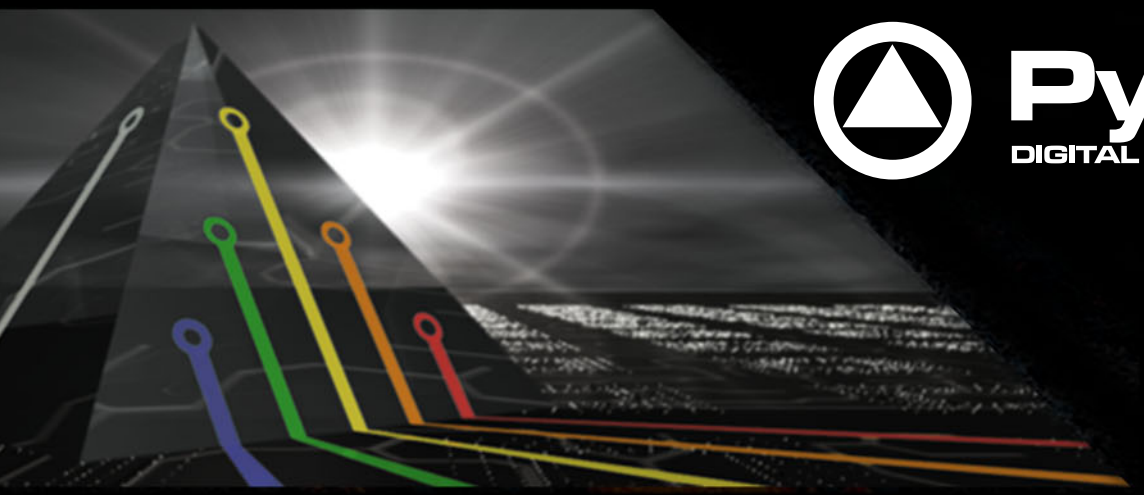

Pyramix

DIGITAL AUDIO WORKSTATION

User Manual

25th Anniversary

MERGING

AUDIO FOR THE NETWORKING AGE

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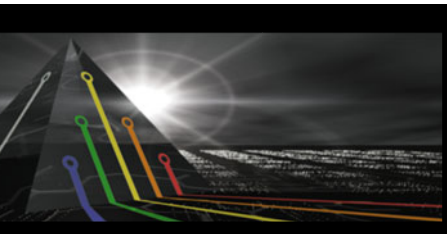
1 Introduction



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Thank you!

Congratulations on your purchase of **Pyramix Virtual Studio**. More than just a product, this is a gateway to the future of sound recording, editing, mixing and mastering. You have joined a worldwide community of users who have already discovered the Pyramix advantage.

> **Note:** IMPORTANT! - The first thing you need to do is register your software to acquire your Pyramix key(s) and to be included in our user support list.

Please also subscribe to the User Forum at:

http://forum.merging.com/

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For all documentation inquiries or suggestions for improvement:

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Installation

Please see the **Pyramix Installation Guide** and the **Installation Guides** for any hardware you have purchased.

About This Manual

Automatically installed with Pyramix and available under the **Help** menu or **[F1]**, this manual is intended to be a comprehensive reference source for all the standard features and functions in Pyramix 7.x.

Navigation

In electronic form, all the **Contents** and **Index** entries and **Cross-references** are hyperlinks. I.e. clicking on them will jump to the relevant item.

PLEASE DO NOT PRINT THIS DOCUMENT UNLESS ABSOLUTELY NECESSARY

SAVE TREES AND INK BY USING THE HYPERLINKS

VERY IMPORTANT!

We strongly recommend you consult the other Pyramix guides for a more complete understanding of all the features and functions of Pyramix.

Scope

This manual is principally concerned with Pyramix software installed on workstations with used together with **Horus** audio interfaces via **RAVENNA**. Although many of the features and functions described also apply to **Pyramix Native** there *are* differences. Native differences are detailed in the Pyramix Native documentation.

Pyramix 11 Compatibility

Pyramix 11.x is compatible with Windows 7 Professional (64 bit) and Windows 10 Professional (64 bit) MassCore RAVENNA, Native/RAVENNA and Native.

Windows 10

The **Windows 10 Creator Update**, is supported by Pyramix v11 MassCore. (based on the **RTX64 -3.2** version). The **Windows 10 Anniversary (1607)** is also supported.

If you wish to use **Windows 10 Creator Update** please refer to the **Pyramix 11 Installation Guide** for details.

Defer Updates

Merging recommends that you set Windows updates to defer for 180 days, in this way you retain control of what is installed on your Windows 10 system.

Details about the recommended Windows 10 Defer Update setting can be found here:

https://confluence.merging.com/display/PUBLICDOC/Windows+10+Defer+Updates

Users performing an update from Windows 7 to Windows 10 should proceed in this way:

https://confluence.merging.com/display/PUBLICDOC/Updating+Windows+7+to+Windows+10+Anniversary+1607

> **Note:** Merging will communicate more details on this Windows 10 Creator update issue in the near future.

Windows 10 Configuration

Merging Technologies recommended Windows 10 configuration details can be found here:

http://download.merging.com/beta/SupportTools/Docs/Windows10ConfigurationBeta.pdf%3C

Commands Reference

Automatically installed with Pyramix and available under the **Help** menu, this document lists all the commands available in Pyramix together with the default Keyboard Shortcuts.

MassCore™

MassCore is an extremely powerful Pyramix option. A truly deterministic real-time engine that does not rely on the Windows operating system. This avoids the inherent restrictions and latencies introduced by the operating system and allows the channel/track-count to be increased to an unprecedented level. **MassCore** is scalable from 16 to 384 Live I/O (768 simultaneous) channels with a massive 512 channel bus structure (At 1FS).

MassCore enables a number of new features:

- Larger Mixer configurations
- Extra 2.66ms and Ultra 1.33ms latency options
- Full Delay Compensation (VS3 and VST)
- VST inserts on Buses and Auxes
- VST Multi-channel support
- External Inserts (physical effects)
- External Monitor Inputs and Talkback
- Virtual ASIO I/O

Where features are **MassCore** specific you will see the **MassCore** logo:

Important Note

Pyramix is not only a very powerful workstation, it is also a highly configurable one, the user interface especially so. Screenshots in this manual are shown mainly with the default interface on a Windows System with the graphite scheme.

If you cannot find something in a Pyramix menu or toolbar that is discussed or shown in the manual, or something appears differently, please go to:

Settings > All Settings > Desktop Layout and examine the relevant tab window.

Pyramix Guides

Quickstart Guide

Automatically installed with Pyramix and available under the **Help** menu, this document is intended to enable new users to achieve good results quickly.

Other Pyramix Guides

The other guides listed here are installed along with the Pyramix software and / or may be freely downloaded from the Merging Technologies website.

http://www.merging.com

Installation Guide
Full details to enable a successful installation.

MassCore RAVENNA Network Guide
Detailed information about setting up Pyramix with **RAVENNA** and **Horus**.

Pyramix Applications Guides
These guides aim to be a useful resource for Pyramix users. They will contain set-up examples and practical hints and tips for using Pyramix for specific applications such as;

Music Recording, Editing and Mastering (in development)

SACD Production Guide (in development)

Post Production (in development)

Radio Production (in development)

Guides for Pyramix Optional Features
Documentation for optional features is provided in PDF format. Some are automatically installed with the Pyramix software. Others may be downloaded freely from:

http://www.merging.com

Assumptions

This **User Manual** and the other Pyramix guides assume you are thoroughly familiar with PCs and Windows terms and concepts. If the PC is new, please ensure the machine is working correctly before attempting to install Pyramix Virtual Studio.

Conventions

Conventions used in this manual:
Names found on Pyramix screens and menus are shown in bold. E.g. **Information & Settings**

Menu and sub-menu selections are shown like this:

View > Tracks > Show all Tracks

Which means:

Go to the **View** pull-down menu, mouse down to the **Tracks** sub-menu and choose **Show all Tracks**.

All Pyramix settings have been gathered together in a hierarchical structure. Selecting **Settings > All Settings** opens the **Pyramix Settings** window with a folder and file tree in the left hand pane.

Where a dialog box has several Pages, Tabs are used to 'turn' the pages. Tab page selection is shown thus:

Settings > Keyboard Shortcut Editor : Clips

Which means:

Go to the **Settings** pull down menu, choose **Keyboard Shortcut Editor** then click on the **Clips** Tab.

Keyboard Shortcuts are shown thus: **[Shift + Alt + R]** means hold down the Shift and Alt keys then press R

Important Information
Important information is shown thus:

Note: When producing a CD image the mixer output **MUST** be stereo, not two monos.

Pyramix Virtual Studio Overview
Pyramix Virtual Studio is a powerful and flexible Digital Audio Workstation (DAW) integrating hard disk recording and editing, digital audio mixing, effects processing, machine control, video, and CD-R mastering.

Pyramix runs on the **PC** hardware platform.

MassCore

MassCore is scalable from 16 to 384 Live I/O (768 simultaneous) with a massive bus structure.

The Pyramix workstation is capable of up to 384 channels of 24-bit digital audio I/O. External access to these inputs and outputs is determined by your choice of **Horus / Hapi** options.

Pyramix v11 with MassCore 256 + Key:

384 @1FS / 192 @2FS / 96 @4FS / 64* @8FS & DSD

(*Please refer to system requirements in the **Pyramix Installation Guide**)

Pyramix v11 with MassCore 128 Key:

128 @1FS / 64 @2FS / 32 @4FS / 16 @8FS & DSD

> **Note:** For example the **MassCore 128** key allows you to connect 16 I/Os @ 8FS/DXD/DSD (However a larger Mixer of 64 Strip/buses can be created but only 16 I/Os may be connected). 64 I/Os for 8FS/DXD/DSD are only available when the MassCore 256 + Key is present.

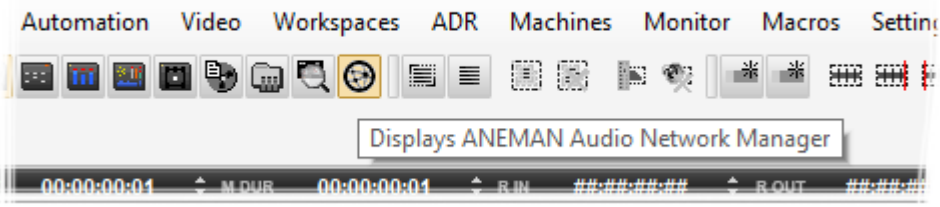
Aneman

If you have a Merging Technologies Network Audio Interface, e.g. a **Horus** or **Hapi** these devices use RAVENNA audio over IP to connect to the Pyramix workstation.

ANEMAN is an application developed by Merging Technologies and will enable you to connect, monitor, and manage your networked audio devices. It can be launched from its desktop shortcut:

ANEMAN

Or from its toolbar icon in the Pyramix Program Window:



Aneman Icon in Pyramix Program Window Toolbar

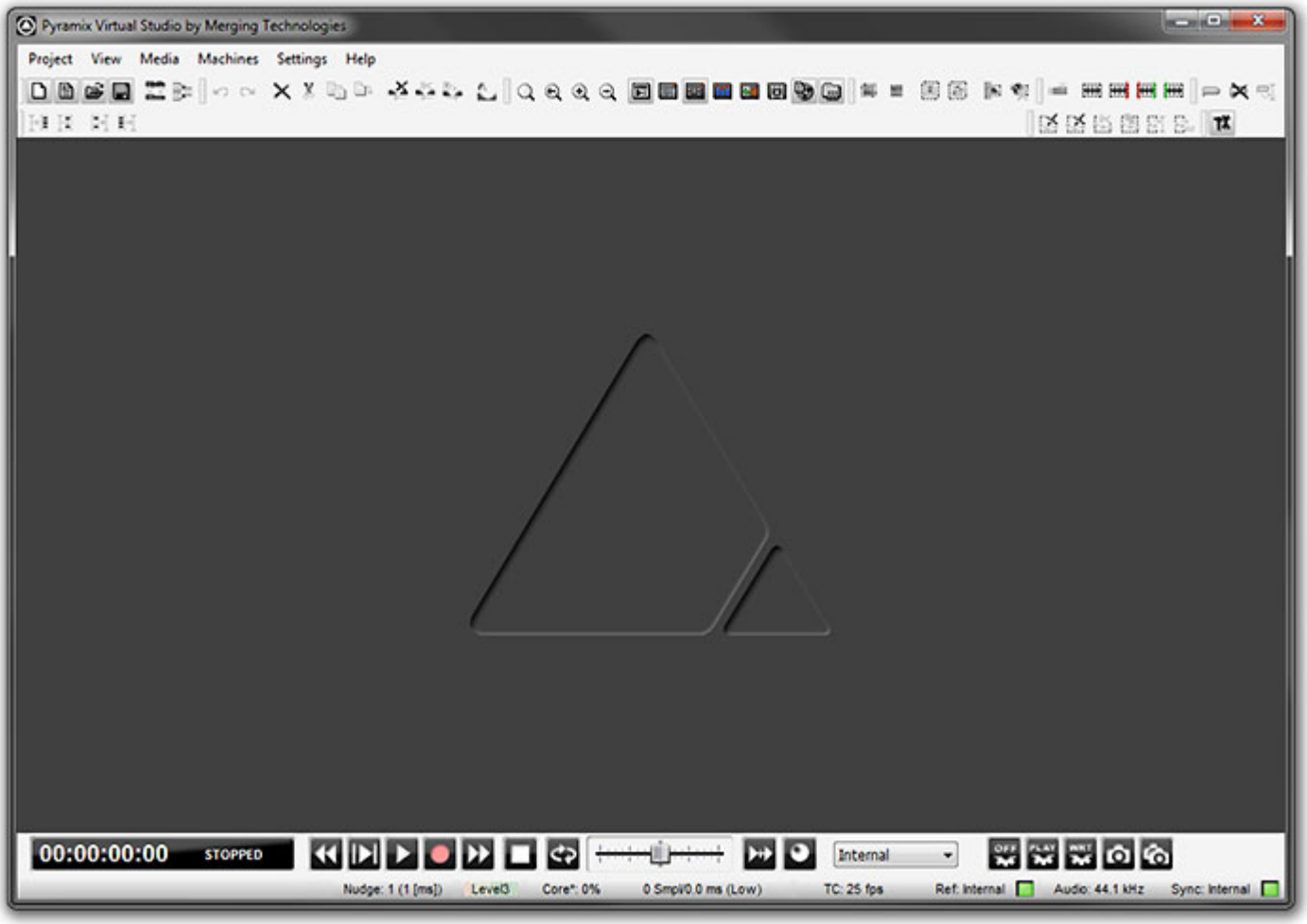
Please visit:

www.aneman.net

for more details and to download the application.

User Interface

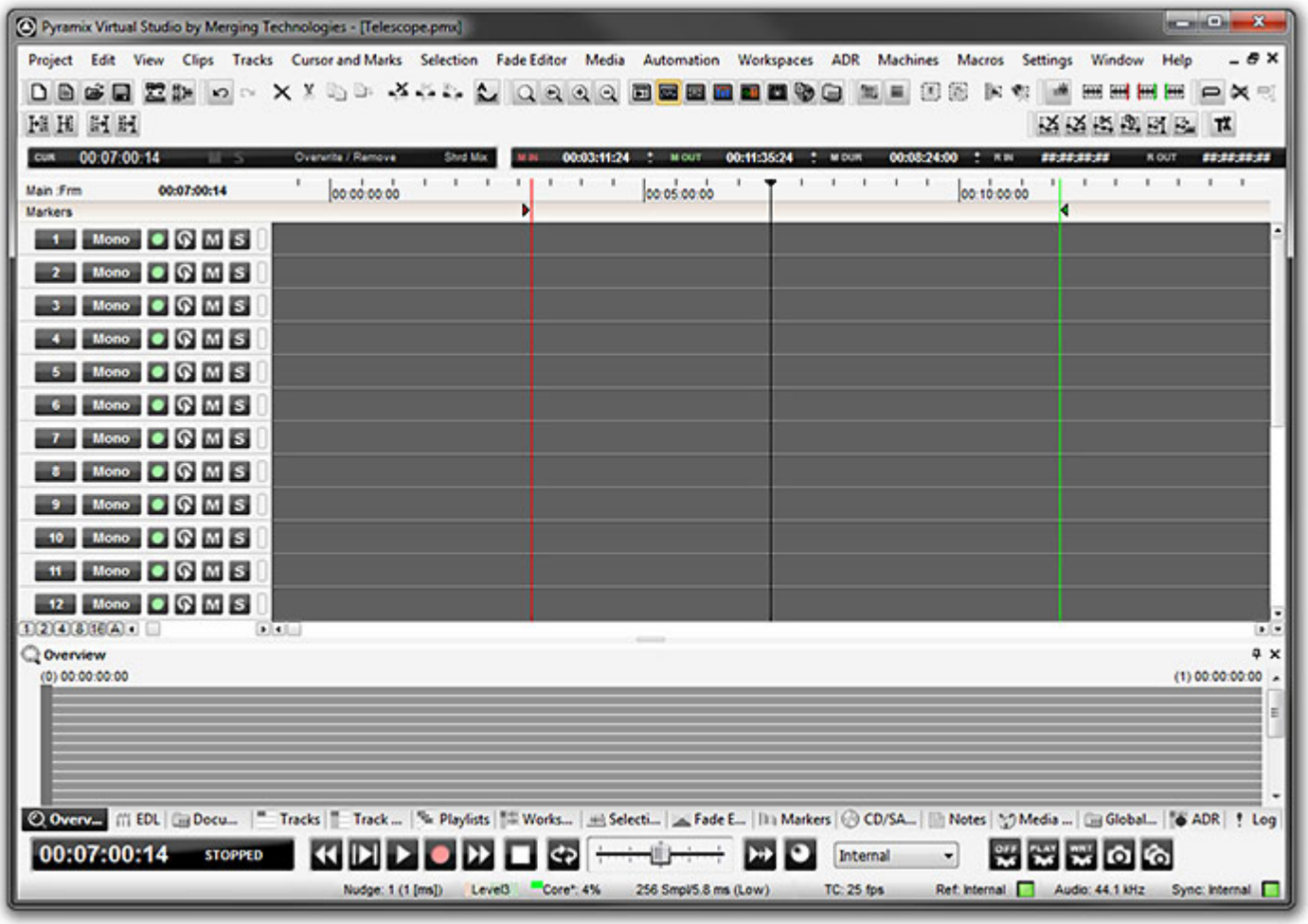
Program Window



Pyramix Program Window

The main **Pyramix Virtual Studio by Merging Technologies** program window appears when the program is launched. It has dockable Toolbars across the top with a Transport bar and status information at the bottom. This main window can be resized, moved, minimized or maximized with the conventional Windows control boxes.

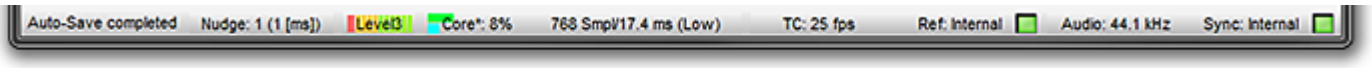
Project Window



Pyramix Project Window

The **Pyramix Project** window is always completely enclosed by the main window. A **Project** window only exists if a **Project** is open, and appears automatically when a new **Project** is started. A **Project** window can be resized, moved, minimized or maximized within the main window. If the **Project** window is made large enough, two separate panels are visible: the **Project Editing Panel** at the top, contains the **Timeline** which shows a graphic representation of the **Composition**. The lower section of the screen is the **Project Management Panel**. The dividing line between these panels may be grabbed with the mouse and moved up or down, thereby varying the space allocated to each panel. The **Project Editing Panel** can be maximized to fill the Project window by clicking on the arrow at bottom right where the scroll bars meet. A second click restores the previous window arrangement.

Status Bar



Status Bar

At the very bottom of the Pyramix Window the **Status bar** shows:

Message Area

Messages from Pyramix are shown here.

Nudge

Currently selected nudge setting

Playback Buffer Meter

Graphic representation of the current state of the Playback buffers together with the buffer **Level** selected currently. When the transport is not running or there are no audio Clips under the playhead cursor this will have no

segments lit. In normal playback all the segments are lit. If the number of Tracks approaches the disk bandwidth or buffer capabilities less segments will be lit.

Core (MassCore Systems)

CPU Load

Latency

Input to Output Latency in Samples and Milliseconds

TimeCode

Current Frame Rate and Reference Source.

- If the selected Reference Source is available the LED lights in Green
- If the selected Reference Source is not available then the LED flashes in Red.

Audio

Current Sample Rate and Sync Source.

- If the selected Sync Source is available and locked on the LED lights in Green
- If the selected Sync Source is not available and the system defaulted to Internal then the LED lights in Red
- If the selected Sync Source is available but with a different Sample Rate then the LED flashes in Red.

Pyramix Busy Warning

When Pyramix is engaged on a very demanding task, such as a opening a huge project or a long and complex render the user interface may appear to *freeze* with the window changed to white and the interface not responding.

A status window opens at the bottom right of the main Pyramix window to inform the user that Pyramix is still operational. One of the following messages may be displayed:

- Pyramix Virtual Studio busy (during tasks like: opening project, mount, renders, libraries,…)
- AAF Parser busy (during AAF import task)
- Merging Technologies VS3 busy (during Mixer tasks)
- Merging Technologies Convert busy (during Convert task)

Note: The small progress bar within the Pyramix status window (white) will progress at different speeds. Please be aware that the progress bar does not necessarily indicate the remaining busy time.

Project Editing Panel

By default the **Project Editing Panel** has a number of dockable toolbars at the top, a row or rows of Time Scale Ruler tool bars and below this the Timescale Ruler(s), Markers Tray and the main Timeline Tracks display. This is where much of the audio editing is accomplished. Audio **Tracks** may be created, added or deleted, and audio **Clips** can be edited, moved, copied or pasted. Note that the **Project Editing Panel** automatically starts with the same number of audio **Tracks** as the number of **Input Channels** configured in the **Mixer** of a new **Project**.

Project Management Panel

The **Project Management Panel** has a number of tools for managing, navigating and modifying a **Project**. A single click on one of the tool **Tabs** at the bottom of this Panel, opens its window in the Panel. Double- clicking a **Tab** opens it as a floating window. Double-clicking the Tab of a floating window or its Caption Bar returns the window to the panel.

Note: By default, clicking the red **X** close box of a floating Tab Window removes it from the screen. It can be reinstated as a Tab from **View > Editor Tabs**

Tab Windows

Many Tab window functions can also be accessed from pull-down menus.

Any or all of the Tab windows can be shown or hidden for a Project, and moved independently and outside of the main Program window. Double-clicking a Tab opens it as a floating Window. Double-clicking the header of a floating Tab Docks it back where it came from.

Tab Window List

Overview

Please see: **The Overview on page 145**

EDL

Please see: **EDL Tab Window on page 192**

Document Libraries

Please see: **Project Libraries on page 81**

Tracks

Please see: **Tracks Tab Window on page 110**

Track Groups

Please see: **Track Groups Tab Window on page 117**

Playlists

Please see: **Playlists on page 677**

Workspaces

Please see: **Workspaces on page 695**

Selection

Please see: **Selection Tab Window on page 174**

Fade Editor

Please see: **Fade Editor Tab Window on page 199**

Markers

Please see: **Markers Tab Window on page 139**

CD

Please see: **CD/SACD Tab Window on page 630**

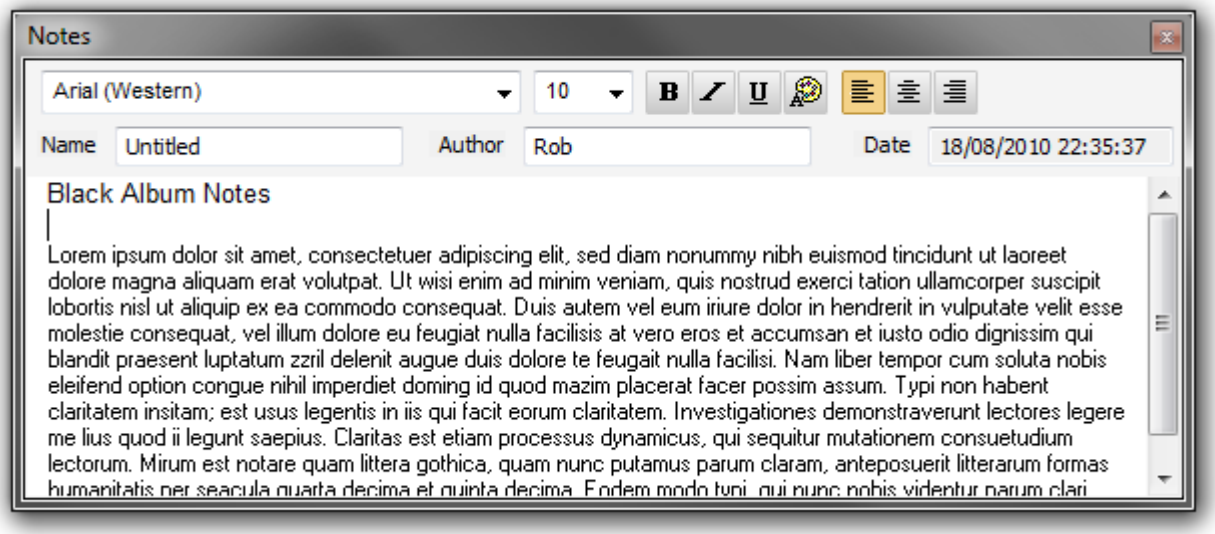
Metadata

Please see: **Archiving Metadata on page 470**

Video

Please see: **Video Tab on page 558**

Notes



The Notes Tab provides a simple word processor for adding notes to the Project. Anything written here will be kept with the Project when it is saved.

Media Management

Please see: **Media Management Tab Window on page 60**

Global Libraries

Please see: **Document and Global Libraries on page 85**

ADR

Only available with the ADR option. Please see the ADR User Guide for more information.

Log

Check this Tab Window if you are experiencing problems.

Most of the Tab Windows are fully described in the sections of this document they relate to as in the cross-references above.

Metadata

Please see: **Metadata Tab Window on page 470**

Video

Please see:

FX Rendering

Please see:

Tab Windows Productivity Tips

For more detail on Tab Window functionality, **Please see Tab Windows on page 687**

Toolbars

The Pyramix main window has a number of Toolbars ranged across the top. All the Toolbars can be torn away and rearranged. Hovering over a a Toolbar button pops up a tool-tip with its function.

Toolbars can be Shown/Hidden using the **View > Scales / Toolbars >** menu.

Individual Toolbars can be configured in **Settings > All Settings > Desktop Layout** (Please see: **Desktop Layout on page 790**

Dual Monitors

By default the screen is horizontally divided with the Tab Windows below the Timeline. When using Dual Monitor setups, you may wish to divide the main project window vertically. With the Timeline displayed on the left screen and the Tab Windows on the right, more Tracks can be viewed simultaneously. This can be achieved by checking the **Display Timeline on the Left of Tab Windows** radio button in the **Settings > All Settings > Application > Timeline Layout** page. This change will take effect the next time a Project is opened.

TimeCode Entry

TimeCode values in Pyramix can be changed by using the up arrow, Increment or down arrow, Decrement buttons, by using the on screen numeric keys or by direct entry from the numeric keypad. an **OK** button or the **ENTER** key finalizes the entry. In Pyramix numbers are entered in time code fields from right to left, a block at a time, progressively overwriting existing numbers.

This makes the most common TimeCode changes easy, I.e frames or seconds, without having to re-enter the minutes or hours.

Clicking in a register inserts a red I-beam cursor. Entries must be made in Hours : Minutes : Seconds : Frames order. So, to enter 10 Hours and 9 seconds and 15 frames, key: **1 0 0 0 0 9 1 5**. **BUT** if you want to change the seconds then you only have to enter the seconds and frames E.g. to enter 9 seconds and 15 frames, key: **9 1 5** followed by **ENTER**. However, to change 10:27:10:15 frames to 10:27:09:15 you would need to key, **0 9 1 5** followed by **ENTER**. In practice most operators always enter the leading zero even when it is not required, to avoid errors.

TimeCode Register

Arithmetic TimeCode Entry

An existing TimeCode value can have time added to or subtracted from it. I.e. a relative entry. Type the number to be added or subtracted then, instead of pressing the Numeric Key Pad **Enter**, press **-** (Minus) or **+** (Plus) on the main keyboard or **Ctrl** + Minus or **Ctrl** + Plus on the Numeric Key Pad.

Increment / Decrement UP & DOWN Arrow Buttons

The **+** (plus) and **-** (minus) buttons to the right of the TimeCode registers increment or decrement by one unit per click of the smallest unit in the current register. E.g. Frames, Samples etc.

Modifiers

Click	**Frames**
Alt + Click	**Subframes**
Ctrl + Click	**Seconds**
Shift + Click	**Minutes**
Ctrl + Shift + Click	**Hours**
Ctrl + Alt	**Current Nudge Value**

Automatic Fades and Crossfades

Summary

Auto Deglitching:

When enabled (Ramp length is user definable), Auto Deglitching allows on-the-fly Deglitching in playback when no fades or crossfades have been created.

This is set globally in **Settings > All Settings > Application > Playback/Record**

To set Auto Deglitching for individual Clips use: **Clips > Properties**. Clicking in the **Auto Deglitching** field opens a drop-down list with the option to **Follow General Settings** or to set a value for the Clip between **1.0 [ms]** to **5 [ms]** in 0.5 [ms] steps.

(The Auto Deglitch action is not visible on Clips, since it only occurs in the playback engine)

Auto Crossfade:

Recording

Set in **Settings > All Settings > Project > Record : Post Processing: Auto Cross-Fade**.

When enabled (Fade Type and duration is user definable, creates a Fade/Crossfade on Clips being recorded.

Playback

Set in **Settings > All Settings > Application > Editing : Drag & Drop: Auto-Crossfade by default - Control key for Drag & Drop**.

Off by default. When checked, a fade will be created on Clips that overlap when they are dragged on top of each other during editing.

The default X-fade can be modified in the **Fade Editor**. Simply edit a Crossfade to taste, then “overwrite” the default X fade. (Click on **X Presets : Save Preset** and choose **Default**.

Sample Rate Conversion

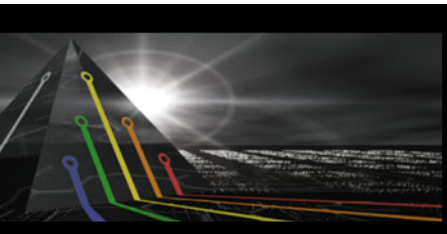
Pyramix can convert Clips to the current Project sampling rate, automatically and on-the-fly. It can also convert in non real-time using the very high quality Merging Technologies **HeptaCon** Sample Rate Converter.

Please see: Real-time Sampling Rate Conversion on page 785,

Convert - Quick Convert sub-menu on page 69

and Sample Rate Conversion on page 162

MassCore 2



Pyramix
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USER MANUAL

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Overview

MassCore™ is an extremely powerful Pyramix option. A truly deterministic real-time engine that does not rely on the Windows operating system. This avoids the inherent restrictions and latencies introduced by the operating system and allows the channel/track-count to be increased to an unprecedented level. **MassCore** is scalable from 16 to 384 Live I/O (768 simultaneous) with a massive bus structure. (For now this is limited in code to a total of 512 at 1FS (256@2FS, 128@4FS, 64@8FS).

MassCore enables a number of new features:

- Larger Mixer configurations
- Extra 2.66ms and Ultra 1.33ms latency options
- Full Delay Compensation (VS3 and VST)
- VST inserts on Mix Buses, Aux Send and SubGroup Buses
- VST Multi-channel support
- External Inserts (physical effects)
- External Monitor Inputs and Talkback
- Virtual ASIO support

Windows Boot Choice

You will see a new screen after the **P.O.S.T**(Power On Self Test) screen before Windows starts to boot. This screen offers the choice between:

Windows 10 (7)

and

Windows 10 (7) MassCore

Please choose **Merging Technologies MassCore**. Boot will then proceed as normal.

If you do not make a choice then the machine will boot into Masscore mode after 30 seconds automatically.

Please ignore all other options on this screen unless asked to use them by Merging Technologies technical support staff.

Memory

MassCore memory allocation is 256MB for all Operating Systems.

The total amount of memory available in a MassCore machine affects the number of VST channels which will be available.

With 8GB or more of system memory, 384 VST channels are available.

Core Load Indicators

In Native systems a single **CPU:** load indicator is present in the Title Bar:

Core Load Indicator - Native in Title bar

The CPU load displayed in the Pyramix bottom bar is not the CPU usage as computed in Windows task manager . CPU load in Native is computed in this way: (time to process audio frame) / (duration of one frame) * 100. Thus, it is the percentage of time used to process in one audio frame duration; this indicator is more useful than CPU Usage because it takes in account CPU stall during processing time.

In MassCore based systems the **CPU:** load indicator is supplemented by a **VST:** core load indicator in the Title Bar:

Core Load Indicators - MassCore in Title

MassCore Load

(Green bar, orange when heavily loaded, red when overloaded): Indicates the MassCore Load.

VST Core load

(Blue bar, orange when heavily loaded, red when overloaded): Indicates VST core load for VST processing.

In both screenshots the left-hand bargraph display shows disk buffering.

MassCore & CPU load indicator range

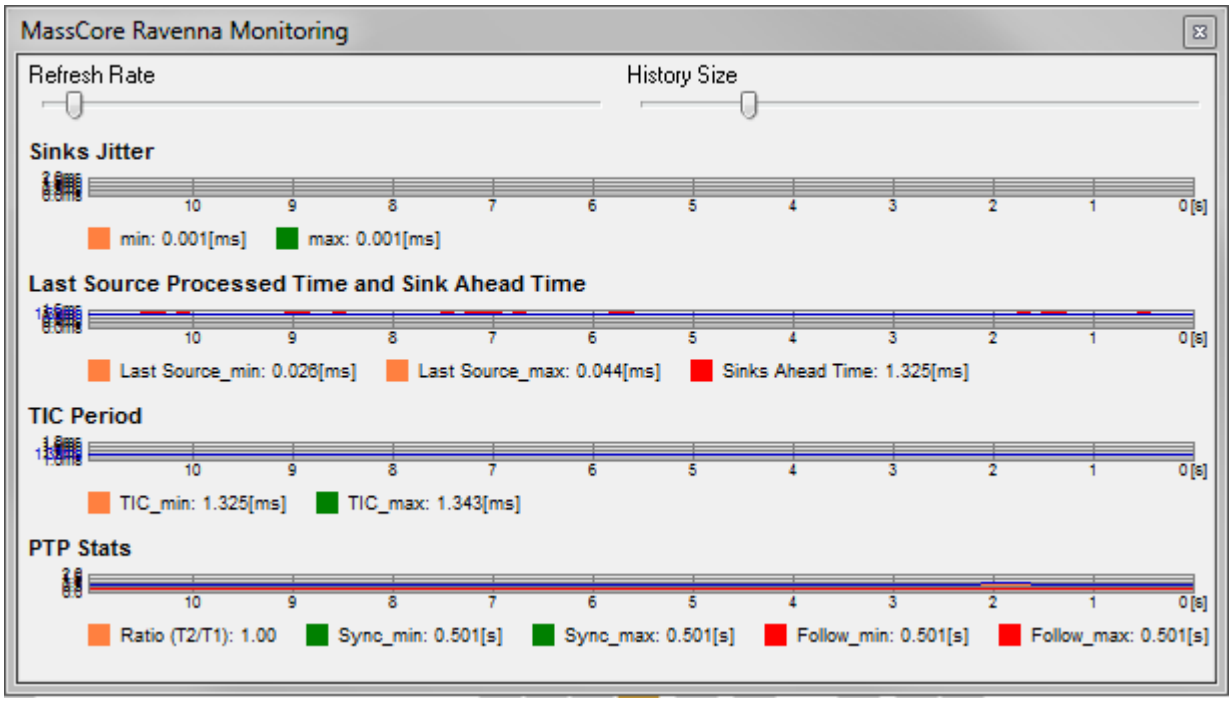
- Green from 0% to 74% = Safe mode*
- Orange from 75% to 84% = Moderate Risk*
- Red from 85%->100% = High Risk

*MassCore users: Will have enhanced Core stability when using recommended dedicated Graphic Cards.

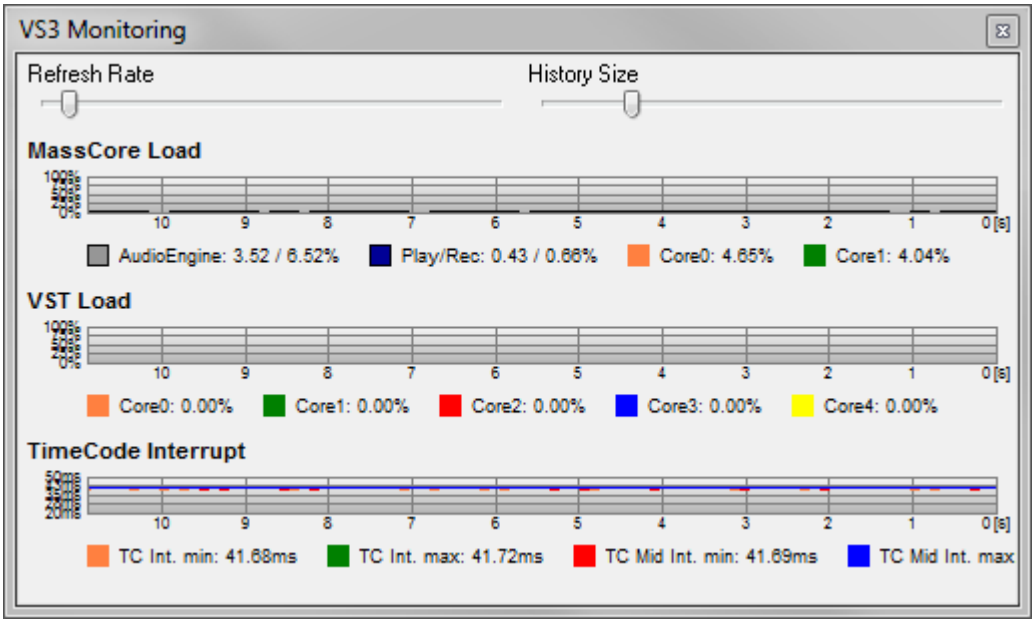
*Native users: Owners of recent laptops owners often experience performance problems when the CPU load reaches somewhere around the middle point of load, then random CPU jumps causing sudden glitches are possible. This has also been seen when benchmarking with Non-Merging Applications on recent laptops.

MassCore and VS3 Monitoring Debug Windows

To see more detailed information about both Core Load Indicators, **[Shift + Click]** on them to open the two **Monitoring** debug Windows:



MassCore Ravenna Monitoring Window



VS3 Monitoring Window

In order to support some VST plug-ins which need a big buffer to be efficient (e.g. Algorithmix EQ Orange/Red,...) we recommend that you increase the **VST Plug-ins engine Latency** size up to **8192 smpl** (samples) using the **VST Plug-ins Engine Latencies** slider in the **All Settings > Hardware > MassCore** page.

Note: this value can only be adjusted when no project is open.

Important! If a **Drop** (glitch) occurs, the **Core indicator** will blink. Click on it to reset it.

Note: This indication may be useful if, for example, you do a Realtime Mixdown or Recording and leave the Studio for a minute to get a coffee. If, on your return, you see the **Core** blinking this

would mean that you have experienced a drop, so that you probably have a glitch in you final mix or recording.

Overload Diagnosis and Cures

First determine whether the CORE indicator or the VST indicator is turning red during a glitch.

If the MassCore (CORE) indicator becomes red during playback or recording you have exceeded the capacity of the workstation. You should reduce the size of your project mixer and/or the amount of active plug-ins you are using, or try increasing the **Max Mixer Delay Compensation** slider value in the Mixer Settings page (**Settings > All Settings > Project > Mixer > Mixer Settings**). You may also try changing the buffered read and write settings of your .pmf files from within the **Project > Record** page under **Format/(PMF)/Settings** for projects with large numbers of audio tracks (approaching machine capacity for current sample rate).

VST

If the VST indicator becomes red you might want to increase the MassCore **VST Plug-ins Engine : Buffer Size** slider value in the **All Settings > Settings > MassCore** page. The VST buffer size can be increased in order to support VST plug-ins that need larger buffers in order for them to work efficiently. So, if you are experiencing VST Core Loads or Peaks (100%) we recommend that you set the **VST Plug-ins Engine : Buffer Size** value higher, it can go up to 4096 samples to help support certain VST plug-ins. Note that you can also monitor the VST Core load by **Shift Click**ing on the **CORE %** indicator, this will open the VST core load debug window. (See above) If you see spikes (red) during playback or an idle indicator then it may be advisable to increase the **VST Plug-ins engine Latency** (**Settings > All Settings > MassCore : VST Plug-ins Engine Buffer Size**), this value can only be adjusted if all projects are closed within Pyramix.

DMA

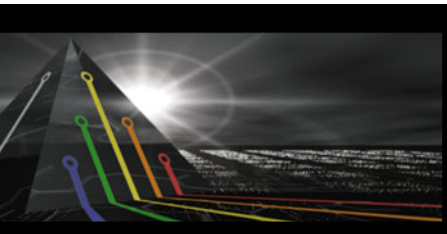
If a DMA Bus (Direct Memory Access) load (peak) occurs, the Text will blink with red **DMA** text. For the user this means that something inappropriate occurred during, for example, the Recording and that the recorded file could contain abnormalities. We recommend that users verify their System configuration/calibration if such indications occur regularly.

Note: These bars should be ignored when loading a project, making changes in the graphical layout of Pyramix when stopped (opening pages, moving the mixer, etc.), or doing offline processes (renders, non real-time mix-downs, etc.). If the indicators become red during these phases of your work, simply click on the indicator bar to reset it.

Pyramix Latency Modes for MassCore

Low, **Extra** and **Ultra** modes are supported.

3 Projects



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Overview

Projects are the top level of Pyramix organization. There are four types of Project. For most applications the one most commonly used is the **Editing Project**. The second type is **Digitizing Session**. As the name implies this a special type of project optimized for media acquisition.

Two further Project types, **DXD Mixing Project** and **DSD Project** are solely concerned with high-definition audio and the production of SACD masters.

There is also the option to **Load a Template**. Templates are the quickest way to configure Pyramix for a specific purpose. A wide variety of Templates are supplied with Pyramix and can also provide a basis for refining your own 'User Templates'.

You can find more information about **Digitizing Sessions** here: **Digitizing Sessions on page 165**

Backward Compatibility

Even the latest version of Pyramix is capable of saving in project formats back to V4.3. Some current features are obviously not supported in previous versions but the **Project > Save Special** option offers the ability to save in all relevant previous versions back to V4.3.

> **Important!** The v10 and later Aux Bus structure, if used, does not allow for **Save Special**. Only v10 and later Projects with Legacy Aux Buses can use **Save Special** to versions earlier than v10.

Note: 25th Anniversary Projects are not compatible with Pyramix v12.0 and earlier. Please use **Save Special** if you need backward compatibility.

Project Files

Saving a Project saves a number of files in a single compressed file. Including **.pmx**, **.pml**, **.Playlist.pml**, **.Default-Library.pml** and **.Composition.pml**.

On opening a Project these files are decompressed.

These files will only be all visible in Windows Explorer when the project is open in Pyramix.

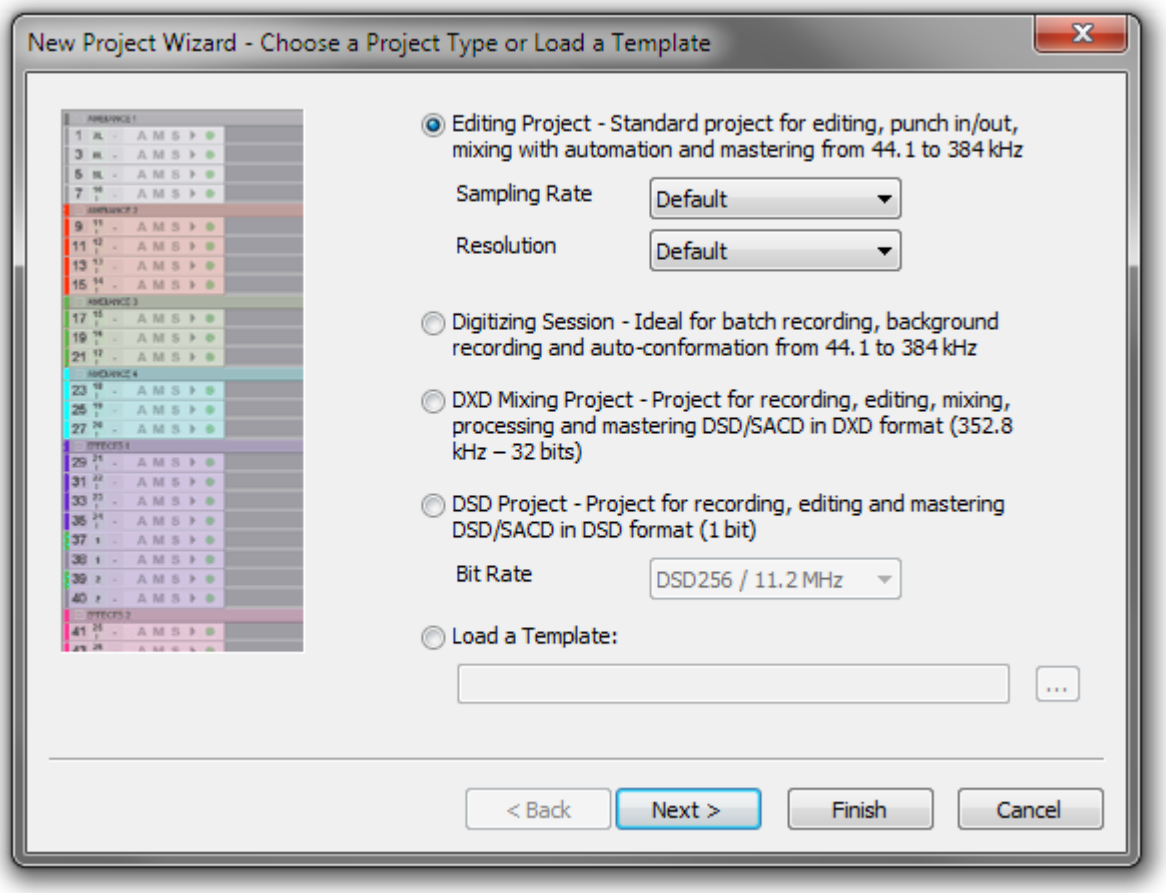
When the Project is saved these files are re-zipped into a single.pmx file and, when the Project is closed the decompressed temporary files are deleted.

Editing Project

New Project

1. Launch **Pyramix Virtual Studio**
2. Choose **Project > New**.

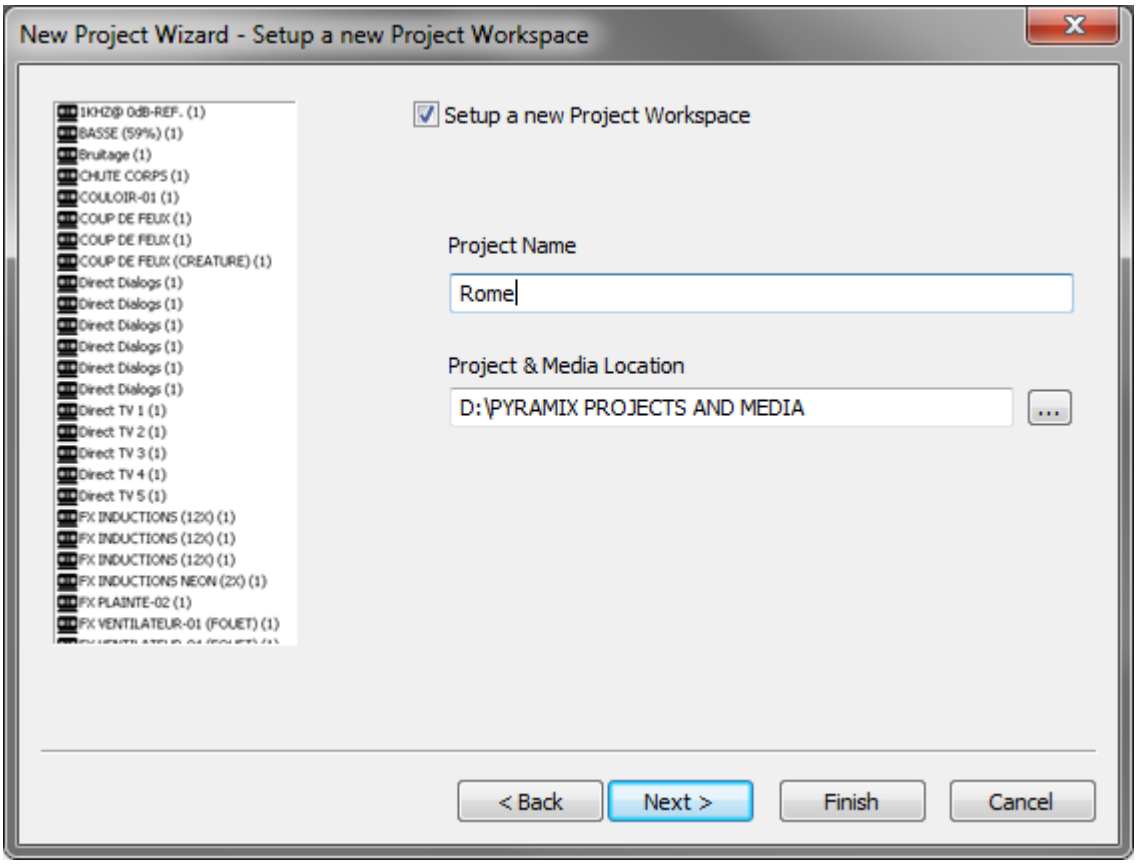
3. The **New Project Wizard - Choose a Project Type** window will open.



New Project Wizard - Choose a Project Type dialog

4. The default is **Editing Project** which is the type we will use.
5. Choose a suitable sampling rate from the **Sampling Rate** drop-down list. (Use 44.1kHz if in doubt and using an analogue input)
6. Choose a suitable bit-depth from the **Resolution** drop-down list. (Use 24 bit if in doubt)

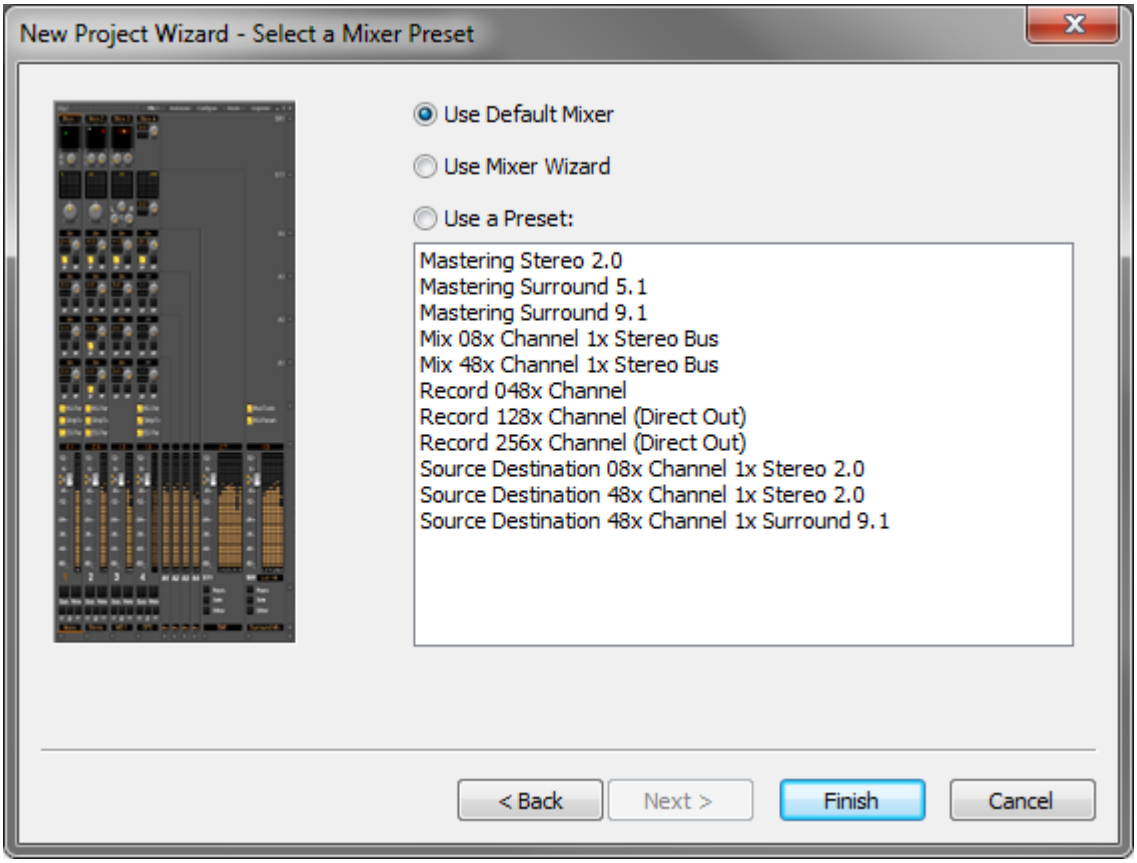
7. Click **Next**. The **New Project WIzard - Setup a New Project Workspace** dialog will open.



New Project Wizard - Setup a new Project Workspace dialog

8. Click in the **Setup a new Project Workspace** box to tick it.
9. Type a name for the Project and either type a suitable path to the **Project and Media Location** or use the **...** button to open a **Browse for Folder** window. This works like a Windows Explorer window and enables you to navigate to a suitable folder.

10. Click **Next**. The **New Project Wizard - Select a Mixer Preset** dialog will open.



New Project Wizard - Select a Mixer Preset dialog

11. If this is the first time you've used Pyramix, choose the **Mix 08x Channel 1x Stereo Bus** preset in the drop-down list by clicking on the name. Note that the **Use a Preset** radio button is checked automatically if a Preset is selected.

12. Click **Finish** to activate your new Project. It will open with a **Project Window** and **Mixer Window**. There will be 8 empty Tracks in the **Project Editing Panel** corresponding with the **8 Mixer Input** channels.

Mixer Wizard

Please see: **Mixer Configuration Wizard on page 276**

Presets

A considerable number of pre-configured presets are supplied for common tasks. You can add your own custom Mixer Presets to the list. **Please see: Mixer Presets on page 284**

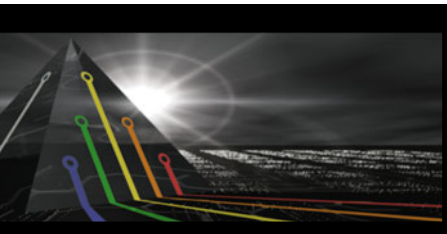
User Templates

When you have a Project with a configuration which may be useful for future Projects you can save it as a Template. I.e. the current Project minus all the Cues. Simply select:

Project > Save Template

A Browser window opens with the default Templates Folder open. Choose an existing Template folder, if appropriate, or create a new one. Name the Template and click on **Save**

4 Media Management & Libraries



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Housekeeping

The Windows hierarchical filing system can become confusing and cluttered very quickly when dealing with a multitude of Media Files. Complex audio projects generate thousands of more or less enigmatically named files. Keeping track of all the files used in a Project in the Windows filing system can become a nightmare even if the user is meticulous.

Pyramix uses the concepts of **Media Drives/Folders**, **Databases** and **Libraries** to reduce the clutter. The **Media Management** Tab, the **EDL** Tab, **Library** Tabs and **Views** such as; **Search Results**, **Used Media**, **Media Present in Project Default Folder** and **Media NOT Present in Project Default Folder**, are all ways of viewing and manipulating the contents of the Databases. These Media Management tools help users to work in a structured and simple manner whilst keeping track of all the Project components.

Databases

All Media listings i.e. **Libraries** are held in databases. A default path to all the database files can be set in **Settings > All Settings > Application > Location : Default Database Location**. Otherwise the Database path will be **C:\Documents and Settings\<user name>\Application Data\Merging Technologies\Pyramix**.

> **Important!** Enough free space (several GB) must be preserved on disk for these files to grow under normal usage. If necessary, the files can be relocated to a bigger or faster drive.

Searching

Database files can be searched using a simple SQLite based search tool which is available in Library, Media Manager, and View Toolbars. Search works with combinations of logical operators ***, **AND**, **OR**.

Relocate Libraries

To relocate the Library Databases:

Settings > All Settings > Location : Default Database Location

- Type a new location for the database files or **Browse** to one.
- Check also that the Fade Library Location is valid:

Settings > All Settings > Application > Editing : Fade Library Location

- If it isn't valid or in the location you wish it to be, proceed as for the Database Location above.
- Click on **OK**
- Restart Pyramix.
- Database Library paths will then be updated.

Conversion of Previous Version Libraries (v6.x or older)

The Version 7 library format is not backwards compatible, so conversion is required for libraries created in previous Pyramix versions:

- Pyramix does the conversion automatically the first time it opens any version 6 (or older) library.
- Conversion will take some time, especially with large libraries, but is only required once.
- A backup (.pml.6xx) is made of the original library so that it can be renamed and restored in version 6 or previous.
- The .pml file is replaced with a converted version 7 library
- Note that subsequent changes made to the new version 7 .pml library will NOT be forwarded to the backup .pml.6xx library.

Performance Tips!

Database Location

For optimum housekeeping perfomance Merging recommend strongly that the **Default Database Location** should be set to point to the fastest drive on your system. **SSD**s are recommended and, where possible, not the **C:\OS defaultdrive** (since a drive with less activity and higher speed should perform better).

Saving

Project Save times will be faster if Saves are made to a high-performance Disk (e.g. an SSD). Saving to older Disks (e.g. 5400 rpm etc.) or saving to the Disk where the OS is located (this disk is often very busy with other tasks) could slow down Saves times.

Media Folders

Media Folders are Windows folders or drives which contain **Media Files**. Pyramix needs to mount these **Media Folders** specifically, in order to access the **Media Files** contained therein. Once mounted, suitable files are displayed as **Master Clips**. I.e. pointers to the underlying Media audio files. Mono and interleaved Stereo and Multichannel Media files are all displayed and manipulated as single Master Clips

These can be dragged and dropped or copied and pasted directly into the **Timeline** or into a **User library** from the **Media Management** Window regardless of format, sampling rate or bit depth.

Media Folder Syncronization

Pyramix synchronizes the contents of mounted Media Folders with the underlying Windows folders automatically. When media is added to these folders by Merging Technologies or third-party applications the changes are reflected automatically. In the event of a consistency problem the Media Manager **Media Folder > Refresh Media Folder** function will remount the selected folder and rebuild indexes.

Media Target Settings

When a Project is created, either with **Project > New** or **Project > New From Template** and a Media Folder is created or selected, the **Project General : Project Media Folder** Media Folder, the **Record : Target settings** Media Folder, the **Project > Render : Target Settings** Media Folder and the **Project > Mix Down : Target Settings** Media Folder all point to the same folder. These target settings can be changed later and each can point to a different folder.

Audition Play

Master Clips in the Media Management window and all audio objects in the Library windows can be auditioned through the **Monitor** as a MONO downmix as determined by the **Monitor** settings Please see: **Media Manager and Library Monitoring on page 348**. The toolbar Play (**Space)** and Stop (**Esc**) buttons starts and stop playback of a selected object. Double-clicking an object begins playback at the start.

Drag and Drop

Audio Media files compatible with Pyramix may be dragged and dropped into Pyramix Libraries and the Timeline. Single or multiple files can be dragged and dropped in the conventional Windows manner from browser windows and from applications that support such operations, e.g. iTunes. As a rule of thumb, if you can drag and drop a file from a location to the Desktop, you can drag and drop to the Pyramix Timeline or libraries.

Example:

Start Pyramix, open a Project and a library view. From a Windows Browser window select one or several audio files and drag them over the library. If the selection contains compatible audio files the library will highlight. Drop the files over the library. Any compatible files will be added to the library and can be then used just like any other library file in Pyramix.

> **Note:** The converse, dragging and dropping from a Pyramix library to the Desktop or to a browser or other application is NOT supported.

Drag and Drop and Copy to Project Default Folder

If you hold down the **Ctrl** key whilst dragging and dropping into the Timeline then the Media File(s) will also be copied to the Project Default Folder. Otherwise they are mounted from their source location directly.

Drag and Drop TO Libraries

A Timeline selection, single or multiple Clips on one or many Tracks can be copied to a Library by holding down **Alt + Shift**, dragging over the right-hand pane of a Library and dropping.

Database Views

The **Media Management Tab**, all **Libraries**, the **Used Media** view, **Project Default Media** view, **Non Project Default Media** view and the all important **Search Results** window are all ways of looking at the database files for particular purposes.

Each of these windows is a way of viewing and manipulating the contents of the underlying databases. In database terminology, a report. The **Media Management Tab** window is also the main bridge between the Windows filing system and the Pyramix Media database.

Look and feel, controls and menus are almost identical in all Libraries and Views except for Media Management.

Search

Overview

Thanks to the database engine Pyramix has comprehensive search tools. All Library views and the Media Manager have a powerful Filter Search which refines the current view.
A simple search field is available in all Libraries and the Media Manager. A more comprehensive search dialog is accessed via **Media > Search Media** or via a toolbar icon. For power users the dialog can be associated with a keyboard shortcut. Search Results are added to the Global Library in a folder labelled with the date and time of the search and the search term(s). Results may be further refined using **Filters**.

Quick Search

In any Library Tab or the Media Management Tab Click in the ***Search*** box to type a query.

Search Box and Buttons

When you click in the ***Search*** box a list of previous search terms (if any) drops down with the option to ***Clear Search History*** at the end. This option clears the previous search terms visible at the top of this drop-down list but leaves the current term in the search box intact. The [X] deletes the current search term from the box.

Note: When **Exact Word Match** is checked in the **Search Media** dialog (See below) then only exact words in the database are searched.

The **Search Exact** button toggles **Exact Word Match** on and off. Default is **Off**

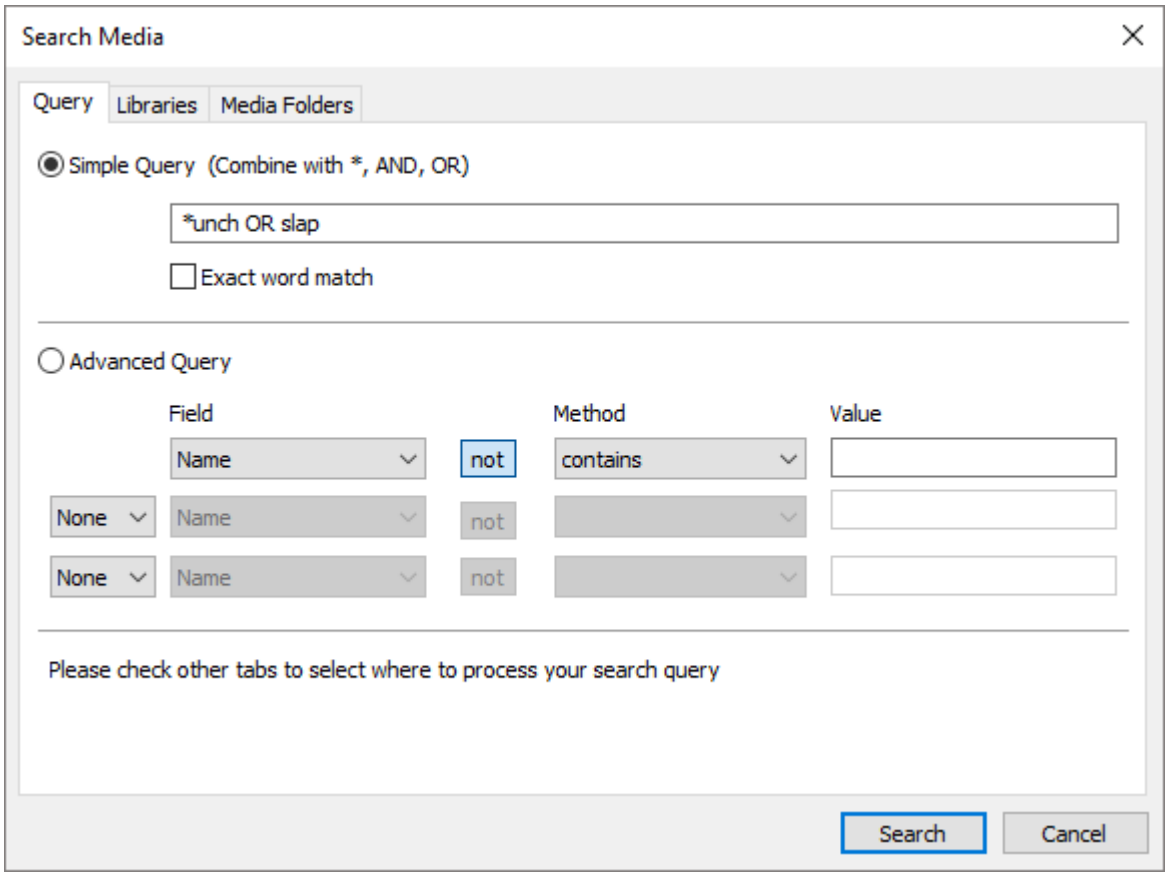
Search Exact button active.

Clicking on the **Add to Search Results** button creates a new folder in the Global Library, named with date and the search request term(s). This folder can be renamed.

Search Media Dialog

The **Search Media** dialog is accessed via **Media > Search Media** or:

Clicking on the **Search Media** Toolbar icon:



Search Media dialog - Query Tab - Simple Query

Search Media Dialog Tabs

The Search Media dialog has three Tabs:

Query	Is where search terms are set
Libraries	Is where Libraries to be searched are set
Media Folders	Is where Media Folders to be searched are set

Query Tab

The **Search Media** dialog opens with the **Query** Tab. This Tab sets up the search terms.

The top section is for Simple Queries. For more advanced searches the bottom section offers further possibilities.

Simple Query

Simple Query	This radio button toggles with **Advanced Query**. When **Simple Query** is selected the search is restricted to the **Name** of the object(s) to be found. Search term(s) are typed in the text entry box. **AND** and **OR** can be used in between two search terms to increase the scope. Similarly, * can be used as a wildcard at the beginning or end of a search term.
Exact Word Match	When checked the search will only identify **exact** words in the database. The wild card * is still valid. When unchecked the words are searched partially. E.g. **car** will return items such as **car** door opening but also **car**avan passing or even s**car**y scream.

Note: When **Exact Word Match** is checked it also applies to the quick search at top right of Library Tabs.

Simple Query Syntax

The wildcard * can also be used as a prefix or suffix so that:

***unch** will return items including:

"munch"

"punch"

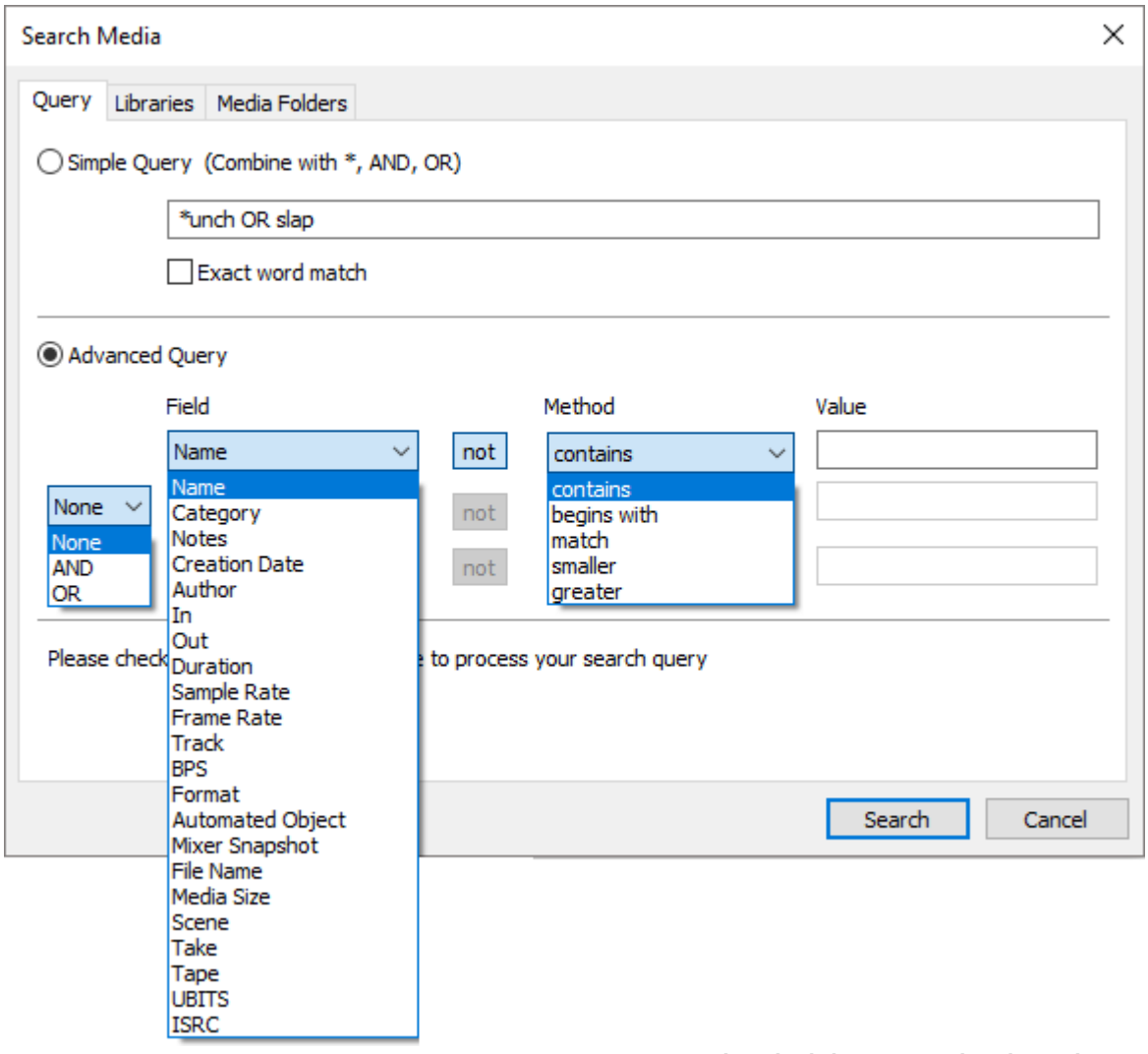
and

auto* will return items including:

"automobile"

"automat"

Advanced Query



Search Media dialog - Query Tab - Advanced Query

Advanced Query This radio button toggles with **Simple Query**.
When selected the following options are available:

Field **Name** drop-down list offers the choice of all file types and information fields on which a search can be conducted:
Name
Category
Notes

Creation Date
Author
In
Out
Duration
Sample Rate
Frame Rate
Track
BPS
Format
Automated Object
Mixer Snapshot
File Name
Media Size
Scene
Take
Tape
UBITS
ISRC

Not When lit (blue) inverts the search to exclude any files containing the search term in the chosen field.

Method The drop-down offers the choice of:

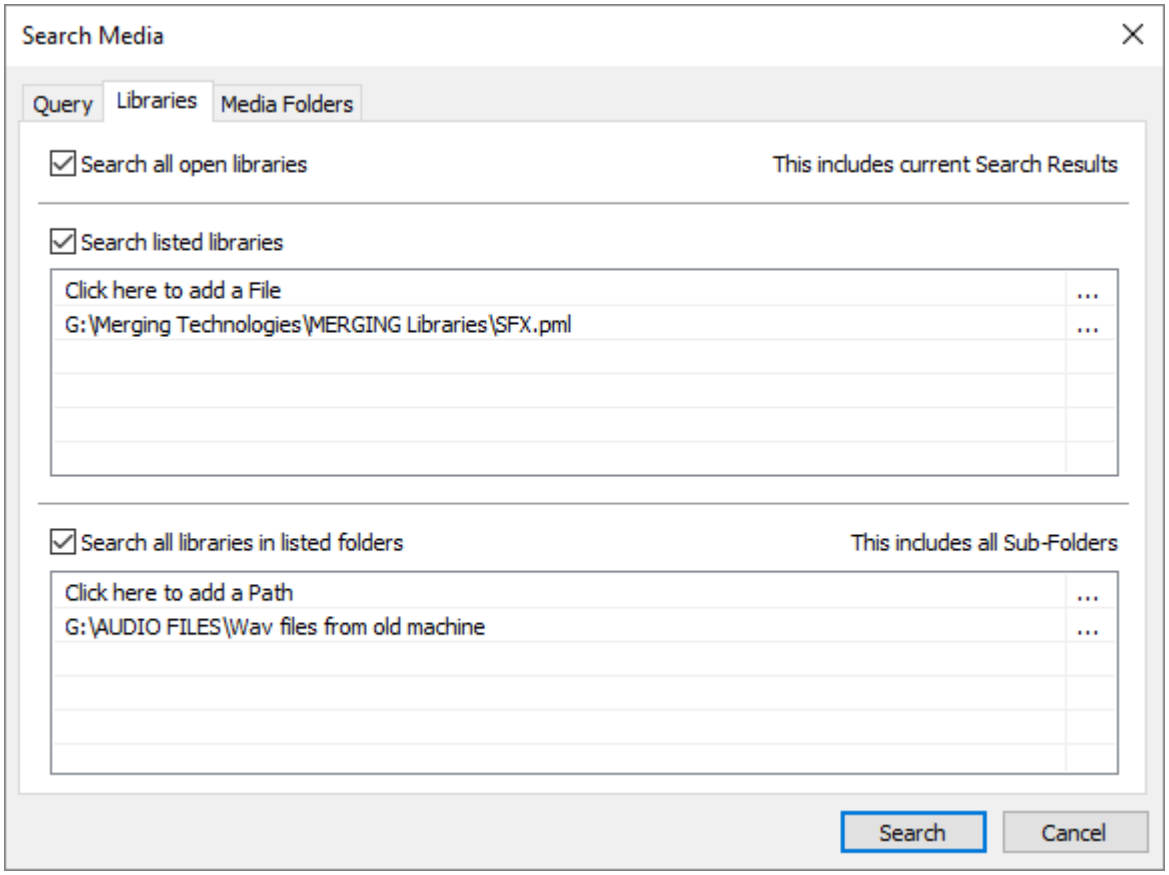
Contains
begins with
match
smaller
greater

Value Type the search term here

The next two rows are used to add further terms to the search and have the same controls as the first except for the first drop-down which offers the choice of:

None
AND
OR

Libraries Tab



Search Media dialog - Libraries Tab

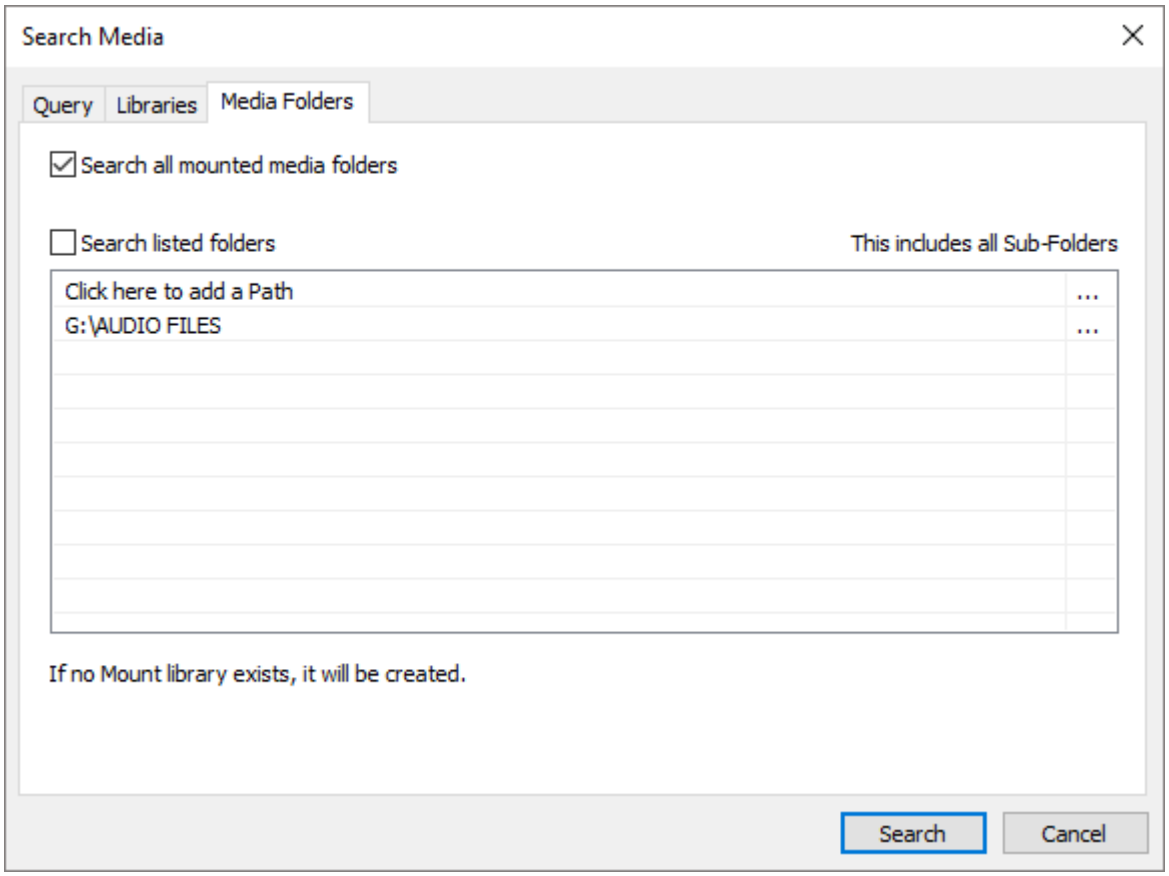
The **Libraries** Tab determines which Libraries will be searched according to the search terms set in the **Query** Tab.

Search all open libraries When ticked all open libraries will be included in the search (including the current search results)

Search listed libraries When ticked any libraries included in the list will be searched whether open or not. Clicking on the **...** button opens a browser to locate Library files to add to the list.

Search all libraries in listed folders When ticked any libraries in the folders included in the list will be searched whether open or not. (Including sub-folders.
Clicking on the **...** button opens a browser to locate Folders to add to the list.

Media Folders Tab



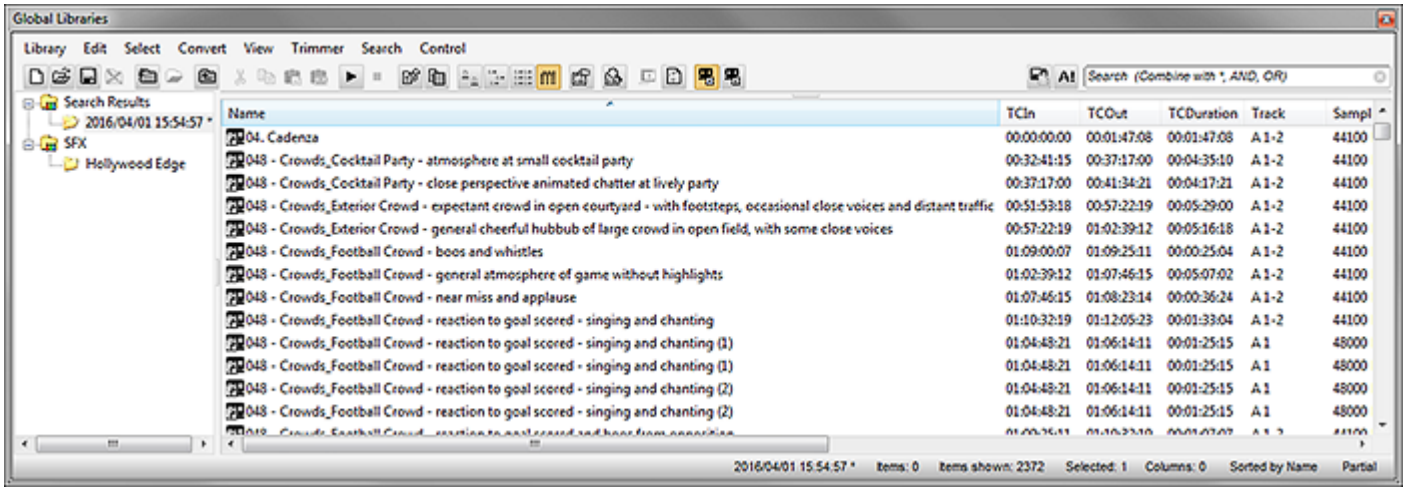
Search Media dialog - Media Folders Tab

Search all mounted media folders When ticked all mounted media folders will be included in the search.

Search listed folders When ticked any folders included in the list will be searched whether mounted or not. (This includes all Sub-Folders.
Clicking on the **...** button opens a browser to locate folders to add to the list.
If a folder is added which does not have a Quickmount library one will be created when the search is run.

Search Results

Search Results are added to the Global Library in a folder labelled with the date and time of the search and the search term(s). The focus is set to the latest search result.



Global Libraries Tab - Search Results

Any operation which can be performed on a library entry can be performed on a search result. E.g. **Drag and Drop.** Any item or items in a results folder can be dragged and dropped to another Library or to the Timeline.

Deleting Search Results

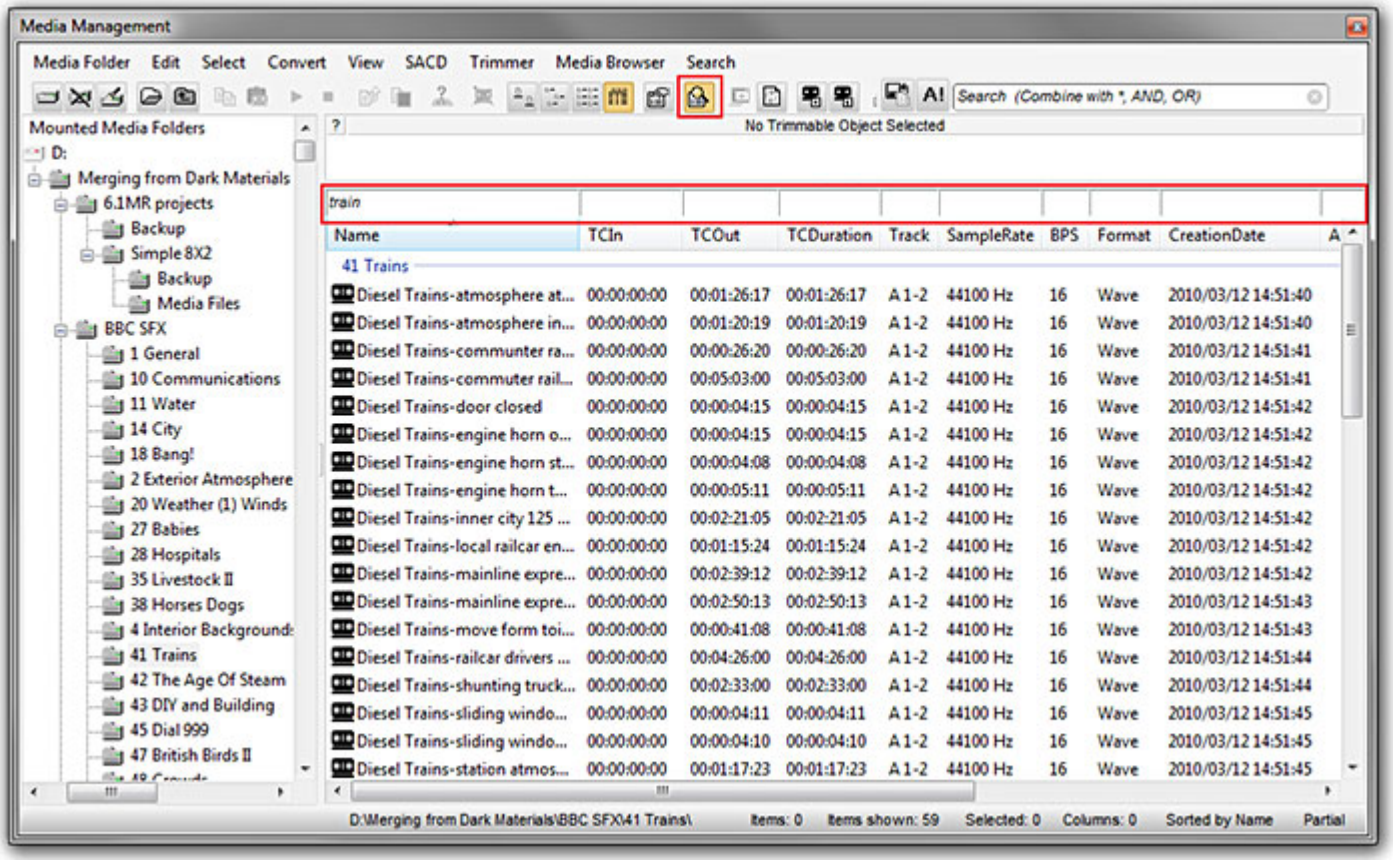
If the Search Results library is open the individual results are displayed in the right-hand pane and can be deleted.

To delete the entire search click on the **Search Results** in the left-hand pane. All current search results libraries will appear in the right-hand pane and may be deleted.

Search Filters

All Library views and the Media Manager view have a **Filters** option. Filters are accessed via **View > Filters** in the Library or Media Manager **View** menu or by clicking on the:

Filters toolbar icon



Media Management Tab with Filters

In the screenshot above the Filter text entry boxes and Filters icon are highlighted in red.

- The specific Columns available for filtering are set in **Options**. **Please see: Media Management and Library Tab Columns on page 57**
- Filters are not case-sensitive.
- Filters always behave as if there is a wild card at either end of the filter term. I.e. ***text***.
- Multiple filters are allowed. So, for example, you could search on ***trains*** in the **Name** column and ***A 1-6*** in the **Track** column. This would filter the view to show only results containing *train* with six audio tracks.
- Filters are NOT recursive I.e. don't filter sub-folders.

Media Management

The Media Menu

This menu gathers together significant Media related commands for the current Project.

Search Media	Opens the **Search Media dialog**
Mount Referenced Media	Mounts all media not already mounted and used in the current Project
Auto-Mount Media	When selected, whenever a reference from an Offline library is placed in the current Project, the Media will automatically be mounted.
Select Online Clips	Selects all Clips in the Timeline whose Media files are currently mounted
Select Offline Clips	Selects all Clips in the Timeline whose Media files are not currently mounted
Select Used Media	Opens a floating Library View window listing all Media files used by the current Project.
Select Media present on Project Default Folder	Opens a floating Library View window with all Media present in the Project Default folder selected (highlighted)
Select Media NOT present on Project Default Folder	Opens a floating Library View window with all Media NOT present in the Project Default folder selected (highlighted)
Collect Media to current Project Default Folder	Copies all media files used in the current project (as shown when the previous **Select Media not present ...** is invoked to the current Project Default Folder. This function is especially useful if moving a machine or disk to another studio or where network resources may not be available.
Clean-Up Media	Opens the **Choose a Media Folder to Clean-Up** window. Choose the Media Folder you wish to clean-up and click **OK**. All media not referenced by the current Project will be permanently removed from the selected folder.

Media Management and Library Tab Windows

Media Management and Library Tab Columns

The Columns displayed in Libraries and the Media management window are determined by the **Columns** dialog accessed from **View > Options**

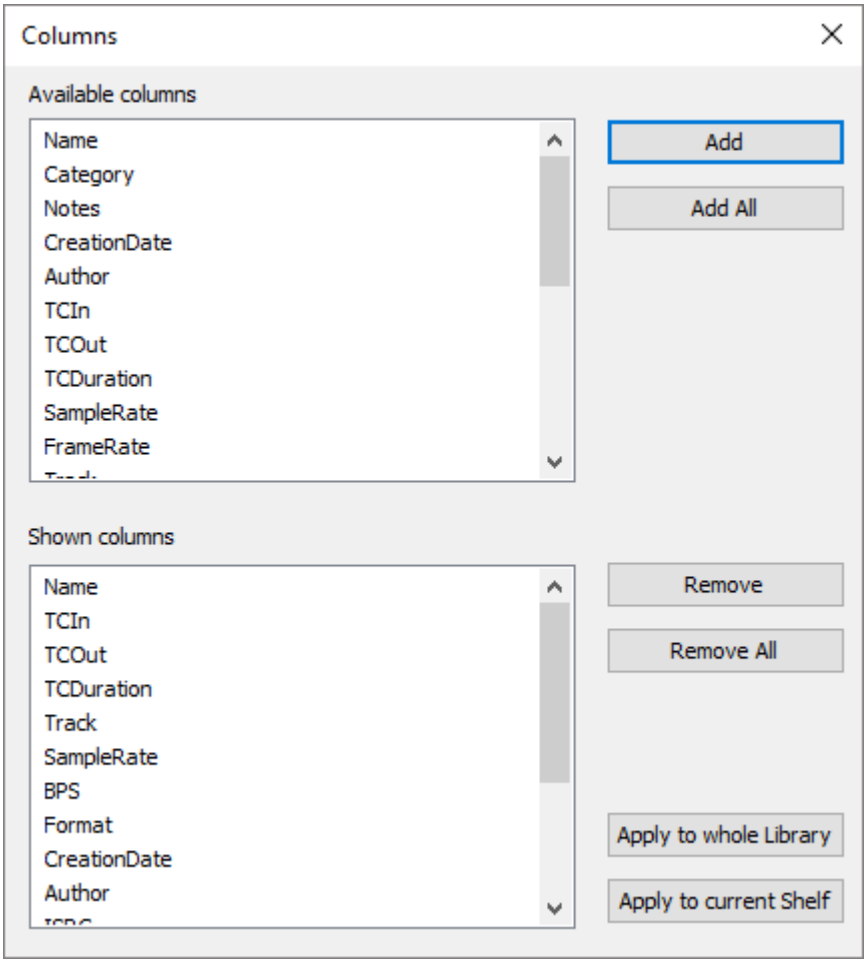
Rearranging Columns

Columns present in Library, Media Management and Search Results frames can be rearranged by simply clicking and dragging the column headers.

Reordering Columns

Clicking on a column header does two things on Columns where this is appropriate. It orders all Library entries according to the numerical or alphabetical order of that Column and it toggles that order between Ascending and Descending.

Options Opens the **Columns** dialog box:



Libraries View Menu Options - Columns pane

The dialog box shows two lists, **Available Columns** and **Shown Columns**.

Available Columns buttons:

Add **Adds** the column(s) selected to the **Shown columns** list

Add All **Adds All** the available columns to the **Shown Columns** list

Shown Columns buttons:

Remove **Removes** the column(s) selected from the **Shown columns** list

Remove All **Removes** all column from the **Shown columns** list

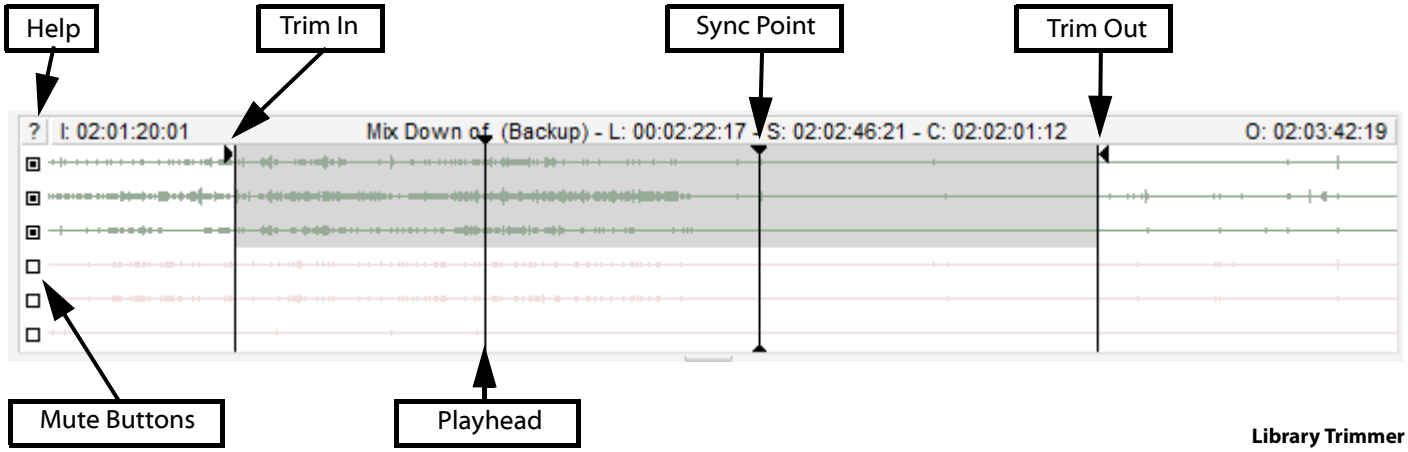
Apply to whole Library	**Applies** the changes made in this dialog to all Folders in the current **Library**
Apply to current Shelf	**Applies** the changes made in this dialog to all Folders in the current **Shelf**

Columns

Name	Clip or Media File name
Category	E.g. **Master Clip**, **Media Folder** etc.
Notes	Where specified
CreationDate	Date Media File (Clip) created
Author	Where specified
TCIn	Clip or Media File **In** TimeCode
TCOut	Clip or media File **Out** TimeCode
TCDuration	TimeCode Length of Clip or Media File
SampleRate	Sample rate of Clip or Media File
FrameRate (Media Only)	Where specified
Track	Shows the Tracks the Media File or Clip occupies
BPS	Beats Per Second
Format	File format e.g. **PMF**, **WAV** etc.
AutomatedObject	
MixerSnapshot	
FileName (Media Only)	Media File Name
MediaSize (Media Only)	In bytes
Scene	Where specified
Take	Where specified
Tape	Where specified
UBITS	
ISRC	

The Trimmer

All Library and Media Management Windows have a **Composition/Media Trimmer**:



Library Trimmer

The **Trimmer** can be shown/hidden with the menu item **Trimmer > Show**. An object highlighted (selected) in the list view is automatically opened in the trimmer. Multi-channel objects may be auditioned and trimmed. A small square to the left of each Track displayed allows Tracks to be de-selected/selected for playback in the Trimmer. The Trimmer output is stereo for 2 channel media. For Media with more than two channels the routing is assumed to be stereo. If the Media contains Channel Type metadata (PMF, BWF, Wave, MP3...NOT AIFF) the monitoring will automatically route the mapping to the associated monitoring patch. Clicking on the **?** at top-left opens the **Media Trimmer Commands** list:

```
Media Trimmer Commands
Click in Tracks:
  None: Drag Selection
  Shift: Set In Point
  Ctrl:  Set Out Point
  Shift + Ctrl: Set Sync Point
  + Alt to the above to Audition from the Point

Click in Track Header:
  None: Select/Unselect Track
  Shift: Unselect All Tracks
  Ctrl:  Select All Tracks

Double Click in Tracks:
  None: Audition from clicked point
  Ctrl: Reset In/Out/Sync Points

Drag and Drop:
  Drag from the List: Whole Media
  Drag from the Trimmer: Follows In/Out Points

Shortcuts:
  SPACE: Toggle Audition/Stop
  ENTER: Audition Trimmer Selection
  ESC or Numpad 0: Stop Audition
  Ctrl + 1: Show 1 Track
  Ctrl + D: Show Track Details
```

Media, Clips or Compositions can be trimmed in the following ways:

- **Double-click**: Plays the object through the Monitoring Section from the point where you double-click.

  Note: Trimmer sound output is via the **Monitor Panel**. If no sound is heard through the current **L** & **R** Monitor Outputs you may need to assign values to the **None** entry in the **Main Grid and Downmixes** section of the **Monitor** Please see: **Media Manager and Library Monitoring on page 348**

- **Click & Drag**: Drag the object to the timeline or to an other library properly trimmed (from the In point to the Out point. Dragging it from the list view takes it untrimmed).

- **Shift + Click**: Sets the **Trim In** point. The point can be modified later by simply clicking on it.
- **Control + Click**: Sets the **Trim Out** point. The point can be modified later by simply clicking on it.
- **Control + Shift + Click**: Sets a **Sync Point**. The point can be modified later by simply clicking on it.
- **Shift + Alt + Click**: Sets the **Trim In** point and plays from it.
- **Control + Alt + Click**: Sets the **Trim Out** point and plays from it.
- **Control + Shift + Alt + Click**: Sets the **Sync Point** and plays from it.
- **Control + Double-Click**: Resets the **Trim In** and **Trim Out** and **Sync Point**s.

Trim In, Trim Out and Sync Points

The **Trim In**, **Trim Out** and **Sync** Points are permanently preserved for Compositions and MasterClips stored in a Library (Project or Global), but only until the next Mount or Refresh for mounted Media in the Media Management Window.

Compatibility

Because the Media Trimmer allows Trim In, Trim Out and Sync Points to be set and saved in current libraries, menu options: **Library > Save Library as 5.x 6.0** and **Library > Save Library As 4.x** allow Libraries to be saved in a format compatible with previous versions for maximum compatibility.

Media Management Tab Window

The **Media Management** Tab Window is very similar in appearance and operation to the **Document** and **Global** Library Tab Windows. However, the Menus and Toolbars differ a little, reflecting their different capabilities.

Media Manager History

By default the Media Manager database and its history is retained when Pyramix is shut down and relaunched.

(**Settings > All Settings > Application > General : Keep Media Manager History**

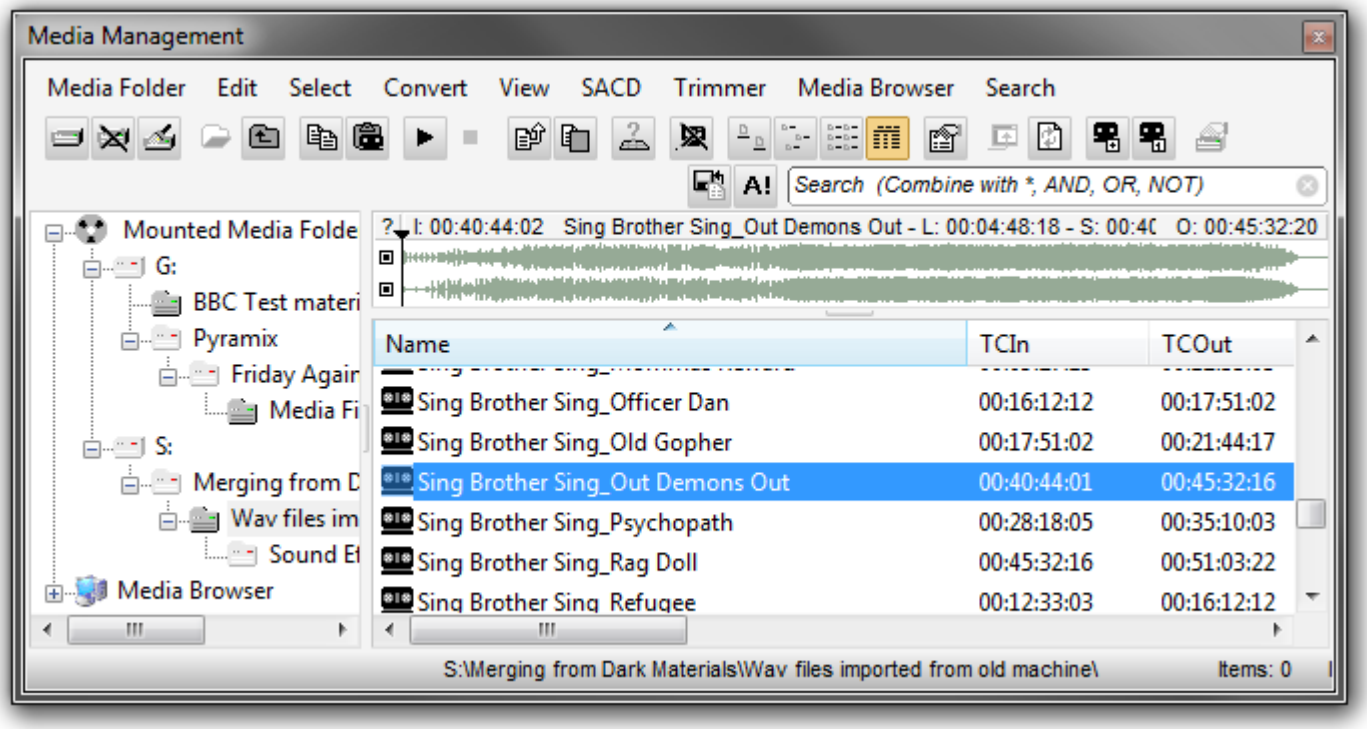
If this option is unchecked, it forces a history reset. (The Media_Library_.pml file is recreated from scratch on the next Pyramix launch.)

This option is useful when several people are working on different projects with the same database (same login). This can make the history database grow VERY fast.

> **Note:** If disabled the Media_Library_.pml file will remain small but the mounting time will most probably be slower.

Media Browser

The **Media Management** window can operate on **Mounted Media Folders** and act as a **Media Browser** for any local or network storage locations.



Media Management Tab floating Window

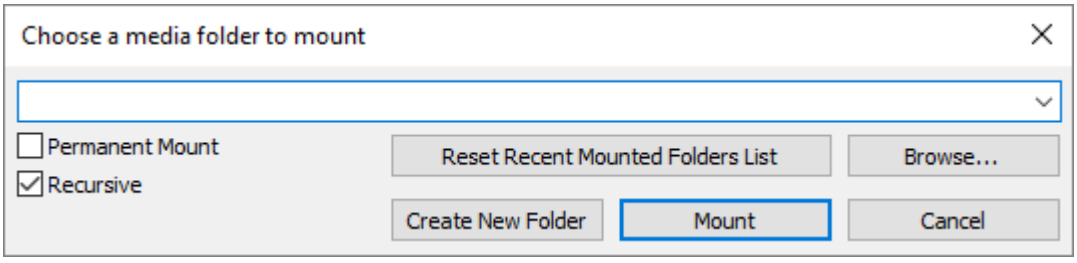
Below all **Mounted Media Folders** an "Explorer like" **Media Browser** Tree allows Media Folders to be browsed without Mounting them formally.

When displayed in the Media Browser all recognized Media are mounted temporarily and can be auditioned and placed in the Timeline.

Media Management Tab Menus

Media Folder Menu

Mount Media Folder Opens the **Choose a media folder to mount** dialog:



Choose a media folder to mount dialog

Mounting a folder makes it visible to the Pyramix media filing system.

Field with drop-down list Clicking the down arrow reveals a list of folders mounted recently. You can select a folder from the list and click on **Mount** to mount it.

Permanent Mount Any folder Mounted with this box ticked will be mounted when Pyramix is launched subsequently.

Recursive When the box is ticked all sub-folders under the folder selected will also be mounted.

Reset Recent Mounted Folders List Clicking the button resets the list of folders mounted recently. I.e. the list accessed from the drop-down. This only takes effect when the dialog is closed.

Browse... Opens a browser window to locate a folder to mount.

Create New Folder Opens a **Save As** browser window. Navigate to the location where you wish to create a new folder, type a suitable name and click on **Save** to create the new folder which then appears in the field in the **Choose a media folder to mount** dialog.

Mount Mounts the folder shown in the field and closes the dialog.

Cancel Closes the dialog without mounting a folder.

Unmount Media Folder **Unmounts** the selected **Media folder** (an **Are you sure** dialog protects from inadvertent unmounting.) Makes the selected folder invisible to the Pyramix filing system.

Refresh Media Folder Invoking **Refresh Media Folder** initiates a complete ground up re-mount of the selected folder. This may solve inconsistency issues. **F5** will also refresh the selected folder.

Clear Media Manager History Choose this option to reduce Database size and improver performance.

Create Offline/Reference Library **Please see: Using Offline/Reference Libraries on page 92**

Create Quick Mount Libraries Use this option to create __QuickMount.pml libraries recursively for a whole disk or folder, (typically overnight on a big new media disk) so that rapid browsing will be available the next time the disk is browsed.

Open Folder Opens the Media Management Library for the selected drive and directory. Double clicking on the name of the Media directory has the same effect

Up One Level Moves up one level in the file hierarchy

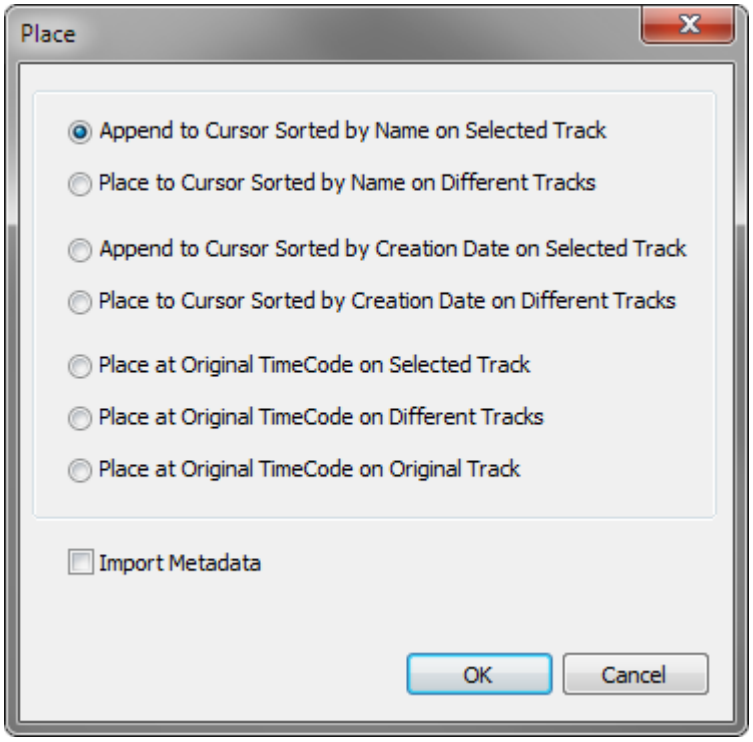
Mounting Rules Opens the **Mounting Rules** dialog only when a file or files are selected. This allows the user to apply special rules when attempting to mount files that contain the same 'unique' identifier. **Please see: Mounting Rules on page 93**

Properties Opens the **Properties** window for the selected **Media Folder** or **MasterClip**:

Properties window

Edit Menu

Copy	Copy object.
Paste with Media	Pastes object complete with associated Media files to wherever the target object is stored.
Rename	Rename object
Lock Rename	When ticked **Locks** all objects for **Renaming**. Do you really want your Sound Effects Library entries to be renamed by anyone who can access it?
Open/Audition	Opens highlighted (selected) Clip or Composition in the Trimmer and begins audition play. Opens highlighted (selected) Shelf
Audition	Opens highlighted (selected) master Clip in the trimmer and begins audition play.
Stop Audition	Stop audition Play and return Cursor to beginning
Place (Ctrl + P)	Opens the **Place** dialog:



Media Management Edit menu Place dialog

The selected object(s) will be placed in the Timeline according to the rule chosen here.

The selected object will be placed in the timeline on the selected Track and Playhead Cursor position at its **Sync Point** or, if no Sync Point has been set, at its **In Point**.
Import Metadata when checked, Metadata in a BWF file will be imported into the **Metadata** Tab window when you click on **OK** as well as the chosen **Place** action.

Placement Tool	Opens the **Placement Tool** for placing the object. Please see: **The Placement Tool on page 194**
Locate	Selects the first instance of the current object in the Timeline and positions the Playhead Cursor at the start of it.
Show Usage	Selects all instances of the current object in the Timeline and zooms to make them all visible.

Collect Selected Media to current Project Media Folder

Select Menu

Select All Selects all objects in the right-hand pane (**Ctrl + Click** toggles selection of individual objects)

Invert Selection Selected objects are de-selected, unselected objects are selected

Select Media Present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are present on the current Project Media Folder.

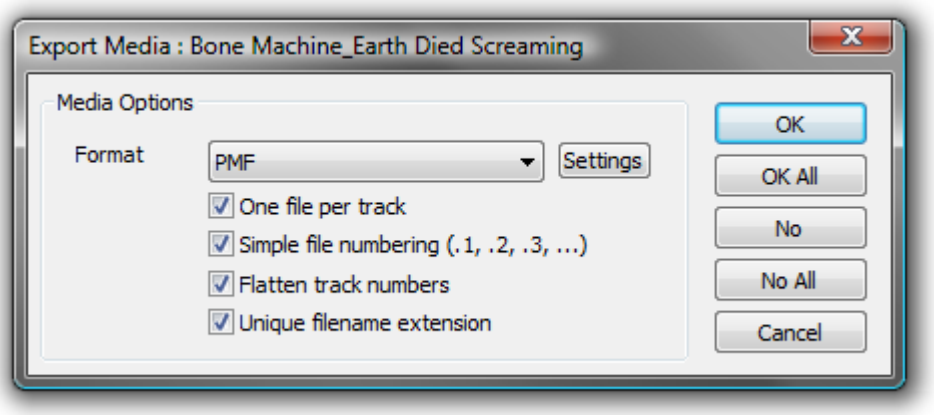
Select Media NOT present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are not present on the current Project Media Folder.

Convert Menu

Quick Import Enables sound files in any supported format to be imported into a Pyramix Media Drive or Folder in either their original format or converted to the Pyramix native PMF format.

Note: Files in supported formats do not need to be converted to be used in Pyramix, a big time-saver.

Quick Export Enables Pyramix Master Clips to be exported in any of the supported file formats with a number of options. When **Quick Export** is chosen a File Browser window opens to enable the target folder to be chosen. When you click **OK** in the Browser the **Export Media** dialog opens with options: .



Quick Export - Export Media: Dialog

One file per track When checked, multi-channel Master Clips are exported with a single file for each channel in the Clip.

Simple file numbering (.1, .2, .3, ...) When checked resultant files are numbered (.1, .2, .3, … instead of _##001##_, _##002##_, …)

Flatten track numbers When checked, Tracks are numbered 1, 2, 3, 4 instead of, for example 1, 2, 7, 8

Unique filename extension When checked, adds a unique filename extension.

Export Masterclips This is similar to Quick Export (above) but is also available in Libraries. It enables selected **Shelves** and **Media Folders** to be exported. Their complete/recursive folder structure is exported. Only **Masterclips**/**Media** are exported. **Compositions** or any other objects in Libraries are not exported.

Quick Convert > Enables one or more Media files to be converted in a variety of ways. (Please see: **Convert - Quick Convert sub-menu on page 69**)

Sample Rate Conversion **Please see: Samplerate Conversion on page 75**

Reverse Reverses the selection so it plays backwards

Export XML Description Exports Media Descriptions as an XML file Select a range of media and select **Convert > Export XML Description**.

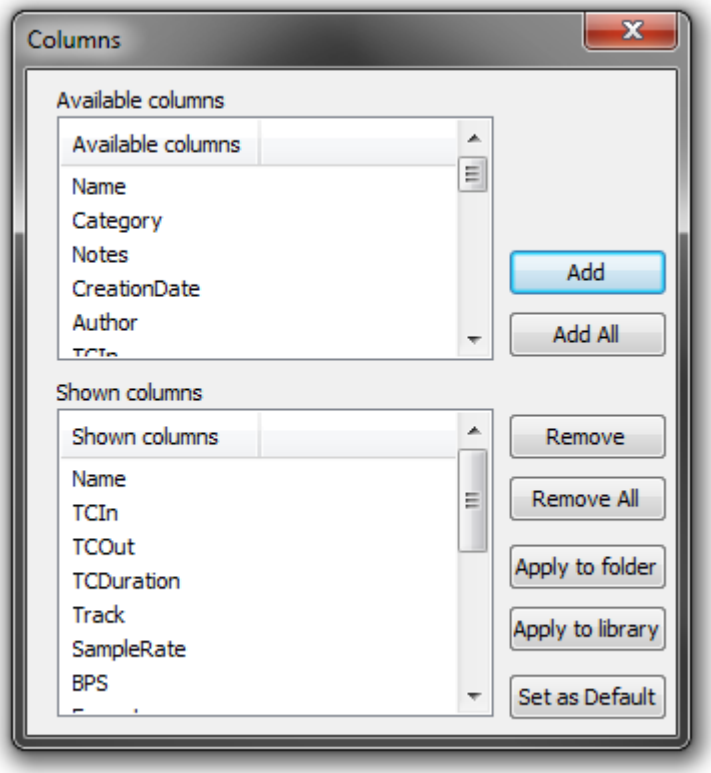
Export to MTInterchange XML

Publish to Open External Database **Please see: Archiving Metadata on page 470**

View Menu

The **View** menu determines how information is displayed.

Status Bar	Turns the Status bar on and off
Large	Show large Icons
Small	Show small Icons
List	Show as list
Detail	Show as list with details
Filters	Adds **Filter** term entry boxes above each column in the view
Options	Opens the **Columns** dialog box:



Libraries View Menu Options - Columns pane

The dialog box shows two lists, **Available Columns** and **Shown Columns**.

Available Columns buttons:

Add	**Adds** the column(s) selected to the **Shown columns** list
Add All	**Adds All** the available columns to the **Shown Columns** list

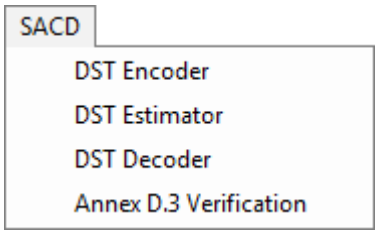
Shown Columns buttons:

Remove	**Removes** the column(s) selected from the **Shown columns** list
Remove All	**Removes** all column from the **Shown columns** list
Apply to Folder	**Applies** the changes made in this dialog to the current **Folder**
Apply to library	**Applies** the changes made in this dialog to all Folders in the current **Library**
Set as Default	**Sets** the changes made in this dialog as the default column content for all Folders in all Libraries.

New Window	Opens another instance of the Media Management Tab Window

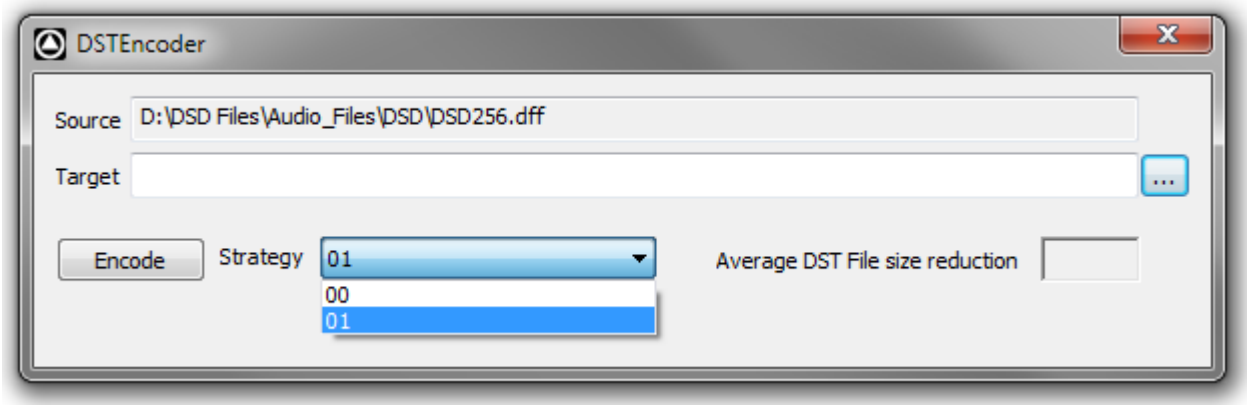
Refresh Forces a refresh

SACD Menu



Media Management SACD menu

DST Encoder Encode an Edited Master in DST



DST Encoder dialog

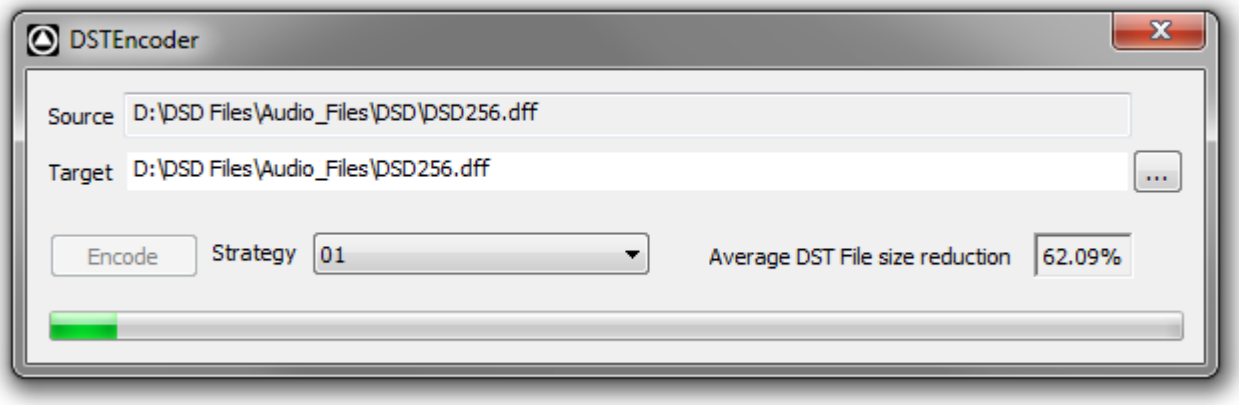
Source Shows the full path of the selected file.

Target The ... button opens a browser window to set the destination file path and enter a name for the file.

Strategy The drop-down offers the choice of **00** or **01**.

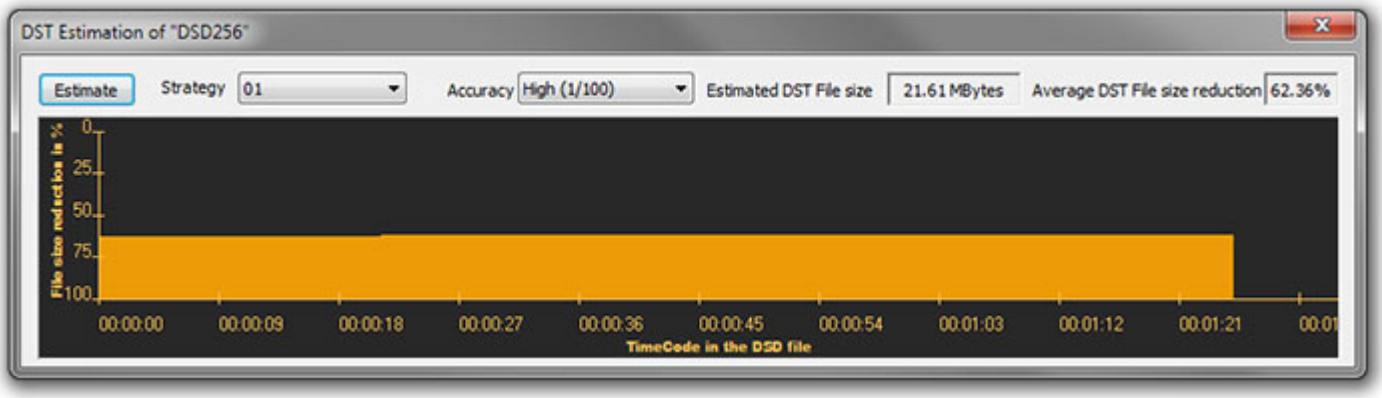
Average DST File size reduction Shows the average percentage reduction in file size dynamically as the encode progresses and the average when it is complete.

Encode Initiates the encoding.



DST Encoder in operation

DST Estimator Estimate the DST encoding of an Edited Master with a graph to show the file reduction rate as a function of the audio material.



DST Estimator

Estimate Initiates the estimation process on the selected file.

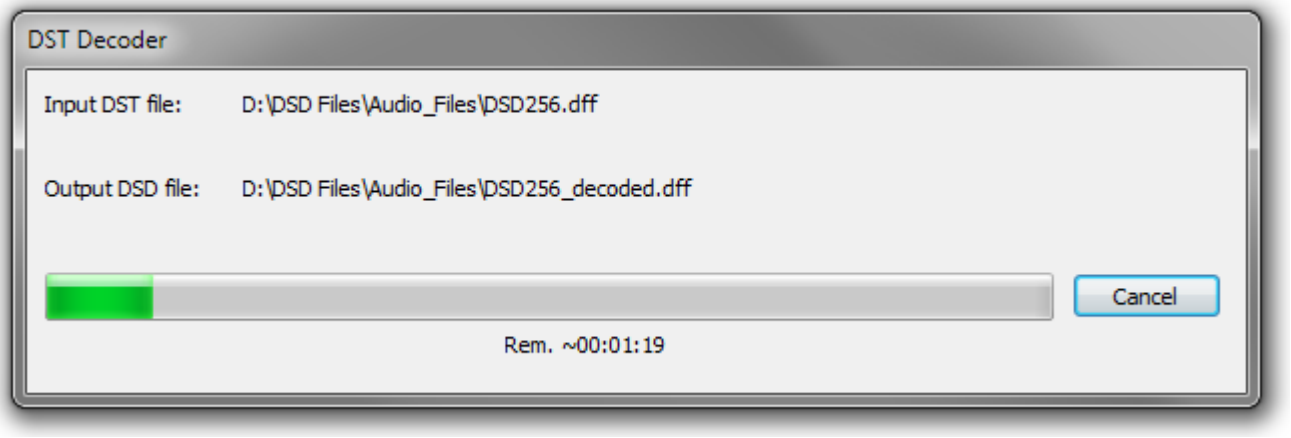
Strategy The drop-down offers the choice of **00** or **01**.

Accuracy The drop-down offers the choice of **High (1/5)** or **Very High (1/100)**.

Estimated DST File Size Shows the estimated file size dynamically as the estimation progresses and the total when it is complete.

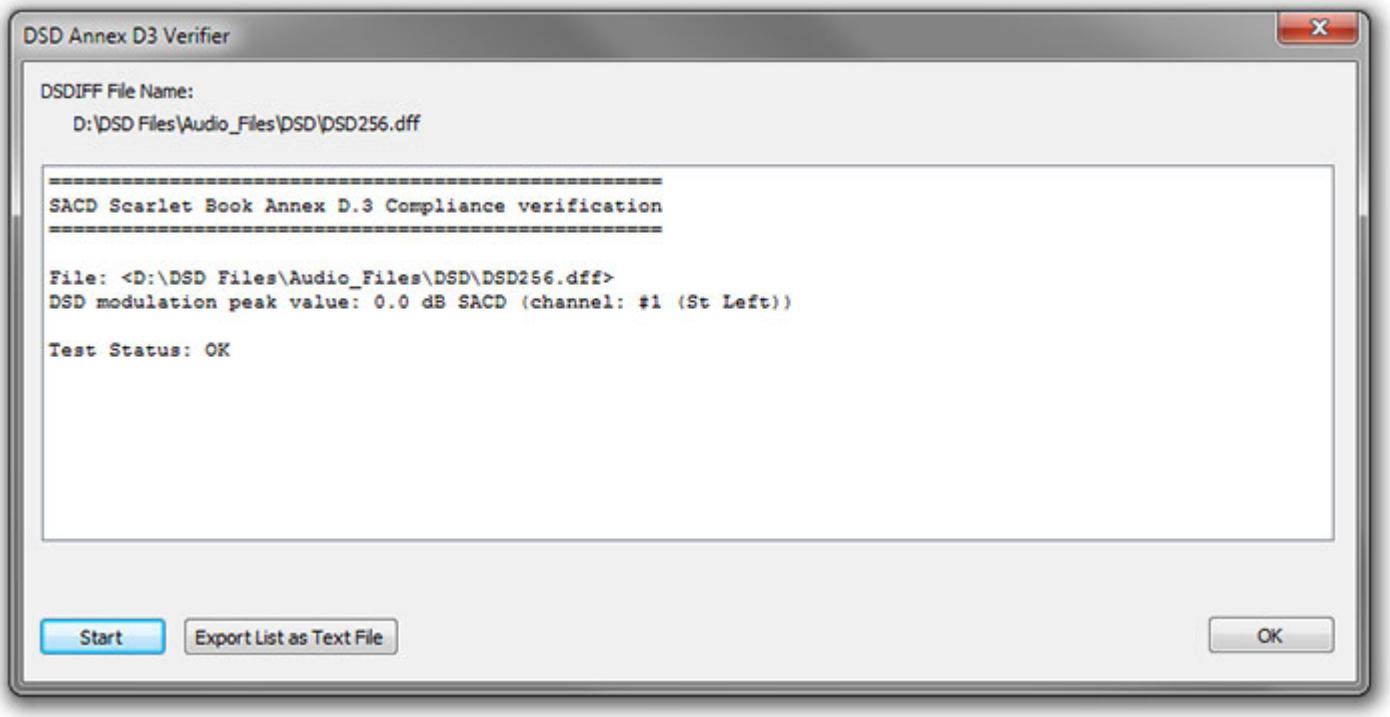
Average DST File size reduction Shows the average percentage reduction in file size dynamically as the encode progresses and the average when it is complete.

DST Decoder Decodes a DSDIFF file. Selecting this option opens a browser window to select the file to be decoded. Clicking on **Open**. initiates the decode. When the decode is completed the dialog closes
Clicking on **Cancel** aborts the decode.



DST Decoder in operation

Annex D.3 Verification Verify the selected file.

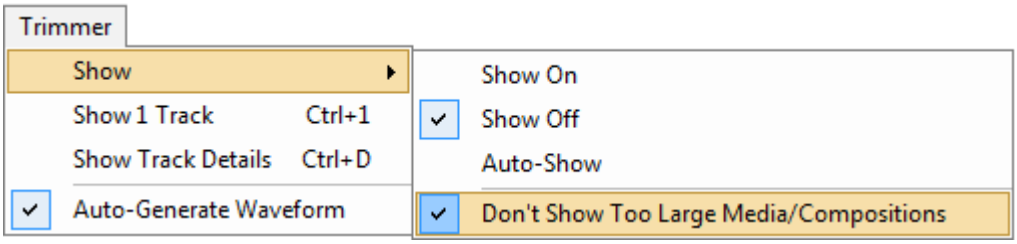


Start Initiates the verification process.

Export List as Text File Opens a browser window where the file path is set and the file named.

OK Closes the verifier window.

Trimmer Menu



Media Manager Trimmer Menu

Show

Show On When ticked the Trimmer is visible

Show Off When ticked the Trimmer is hidden

Auto-Show When ticked the Trimmer is only shown when a Media file is selected

Don't Show too Large Media/Compositions When ticked Large Media files and Compositions will not be opened in the Trimmer.

Note: When this option is selected Media or Compositions with more than 16 Tracks or more than 100 Clips will not be shown in the Trimmer. Selecting this option avoids the loading time associated with Compositions containing a large number of Clips.

Show 1 Track Show only the first Track of the object displayed in the **Trimmer**. When this option is selected **Up** and **down** arrows appear at the left of the Trimmer Track display which enable any Track to be displayed.

Show Track Details The following information is displayed for each Track of the selected Media file:

- Track Name
- Track Number

- Track Type (left, Right, Center etc.)
- Track File Name (If the Media is recorded in **One File Per Track** mode)

Auto-Generate Waveform **Waveforms are automatically created for objects without them.**

Media Browser Menu

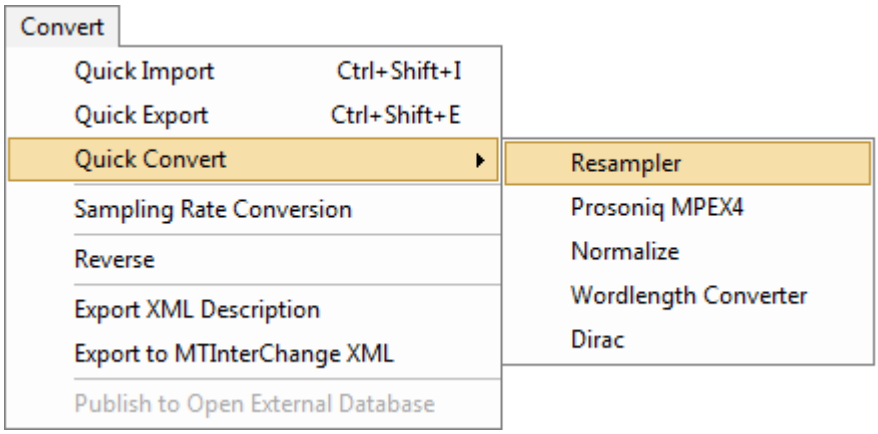
Mount Currently Displayed Media Folder allows easy mounting of the Media Folder currently displayed in the Media Browser. (Typically when the correct folder is located).

Search Menu

Search All Mounted Media Folders Toggles between Global and Local search. When Active, all Mounted Folders are searched. When Inactive only the current Folder is searched.

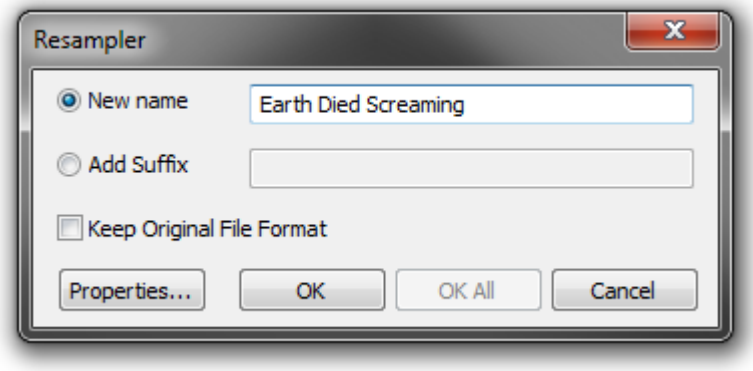
Add to Search Results Creates a new Search Results folder named by date and time and the search term(s).

Convert - Quick Convert sub-menu



Media Management Convert - Quick Convert sub- menu

Output Dialog

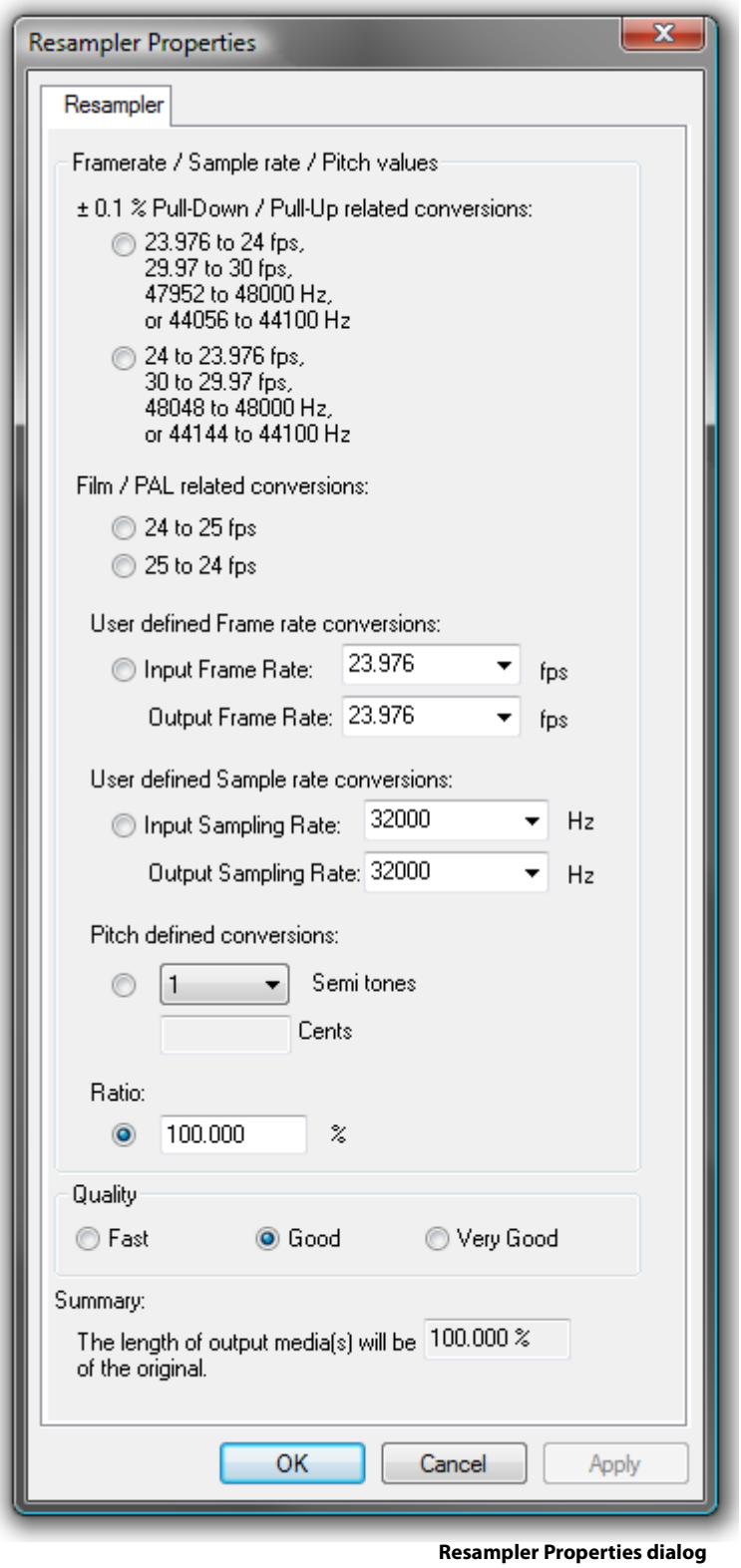


Resampler Converter dialog

All these options produce new media files on disk. Whichever conversion option is chosen, this dialog box will pop-up with a title reflecting the selected process. Either a new name may be chosen or the existing one kept with a new suffix. If you wish to process multiple files in one operation the **Add Suffix** button must be selected. When multiple files are selected and when this option is chosen the **OK All** button is available. The **Keep Original File Format** check box does what it says. The **Properties...** button opens a dialog box specific to each conversion type. (See below)

Quick Convert - Process Properties Dialogs

Resampler Properties



Resampler Properties dialog

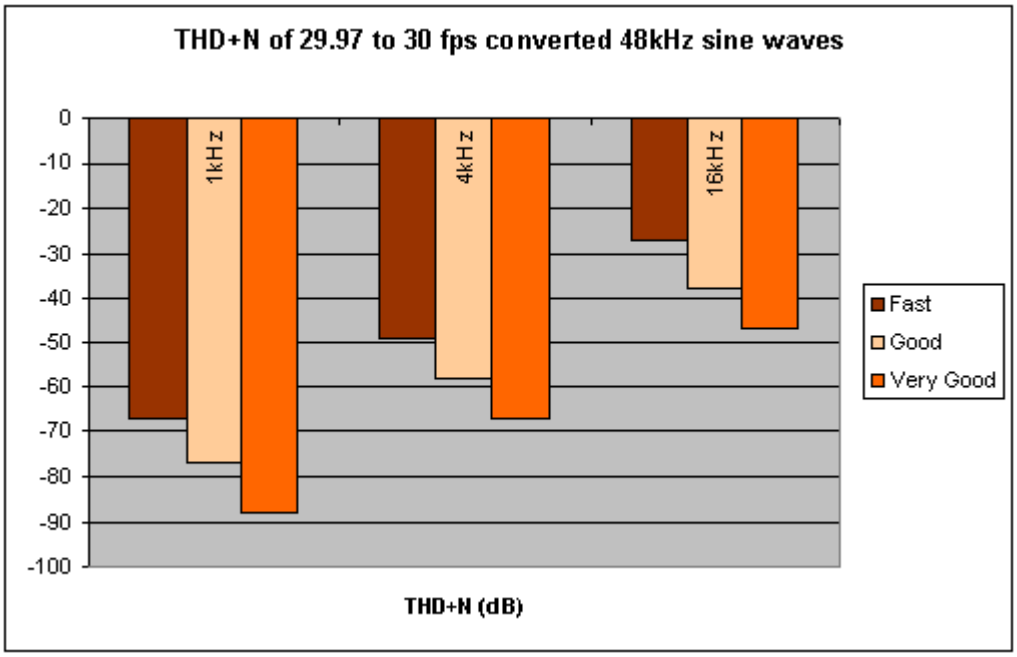
This module is initially aimed at performing ±0.1 % pull-up / pull- down audio conversions, but there are several possible ways of defining the ratio between the destination length and the final length (frame rates, sample rates, pitch and ratio in percent).

The process differs from a **Time Stretch** operation since the pitch is modified. The Input and Output files have the same sampling rate but the length of the output files will be: (initial length) x (displayed ratio).

Another setting, **Quality**, has an effect on the resolution of the oversampling process of the treatment.

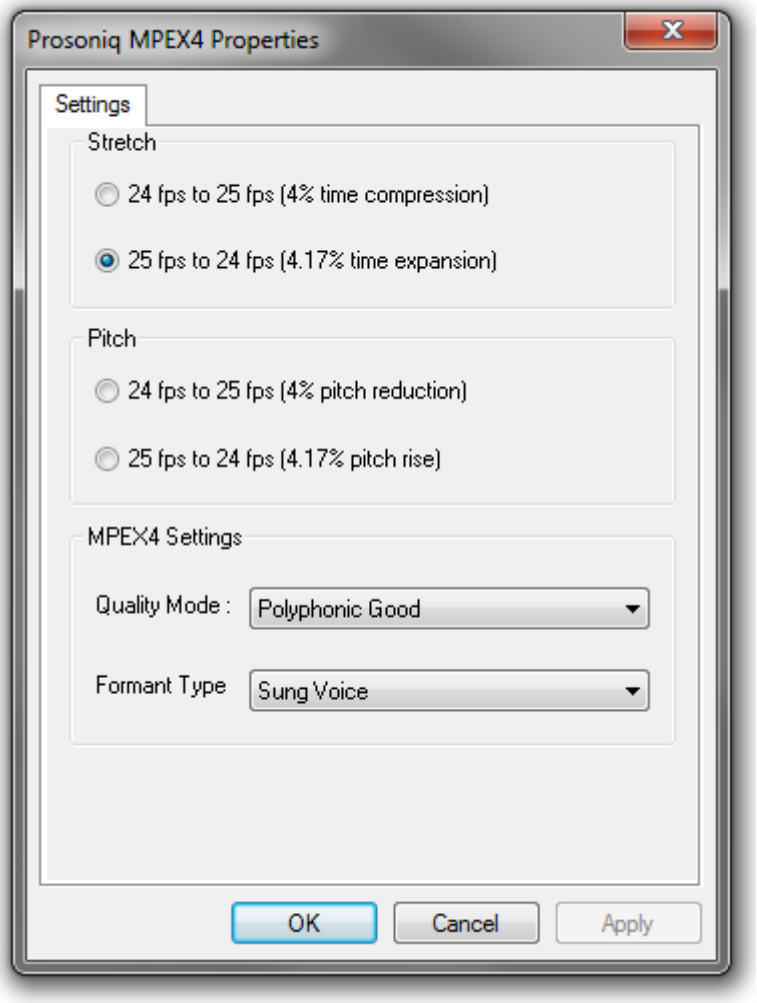
This module is available, like **MPEX**, in the '**Quick convert**' list of the Media Manager, the **Project** menu (to process all the media in a project), and as a '**Surround Encoder**' (**Project > Surround Processing**).

The following graph gives an indication of the effect of the three **Quality** settings on **THD & Noise**.



Resampler quality setting effect on THD & Noise

Prosoniq MPEX4 Properties



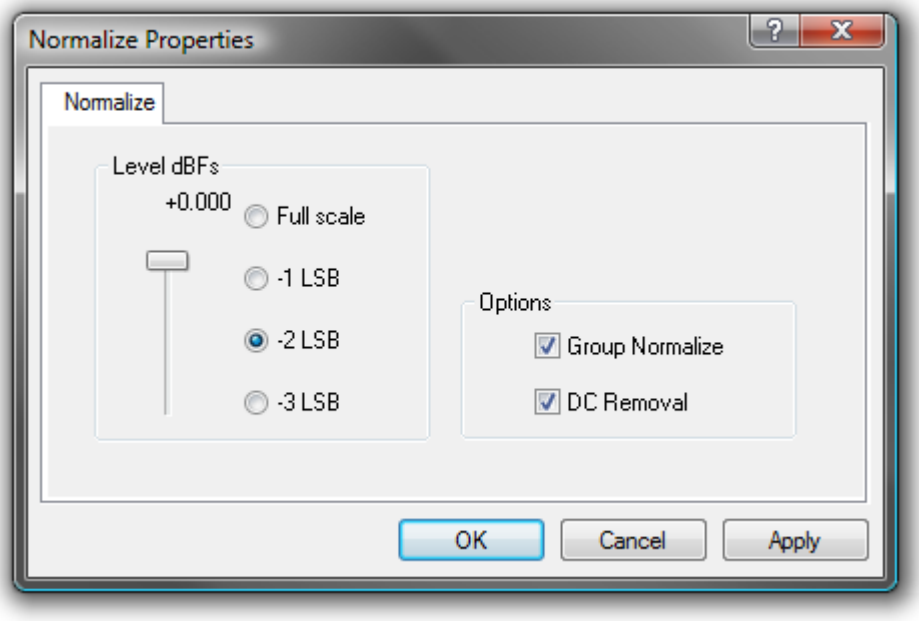
Prosoniq MPEX4 Properties dialog

Select the required conversion factor from the four **Stretch** and **Pitch** options.

Optimize **MPEX4 Settings** by making appropriate choices from the **Quality Mode** and **Formant Type** combo boxes.

Quality Mode	Single Instrument Fast
	Single Instrument Best
	Polyphonic Fast
	Polyphonic Good
	Polyphonic Best
Formant Type	Sung Voice
	Spoken Voice

Normalize Properties



Normalize Properties dialog

Level dBfs

Here you can select from four preset values, or use the slider to specify the maximum level for the new file.

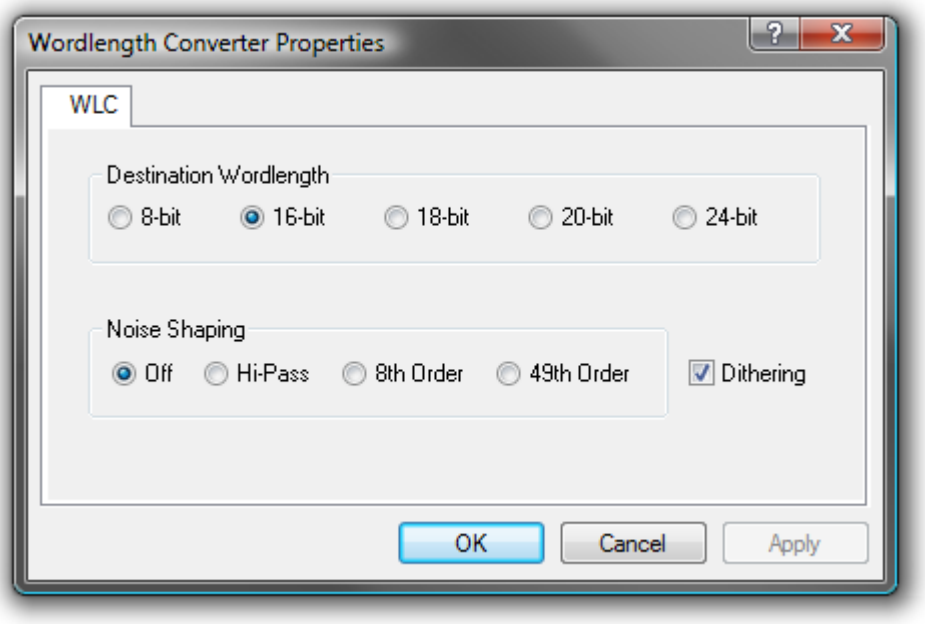
Group Normalize

When checked, the level of the highest peak in any group of Clips is raised to maximum and level of the other Clips is increase proportionally.

DC Removal

When checked, D.C. offsets will be removed.

Wordlength Converter Properties



Wordlength Converter Properties dialog

Destination Wordlength

Select the desired wordlength using the radio buttons.

Noise Shaping

Select the required quality of Noise Shaping.

Hi-Pass is single order shaping with

8th Order and

49th Order offering improved quality.

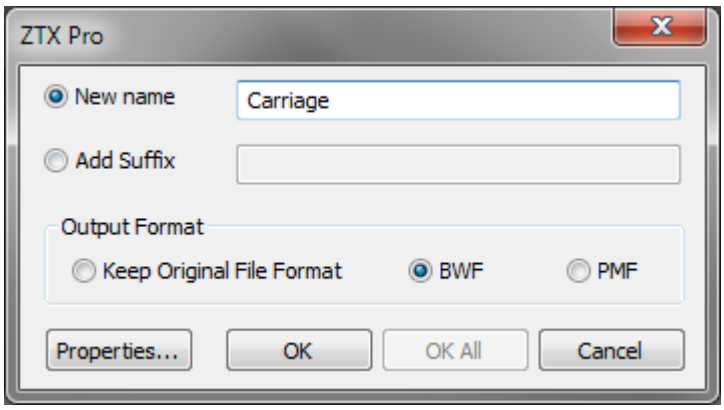
A higher quality setting will produce better results, but the processing time will also increase.

Dithering When checked, If dithering is required, dithering will be applied.

ZTX Pro

Optional high quality pitch-shift and time-stretch renderer from Zynaptiq.

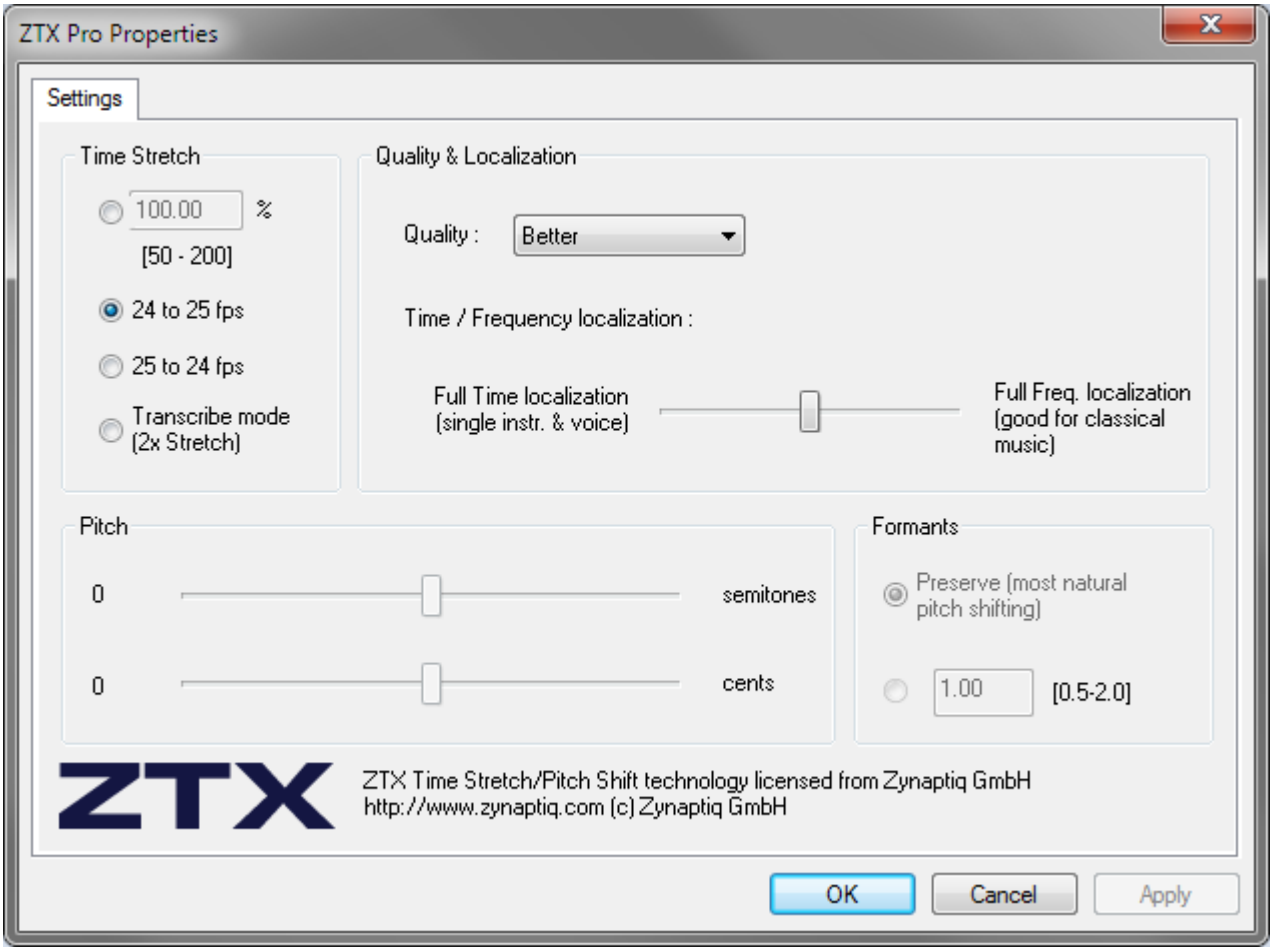
Note: Merging Technologies ZTX Pro key is required.



ZTX Pro dialog

ZTX Pro Dialog

New Name	Toggles with **Add Suffix**. The field is populated with the existing name of the file selected in Media Manager. The name may be changed by typing in the field.
Add Suffix	Type in the field to add a suffix.
Output Fomat	Three options - **Keep Original File Format**, **BWF** or **PMF**.
Properties...	Opens the **ZTX Pro Properties** dialog.



ZTX Pro Properties dialog

Settings

Time Stretch

Four options are available:

% (percentage)	Type in the field to enter a percentage value between 50 and 200.
24 to 25fps	As it says.
25 to 24fps	As it says.
Transcribe mode (2x Stretch)	As it says.

Quality & Localization

Three quality modes are available in the drop-down list: **Good**, **Better**, **Best**.

Time/Frequency localization:

The slider can be set to one of five positions from far left to far right:

1. Far left. Selects full time localization. Good setting for single instruments and voice.
2. Time/frequency localization with emphasis on time localization. If setting **1.** produces echoes this give better results.
3. Middle. This sets the time/frequency localization halfway between time and frequency domains. It is the best setting for all general purpose signals and should be set as default for non-preview processing.
4. Higher frequency localization and less time localization. May be a better choice for classical music than the lower Time/Freq localization settings.
5. far right. Highest frequency localization. This may not be an ideal choice if you're dealing with signals with very fast attack transients.

Pitch

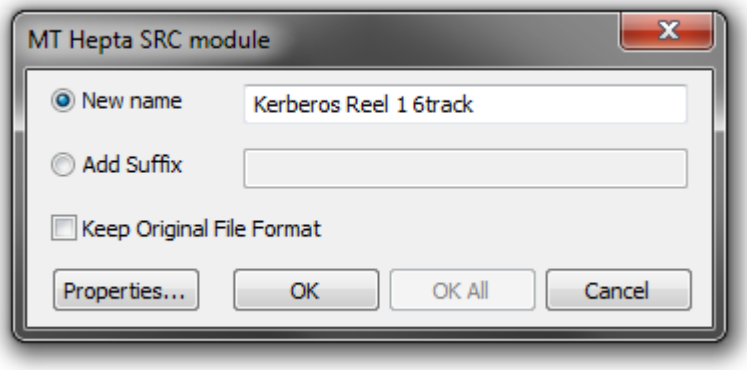
The sliders enable values of **-12** to **+12** semitones and **-50** to **+50** cents to be set.

Formants

Choice of **Preserve**, which results in the most natural pitch shifting or manual with values of **0.5 - 2.0** available.

Samplerate Conversion

Where the sampling rate of a **Media File** is different to the current **Project**, Pyramix offers a simple means of converting the **Media File**'s sample rate at very high quality. Using the Merging Technologies **HeptaCon** Sample Rate Converter:

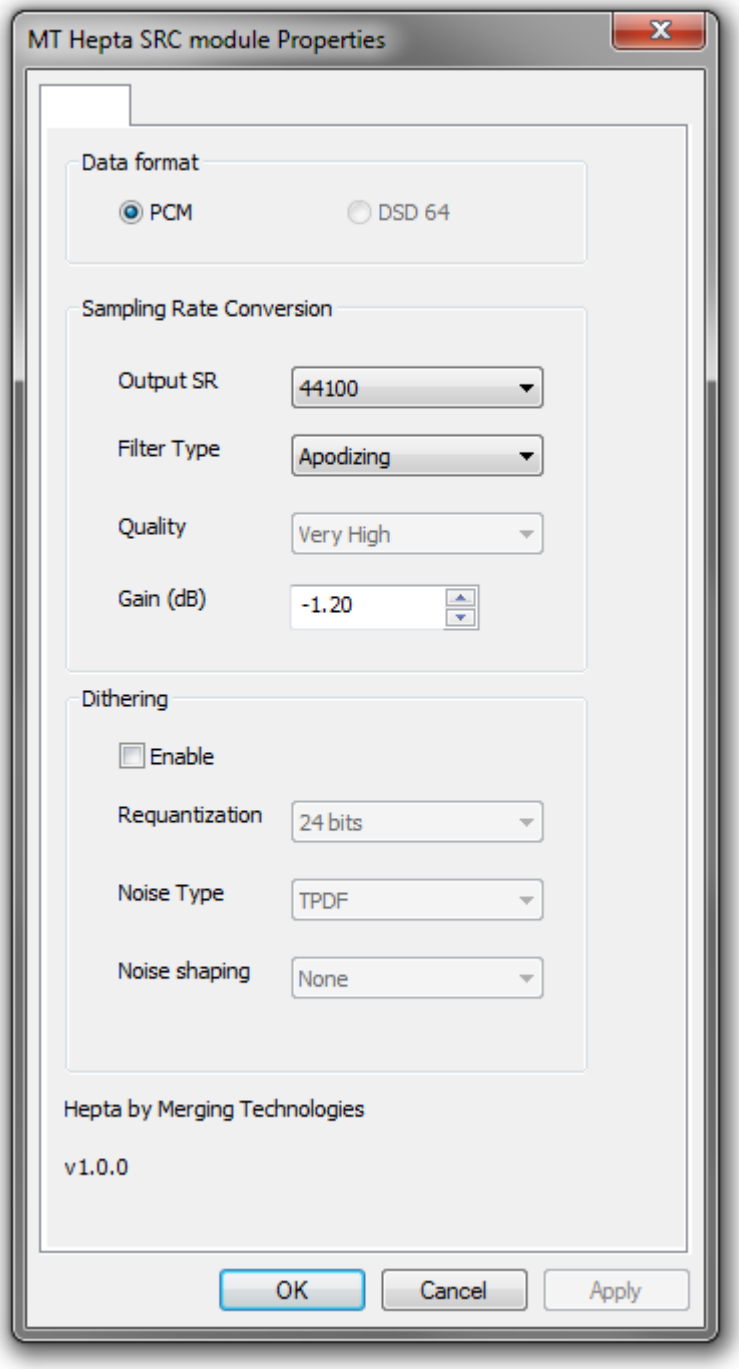


MT Hepta SRC module dialog

Radio buttons offer the choice of two text entry fields, **New name** for the file or **Add Suffix** to the existing filename. A check box selects **Keep Original File Format** otherwise the file will be converted to **PMF** format as well as sample rate converted.

Properties...

Selecting **Properties...** opens the **HeptaCon SRC module Properties** dialog:



MT Hepta SRC module Properties dialog

Data Format

The radio buttons offer the choice of **PCM** or **DSD 64**. (The latter is only available for DSD to DXD conversion.)

Sampling Rate Conversion

Output SR Select the **Output Sampling Rate** from the drop down list.

Filter Type Offers the choice of **Lin. Phase, Min Phase or Apodising.**

- **Linear Phase** features constant group delay, thanks to the linear phase, and has a symmetric impulse response, but also longer rings. This offers the best preservation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.

- **Minimum Phase** features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spectrum and allows slightly better results for transient sounds.
- **Apodizing** offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between linear and minimum phase types.

Quality — **Conversion Quality** defaults to **Very High**.

Gain (dB) — Use the increment/decrement buttons or type a value for any required Gain offset. (E.g. when converting from DSD where the DSD recording has taken advantage of the 3.1dB SACD maximum level allowed by SACD Audio signal properties Annex D3 you should reduce the gain by typing a minus value (e.g. -3.10dB) to avoid clipping in the PCM output product.)

Note: In a DSD to PCM conversion the gain is applied on the filter's pre-computed lookup table (64 bit floating point domain) so avoiding any clipping if dealing with levels above 0dB (SACD). In PCM to PCM conversions gain adjustment is applied after the SRC stage and before the dithering stage.

Dithering

Enable — When ticked **Dithering** is enabled.

Requantization — The drop-down list offers a wide choice of output bit-depths.

Noise Type — Default is **TPDF**

Noise Shaping — Choice of **High Pass (POW-r2)** or **Equal Loudness** (**POW-r 3**)

OK

Accepts the settings and closes the dialog.

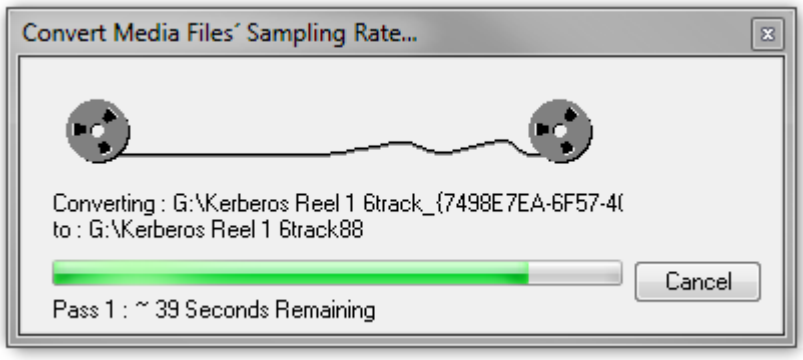
Cancel

Cancels any changes made and closes the dialog.

Apply

For future developments

Choose **OK** in the **MT HeptaCon SRC module** dialog box to begin the conversion. When converting multiple files, choose **OK** to convert the files one at a time with the possibility of changing parameters on each file or, if **Add Suffix** was chosen in **step 2,** you can choose **OK All** to convert all the selected files in one operation.



Convert Media Files Sampling Rate... dialog

Media Management Tab Context Menu

Right-clicking on an Audio File entry (or a blank area) in the file list in the Media Management Tab opens a context menu with the following entries:

Show All Drives

Copy

Paste with Media

Audition

Stop Audition

Place

Locate

Show Usage

Delete Media

Quick Import

Quick Export

Quick Convert >

Sampling Rate Conversion

DST Encoder

DST Estimator

Annex D.3 Verification

Publish to VCube Timeline

These functions are the same as those which can be found in the Media Management Tab Menus. **Please see: Media Management Tab Menus on page 61**

Properties Opens the **Properties** window for the selected Master Clip:

Properties window

Media Manager File Format Conversions

Input Formats	Output Formats: Generic lossless or lossy PCM format (BWF, PMF, MP3, MTFF-PCM ...)	DSDIFF 2.8 MHz (DSD64)	DSDIFF 5.6 MHz (DSD128)	DSDIFF 11.2 MHz (DSD256)	MTFF-DSD 2.8 MHz (DSD64)	MTFF-DSD 5.6 MHz (DSD128)	MTFF-DSD 11.2 MHz (DSD256)	WSD 2.8 MHz (DSD64)	WSD 5.6 MHz (DSD128)	WSD 11.2 MHz (DSD256)	DSF 2.4 MHz (DSD64)	DSF 5.6 MHz (DSD128)	DSF 11.2 MHz (DSD267)
Generic lossless or lossy PCM format (BWF, PMF, MP3, MTFF-PCM ...)	Yes	Yes (1)	No	No	No	No	No	No	No	No	No	No	No
DSDIFF 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
DSDIFF 5,6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
DSDIFF 11.2 MHz (DSD256)	Yes (2)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)
MTFF-DSD 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
MTFF-DSD 5.6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
MTFF-DSD 11.2 MHz (DSD256)	Yes (2)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)
WSD 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
WSD 5.6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
WSD 11.2 MHz (DSD256)	Yes (2)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)
DSF 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
DSF 5.6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
DSF 11.2 MHz (DSD256)	Yes	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)

(1) Pyramix Media manager's Quick export requires the input media's sampling rate to be 352.8 kHz
(2) Pyramix Media manager's Quick export requires the output format to support 352.8 kHz sample rate
(3) No processing filter will be applied, only audio data copy

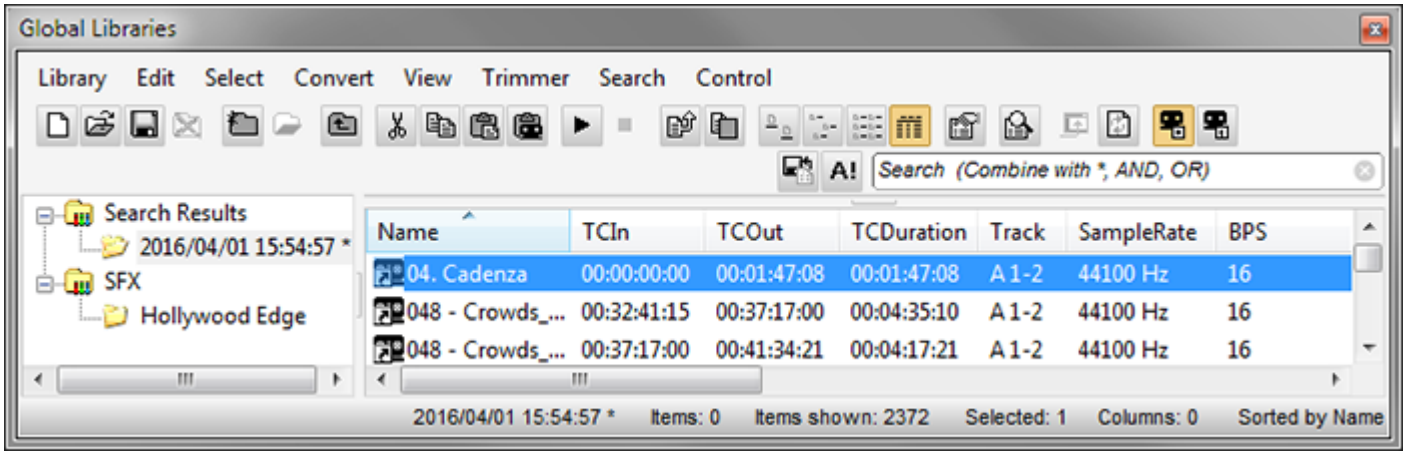
Libraries and other View Windows

Pyramix uses Libraries to help keep Project organization tidy. **Libraries** are used to organize project material into logical groupings. However, **Libraries** are not the same as Windows directories or folders. They are only meaningful within the Pyramix environment. A **Library** is a database, containing a collection of pointers to different types of media objects with tools designed to enable you to work quickly and intuitively.

Other View windows such as **Search Results**, **Used Media**, **Project Default Media** and **Non-Project Default Media** operate in the same way as Library windows.

Shelves

A library **Shelf** is a sub-folder. You can create many **Shelves** in a Library and **Shelves** can also contain further **Shelves**.



Libraries - Shelves

Project Libraries

Composition Library

Since Pyramix 7, the **Composition Library** is no longer present. This has been done to preserve editing interactivity.

We recommend two work flows to achieve the same results as using the Composition Library:

- Toggle the **Select Used Media** view to list the Media by location, based on Timeline selection. You can search and drag & drop from this window back into the Timeline. You can also save the **Select Used Media** content to a User Library which can be re-opened as a Library.
- Use the **EDL view** since this has been improved and is fully functional and reliable.

Default Library

Each new Project creates an empty **User Library** named **Default Library ('project name.pmx')**. This is provided to aid housekeeping and is kept with the project.

User Project Libraries

Further Project Libraries can be created at will. From the Document Libraries Tab choose **Library > New Library**.

Global Libraries

Project Libraries are kept with the Project, **Global Libraries** are available to all projects and users of the system. Otherwise they are identical functionally. Global Libraries are useful for sound effects or where several users need access to the same source material to produce different end products.

User Libraries

Master Clips can simply be dragged from **Media Folders** to **User Libraries** for purposes of **Clip** organization, grouping, etc. just as they are dragged into **Compositions**

Clips or **Selections** can be copied and pasted into User and Global libraries. Library items can be dragged and dropped onto other Libraries, Shelves or the Timeline or you can use the familiar **Cut, Copy** and **Paste** commands.

Other View Windows

Search Results

Project Default Media

Non-Project Default Media

Used Media

All these views have the same controls and behave like Libraries.

Adding Regions and Compositions to Libraries

User Libraries are not restricted to storing individual **Clips**. Whole **Compositions** or selected **Regions** of **Compositions**, including all the **Clips** in a **Composition** in relation to each other on multiple **Tracks** may be placed in a library. To do this, select one or more **Clips** in a **Composition**, hold down the **Shift**-**Alt** keys and drag the selection from the **Timeline** to the **Library**, or hold down the **Shift-Alt** keys and drag the whole **Composition** from the **Overview** panel to the **User Library**.Media Folders

User Libraries can contain **Master Clips**, **Compositions**, **Mixer Snapshots, Plug-in Snapshots**, **Fade Settings**, etc…. Each **Project** can have an unlimited number of User Libraries open, each with an unlimited number and mixture of contents.

N.B. In Pyramix **User Libraries**, there is no practical distinction between a **Clip**, a section of a **Composition** (**Region**) and a complete **Composition**. Either can be added to a **User Library** or to an existing **Composition**. This is an extremely powerful feature. Any item copied to a **User Library** from the **Timeline** appears there as a **Composition** automatically labelled **Part of 'composition name'**.

Automation in Libraries

If the menu item **Edit > Automation Editing > Enable Automation Editing** is enabled then any Edit operation (**Cut**/**Copy**/**Paste** etc…) brings automation data with it according to the mode set in the same sub-menu. E.g. **Cut/Copy/Delete Displayed Automation**. When active Edit operations will only include Automation Curves visible in the Timeline. When **Cut/Copy/Delete Whole Strip Automation** is active (Enabled By Default) **ALL** Automation, even the curves not visible currently in Timeline Track(s) will be affected when editing.

> **Note:** Only parameters of controls present in both the source and destination Mixer strips will be copied successfully.

Library Maintenance

If media is moved or the path to it is changed (E.g. by copy, backup or moving folders etc.) Libraries referencing the 'orphaned media can have their paths updated by simply mounting all the media folders involved and selecting **Drive > Update Media Paths** in the **Global Libraries** tab window.

Libraries (apart from the **Default Library** which is embedded in the Project) can be closed from the Library menu, but not deleted. Click on the library you wish to close to highlight it and select **Library > Close Library**. This will remove the library from the Project Library list but it can still be opened, if required, by selecting **Library > Open Library** and navigating to the library you wish to open, clicking on it to highlight it, and clicking on **Open**.

A **Shelf** can be re-named by clicking on it to highlight it in the right-hand pane and selecting **Rename** from either the Library **Edit** menu or the right-click context menu.

A **Shelf** can be deleted by clicking on it to highlight it in the right-hand pane and pressing **Delete**.

Using Global Libraries

Overview

The Pyramix Global Libraries feature is one of the most unique productivity tools imaginable in any DAW and is thus one of the least understood. This section describes the Libraries (Global and Document) and their use. Examples describe workflows which rely on them to speed up an operator's working day in many different ways.

Global V Document Libraries

The main difference between Global and Document Libraries is this: Global Libraries are independent files, able to be opened and used without having a reference to a single Pyramix Project while Document Libraries are saved embedded within the Pyramix Project itself and are thus more commonly used with the saving of items associated with a single Timeline.

> **Note:** Documents Libraries from other Projects can be accessed by simply opening the PMX Project containing the required Document Library in the **Global Libraries** Tab.

Global Libraries as Sound Libraries

One of the most time consuming tasks for any integrated Media Management tool in a DAW is to parse thousands of audio files and search for the exact sound needed. Using the Global Libraries, users are able to do a scan of any media location (even an entire server!) and present this database to Pyramix users to allow for the following:

- Offline reference to an entire set of media files. (Media does not need to be present to be able to search.)
- Ultra-fast searching of terrabytes of media using File Name, or any other metadata.
- Search using Boolean (And/Or) search tools.

Global Libraries as Sound Design Libraries

Most effects editors and dubbing mixers are familiar with the concept that a single sound effect is rarely used on it's own to match against a picture element. More often than not, a single sound effect is constructed from a variety of individual elements which, when played together form a composite which aids in the suspension of disbelief.

Once an editor makes such a composite on a Timeline, in order to be able to use it again, they would need to either save the Project, remembering where it exists, or bounce it to a single file for use in other Projects in the future.

The problem with the first solution is that the user would always need to remember which Project and where in the Timeline the effect exists. The problem with the second approach is that, if in the future the editor needs only part of the composite for the subsequent usage, he or she would have to build it again from scratch.

Global Libraries solves this dilemma with the ability to save selections of Clips from the Timeline with the following information, which are then usable in any Project, so long as the media still exists at the same location. These composites can be stored in the same databases as the originating Sound Library, in sub-folders of that Library, or as completely separate Library files.

Saving edits into a Global Library saves:

- Edit information: Trim/Fade/Crossfades/Fade Curves.
- Clip Gain and Clip Envelope.
- Track location (if the sound design was done on a specific set of tracks that are normally reserved for certain types of sounds (ie using a template where Atmos tracks are 25-32) then this can be recalled when bringing a saved composite back to the Timeline.
- Track-based automation.
- Clip color, naming etc.

This is perfect for use in the following work flows:

- Building a bigger and bigger sound library over time by adding in composites as they are built to be able to enhance future productions with a greater fx toolbox
- Show or production based composites (such as stings for TV programs) where parts of designed sounds need to be used a varying parts of an episode.

Use of Global Libraries for Tracklay Versioning

Understanding that Libraries can hold composite edits from the Timeline as single elements in an easy to search database also means that it is very simply to create versions of a section of the Timeline without having to create Mute Tracks or otherwise disfigure an otherwise pristine Timeline.

If you have a section of a tracklay that you could edit in a number of different ways and want to give the dubbing mixer and/or director options during the mix you can:

- Highlight the initial edit version.
- Color it with a pre-agreed color for "alternate versions available" to be recognized.
- Save it into a Global Library.
- Delete it from the Timeline and complete another fresh edit, coloring it in the same manner once completed.
- Repeat the process as many times as needed.

When it comes to the mix the dubbing mixer can see that there is an alternative version and use the **Place** function in the Library to put into place any of the other versions. The dubbing mixer can even use the **Trimmer** in the Global Libraries tab to audition the edit on its own before placing it on the Timeline.

Creating a Folder Structure Independent of Sound Library Structure

Depending on the editor's personal preferences and the working practices in facilities, sound effects may exist in numerous physical libraries and be in an order that does not make a lot of sense in an everyday workflow. Global Libraries allow for complete reordering and restructuring, with the ability to create a folder structure manually. This allows for a sound editor to create and refine their tools as time goes by, creating more and more streamlined methods of organizing (and thus finding!) files for use in editing.

Libraries as Sharing Tools for Multiple Pyramix's Working Together

Global Libraries are multi-read files since they do not actually require saving in order to update them on the disk. Thus, it is possible for a user on one Pyramix computer to place information and edits in a Global Library, and if that same Library is open on another, network connected Pyramix, then that editor can simply grab the Library item and place it on their Timeline.

Uses of this Feature:

- A Dialogue editor can send updates to the FX editor(s) without having to save Projects and ask them to open/copy/paste.
- FX editors can make available any additional sounds they are working on for other editors to use as a reference.
- A common library folder can be used a repository for any series based sounds that anyone might need access to.

Saving Mixer Information Away from a Timeline

By using the same method as one would for saving a part of the Timeline to a library, users can also save an entire Mixer's worth of parameters, or that of any individual VS3 plug-in in the Mixer.

Some reasons for saving parameters to a library

- EQ settings for standard use. (Source music from a radio effect for example.)
- Mixer Snapshot for a scene that will be occurring again in the Timeline.
- Aux sends for reverbs.
- Basic levels of individual Tracks.
- Mic Pre amp settings for Horus Mic-Pres.

Useful Library Commands

SHIFT+ALT Click and **Drag** to drag Mixers and composite edits into a Library.

Right-click on a composite edit in a Library and choose **Place** and then select: **Original Timecode**, **Original Track** to return a composite edit to its original placing in the Timeline

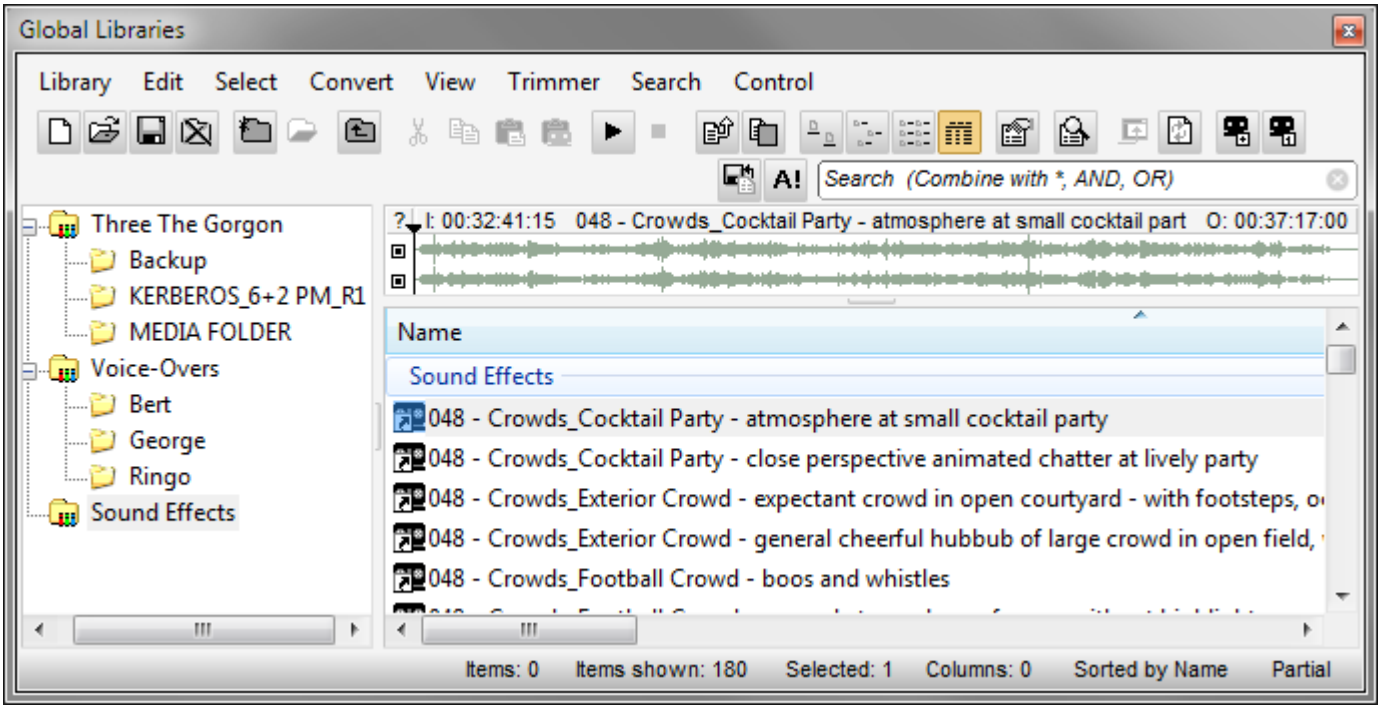
New Shelf in the **Library** menu in the Global Libraries tab makes new sub folders.

Library Tab Windows

Document and Global Libraries

There is no real difference between Document libraries and Global Libraries. The distinction is an organizational one, made to help keep complex Projects manageable and to provide security features for larger facilities. Libraries designated as **Global** are available to all projects but can be opened and manipulated from the **Document Library** window. Equally, Libraries created in the **Document Libraries** window can be opened in the **Global Libraries** window.

The default Project Library created with every Project is stored with the Project. It can still be opened in the **Global Libraries** window by locating the **.PMX** project file in the Project's **Media Files** sub-folder.



Global Libraries Tab floating Window

The left hand pane shows **Libraries** and **Shelves** associated with the project. The contents of the selected **Library** or **Shelf** is shown in the right-hand pane with information about the objects in columns. Shelves are displayed at the top with individual library items below. Clicking on the **+** or **-** signs in the left-hand pane expands or collapses Libraries and Shelves.

Libraries allow Drag & Drop operations from the Library content (right side window) to the Library/Shelf tree hierarchy (left side window).

Library Menus

Library Menu

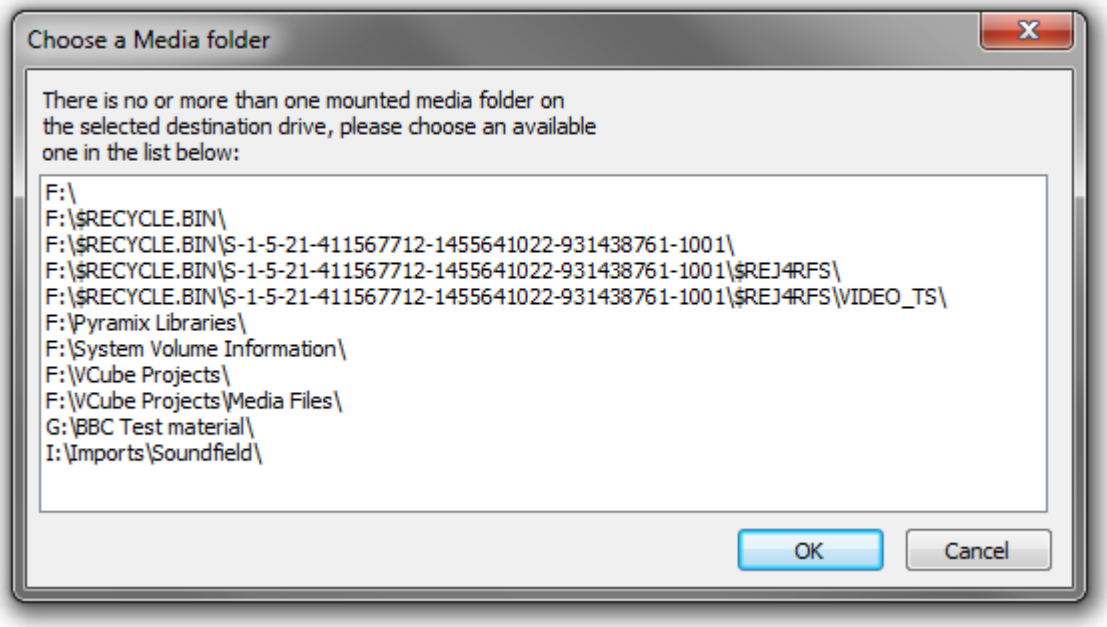
The **Library** menu allows new **Libraries** and **Shelves** to be created and existing ones to be opened and saved. When a library is opened the media used by **MasterClips**/**Compositions** may not be mounted, (E.g. on a removable drive). **Mount Referenced Media** automatically mounts the most recent location where these media were found

New Library	Create new user library in a mounted folder
Open Library	Open existing user library
Save Library As	Save a copy of the current library with a new name or in a new location
Save Library As 7.x	Save a copy of the current library in Pyramix 7.x format for maximum compatibility
Close Library	Close current library **Shift + Click** closes all open Libraries

Mount Referenced Media	Automatically mounts the most recent location where media in the current project were found
Update Referenced Media Paths	To update a library, mount all the media folders involved then select this menu item
Import MTInterchange XML	Opens the **Import MTInterchange XML** Browser Window
Export to MTIntercange XML	**Opens the Export MTInterchange XML** Browser Window
Import MTInterChange XML	Opens a File Browser to locate the XML file you wish to import
Export to MTInterChange XML	Opens a File Browser to select a folder for exporting an MTInterchange XML
Import OMF Library (Avid Bin)	Opens a File Browser to locate the OMF Library you wish to import
Export to Akai DD-Series	No longer available
New Shelf	Adds a new Shelf (folder) in the current Library or Shelf
Open Shelf	Opens selected/highlighted Shelf
Up One Level	Moves right-hand pane display up one level in the hierarchy
Properties	Pops up a window showing the **Properties** of the currently selected object

Edit Menu

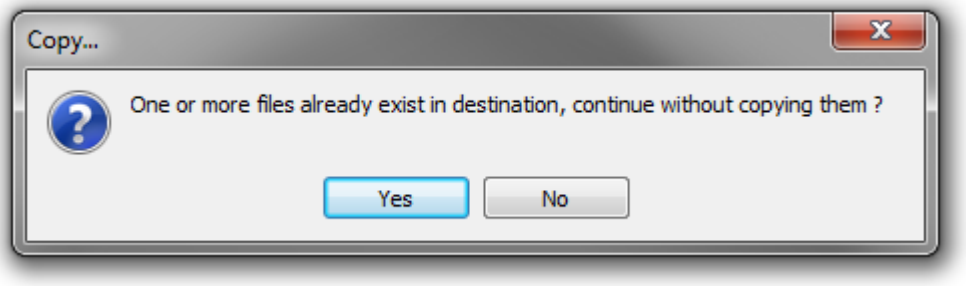
Cut	Cuts Object from pane. Object will be deleted unless pasted elsewhere.
Copy	Copy object
Copy Trimmer Selection	As it says
Paste	Paste object (Media is preserved at its current location)
Paste with Media	When more than one Media folder or no Media Folders are mounted this opens the **Choose a Media Folder** dialog.



Library Edit menu Paste with Media - Choose a Media Folder dialog

Select a suitable folder and click on **OK** to complete pasting the object complete with a copy of the associated Media files to the target directory path chosen in the pop-up. Click on **OK** to complete the Paste with Media Files

If one or more of the Media Files already exist in the chosen destination a dialog pops-up :



Library Edit menu Paste with Media - Choose a Media Folder - Copy... dialog

Click on **Yes** to complete the Paste Click on **No** to abort the operation.

Rename Rename object

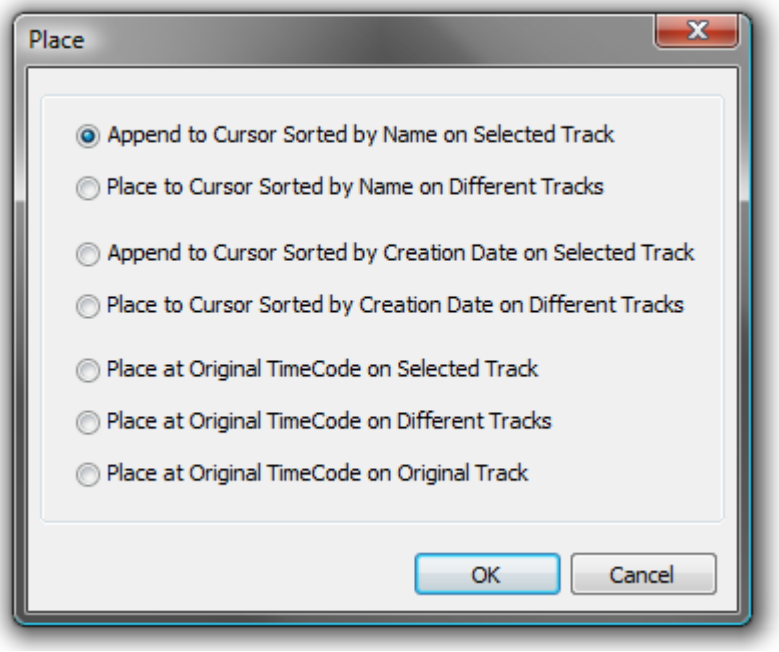
Lock Rename When ticked **Locks** all objects in the library for **Renaming**. Do you really want your Sound Effects Library entries to be renamed by anyone who can access it?

Open/Audition/View Opens highlighted (selected) Clip or Composition in the Trimmer and begins audition play. Opens highlighted (selected) Shelf

Audition Opens highlighted (selected) master Clip in the trimmer and begins audition play.

Stop Audition Stop audition Play and return Cursor to beginning

Place Opens the **Place** dialog:



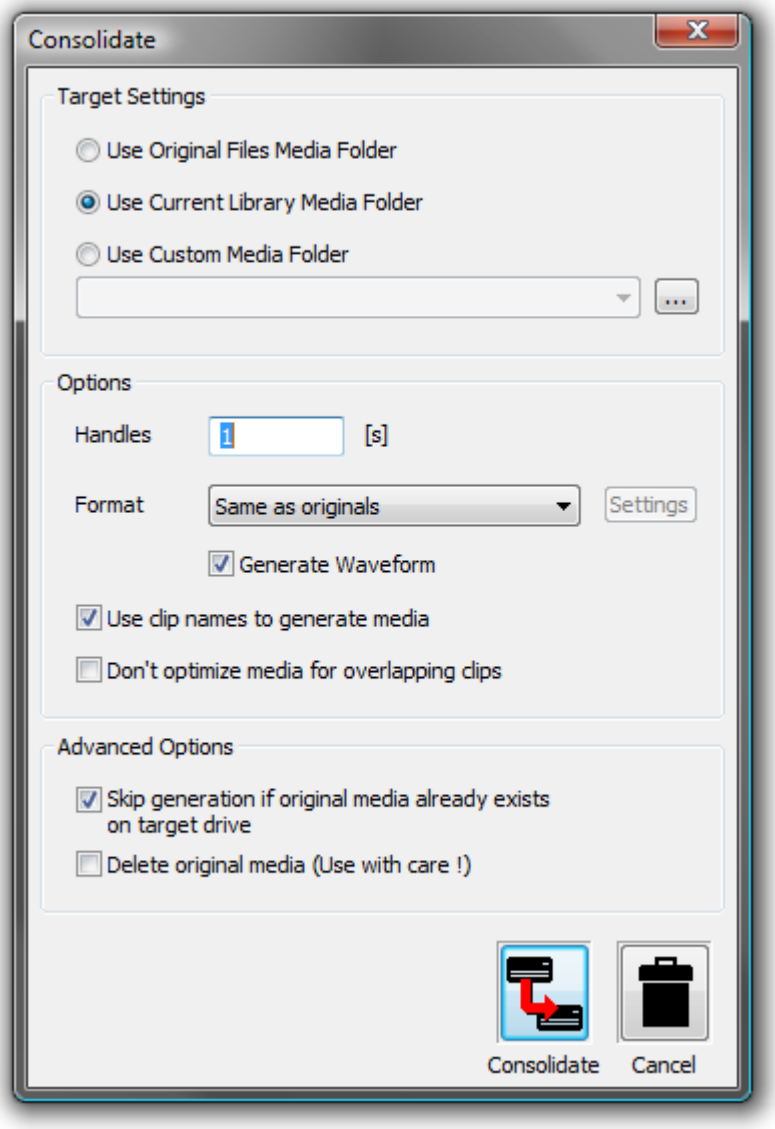
Library Edit menu Place dialog

The selected object(s) will be placed in the Timeline according to the rule chosen here.

The selected object will be placed in the timeline on the selected Track and Playhead Cursor position at its **Sync Point** or, if no Sync Point has been set, at its **In Point**

Placement Tool Opens the **Placement Tool** for placing the object. **Please see: The Placement Tool on page 194**

Consolidate (Libraries only) Opens the **Consolidate** dialog.



Libraries Edit menu Consolidate dialog

The **Consolidate** function makes a selective backup of the media segments in the selected object. I.e. instead of backing up the whole of every media file referenced by the Clips in a composition, **Consolidate** backs up only those parts of the media files that are referenced by the Clip segments in the **Composition**. Extra media, beyond the Clip boundaries can be added using the **Handles** option. This allows further manipulation of the Composition within the limits of the handle length.

Please see also: Consolidating Projects on page 478

Collect Selected Media to current Project Media Folder Copies all selected media to the current Project Media Folder.

Select Menu

Select All Selects all objects in the right-hand pane (**Ctrl Click** toggles selection of individual objects)

Invert Selection Selected objects are de-selected, unselected objects are selected

---

Select Media Present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are present on the current Project Media Folder.

Select Media NOT present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are not present on the current Project Media Folder.

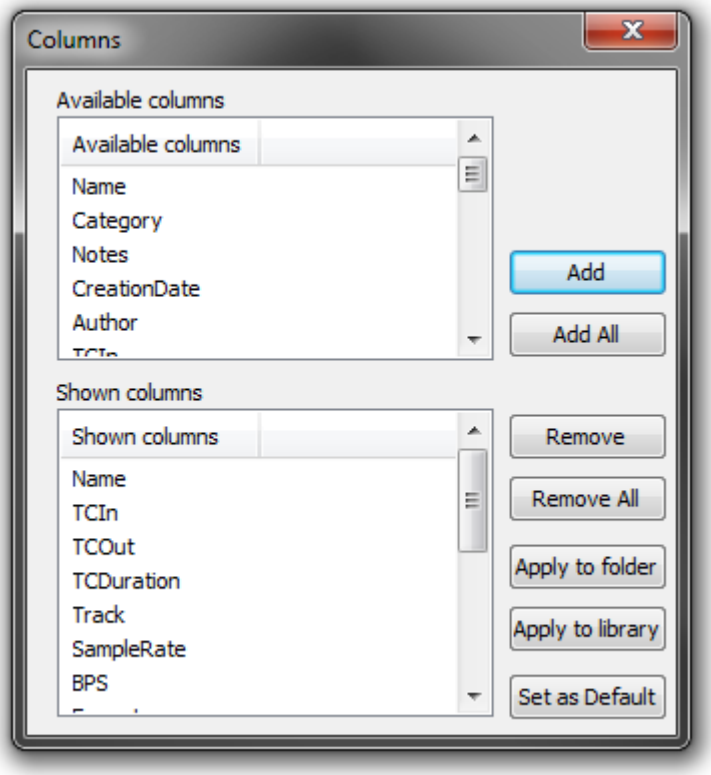
Convert Menu

Export Masterclips This is similar to **Quick Export** in the **Media Manager** but is also available in Libraries. It enables selected **Shelves** and **Media Folders** to be exported. Their complete/recursive folder structure is exported. Only **Masterclips**/**Media** are exported. **Compositions** or any other objects in Libraries are not exported.

View Menu

The **View** menu determines how information is displayed.

Status Bar	Turns the Status bar on and off
Large	Show large Icons
Small	Show small Icons
List	Show as list
Detail	Show as list with details
Filters	Adds **Filter** term entry boxes above each column in the view
Options	Opens the **Columns** dialog box:



Libraries View Menu Options - Columns pane

The dialog box shows two lists, **Available Columns** and **Shown Columns**.

Available Columns buttons:

Add	**Adds** the column(s) selected to the **Shown columns** list
Add All	**Adds All** the available columns to the **Shown Columns** list

Shown Columns buttons:

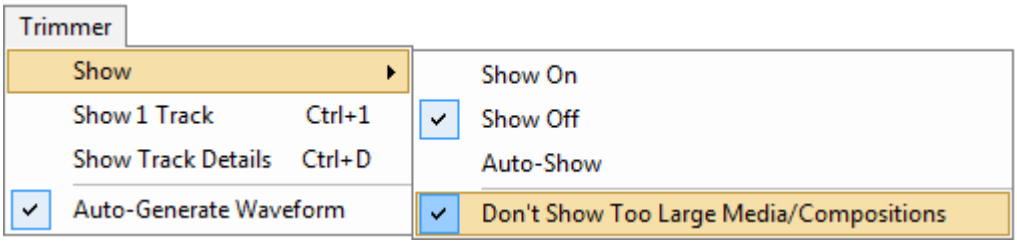
Remove	**Removes** the column(s) selected from the **Shown columns** list
Remove All	**Removes** all column from the **Shown columns** list
Apply to Folder	**Applies** the changes made in this dialog to the current **Folder**
Apply to library	**Applies** the changes made in this dialog to all Folders in the current **Library**

Set as Default **Sets** the changes made in this dialog as the default column content for all Folders in all Libraries.

New Window Opens a new Library Window empty

Refresh Forces a refresh

Trimmer Menu



Media Manager Trimmer Menu

Show

Show On When ticked the Trimmer is visible

Show Off When ticked the Trimmer is hidden

Auto-Show When ticked the Trimmer is only shown when a Media file is selected

Don't Show too Large Media/Compositions When ticked Large Media files and Compositions will not be opened in the Trimmer.

Note: When this option is selected Media or Compositions with more than 16 Tracks or more than 100 Clips will not be shown in the Trimmer. Selecting this option avoids the loading time associated with Compositions containing a large number of Clips.

Show 1 Track Show only the first Track of the object displayed in the **Trimmer**. When this option is selected **Up** and **down** arrows appear at the left of the Trimmer Track display which enable any Track to be displayed.

Show Track Details The following information is displayed for each Track of the selected Media file:

- Track Name
- Track Number
- Track Type (left, Right, Center etc.)
- Track File Name (If the Media is recorded in **One File Per Track** mode)

Auto-Generate Waveform Waveforms are automatically created for objects without them.

Search Menu

Add to Search Results Creates a new Search Results folder named by date and time and the search term(s).

Exact Word Match When ticked result will only show exact matches.

Control Menu

Provided mostly for use with hardware controllers.

Folders >

Up	Moves the focus up one step in the tree.
Down	Moves the focus down one step in the tree
Collapse	Collapses the current branch
Expand/Focus on List	Expands current selection/Shifts focus to list

List >

Up	Moves the focus up one step in the list
Down	Moves the focus down one step in the list
Focus on Folders	Shifts the focus to the Folders level
Focus on Trimmer	Shifts the focus to the Trimmer

Trimmer >

Focus on List	Shifts the focus to the list
Play from In	Play from **In** marker in Trimmer
Play from Start	Play from **In** marker in Trimmer
Stop	Play from **In** marker in Trimmer
Set In	Play from **In** marker in Trimmer
Set Out	Play from **In** marker in Trimmer
Set Sync	Set **Sync Point** on Clip in from **In** marker in Trimmer

Library Tab Context Menu

Right-clicking on an object (or a blank area) in the file list in a Library Tab opens a context menu with the following entries:

New Shelf

Open Shelf

Cut

Copy

Paste

Paste with Media

Rename

Open/Audition/View

Place

Consolidate

Properties

These functions are the same as those which can be found in the Library Tab Menus. **Please see: Library Menus on page 85**

Offline / Reference Libraries

As the name implies **Offline/Reference Libraries** are useful for keeping track of very large projects and material on media that may not be permanently on-line.

Creating Offline/Reference Libraries

Offline libraries are created in the **Media Management** Tab Window by selecting

Media Folder > Create Offline/Reference Library.

This will open a standard Windows browser.

Navigate to the location you wish to save the library in.

Type a name for the new Offline Library and Click on **Save**.

> **Note:** The Folder(s) currently mounted in the Media Management frame, the Media Files it contains, its sub-folders their Media File contents will be added to the new Offline Library.

Using Offline/Reference Libraries

When used in the following manner Offline Libraries provide an extremely powerful organizational tool for managing very large project libraries and, for example, sound effects libraries.

Mount The Media

In the **Media Management** Tab Window, Mount all folders or disks containing your audio files (as ripped with LibraryLoader, mTools or any other source). We strongly suggest these files be in either PMF or BWF (Broadcast Wave Format) as they both have a long description field, a unique identifier and a timestamp.

> **Note:** There may well be Copyright implications when working with ripped files. Please ensure you comply with any restrictions on copying other people's material.

Create An Initial Library

Open a Media Folder you wish to include in the new Library and follow the above procedure to create the new Offline Library

The library can now be re-organized, Folders and Shelves created, items duplicated etc. etc.

You can make searches (queries) or apply filters to your Offline / Reference libraries) and, if **Media > Auto-mount Media** is on, each time an item is dragged onto the Timeline the appropriate audio file will automatically mount. Or this can be done this manually by calling **Media > Mount Referenced Media**.

Updating Libraries - Orphaned Entries

If the original audio files are moved or reorganized, just mount all the folders once again, load all your libraries and call the Library menu command **Update Referenced Media Paths**.

Media / Timeline Linkage

It is important to note that the link between the Timeline and the media is made using unique ID's in the files. This means that if multiple files with the same name, with no unique ID (WAV for example) are available in various locations, then Pyramix will not be able to distinguish between them when all the folders are mounted. The Timeline will attempt to reference any and all of the instances of the file, meaning that the media shown in the Timeline may well not be the desired instance. I

Mounting Rules

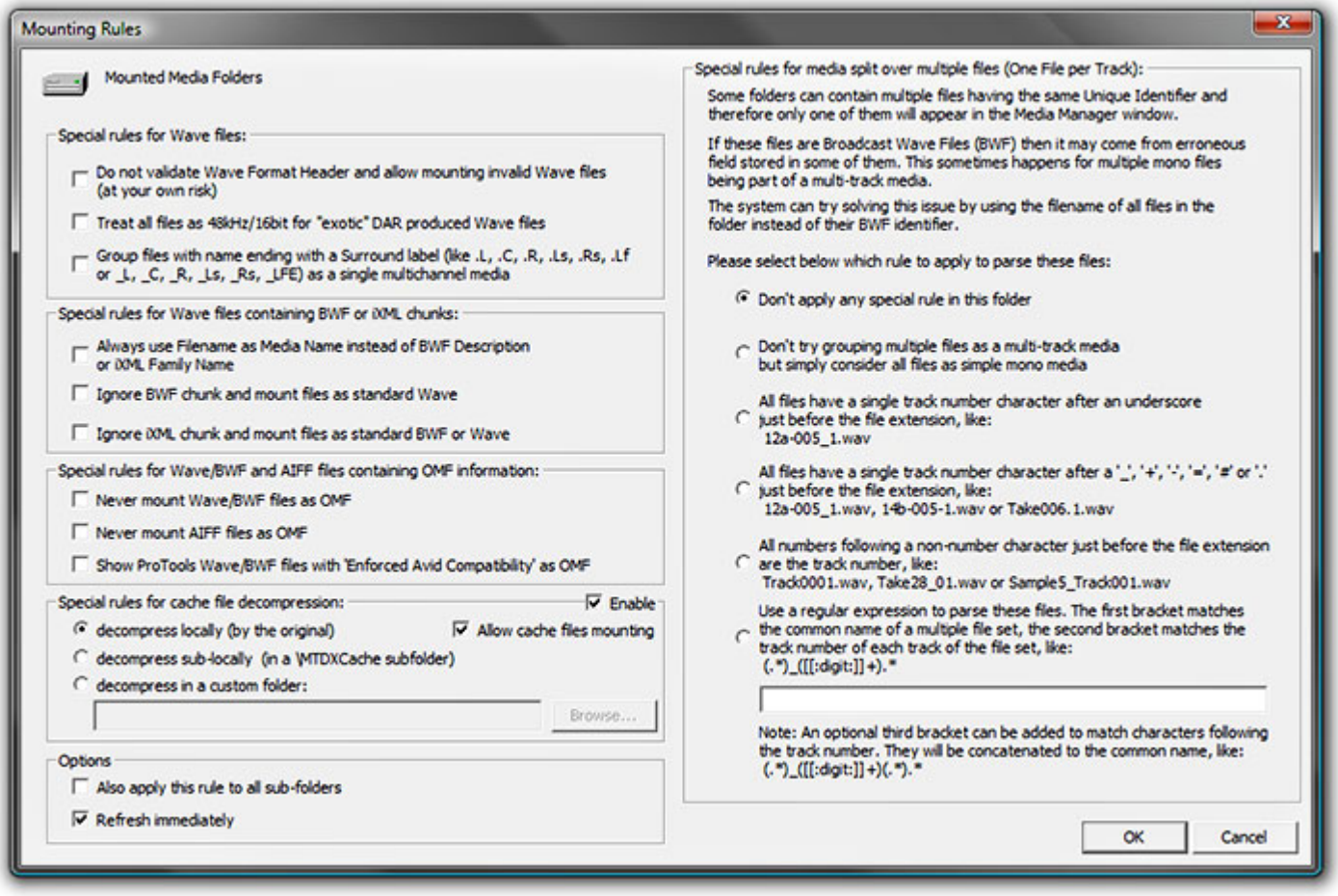
This dialog allows various rules to be applied when parsing **BWF** or **Wave** files in a given folder. Pyramix always tries to group multiple mono files that are part of a single multi-track media when viewed in the Media Manager so the multiple mono files appear as a single item with multiple tracks numbered in the form A 1-2 or A 1-8, or A 1-2, 7-8, etc. Otherwise, you would see a separate entry for each mono file whether or not it is part of a multi-track 'set'. In order to achieve this in the case of **BWF** files Pyramix looks at the **BWF** header and uses the **Originator Reference** field as a **Unique Identifier** with some rules as defined by the EBU organization and some conventions adopted between various manufacturers.

It may happen that some files do not follow these rules and therefore sometimes the Pyramix Media Manager fails to properly mount these files. Sometimes some files are missing, or some tracks within a multi-track media are missing. The Pyramix Media Manager detects these conflicts at the time the folder is mounted and informs the user of such a problem, prompting him to go to the **Media Manager > Drive > Mounting Rules** menu item. The **Mounting Rules** dialog allows a variety of different rules to be applied for this or these Media Folders so all files are properly mounted.

Folders where a conflict has been detected appear in Red.

Folders where a special Mounting Rule has been applied appear in Dark Green.

The **Mounting Rules** dialog can be found in the **Media Management** Tab window in the **Media Folder** menu : **Media Folder > Mounting Rules**



Mounting Rules dialog

Most of the dialog is self-explanatory. The description of the Rules that can be applied appears in the Mounting Rules dialog as above but for convenience, we have also listed the options on the left of the dialog below.

Special rules for Wave files

Do not validate Wave format Header and allow mounting invalid Wave files (at your own risk)

This can enable files to be mounted that do not follow the Wave specification strictly.

Treat all files as 48kHz/16bit for 'exotic' DAR originated Wave files

As it says. **Please see DAR WAV file Import on page 94**

Group files with name ending with a surround label (like .L,. C, .R, .Ls, .Rs, .Lf or _L, _C, _R, _Ls, _Rs, _LFE) as a single multichannel media

As it says. Useful when working with files generated by certain other DAWs.

Special rules for Wave files containing BWF or iXML chunks:

Always use Filename as Media Name instead of BWF Description or iXML Family Name

This will allow files recorded in Steinberg's Nuendo to be mounted and can also help with (re)conforming files from Aaton Cantar or other location recorders where the filename matches information in the EDL.

Ignore BWF chunk and mount files as standard Wave

This effectively treats Broadcast Wave files as ordinary Wave files and can help with (re)conforming as above.

Ignore iXML chunk and mount files as standard BWF or Wave

This treats iXML files as pure Wave or BWF with the same aims as above.

Special rules for Wave/BWF and AIFF files containing OMF information:

Never mount Wave/BWF files as OMF

Never mount AIFF files as OMF

Show ProTools Wave/BWF files with 'Enforced Avid Compatibility' as OMF

Special rules for cache file decompression

When compressed audio files are mounted Pyramix creates an uncompressed WAV version of the file(s) in a cache. The location of these cache files is determined by this dialog.

Locally (by the original) File(s) will be created in the same location as the original file.

Sub-locally (by the original, in a \MTDXCache sub folder). File(s) will be created in a sub folder created by Pyramix in the same location as the original file.

Custom (files are generated to the specified location). File(s) will be created in a user specified location. When this option is selected the **Browse...** button is available to open a file browser window to set the user defined path.

Enable enables the rule.

Allow cache files mounting when ticked, cache files can be mounted directly, otherwise they remain invisible, i.e. filtered out of Media Manager views.

Options

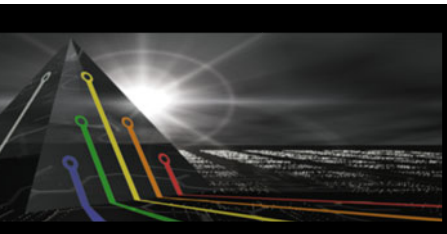
Also apply this rule to all sub-folders

Refresh immediately

DAR WAV file Import

It seems that DAR systems were strange in that they always played audio at 48khz. Even if 44.1khz audio was imported into a DAR, it would be converted to 48khz. The sample rate and bit-depth information in the WAV files was ignored as everything was assumed to be 16-bit/48khz. We've seen WAV files from DAR systems where the WAV files were identified as containing 128-bit audio or having a 10hz sample rate. So it would seem there must have been a bug in the DAR software that caused incorrect data to be stored in the WAV header. There is already code in the Pyramix WAV handler to try to catch these completely invalid parameters but, unfortunately, the WAV files from DAR don't include any manufacturer identifier so it isn't simply a case of identifying that they are from a DAR and automatically forcing them to 48khz in Pyramix.

5 Tracks and Track Groups



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Tracks

Each **Project** has a user defined number of audio **Tracks** on which audio **Clips** can be placed, or audio inputs can be recorded. Blocks representing placed or recorded **Clips** will appear on the **Track** as soon as a **Clip** has been placed or recorded onto it. The **Track** itself extends horizontally beneath the **Time Scale** bar, and multiple **Tracks** are stacked vertically.

Where appropriate a Video Track or Tracks can also be added. Please see: Video Tracks on page 554.

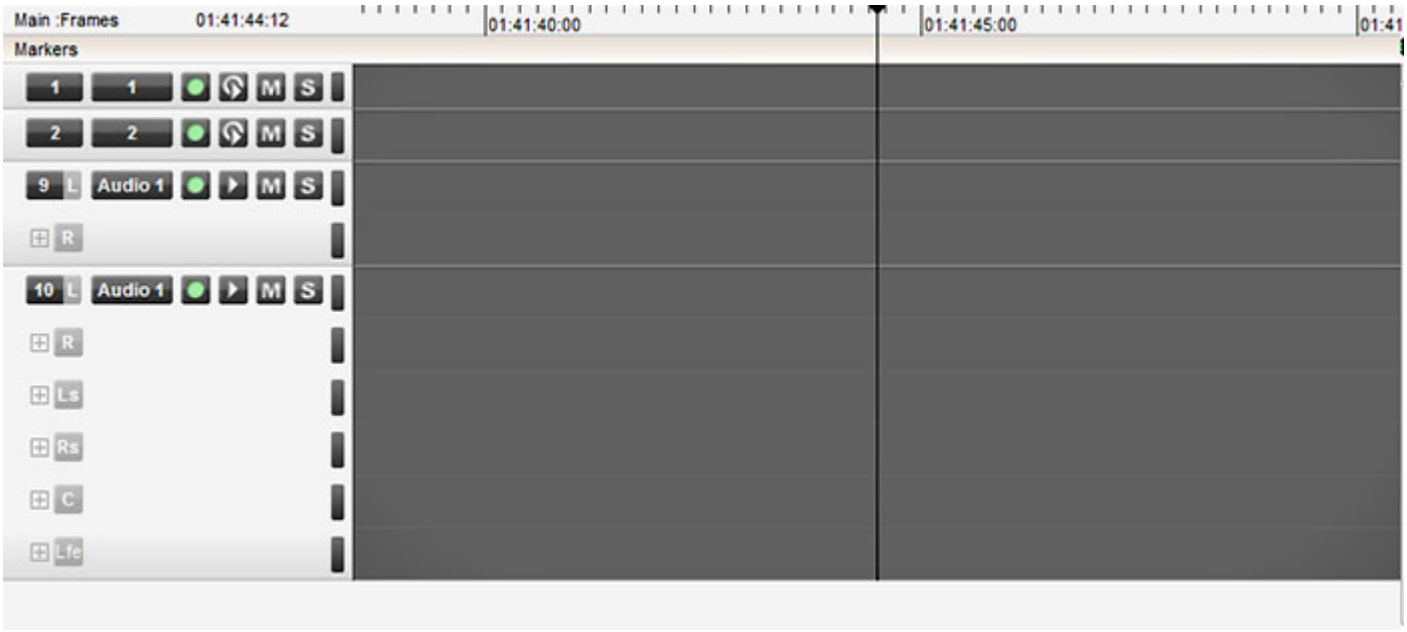
On the left side of each **Track** is a **Header** panel with various controls and information displays. **Please see: Track Header Panel on page 101**

Some operations only apply to a selected Track. A **Track** can be selected by left-clicking anywhere on the **Header** which will then appear in a darker shade of gray. You can also select a Track by clicking on a blank **Track** area. However, when selecting a Track, be careful **NOT** to inadvertently click on any of the Track buttons, thereby changing a Track function: the **Track Name** or a blank area are good places to click in order to select.

Track Numbering

Tracks are numbered according to the Mixer Strip they are connected to. So, in a project using Mono Mixer Strips exclusively, if there are 10 Tracks they will be numbered 1-10.

Where there are Stereo Mixer Strips or Multi-channel Mixer Strips then, whilst each channel is on a separate Track, both Tracks of a stereo pair are numbered the same, together with a suffix to indicate each channel type. The same applies to multi-channel. As shown here:



Track numbering - mono - stereo - multi-channel

Adding Tracks

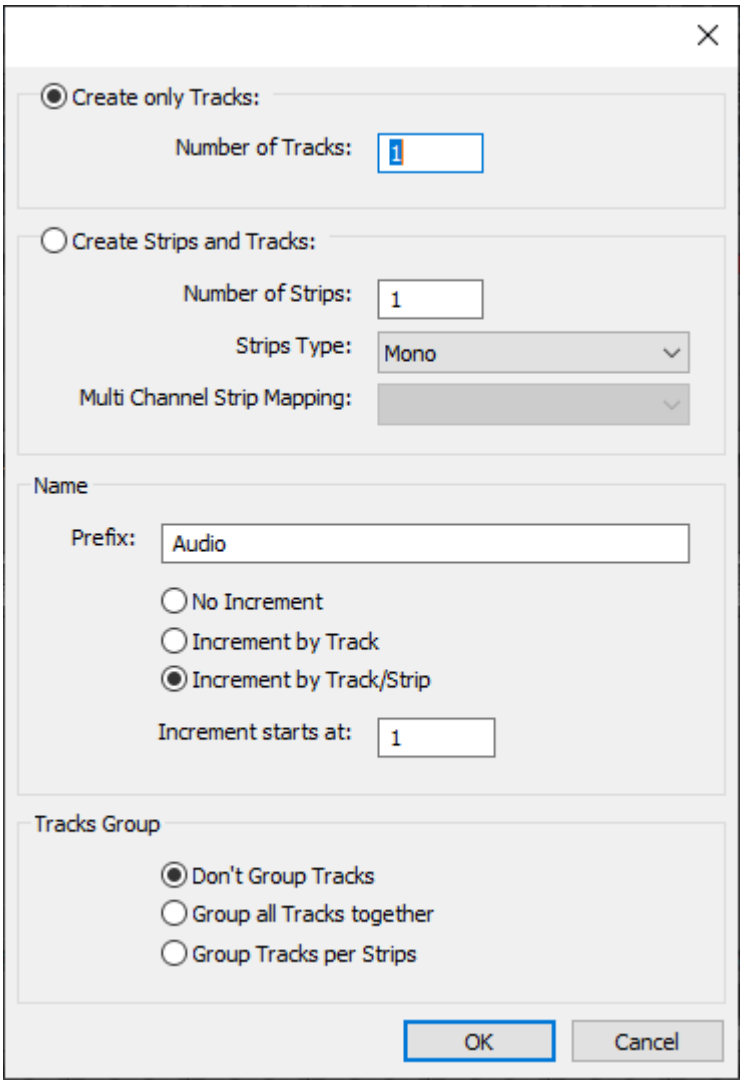
By default, a new **Project** opens with the same number of **Tracks** as there are **Input Channels** defined in the **Mixer** for the **Project.** However, **Tracks** can easily be added or deleted.

Creating Tracks via Paste

If a Clip or Composition is dragged and dropped or copied and pasted from Media Management or a Library onto a blank area of the TimeLine where no Tracks exist, sufficient Tracks will be created below the last existing Track to accommodate the number of Channels in the Clip or Composition.

Create New Tracks

New Tracks are inserted below the currently selected Track or, if no Track is selected, at the bottom after the last existing Track. To add **Tracks** to the **Timeline**, select **Tracks > New Audio Track** (or right-click in a blank area of the Track header and choose **New Audio Track** from the context menu).



Create New Tracks dialog

Create only Tracks: / Create Strips and Tracks:

To simply create Mono Tracks only, check the **Create only Tracks** radio button, enter the number of Tracks required into the **Number of Tracks** data entry box and click **OK**. The Track(s) will be created with the default name **Audio** numbered in ascending order from **1**.

If you wish to create Mixer strips at the same time, check the **Create Strips and Tracks** radio button. Enter the number of Strips required into the **Number of Strips** data entry box. Pyramix currently supports four categories of Strip. The default is **Mono**, with **Stereo, MS** and **Multi Channel** also available.

The appropriate number of Tracks will be created to suit the chosen Strip type. If **Multi Channel** is selected you must then choose the desired format from the **Multi Channel Strip Mapping** drop-down list. The following table lists the formats available:

Mono	**7.1 / ITU-I (0+7+0)**	**Auro 8.0**
Stereo	**7.0 SDDS**	**Auro 9.1**
2.1	**7.1 SDDS**	**Auro 10.1**
Stereo Surround	**7.0 / ITU-C (2+5+0)**	**Auro 7.4 / ITU-J (4+7+0)**
3.0 / LCR	**7.1 / ITU-C (2+5+0)**	**Auro 11.1**
3.1 / LCR	**8.0 / LCR**	**Auro 13.1**
3.0 Surround	**8.1 / LCR**	**KBS 10.2 / ITU-F (3+7+0)**

3.1 Surround	9.0 / LCR	NHK 22.2 / ITU-H (9+10+3)
4.0 Quadro	9.1 / LCR	Cube
4.1 Quadro	9.1 / ITU-D (4+5+0)	Cube + Mid Layer
4.0 Surround	9.1 / ITU-E (4+5+1)	Cube (Corners + Faces)
4.1 Surround	11.0	Cube (Corners + Faces + Edges)
5.0 / LCR	11.1	30.2 La Totale
5.1 / LCR	Dolby 5.0	4 x Stereo
5.0 / ITU-B (0+5+0)	Dolby 5.1	1st Order Ambisonic (4 ch)
5.1/ ITU-B (0+5+0)	Dolby 7.0	2nd Order Ambisonic (9 ch)
6.0 / LCR	Dolby 7.1	3rd Order Ambisonic (16 ch)
6.1 / LCR	Dolby Atmos 5.1.2	4th Order Ambisonic (25 ch)
6.0 / LRC	Dolby Atmos 5.1.4	5th Order Ambisonic (36 ch)
6.1 / LRC	Dolby Atmos 7.1.2	6th Order Ambisonic (49 ch)
7.0 / LCR	Dolby Atmos 7.1.4	7th Order Ambisonic (64 ch)
7.1 / LCR	10.2 TMH	
7.0 / ITU-I (0+7+0)	12.2 TMH	

Track Types

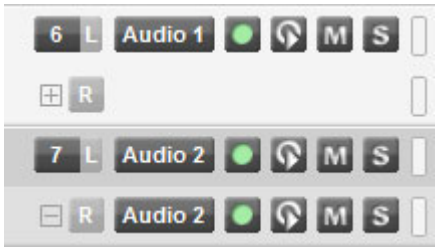
Overview

In Pyramix there are two basic types of Track. **Audio Tracks** which can be single or multi-channel and **Automation Sub-Tracks** which are a vehicle for displaying extra automation data relating to Audio Tracks. A third possibility exists, which is to use an **Audio Track** to display **Bus Automation**.

Audio Tracks

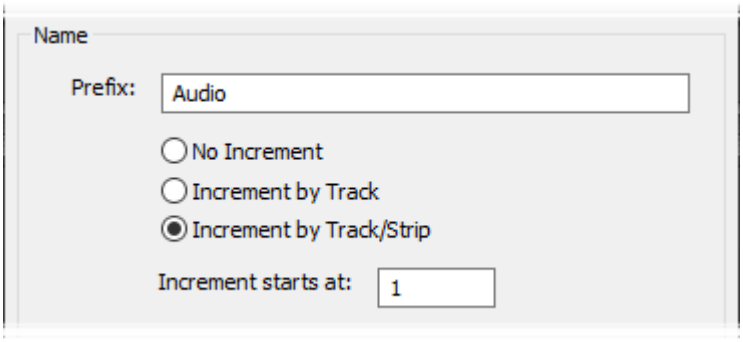
When Multi-channel Tracks are created with a Strip Channels Type format, certain functions are automatically linked, namely: Automation, Solo, Mute, Monitor mode, Record mode, Waveform display.

By default and to reduce on-screen clutter Stereo or Multichannel Tracks only display the full complement of buttons on the first channel. For example, the right-hand Track of a stereo pair will only show a pale gray **+** button next to the **R** button. Clicking on the **+** button reveals the rest of the buttons in the header. The **+** button then turns into a - button. Clicking the **-** button hides the buttons again:



Track Headers - Stereo

Naming and Numbering



Create New Tracks dialog - Name

However many Tracks and Strips you decide to create, they can be automatically named and incrementally numbered.

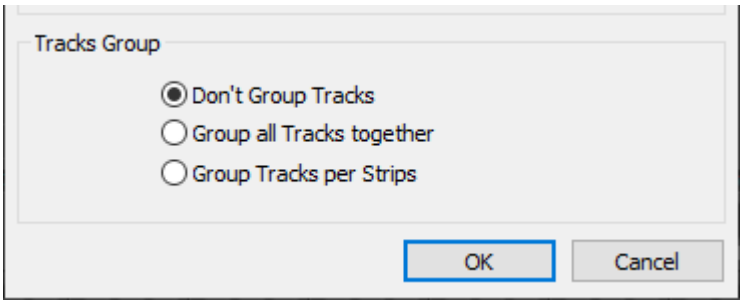
If the **No Increment** option is chosen all Tracks created will have the same name. I.e. whatever is entered in the **Prefix:** text entry box and no number.

If the **Increment by Track** option is chosen, each Track will be named using the text entered in the **Prefix:** text entry box and numbered incrementally. E.g. If you enter say, **Atom** and add two 5.1 GP strips in L-C-R-Ls-Rs-Lfe format, six Tracks are added. If the **Increment starts at:** number is set to, say **33** then all the Track names will all be **Atom 33** as will the Strip name.

If the **Increment by Track/Strip** option is chosen in the above example then the Tracks will be named **Atom 33**, **Atom 34** to **Atom 38** and the Strip will be named **Atom**.

Tracks Grouping

There are three options:



Create New Tracks dialog - Grouping

Don't Group Tracks leaves the new Tracks ungrouped.

Group all Tracks together groups all the new Tracks in a single group.

Group Tracks per Strips groups the Tracks as they are assigned to strips. E.g. 12 Tracks assigned to two 5.1 strips would be grouped as two six-Tracks.

Synchronized Creation/Deletion of Tracks/Strips

Note: When Creating, Deleting or Moving Strips in the Mixer Configuration page (or with the right mouse button context menus) the connected Tracks are also Created/Destroyed or moved accordingly.

- This behavior will apply when the **Tracks > Synchronize Tracks & Strips** is checked.
- When Strips are Created or Moved the Tracks are Created or Moved seamlessly.
- On Deleting a Strip or Strips, only empty Tracks are destroyed. Tracks containing Clips are preserved, disconnected and set to minimum size.

Deleting Tracks

Single Track

To delete a **Track**, first select the **Track** to delete. Then choose **Tracks** > **Delete** from the Project window pull-down menu. The **Track** and all **Clips** placed on it will be deleted. Note that only the **Clip** or pointer will be deleted, not the original **Media File**.

Multiple Tracks

You can also delete all Tracks from the selected Track to the last (highest number) by selecting **Delete to Last** instead of **Delete**.

You can also right-click in the **Track Header** to add or delete **Tracks**.

Routing Tracks to / from the Mixer

When you create a **Mixer**, Pyramix will automatically create the same number of **Tracks** as **Mixer Input Strips** (channels).

If **Connect automatically as many inputs and outputs as possible** is checked, Pyramix will attempt to automatically route the output of each **Track** Channel to a corresponding **Mixer** input Channel, so that with mono Tracks **Track** 1 outputs route to **Mixer** Strip 1 input, **Track** 2 to **Mixer** Strip 2, etc.

Similarly, Pyramix will attempt to automatically route each **Mixer** Strip Channel output to a corresponding **Track** input, so that **Mixer** channel 1 output routes to **Track** 1 input, **Mixer** channel 2 to **Track** 2, etc.

With **Stereo Tracks** Track 1L and Track 1R Channels will be routed to Mixer Strip 1 by default, Mixer Strip 1's outputs will be routed to Track 1L and Track 1R and so on.

So a 5.1 Multi-channel Track connected to a 5.1 Mixer Strip will be connected to the six channels according to the **Strips Channels Type** scheme selected in the Mixer creation wizard or in the **Add Tracks** dialog.

These default **Track I/O** assignments can easily be changed by the user by right-clicking on the Main Mixer Strip Number in a Mono Track or the **L** and **R** buttons in a stereo Track or the **LCRLsRsLfe** buttons in a 5.1 Multi-Channel Track. Please see also: **Adding Strips on page 280**

Track Display Height

Individual Presets

Double-Clicking in the blank area of the Track header to the left of the Strip number (highlighted in red below) cycles through four preset Track heights. **Mini**, **Medium**, **Large** and **Extra large** :

Preset Track Heights

Global Track Display Height

Track Height Controls

1, **2**, **4**, **8**, **16**, and **A** buttons at the bottom left of the **Project Editing Panel** automatically scale the vertical Track size so that 1, 2, 4, 8, 16 or All (as many as possible given the vertical space) **Tracks** fit in the vertical space allocated to the **Project Editing Panel**.

The horizontal Scrollbar adjacent to these buttons enables continuous adjustment of the Track height.

Shift + Mouse Scroll Wheel also adjusts Track height.

Track Header Panel

The Track Header Panel contains a number of buttons and information fields.

Track Header Panel

In the top row of a Mono **Track Header** or, by default, in the first Track of a multi-channel Track object, the first button at top left indicates the mixer strip the Track is connected to. Clicking on this pops up a list of all the Channels of all the Strips in the current Mixer plus **None**. Clicking on any Mixer Strip Channel in the list connects the Track's output to it.

The next button is the Track Name. Click on it to type in a new name.

The box with the red number in the second row shows the input currently connected. Click on this to pop up a list of all possible inputs. Click on an input in the list to connect it.

To change a **Track Input** or **Output** assignment, just click on the corresponding **Track** input or output box, then select the appropriate **Mixer** channel or **Input** number from the corresponding pop-up list. If the Input assignment is changed in the Track Header, this change is reflected in the strip and vice-versa.

When **Track** inputs and outputs are not assigned, the corresponding boxes for that **Track** will show **no input** and **Off** instead of numbers.

Multiple Tracks can be assigned to the same **Mixer** channel. They are therefore sub-mixed (summed) before entering the **Mixer**. This allows more Tracks to be played than the number of **Mixer** channels.

Many Tracks can be fed from the same physical input.

Track Control Grouping

Where the Mixer Strip is multi-channel, Tracks are grouped into Multi-Channel Track groups. By default, only the first Track in such an object shows the full complement of Track Header controls. The other Tracks just show the channel assignment, e.g. **R**, **C**, **Ls**, **Lfe** etc. and a small [+] button. Clicking this button shows the full complement of Track Header controls.

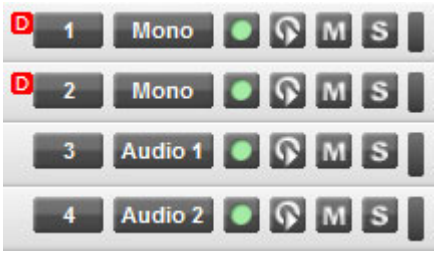
Button Grouping

Buttons in Multi Channel Track are linked by default. First by Track Group then by Mixer Strip. This behavior can be modified as follows:

No Modifier	Auto linked by Track Group then by Mixer Strip.
Ctrl	Bypasses all linking
Shift	Affects all Tracks
Ctrl + Shift	Bypasses Track Groups but still follows the Strip. (Useful when Multi-Channel Strips/Tracks are grouped.)
Scroll Wheel	Affects Track height.

Tracks Feeding Direct Monitoring Input Strips

Track returns to these strips do not have automatic delay compensation applied and are intended for monitoring only. When mixing down the Track outputs should be connected to 'normal' strips. To indicate this clearly, Tracks feeding Direct Monitoring Input Strips show a small red box with 'D' in the header:



Track Header Direct Monitoring Indicator

Track Header Components

Overview

The Track Header consists of a number of buttons and information displays spread over from one to three rows. Buttons used most frequently are arranged in the top row so that, when only one row high, they remain visible.

Track Header Components

If the Track is a member of a Track Group then a toggling **- / +** button is shown, together with the Track Group name, in the Track Group separator area above the header.

Expand Track Group

Collapse Track Group - Alternate state of **Expand Track Group**.

Components

First Row

The number on the top-left button shows the number of the **Mixer Strip Channel** its output is assigned to. Clicking this icon pops up a list to select from all available **Mixer Strip Channels**. If the button shows a **Off**, no **Mixer Strip Channel** is selected and recording and or replay is not possible.

Where the mixer strip is anything other than mono a channel identifier is also shown. All Tracks are numbered in this way in ascending mixer **Strip** order.

Note: If the small red **D** symbol is visible to the left of the Strip number then the **Track is feeding a Direct Monitoring Input Strip** - Therefore automatic delay compensation will not be applied. Patch Track to a 'normal' Input Strip for mix down etc. The symbol is also displayed when the **Track is feeding an Input Strip with an Internal Bus Return Input**. A Strip fed from an **Internal Return Bus** will **NOT** be fully Delay Compensated when in Auto-Monitoring mode and when in Repro mode the red '**D**' will be appear to indicate that automatic delay compensation will not be applied. On the other hand, recorded material will be Compensated correctly and in sync with the current timeline events.

The name button defaults to the Track type. Click on the button to type a new name in the field.

The Record icon has three possible states.

Record Safe and **Record Ready** are toggled by left-clicking the icon. **AutoPunch Ready** is enabled / disabled by holding down the **ALT key** while left-clicking the icon.

Record Safe - no recording possible.

Record Ready - Recording commences when the transport **Master Record** button is pressed and finishes either when the **Stop** button is pressed, or when the **Play** button is pressed.

Autopunch Ready - Recording commences when the previously set **Record In** point is reached and finishes when the previously set **Record Out** point is reached.

The Monitor icon has three possible states.

These are toggled by left clicking the icon.

Auto - monitoring switches the associated **Mixer channel** input automatically between input and repro. Behavior depends on the **Auto-monitoring** section setting in the **Settings > All Settings > Application > Playback/Record** page**. European Monitoring** (All Tracks turn to **INPUT** on stop) **OR US Monitoring** (Only Record Ready Tracks turn to **INPUT** on stop)

Repro - The associated **Mixer channel** is always fed from the Track replay.

Input - The associated **Mixer channel** is always fed from the Track's selected **Input** source.

The **Mute** icon toggles the **Track Output** between **Un-Muted**, as shown here;

and **Track Output Muted**, as shown here.

The **Solo** icon toggles the **Track Output** between **Solo off,** as shown here and;

Solo active as shown here.

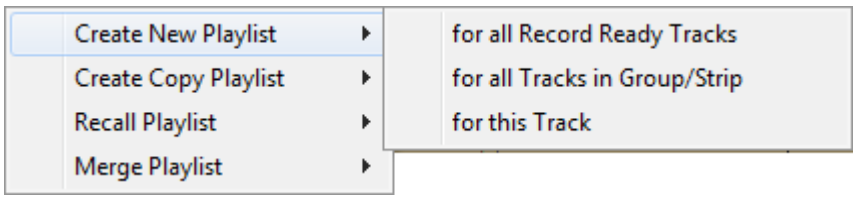
Peak Meter - If the **Peak Meter** is visible on the far right of the Track Header, clicking on it hides it. If not visible, clicking in the space where it should be unhides it.
The meter scales with the Track height.
Meter parameters follow the settings made in **Settings > All Settings > Mixer > Level Meter**.

Automation Scale - If Automation display is switched on, a scale appropriate to the control is shown to the right of the meter.

Second Row

2 (2) **Input source** - the first number shows the absolute number of the selected record input. The second number in brackets shows the input number within the physical or logical input block. When this area shows a **No Input** no record input is selected. This can be also set directly in the Mixer Console window.

Playlist opens this menu:



Playlist popup menu

Please see: Playlists on page 677

Effects - Clicking this button pops up a menu:

Automation popup menu

The list shows all effects in the Mixer Strip the Track is connected to. Selecting an effect in the list opens the control window for the plug-in.

The **Always Visible** icon toggles between always visible when a member of a Track Group. (As shown here.) and:

Hidden when **Auto Hide** is active.

The Waveform icon has three possible states.

Display Waveform - by default shows **Clips** as orange blocks with white waveform superimposed.

Display Text - by default shows **Clips** as orange blocks with **Text Labels** without waveform.

Display Envelope - by default shows **Clips** as orange blocks with white waveform and adds a black line which allows the gain to be adjusted using the mouse by simply clicking and dragging.

Note: Waveform display can be conventional symmetric or **Half Waveform** relative to the bottom of the Clip. **View > Waveform Display > Show Half Waveform / Origin**

Toggles automation curve display for the Track. Inactive as shown here, or

Automation curve display for the Track Active, as shown here.
Right-clicking the button pops up the automation display menu for the Track. **Please see: Track Automation Menu on page 439**

Third Row

No Group **Track Group** indicator and selector. Click on the button to pop-up the list of Track Groups available. Click on an entry to select.

Dial **Track Group** indicator and selector indicating that the Track is a member of the Track Group **Dial**.

No Automation **Automation Curve** indicator and selector. Clicking on the button pops-up a list of automatable parameters for the Track. The selected parameter curve is superimposed on the Track and the label changes to reflect this:

Gain Bus 1 | Gain **Automation Curve** indicator and selector. Here **Fader** has been selected.

Add Automation Sub-track this button is just to the right of the **Automation Curve** button above. Clicking on the button pops-up a list of automatable parameters for the Track. The

selected parameter curve is displayed in a new **Automation Sub-track** below the current normal Track.

Automation Sub-track Header

The main button in the **Automation Sub-track** Header pops up the list of automatable parameters for the Track. Selecting **More...** opens the **Select Displayed Automation Track** dialog with access to every automatable parameter in the Project. (**Please see: Automation Sub-Tracks on page 107**)

The smaller [**+**] and [**-**] buttons on the right of the main button create a new **Automation Sub-track** and delete the current one, respectively. The icon to the right indicates the number of audio channels controlled by the automation in the **Sub-track**.

When one or more Automation Sub-tracks exist a small blue [A] button is shown adjacent to the **Strip** number. Clicking this button toggles all Automation Sub-Tracks associated with this Audio Track visible/hidden.

Automation Sub-track Indicator/toggle

Track Record Modes

Each **Track** has a tri-state **Record Ready** toggle button, located to the left of the **Track** itself in the **Track Header**.

Tip: Right-clicking on a Track arming button opens the **Settings > All Settings** window immediately on the **Project > Record** page.

Play

The **Green Dot** in the **Track Header** indicates **Record Safe** mode, the default when **Tracks** are newly created. When in this state, the **Track** cannot be recorded to.

Record Ready (Manual)

Click on the **Green Dot** once to toggle to **Record Ready** mode. This is indicated by the dot turning into the **Red Dot**. The Track will now go into **Record** mode immediately when the **Master Record** button is pressed in the **Transport Strip** or **Transport window**.

Record Punch In (Auto)

Alt-Click on the **Red Dot** to toggle to **Record Punch In** mode. This is indicated by a **Red Dot flanked by 2 white vertical lines**. In this mode, when the **Master Record** button is pressed in the **Transport Strip** or **Transport window**, the **Track** will stay in **Play** mode until the current **Mark In** point is reached, then the **Track** will go into **Record** mode. It will stay in **Record** mode until the current **Mark Out** point is reached.

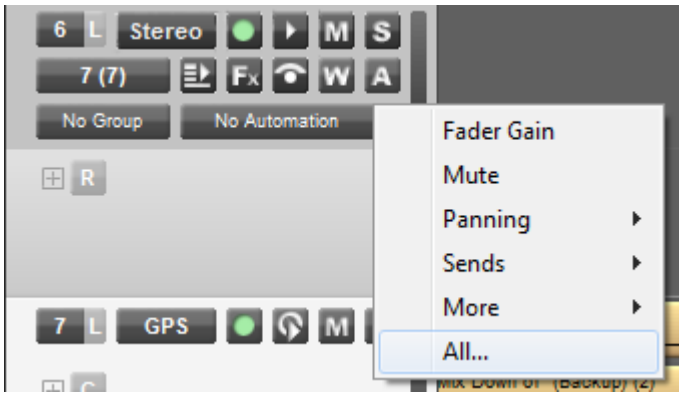
Automation Tracks

Overview

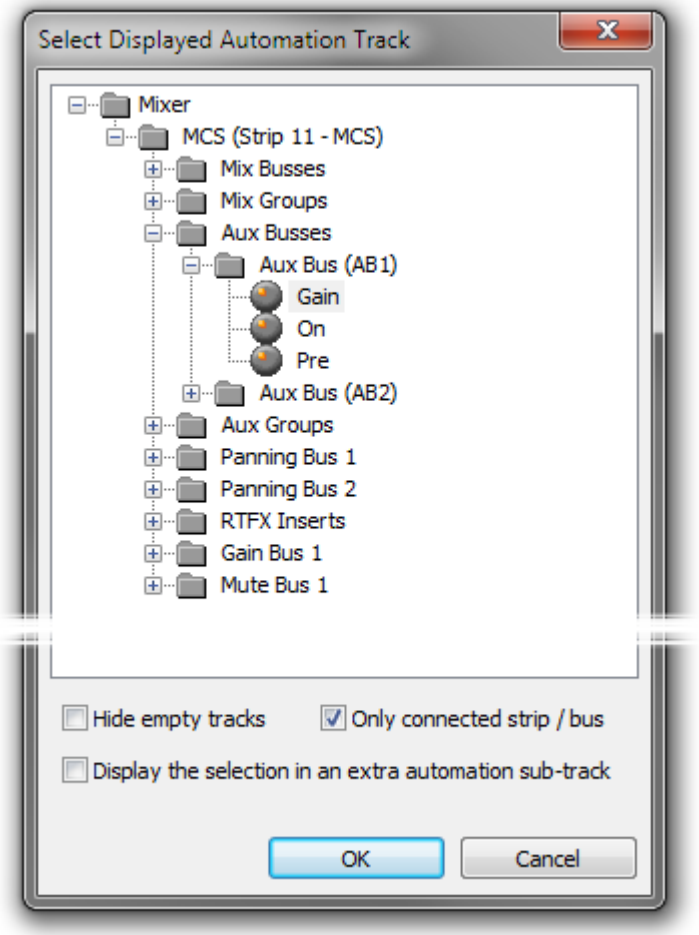
Automation curves can be overlaid on Audio Tracks. However, there is often a need to display more than one automation parameter at the same time. (Commonly Gain, Mute and Pan). In order to accommodate this Pyramix has **Automation Sub Tracks**. Similarly, there are times when it would be highly desirable to be able to display Bus automation curves in the Timeline. Pyramix uses ordinary Audio Tracks for this purpose, **Please see: Bus and VCA Group Automation Tracks on page 109**.

Automation Sub-Tracks

Add Automation Sub-track this button is located just to the right of the **Automation Curve** button in the third row of Audio Track headers. Clicking on the button pops-up a list of automatable parameters for the Track.



All automatable functions can be displayed. **Fader Gain** and **Mute** can be selected directly while other functions are grouped logically into sub-menus. Clicking on **All...** at the bottom of the list opens the **Select Displayed Automation Track** dialog:



Select Displayed Automation Track dialog

All automatable parameters for the entire Project are shown in a tree.

Hide Empty Tracks When ticked only Tracks with existing Automation Date will be present in the tree.

Only connected strip / bus When ticked only Strips and Buses connected are shown.

Display the selection in an extra automation sub-track When ticked a new Automation Sub-Track is created to contain the automation curve for the selected parameter when the **OK** button is clicked.

OK Confirms selection and closes the dialog

Cancel Cancels the selection and closes the dialog.

The selected parameter curve is displayed in a new **Automation Sub-track** below the current normal Track.

Automation Sub-track Header

The main button in the **Automation Sub-track** Header pops up the list of automatable parameters for the Track. Selecting **More...** opens the **Select Displayed Automation Track** dialog with access to every automatable parameter in the Project. The smaller **[+]** and **[-]** buttons on the right of the main button create a new **Automation Sub-track** and delete the current one, respectively. The icon to the right indicates the number of audio channels controlled by the automation in the **Sub-track**.

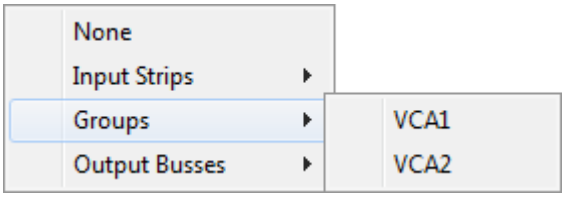
When one or more Automation Sub-tracks exist a small blue [A] button is shown adjacent to the **Strip** number. Clicking this button toggles all Automation Sub-Tracks associated with this Audio Track visible/hidden.

Automation Sub-track Indicator

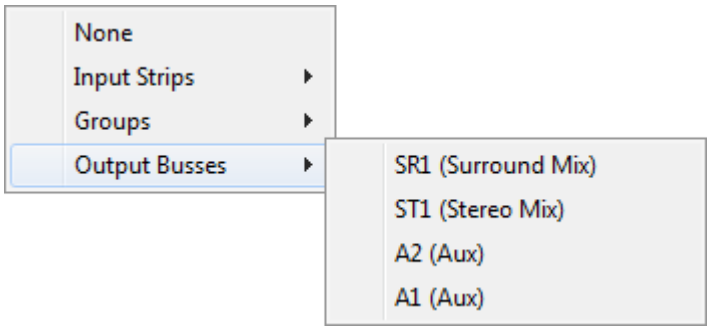
Bus and VCA Group Automation Tracks

Normal Audio Tracks are used to display and manipulate Bus and VCA Group Automation.

Clicking on the top-left button, used for assigning Tracks to Mixer Strips Now also has the option of connecting to VCA Group Strips and Bus Strips :



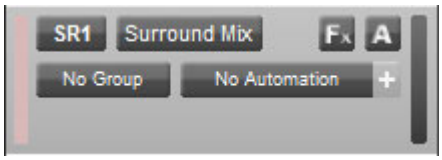
Select VCA Group Strip



Select Output Bus

A Bus is connected without consideration of the number of Channels in the strip.

The Bus ID is displayed in the connection Box (SR1, ST2, A3, etc…)



Bus Automation Track header

The Bus Name is displayed in the Name Box, but is not editable currently.

The Fx button remains available.

The Automation button [**A**] is available.

The Automation Name and [+] are available.

Automation Sub-Tracks [+]) are available.

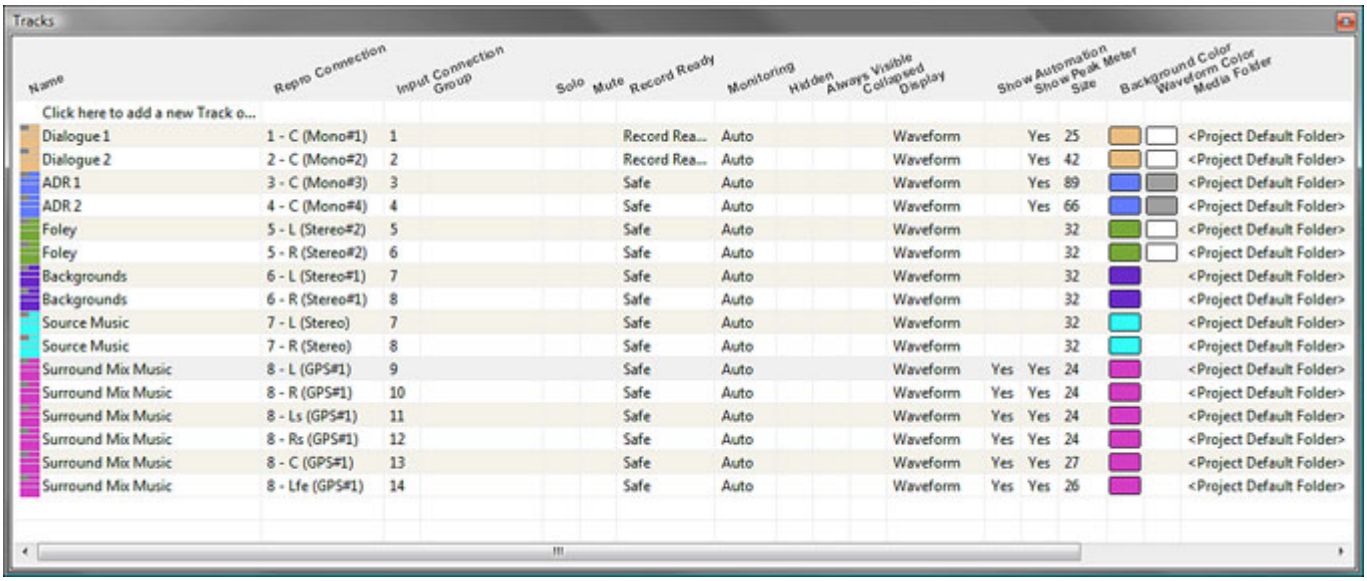
Notes:

When connected to a Bus the Track does not play back any audio. It can, however carry Clips.

When right clicking on the [A] button or left clicking on the Automation Name or [+] all menus enabling Automation Tracks to be selected filter available Tracks following the Bus controls as is the case for Input Strips.

Tracks Tab Window

The **Track** Tab Window shows a table where each row contains information about a single Track and each column contains information and function selection fields. New Tracks can be created or existing ones deleted and the order of Tracks changed. All Track parameters are accessible and modifiable.



Tracks Tab floating Window

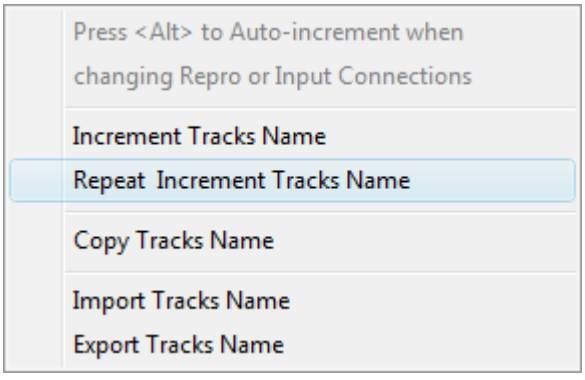
New Tracks can be added by clicking on the first line of the Tab Window and typing a suitable name then pressing **Enter**.

Tracks can be deleted by selecting them and pressing the **Delete** key.

The order of the Tracks can be changed by selecting and dragging Tracks. Click on the symbol at the far left of the **Name** field and drag to the desired row.

Tracks Tab pop-up

Right-clicking on a selection of Tracks or on all Tracks (no selection) displays this context menu:



Increment Tracks Name : Adds an incremental number after each selected Tracks name, taking into account an already existing number

Repeat & Increment Tracks Name : Copies the first selected Tracks name to the rest of the selection and adds an incremental number

Copy Tracks Name : Copy the selected Tracks name or all if no selection

Paste Tracks Name : Paste the previously selected Tracks name to the currently selected Tracks

Import Tracks Name : Rename the selected Tracks or all Tracks if no selection with names coming from a text file

Export Tracks Name : Saving the selected Tracks or all if no selection to a text file

Making Settings Changes to Multiple Tracks

Changes to Tracks settings can be made on a multiple selection of Tracks. Press **Ctrl** and Click on a Track to add or subtract it or press **Shift** to select a contiguous range of Tracks.

Changing Repro or Input connections

Clicking in the column field to drops down a list of available connections. Highlight the required connection to select it.

With a range of Tracks selected, choosing a connection from the list assigns all selected Tracks to the same connection. If **Alt** is held down while choosing the selected Tracks are connected in ascending order.

Track Tab Column Fields

Name

The name of the **Track**. Up to 29 characters are visible in this field but longer names are accepted. Click in the field or use **F2** to enter a new name.

Repro Connection

Shows which Mixer Input Strip (and Channel if applicable) the Track is connected to. Clicking in this column field drops down a list box with all available Mixer Input strips (and Channels). Strip number on the left followed by Channel Tag with the Strip Name in brackets.

Input Connection

Shows which Input is feeding the Track. Clicking in this column field drops down a list box with all available physical inputs and Internal Return buses.

Group

Shows which **Track Group** (if any) the Track belongs to. (see below) Clicking in this column field drops down a list box with all available Track Groups.

Solo

If **YES** Track is soloed.Clicking in this column field toggles between **YES** and blank.

Mute

If **YES** Track is muted.Clicking in this column field toggles between **YES** and blank.

Record Ready

Shows the current record ready state. Clicking in this column field drops down a list box with the three possible states, **Safe**, **Record Ready** and **Auto-Punch**.

Monitoring

Shows the current monitor mode. Clicking in this column field drops down a list box with the three possible modes, **Auto**, **Input** and **Repro**.

Hidden

If **YES** the Track is not visible in the Timeline but continues to operate normally. Clicking in this column field toggles between **YES** and blank.

Always Visible

If **YES** the Track will always appear on screen (if there is sufficient room) even when scrolling other Tracks.

Collapsed

If **YES** the Track is a member of a **Track Group** currently collapsed. (see below)

Display Mode

Shows the current Clip Display Mode mode. Clicking in this column field drops down a list box with the three possible modes, **Block**, **Waveform** or **Envelope**

Show Automation

If **YES** the automation envelope is displayed. Clicking in this column field toggles between **YES** and blank.

Show Peak-Meter

If **YES** a Peak Meter is displayed in the **Track Header**. Clicking in this column field toggles between **YES** and blank.

Size

Shows the current Track display **Height**. (in pixels) Clicking in this field allows a numeric value between 24 and 511 to be entered.

Background Color

Shows Clip background color. If blank, color is set to the default. Clicking in this column field pops-up a color picker. Choosing **Standard** restores to default.

Waveform Color

Shows Clip Waveform color. If blank color, color is set to the default. Clicking in this column field pops-up a color picker. Choosing **Standard** restores to default.

Recording Media Folder

Shows the **Media Folder** where new recordings will be stored. Clicking in this column field pops-up a list of all mounted Media Folders.

Track Envelope and Static Gain

Pyramix offers two Track based methods of varying Clip gain. **Static Gain** and **Envelope**.

Note: Static Gain and Envelope operate independently of the dynamic automation.

Static Gain

Gain Window

Gain Window

The Gain window allows the gain to be set for the current selection. The gain value can be typed into the box at the top of the strip or set by clicking and dragging the fader.

Keyboard up and down arrows adjust gain by 0.1dB per press, with **Shift** 0.5dB per press and with **Ctrl + Shift** 1.0dB per press.

Mute when checked, mutes the selection but retains the gain value

Sel. box (**Se**lection). When checked, the gain change will be applied to the whole selection (default is checked.)

Rel. box (**Rel**ative) When checked **and** a series of Clips are grouped, the gain change is relative to pre-existing level.s

When neither box is checked any gain change is only applied to the Clip which was last right-clicked (even if others are selected)

OK button executes any changes selected in the Gain window and closes it
Cancel button cancels any changes selected in the Gain window and closes it

Note: The upper end of the scale is not fixed. You can continue to raise gain until the mouse pointer hits the edge of the screen.

Keyboard Shortcuts

- Up Arrow = Increase gain by 0.1dB/step
- Down Arrow = Decrease gain by 0.1dB/step
- Shift + Up Arrow = Increase gain by 0.5dB/step
- Shift + Down Arrow = Decrease gain by 0.5dB/step
- Ctrl + Shift + Up Arrow = Increase gain by 1.0dB/ step
- Ctrl + Shift + Down Arrow = Decrease gain by 1.0dB/step

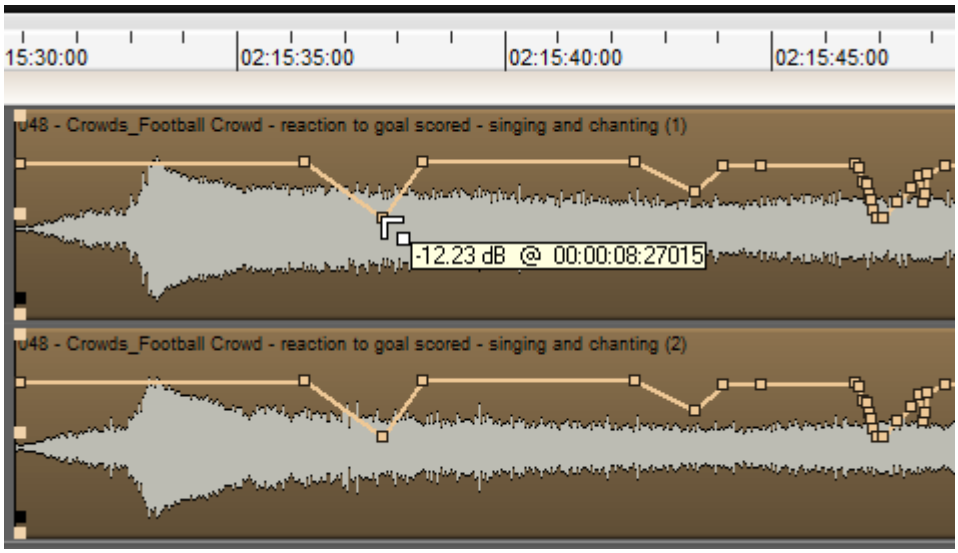
Envelope

Enveloping is active continuously for all Clips. However, in order to change the envelope from the default 0db unity gain **Display Envelope** must first be switched on in the Track Header by toggling the Waveform button until it displays:

Display Envelope - by default shows Clips as orange blocks (brown when selected) with white waveform and adds a thin black line (thicker and orange when the Cue is selected) which allows the gain to be adjusted using the mouse by simply clicking and dragging. Pressing the **Alt** key enables the drawing tool for envelopes. This is also applicable to **Automation curves**.

Note: Envelope level changes are rounded to 0.5dB

Note: Adjustment nodes on Envelopes are square and nodes on automation Tracks are circular.



Adjusting Envelope

As can be seen above the mouse cursor changes to a new symbol when over the Envelope line. Different cursor symbols mean that clicking (and, where appropriate, dragging) will do different things. For example, Left-clicking adds a node which can then be dragged to the desired level as shown in the box beside the cursor. Note that the TimeCode value pop-up is elapsed time from the beginning of the Clip.

Note: Double-clicking a node restores its value to 0dB.

Actions and Modifiers

Left Click	Anywhere on the Envelope line to make a new node.
Ctrl + Click	On an existing node to adjust all nodes in the Region selected currently. New points are inserted automatically at the Region borders if necessary.
Alt + Click	Anywhere on the Envelope line to draw nodes freehand.
Shift + Click	Fine tune of a point (**0.1 dB** steps for dB values).
V + Click	Constrains changes to a point to **Vertical**.
H + Click	Constrains changes to a point to **Horizontal**
Click - hold - Alt	Create new point with same value as next point. (if one exists).
Click -hold- Ctrl	Create new point with the same value as previous point (if one exists).
Ctrl + Alt + Click	On an existing node to erase it.

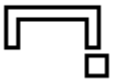
Envelope Cursors

Note: Adjustment nodes on Automation Tracks are circular and nodes on Envelopes are square

Left Click anywhere on the Envelope line to make a new node:

Left Click on an existing node to adjust it:

Ctrl + Click on an existing node to adjust all nodes in the Region selected currently:

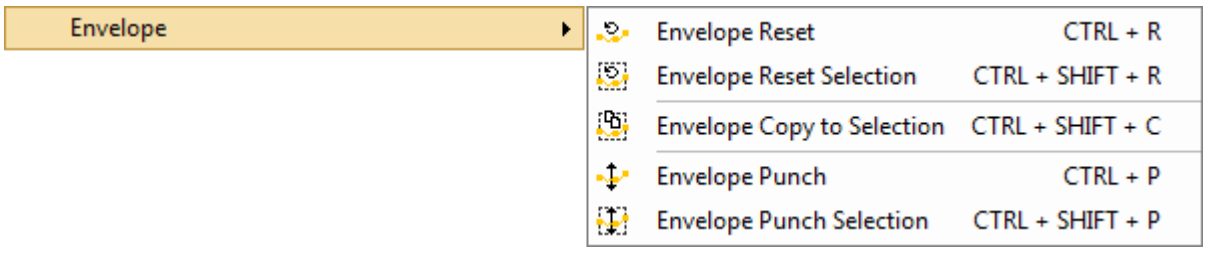


Alt + Click anywhere on the Envelope line to draw nodes freehand:

Ctrl + Alt + Click on an existing node to erase it:

Clip Envelope Menu Functions

Clips > Envelope offers a number of powerful Envelope related functions :



Clip > Envelope Sub-menu

Envelope Reset	Reset the gain envelope for the whole selection by deleting all envelope nodes within the selection only on the Track under the mouse cursor when Reset is chosen.
Envelope Reset Selection	Reset the gain envelope for the whole selection by deleting all envelope nodes within the selection.
Envelope Copy to Selection	Copies the values of all envelope nodes within the selection from the Track under the mouse cursor when Copy to Selection is chosen to all other Tracks in the selection

Envelope Punch	Places four new envelope nodes at the bounds of the selection on the Track under the mouse cursor when Punch is chosen and opens the Punch Envelope dialog box
Envelope Punch Selection	Carries out the same operation as Punch but to all Tracks in the current Selection.

Envelope Shortcuts

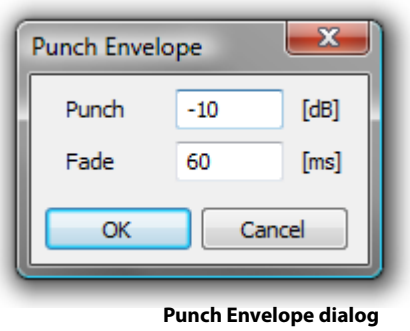
If Envelope features in your workflow it is well worthwhile learning some keyboard shortcuts:

Envelope Reset	**Ctrl + R**
Envelope Reset Selection	**Ctrl + SHIFT + R**
Envelope Copy to Selection	**Ctrl + SHIFT + C**
Envelope Punch	**Ctrl + P**
Envelope Punch Selection	**Ctrl + SHIFT + P**

Punch Envelope

Punch Envelope is a powerful method of adjusting gain within a Clip in many circumstances, especially when editing dialog.

When invoked from the **Clips > Envelopes** menu or by **Ctrl + P** or **Ctrl + SHIFT + P** the **Punch Envelope** dialog appears :



Punch Envelope dialog

Type the gain change required in the **Punch** field. (Type a **-** minus to attenuate)

To add a fade at each end of the Punch, type the required duration in **ms** in the **Fade** field.

Click on **OK** to execute the change or **Cancel** to reject it.

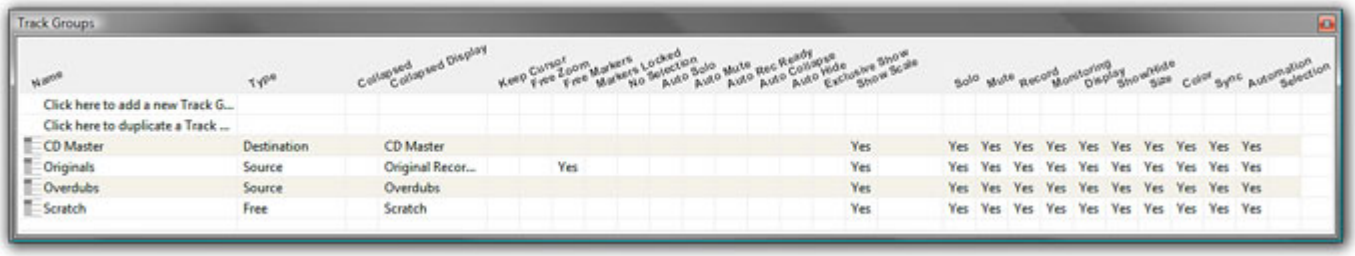
Track Groups

Track Groups, as the name implies, enable a number of logical function linkages between Tracks and several other useful methods of improving efficiency. Track groups can be created and manipulated by the user. Track Groups are also created by default when Recording or Rendering operations occur on more than one Track at the same time.

> **Note:** To add Tracks to a **Track Group** us e the drop-down list menu in the **Group** field in the **Tracks** Tab pane.

Track Groups Tab Window

Opens a table where each row contains information about a single Track group and each column contains Information and function selection fields.



Tracks Groups Tab floating Window

The first two rows enable new Track Groups to be created and existing ones to be duplicated by clicking on the **Name** field.

To create a new Track Group, click on **Click here to add a new Track Group**. A text entry box replaces the **Name.** Enter a suitable name and press **Enter**. A new Track group will appear at the bottom of the list.

To duplicate an existing Track Group, click on the Track Group you wish to duplicate then click on **Click here to duplicate a Track Group**. A text entry box replaces the **Click here to duplicate a Track Group**. Type a suitable name and press **Enter**. The duplicate **Track Group** appears in the row below the **Track Group** you have just copied. Subsequent rows are moved down the table. The **Track Group** entries can be re-ordered by clicking on the symbol at the far left of the **Name** field and dragging to the desired row.

When Tracks are assigned to a **Track Group** a small Group Track is shown in the **Timeline** immediately above the first assigned Track.

Track Groups can be collapsed/expanded by clicking the little [-] or [+] on the Track Group Track header.

Track Group Column Fields

Name

The name of the **Track Group**. Up to 29 characters are visible in this field but longer names are accepted. Click in the field or **F2** to edit the name.

Type

Clicking in this column field drops down a list box with current choices of **Free**, **Source**, or **Destination**.

Free is used to create General purpose Track Groups
Source is used for grouping Tracks to be Sources in the Source/Destination model.
Destination is used for grouping Tracks to be Destinations in the Source/Destination model.

Collapsed

Track Groups can be collapsed, so only one of the Tracks of the group is displayed. When set to **Yes**, only the Track chosen and shown in the **Collapsed Display** field is displayed in the Timeline. This field has the same function as the little [-] or [+] on the Track Group header.

If the single visible Track is selected the group is expanded.

Collapsed Display

Clicking in this column field drops down a list box which contains the names of all the Tracks in the group. The selected name determines which Track will be displayed when the display is collapsed.

The rest of the fields

All the other column fields toggle when clicked, either displaying **Yes** or a blank. The functions described below apply when the fields are set to **Yes**.

Keep Cursor

The Group 'remembers' the position of the cursor and restores it each time one of its Tracks is selected.

Free Zoom

The group has its own zooming factor, independent of the general zoom factor.

Free Markers

Track Groups can have their own list of markers that are displayed on the Track Group Scale or on the main Time-Code Scale if the Track Group Scale is hidden (see below).

Markers Locked

Locks the Markers. For the particular **Group**. **Free Markers** must be **ON**

No Selection

Clicking on Clips placed on Tracks of the Group does not select anything, the cursor is simply placed at the position where the mouse is clicked. Clicking with the **Q** key held down allows Clips to be selected on these Tracks.

Auto Solo

If any Track of this Group is selected, the whole group is automatically Soloed.

Auto Mute

The whole Group is automatically muted unless one of its Tracks is selected.

Auto Record Ready

When a Track of this Group is selected, the whole Group goes into Record Ready mode.

Auto Collapse

When none of the Tracks of this Group is selected, the Group is automatically collapsed to display a single Track. When this Track is selected, the whole Group is expanded.

Auto Hide

When none of the Tracks of this Group is selected, all Tracks of the group are automatically hidden. When any Track of the Group is selected, the whole Group is shown.

Exclusive Show

When any Track of this Group is selected, all Tracks that are not part of this Group are hidden. This is the equivalent of a Solo for the Display.

Show Scale

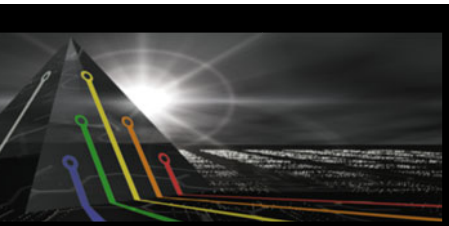
Toggles show/hide an independent scale for TimeCode if the Track Group is on Free Zoom and Markers if it is in **Free Markers** mode. If **OFF** then the Scale and Markers are displayed in the main Scale of the Timeline when any of the Tracks of this Group is selected.

Selection

When set to **Yes** this option ensures that any selection made within a Track Group is extended to all Tracks in the group. **Selection** is disabled by default for backwards compatibility.

All other columns of the Tab Window (**Solo**, **Mute**, **Record**, **Monitoring**, **Display**, **Show/Hide**, **Size**, **Color**, **Sync**, **Automation Display**) define which of the parameters set in the Track Header or in the **Tracks** Tab window are affected by the group, I.e. which of these parameters are changed in the whole group when a change is made to an individual Track of the Group.

6 Transport and Navigation



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Transport Control

Pyramix features a wide range of Transport Control commands including, unlike many other workstations, **Reverse Play** and Play at fractions and multiples of sync play speed both forwards and backwards. These possibilities can be attached to short-cut keys in the Keyboard Shortcut editor. Please see: **Customizing Keyboard Shortcuts on page 538**

Of course, these commands are also available via remote controllers that support them.

Navigation

Pyramix Virtual Studio offers a number of ways of navigating around a Project.

Timeline Structure

Important! The Pyramix Timeline starts at **00:00:00:00** on **Day 0**. It is perfectly possible to go backwards before **00:00:00:00** say to **23:50:50:00**. In this case the cursor is in **Day -1**. If you go forwards beyond TimeCode Midnight the cursor will be in **Day +1**. When the Timeline is outside Day 0 it is shaded in red. The TimeCode display in the bottom Transport Toolbar and Main Transport Window will show a red indication when the Playhead Cursor is outside Day 1. E.g. **-1** in the day before Day 0, **+1** in the day after Day 0 and so on.

Time Scale Rulers

Pyramix is equipped with many Time Scale options. Each Time Scale has an associated **Time Scale Ruler** and **Tool Bar** which appears above the Time Scale Ruler(s).

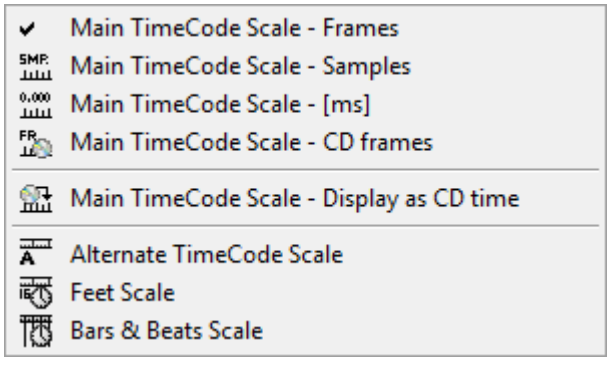
Main TimeCode Ruler

Near the top of the **Project Editing Panel** is a horizontal gray area with time code numbers. This is the **Main TimeCode Ruler**. On the left, above the Track Headers, the Time Range, i.e. the length of the visible Timeline window is indicated.

The simplest way to move the **Playhead Cursor** within the **Project Editing Panel** is to position the mouse anywhere along the **Time Scale Ruler** and left-click. The **Playhead** will immediately move to the new position. You can also left-click the **Playhead Cursor** and drag it along the Ruler.

Context Menu

Clicking in the left hand, Header, area of a Time Scale Ruler pops up a context menu.



Main TimeCode Scale Ruler context menu

The first six entries offer a choice of display modes for the Main TimeCode Scale a tick appears next to the option selected currently:

- Main TimeCode Scale - Frames
- Main TimeCode Scale - Samples
- Main TimeCode Scale - [ms]

- Main TimeCode Scale - CD frames
- Main TimeCode Scale - Display as CD Time

The remaining three entries add new Time Scale Rulers beneath the Main TimeCode Scale Ruler

- Alternate TimeCode Scale
- Feet Scale
- Bars & Beats Scale

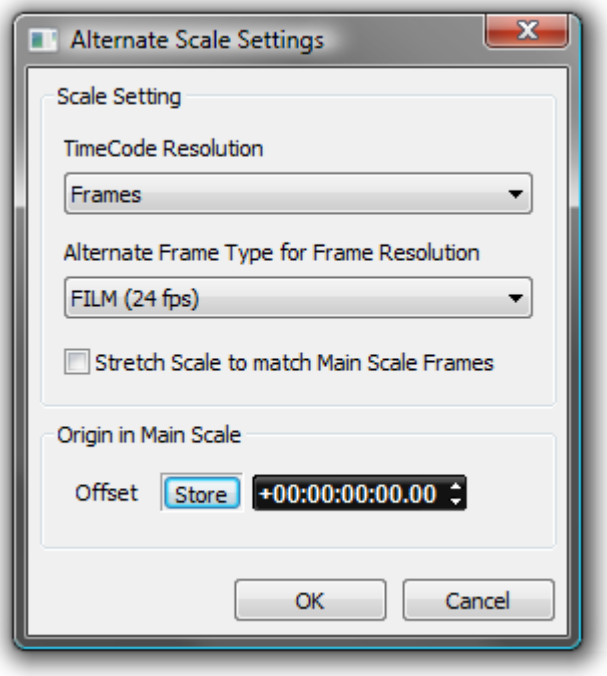
Alternate Time Scale Ruler

To add an alternative Time Scale Ruler below the Main Ruler right-click in the Main Ruler header area and select **Alternate TimeCode Scale**

You can set up the Alternate Time Scale Ruler either by right-clicking in the its Header to open the context menu or by selecting **Alternate TimeCode Scale Settings** or **View > Scales / Toolbars > Alternate TimeCode Scale Settings**:

- Alternate TimeCode Scale Settings

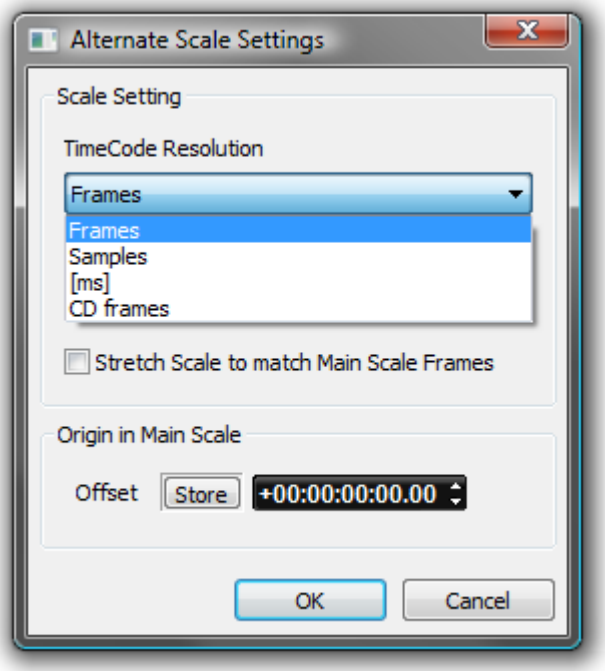
Choosing this pops up the Alternate Scales dialog:



Alternate Scale Settings dialog

Scale Setting

The **Scale Setting** combo box offers a choice of TimeCode resolution to display:



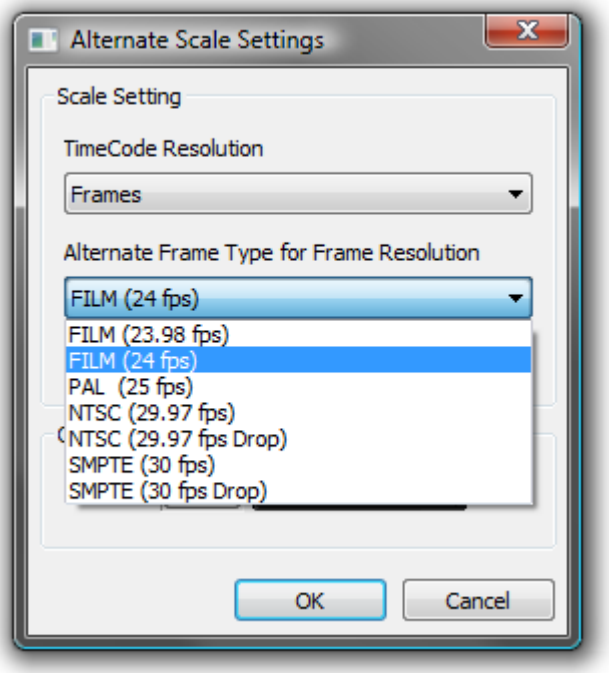
Alternate Scale Settings TimeCode Resolution drop-down menu

Stretch Scale to match Main Scale Frames (see below)

Origin in Main Scale

An Offset can set and stored. For example when versioning. I.e. making several sound versions for the same picture.

The **Alternate Frame Type for Frame Resolution** combo box offers a choice of frame types appropriate to the chosen resolution. E.g.



Alternate Frame Type for Frame Resolution combo box

View > Scales / Toolbars > Alternate TimeCode Scale Settings also enables selection of The TimeCode Resolution for the Alternate Scale from a choice of:

- **Frames**
- **Samples**
- **[ms]**
- **CD Frames**

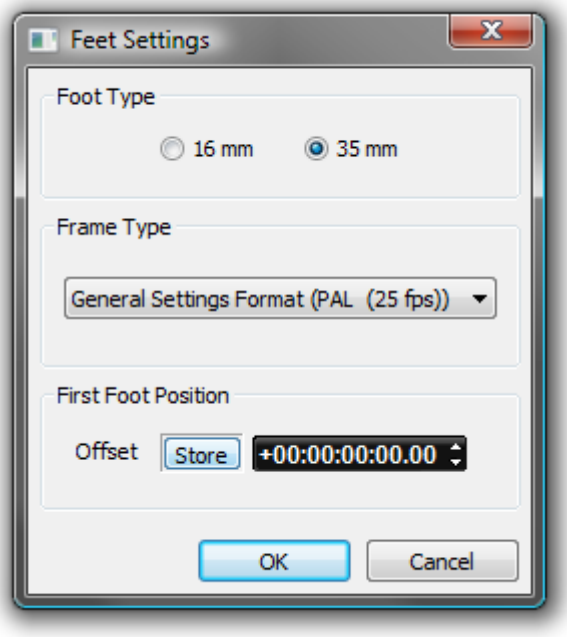
When the Resolution is set to **Frames**, an **Alternate Frame Rate** can be chosen.

When **Alternate Frame Rate** is chosen, the check box **Stretch Scale to match Main Scale Frames** allows the Alternate Scale to no longer display the same time flow as the Main Scale (1 Second = 1 Second). Instead it matches the length of individual Frames (1 Frame = 1 Frame). In this case the time is not the same in both scales and this allows making comparisons between, for example, 24 frames events and 25 frames events.

The **Origin in Main Scale** option allows an offset to be set between the Main Scale and the Alternate Scale.

Film Feet Scale Ruler

As with the other Scale Rulers, clicking in the header area pops up a context menu with the extra option **Feet Settings** selecting this pops up the **Feet Settings** dialog:



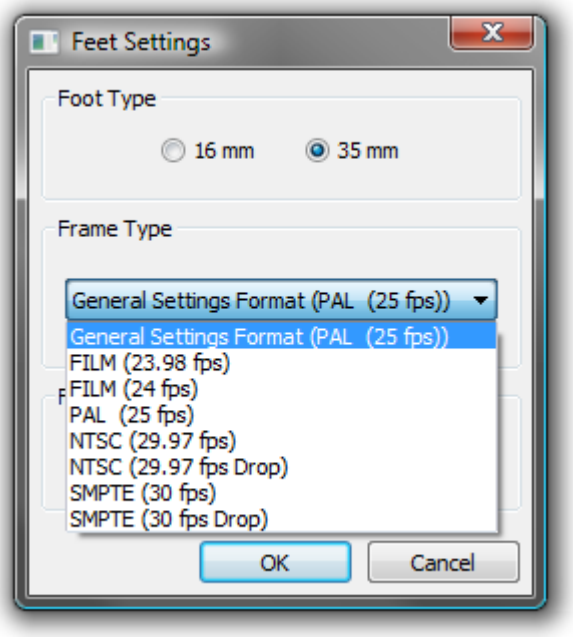
Feet Settings dialog

Foot Type

The radio buttons offer a choice of **16mm** feet (units of 40 frames) and **35mm** feet (units of 16 frames).

Frame Type

The combo box offers a choice of frame rates:

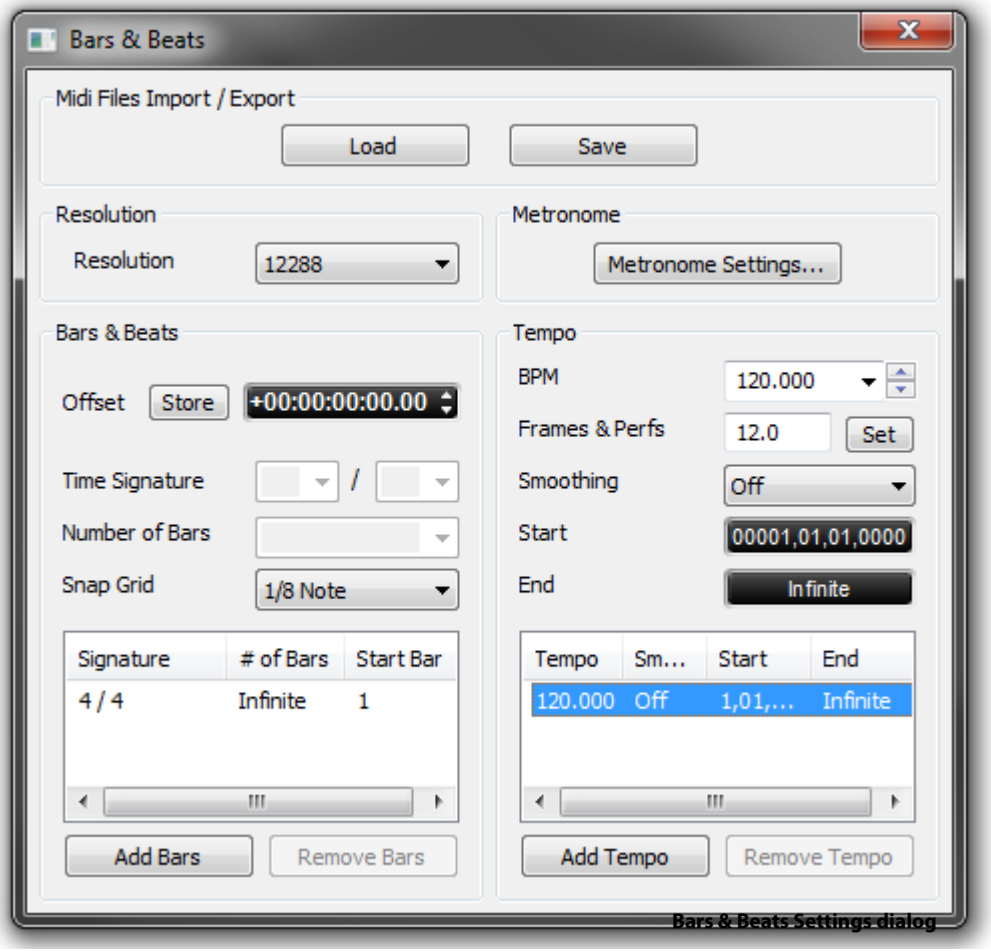


Frame Type combo box

Default is the format selected in **All Settings > Formats & Sync > Frequencies**. You may need one of the others in the context of non-linear editing workflows.

Bars & Beats Scale Ruler

As with the other Scale Rulers clicking in the header area pops up a context menu with show/hide for the Alternate, Feet and Bars & Beats Scale bars plus two extra options, **Bars & Beats Settings** and **Tempo Map**. The **Tempo Map** option shows the current Tempo Map below the **Bars & Beats Scale Bar**.



Bars & Beats Settings dialog

Midi Files Import / Export

Load

Save

Both buttons open a Browser Window to enable navigation to a file to load or a location to save to.

> **Note:** Currently, when MIDI files of type 2 are imported, only the Track 1 Tempo Map and Time Signature is imported.

Resolution

Sets the clock resolution in Pulses Per Quarter Note, **PPQ**. The combo box offers a choice of values between 192 and 49152

Bars & Beats

Offset — Offsets the **Bars & Beats** scale start from the main Time Scale. Value can be typed in the TimeCode register and or nudged up or down with the increment, decrement buttons.

Store — Offsets the **Bars & Beats** scale start to the current Playhead Cursor position.

> **Note:** Offsets can be negative or positive.

Time Signature and Bars

The bottom left panel displays a list of blocks of bars in the order they appear in the 'song'. The following settings apply to the currently selected entry in the list.

Time Signature	Use the combo boxes to set the Time Signature
Number of Bars	Type a value or choose **Infinite** from the combo box dropdown list.
Snap Grid	Combo box offers a choice of **Off** or values between **Note** and **1/64 Note .**

Add Bars

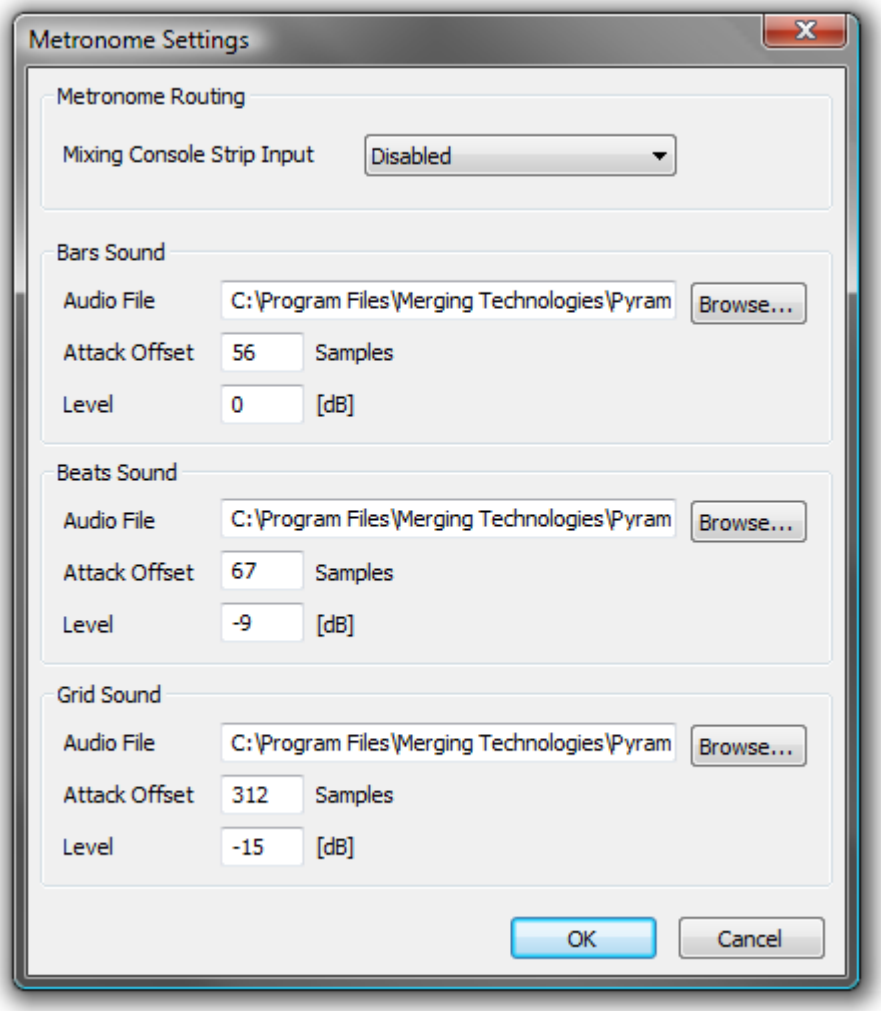
Click to add a new block of bars to the list above.

Remove Bars

Deletes the selected entry from the list above.

Metronome

Metronome Settings...



Metronome Settings dialog

Tempo

The bottom right panel displays a list of currently defined Tempos in the order they appear in the 'song'. The following **BPM**, **Frames & Perfs, Smoothing**, **Start** and **End** fields reflect the values for the highlighted (selected) Tempo.

BPM	Allows you to pick a tempo from the common values in the drop-down list, to increment or decrement in 1BPM steps with the up and down buttons or to directly type a value in the box.

Frames & Perfs	An alternative method of defining a **Tempo** used by film composers. It is based on 24 frames per second, each frame subdivided into 8 perfs, or perforations. Thus a value of 24.0 results in a Tempo of 60BPM. Perfs are entered as decimals. E.g. 12.7. Illegal entries are rounded.
Smoothing	Enables values between **Note** and **1/64 .** to be chosen. (or **OFF**)
Start	The starting point for the Tempo can be entered by typing.
End	The end point for the Tempo can be entered by typing.

The Information pane shows all currently defined Tempos.

Add Tempo

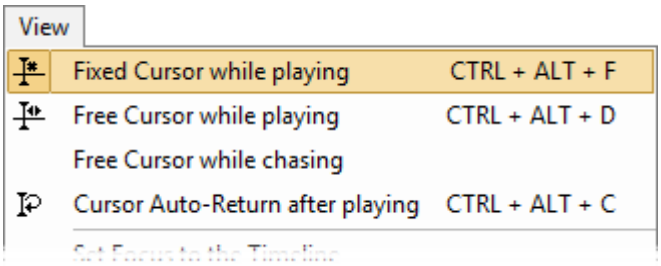
Adds a new Tempo

Remove Tempo

Removes the highlighted (selected Tempo) from the list.

Playhead Cursor Options

Four **Playhead Cursor** options will be found at the top of the **View** menu:



View menu (part)

Local Options

Fixed or Moving Playhead Cursor

The **Playhead Cursor** can be static with the **Timeline** moving (choose: **View > Fixed Cursor while playing)** or the **Playhead Cursor** can move while the **Timeline** remains static, 'Paging' when the **Playhead Cursor** hits the screen edge. (Choose: **View > Free Cursor while playing**).

> **Note:** In **Fixed Cursor While Playing** mode, if **Play Selection** is invoked then Cursor switches to **Free Cursor** mode until **Stop** is pressed.

Chase Options

When **Free Cursor while chasing** is selected in conjunction with either of the local options the Playhead Cursor and Timeline position can be freely manipulated from the workstation whenever the TimeCode Master machine is in Stop, Rew, FF, Play, Locate, etc. as well as while chasing, but as soon as Pyramix has locked to incoming Time-Code, the cursor will "jump" to current TC. This mode is useful for Cinema mixing since it allows the Sound Editor to make good use of idle moments to perform quick edits and adjustments, anywhere in the Timeline and regard-less of current TC position. This used to be the default behavior.

When **Free Cursor while chasing** is **NOT** selected, the Cursor will always be locked to TimeCode when Pyramix is set to chase, whether in Stop, Rew, FF, Play, Locate, etc. as well as while chasing.This mode is desirable for TV Post, where the Pyramix Playhead cursor and Timeline display should always reflect the current TC position.

Auto Return

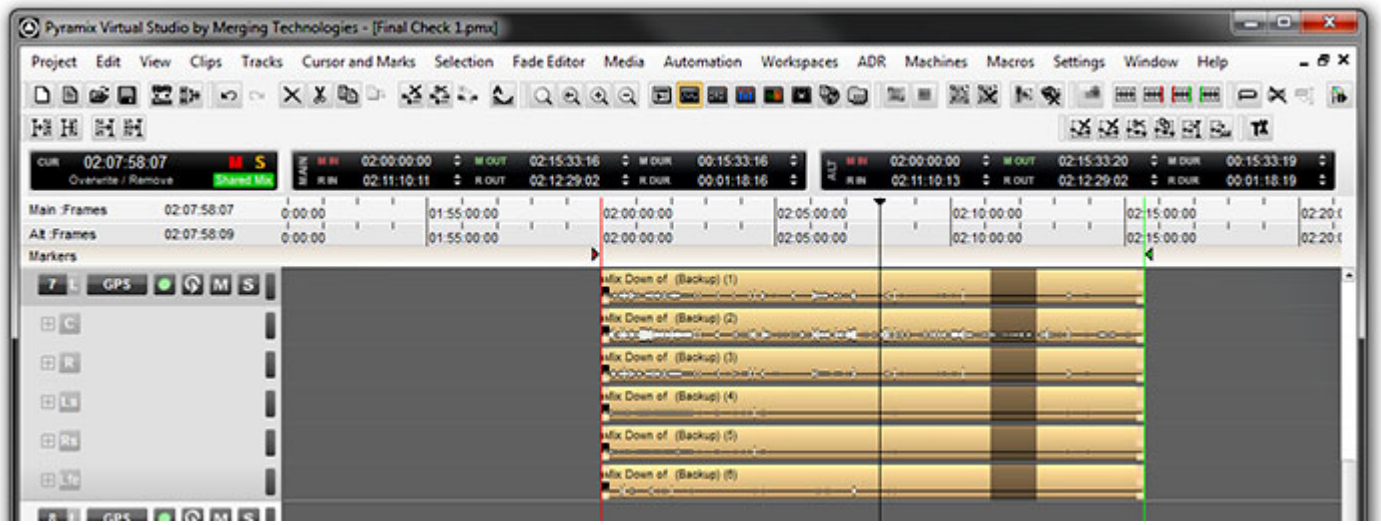
Cursor Auto-Return after playing. When this is selected with either of the local options, the **Playhead Cursor** will return to the point at which **Play** began when **Stop** is selected.

Playhead Position

When **View > Fixed Cursor while playing** is selected, the Playhead position can be set in **Settings > All Settings > Application > Playback/Record** in the **Fixed Cursor Settings** section. The **Place of Cursor in Screen** combo box offers a range of choices between 1/10th and 1/2 of Screen.

Cursor & Timescale Ruler Toolbars

Above the **Timescale Ruler(s)** and below the **Project Editing Panel Toolbar(s)** are the **Timescale Toolbars** and **Cursor Toolbar**. When several Timescale Ruler Toolbars are displayed together each Toolbar will wrap into two rows as shown here:



Timescale Ruler Toolbars

Each Toolbar contains a number of Icons and TimeCode register boxes with increment / decrement **up** and **down** arrow buttons. The Cursor and Main Marker/Region Timescale Toolbars are associated with the main Timescale Ruler and Marker Tray. Other Timescale Toolbars appear by default when the Alternate Timescale, Footage or Bars & Beats rulers are visible. Any or all of these Toolbars can be Hidden/Shown using **View > Scales / Toolbars** and toggling individual Toolbars or **Hide All Toolbars**.

Increment / Decrement UP & DOWN Arrow Buttons

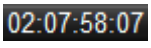
The **+** (plus) and **-** (minus) buttons to the right of the TimeCode registers increment or decrement by one unit per click of the smallest unit in the current register. E.g. Frames, Samples etc.

Modifiers

Click	**Frames**
Alt + Click	**Subframes**
Ctrl + Click	**Seconds**
Shift + Click	**Minutes**
Ctrl + Shift + Click	**Hours**
Ctrl + Alt	**Current Nudge Value**

Cursor Toolbar

Click here to locate to the current Playhead Cursor position with the Playhead Cursor centered in the Timeline.



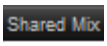
Current Cursor position register. Click to edit.

Global Mute indicator. When unlit no Tracks are muted.

Global Mute indicator. When lit one or more Tracks are muted. Click on the lit indicator to cancel all active Mutes.

Global Solo indicator. When unlit no Tracks are Soloed.

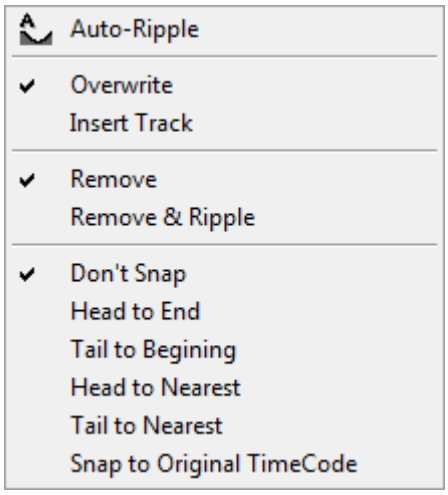
Global Solo indicator. When lit one or more Tracks is Soloed. Click on the lit indicator to cancel all active Solos.



When inactive, as here, the current Project's mixer is not shared with subsequently opened Projects.

When active, the current Project Mixer will be shared with Projects opened or created subsequently. **Please see: Mixer Sharing on page 293**

This area indicates the current Edit Mode. Clicking on it pops-up a menu:



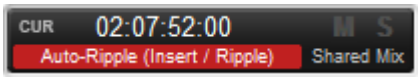
Timescale Ruler Toolbars

This shows the options selected currently with ticks. Click on menu entries to change the options.

Auto-Ripple	Toggles **Auto-Ripple** On or Off
Overwrite	When active Pasting a Cue(s) will overwrite any Cue(s) present on the target Track(s) for the duration of the pasted Cue(s).
Insert Track	When active Pasting a Cue(s) will split an existing Cue or Cues present at the Insert point to accommodate the Pasted Cue(s).
Remove	When active deleting a Cue or Selected Region leaves blank space. No subsequent Cues are moved.
Remove & Ripple	When active, deleting a Cue or Selected Region results in all subsequent Cues on the same Track(s) being moved forward by the same time as the time deleted.
Don't Snap	When active, moving a Selected Cue or Range simply moves it at will.
Head to End	When active, moving a Selected Cue or Range results in its beginning snapping to the end of the last Cue on the Track(s)
Tail to Beginning	When active, moving a Selected Cue or Range results in its end snapping to the beginning of the first Cue on the Track(s)

Head to Nearest	When active, moving a Selected Cue or Range results in its beginning snapping to the nearest Cue on the Track(s) or the Playhead Cursor or In/Out Marker.
Tail to Nearest	When active, moving a Selected Cue or Range results in its end snapping to the nearest Cue on the Track(s) or the Playhead Cursor or In/Out Marker.
Snap to Original TimeCode	When active, moving a Selected Cue results in it snapping to the Original Time-Code as stamped in the file.

Note: Whenever a mode is selected which can affect other Cues, e.g. **Ripple** then the label displayed in the Toolbar turns red.



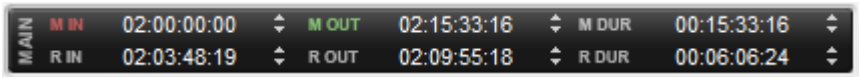
Other Timescale Ruler Toolbars

In all of the following Toolbars:

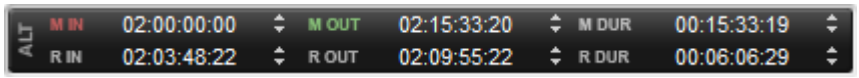
M IN	Centers the Timeline on the **In** Marker.
M Out	Centers the Timeline on the **Out** marker.
M Dur	Zooms the Timeline to show the entire area between the **In** and **Out** Markers
R In	Centers the Timeline on the beginning of the current Selection or **Range**.
R Out	Centers the Timeline on the end of the current Selection or **Range**.
R Dur	Zooms the Timeline to show the entire area between the beginning and end of the current **Range** or Selection.

When values are typed into the **M Dur** or **R Dur** registers, the **In** value remains fixed while the **Out** is adjusted.

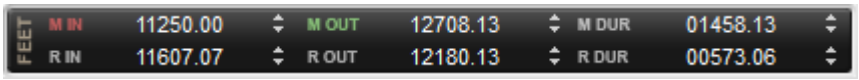
Main (Markers and Selected Range) Toolbar



Alternate TimeCode Ruler Toolbar



Film Feet Ruler Toolbar



Bars & Beats Ruler Toolbar

M IN	Centers the Timeline on the **In** Marker.
M Out	Centers the Timeline on the **Out** marker.
M Dur	Zooms the Timeline to show the entire area between the **In** and **Out** Markers
R In	Centers the Timeline on the beginning of the current Selection or **Range**.
R Out	Centers the Timeline on the end of the current Selection or **Range**.
R Dur	Zooms the Timeline to show the entire area between the beginning and end of the current **Range** or Selection.

When values are typed into the **M Dur** or **R Dur** registers, the **In** value remains fixed while the **Out** is adjusted.

Start	The **Start** register enables an Offset to be entered for the first Bar

Metro	Clicking on **Metro** opens the **Metronome Settings** dialog. Clicking on the label to the right toggles through **On**, **Pre-Roll** only and **Off**.
Volume	Below **Metro** the volume slider sets the metronome click level.
BPM	Clicking **BPM** enables an alternative value to be entered.The **BPM** counter displays and allows modification of the tempo map section where the Cursor is currently.
SG	Toggles Time Signature
4/4	Click on the Time Signature displayed currently to enter and alternative.
PRL	Click on the number adjacent to **PRL** to enter a Pre-Roll value.
CLK IN	When **Click In** is set (to something other than 1, 1, 1) the Pre-Roll pre-counts to Click In Bar/Beat, otherwise pre-counts to the first Bar.
Lock (chain) Symbol	Toggles between **blank** (off), **MRK** (**In** Marker) and **RGN** (**Region)** Click In/Out are then linked to the Markers or selected Region automatically.
CLK OUT	When **Click Out** is set (to something other than 1, 1, 1) the PostRoll counts ???

Markers

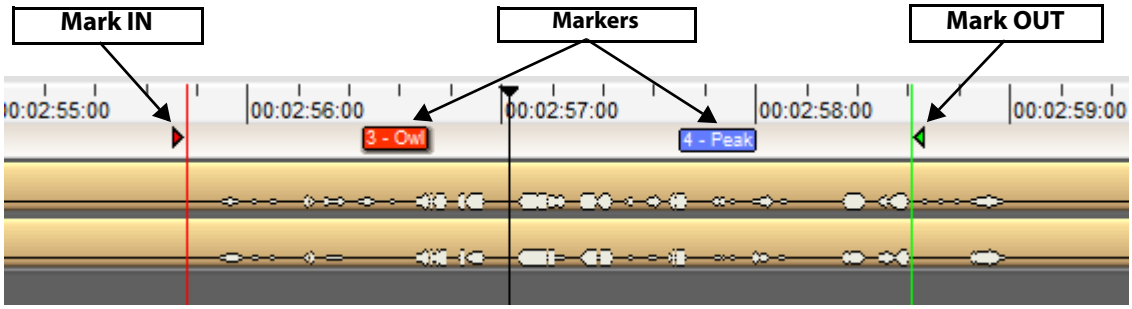
Pyramix has several types of Marker. For information about Track Group Markers please see: **Track Group Markers on page 133**. For Media Markers, **please see: Media Markers on page 134** and for CD and SACD Markers **please see: CD Markers on page 628** and the SACD Production Guide.

The **Cursor & Markers** and **Markers** menus, Toolbar and keyboard shortcuts all offer methods of placing Markers and using them for locating etc. The menu entries should be self explanatory. **Please see also : Cursor & Marks on page 724** and **Markers on page 727**

Up to 48 Markers can be attached to shortcut keys and/or mapped to a hardware controller.

Project Markers

Project Markers are shown in a **Markers Tray** just above the TimeLine Tracks display.



Markers

Placing Project Markers

Markers are placed at the current Playhead Cursor position in the Timeline by either [**NUM9**], **Markers > Add marker to Cursor** or in the **Markers** Tab window.

Renaming or Deleting Markers in the Tray

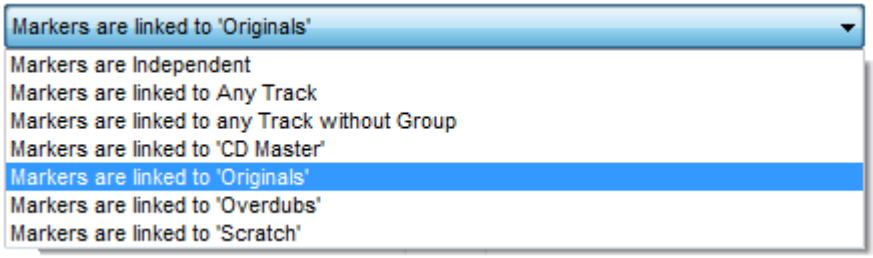
Right-click a Marker in the Tray to pop a context menu with choice of **Rename Marker** or **Delete Marker**.

GoTo Marker

Right or Left-click in the Marker Tray above the Track Header to pop up a list of all Markers in the current Project. Click on a Marker in the list to locate the Playback Head cursor to it.

Markers Linking

The **Markers Linking** drop-down list menu is at the top of the **Markers Tab Window**.



Markers Linking drop-down list menu

The selection made here determines the behavior of markers when Tracks are edited.

Markers Independent (markers are locked to the scale)

Linked to Any Track (markers follow any Track operation)

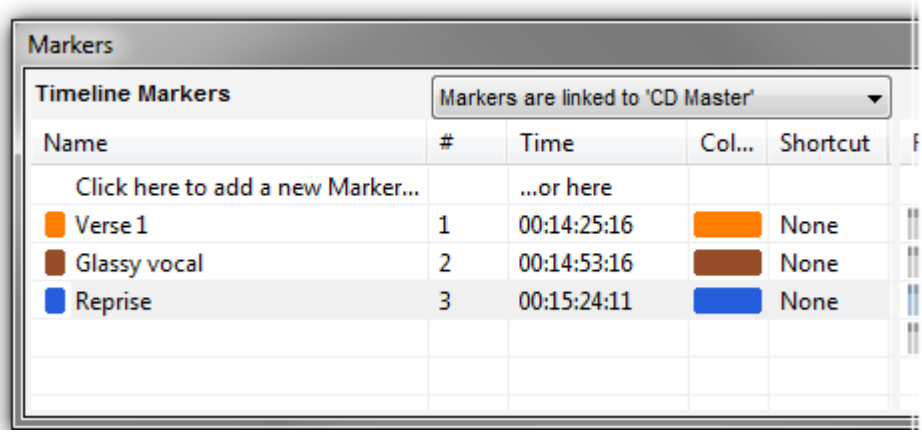
Linked to Tracks without Group (markers follow any Track that is not a member of a group)

Linked to 'Effects', 'Music', 'Foley' etc. (Markers follow any Track which is a member of theTrack G roup selected here.)

Editing Project Markers

Project Markers can be edited the following ways:

- Click and drag to move Markers directly in the timeline Marker Tray..
- With the mouse over the Marker in the tray right-click pops up a context menu with **Rename Marker** and **Delete Marker** options.
- In the **Timeline Markers** section of the **Markers** Tab window.



Timeline Markers section of Markers tab

See: Markers Tab Window on page 139

Track Group Markers

Filter By Track Groups

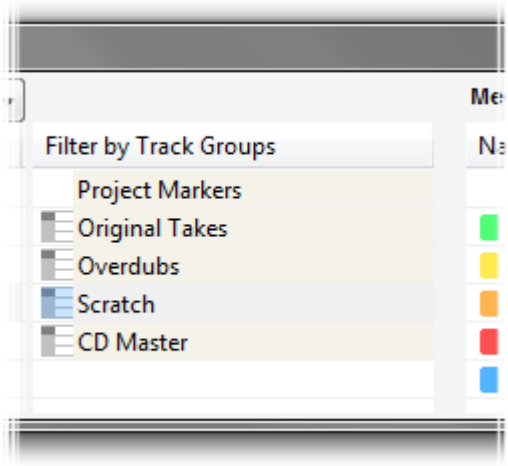
Separate lists of Markers can be created for the Project as a whole and for individual Track Groups.

The **Filter By Track Groups** column shows **Project Markers** and all the **Track Groups** added to the Project. Timeline Markers can be created in a specific Track Group.

For example:

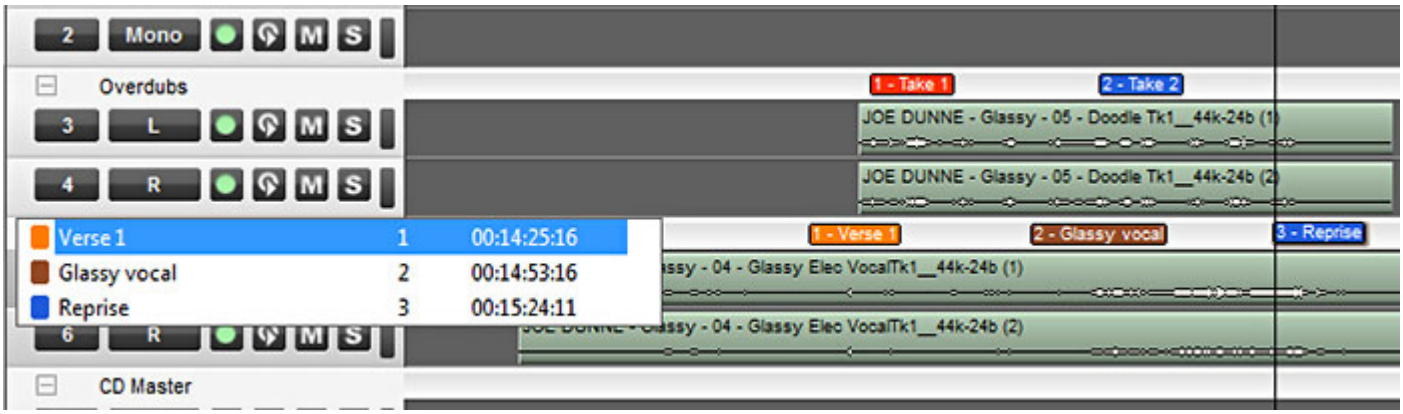
1. Create a Project with Tracks.
2. Create two or more Track Groups in the **Track Groups** Tab window.
3. Add Tracks to each of the Track Groups.
4. Turn **Free Markers** on (**Yes)** for each Track Group.
5. Add Markers with Group 1 selected in the Timeline (Either by selecting one of the Tracks belonging to the Track Group in the Timeline or by clicking on the Track Group where it is listed under **Filter By Track Groups** in the Markers Tab window.)

6. Repeat step **5** for the other Track Groups.



Filter by Track Groups section of Markers tab

Now you can use the Filter By Track Group entries to filter the Markers displayed in the Markers Tab window. Clicking on Project Markers shows the list of Markers belonging to the Project without any of the Markers belonging to Track Groups. Clicking on any of the Track Groups shows only the Markers belonging to that Track Group.



Track Group Markers in the Timeline

Markers created in Track Groups are shown in the Group separator tray above the Track Group in the Timeline. Clicking on the Track Group Name in the Timeline pops up a list of all markers created in the Track group. These function as locators.

Media Markers

Overview

Media Files and Libraries Master Clips can store Markers. These are called **Media Markers** to differentiate them from the Timeline Project and Track Group Markers. Media Markers are useful for many purposes, e.g. marking good, bad or indifferent takes within a long continuous recording or marking the peak point of a car or plane pass etc.. They are attached to the Master Clip or to the Media itself.

Characteristics

- Media Markers can be added to any Media File, regardless of format.
- Media Markers are stored in the Media Object or Master Clip in the Media Manager, Libraries and in Projects referencing the Media.
- Multiple Clips referencing the same Media share the same Markers within the same Project or Library.

Note: When recording into the Active Project Media Markers will not be added if any Clip or Clips is/are selected in the Timeline.

Where Media Markers Are Saved

Media Markers are stored in the Media Object or Master Clip in the Media Manager, Libraries and in Projects referencing the Media. When saving a Project with two different versions (with **Project > Save As** for example), the Media Markers within both versions can evolve differently as they are saved in the Projects and/or in different Libraries, but: Media Markers can be saved along with the physical Media File by using the menu item **Markers > Update Media Markers to Files**. A file with the same name as the physical Media File with an **.mmd** extension is saved in the same location as the Media Files which contains all the Markers for this Media.

When adding Markers to a Media being recorded the .mmd file is automatically saved automatically when the recording is stopped.

When mounting a Media file with no reference to any Projects or Libraries, its associated Markers are only available in its associated .mmd file.

Clips in a Project or Master Clips in a Library carry a copy of the Markers and can be edited separately. The original version of the Markers created during recording can be retrieved from the .mmd file. This .mmd file can be updated after modification of the Markers with the menu **Markers > Update Media Markers to Files**, as explained above.

Contents

Media Markers contain:

- A Number (not editable) The first Media Marker in each recording starts numbering at **1**.
- A TimeCode (the offset from the beginning of the Media).
- A Name.
- A Comment.
- A Rating (a choice of: **Excellent**, **Good**, **OK**, **Bad**, **Ridiculous** or **Custom**).

Display

Media Markers in the Timeline

Media Markers are displayed:

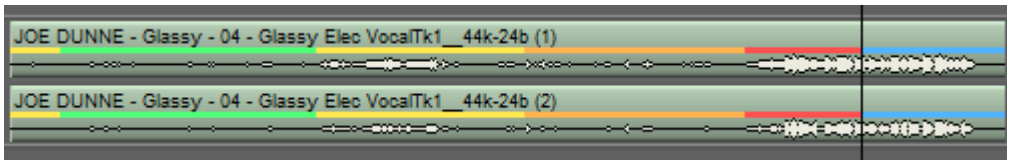
- In the Media Manager or Library Trimmer (not editable here)
- In the Timeline in Clips referencing a Media containing Markers (editable in this case) but only when the Clip(s) is(are) selected and the menu item **Markers > Display Media Markers** is active.

The Media Markers have a color based on their Rating:

- Excellent = Green
- Good = Blue
- OK = Yellow
- Bad = Orange
- Ridiculous = Red
- Bad Take = Gray
- Custom = Use definable color and name

- Markers outside Clip boundaries (trimmed Clips) are displayed only if the menu item **View > Show Media** is enabled.

A Rating Line is displayed on Clips containing Media Markers, even if the Clips are not selected.



Media Markers - Rating Line

- This enables sections of a recording with a good or bad rating to be identified easily.
- The Rating Line can be shown/hidden using the menu item **Markers > Display Media Markers Rating Line**

Note: When the Rating Line and Media Markers are hidden then **Nudge Cursor to Next/Previous Edit** and **Nudge Clip to Next/Previous Edit** ignore Media Markers.

Tip! Adding Media Markers in conjunction with the Rating Line

A nice feature is the possibility of mapping, for example, the **Add Media Marker with Rating Excellent** function to a Key of your choice, and then mapping the **Add Media Marker with Rating OK** to the same Key but on **Key Up**. Do the same with **Add Media Marker with Rating Good**, **Add Media Marker with Rating Bad** and **Add Media Marker with Rating Ridiculous** to three other Keys.

Pressing any of these keys will actually "color" your recording e.g. green (Excellent) as long as the key is pressed and resume "normal" yellow (OK) when released. This allows for marking regions of the recording that will be recognised easily during editing when the Rating Line is displayed.

Rate Selected Region

This allows a rating to be applied to a selected region using the menu item **Markers > Rate Region**.

When the command is activated a Media Marker with the chosen rating is placed at the beginning of the region selected. A second Media Marker is placed at the end of the selected region with the rating **OK** or whatever the former rating at that location was. E.g. an area is selected in a Clip rated **Good**. Under **Markers > Rate Region Excellent** is selected. A Media Marker for **Excellent** is placed at the beginning of the selected region and a Meida Marker for **Good** is placed at the end.

Note: Any pre-existing Media Markers within the selected region are deleted.

Rate Playback / Record Zone

This enables a Region / Zone in a selected Clip to be rated while it is being recorded or played back.

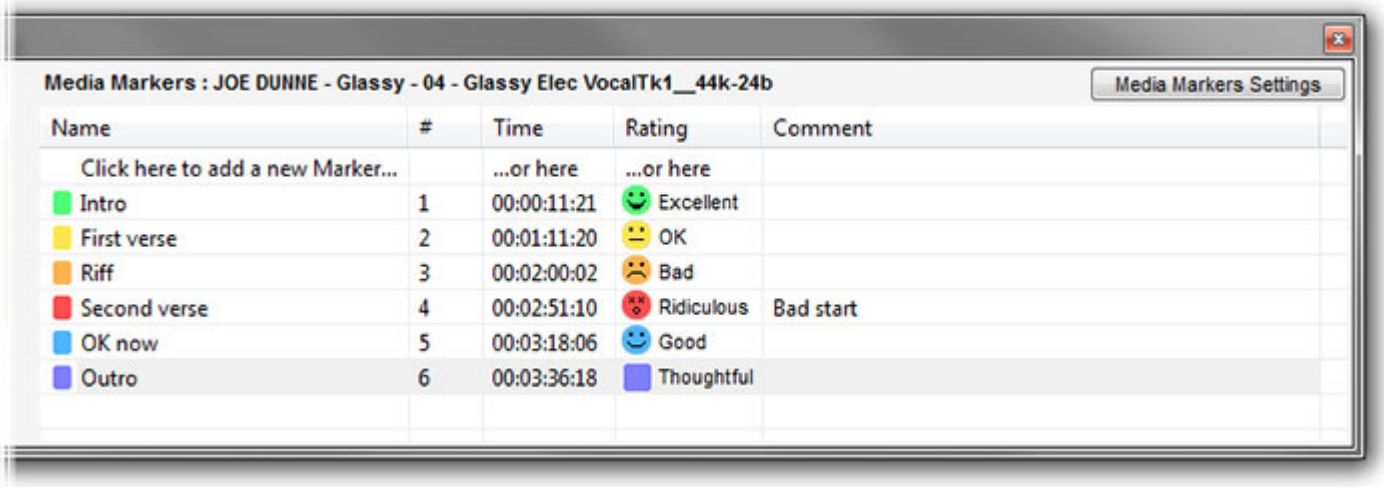
Note: This only works with short-cut keys while recoring or playing back. The corresponding rating will be applied while the shortcut key is depressed and will cease to be applied when it is released. Ratings are bound to Keys in the Keyboard Shortcut Editor. **Please see: Customizing Keyboard Shortcuts on page 538**

Editing Media Markers

Media Markers can be edited the following ways:

- Grab and move Media Markers directly on Clips.
- Add Markers to the selected Clip with the menu item **Markers > Add Media Marker to Cursor**
- Add a Rating based Media Marker with the menu **Markers > Add Media Markers Special > Add Media Marker with Rating XXX**
- Delete a Media Marker with the menu item **Markers > Delete Selected Media Marker**

In the Marker Tab:

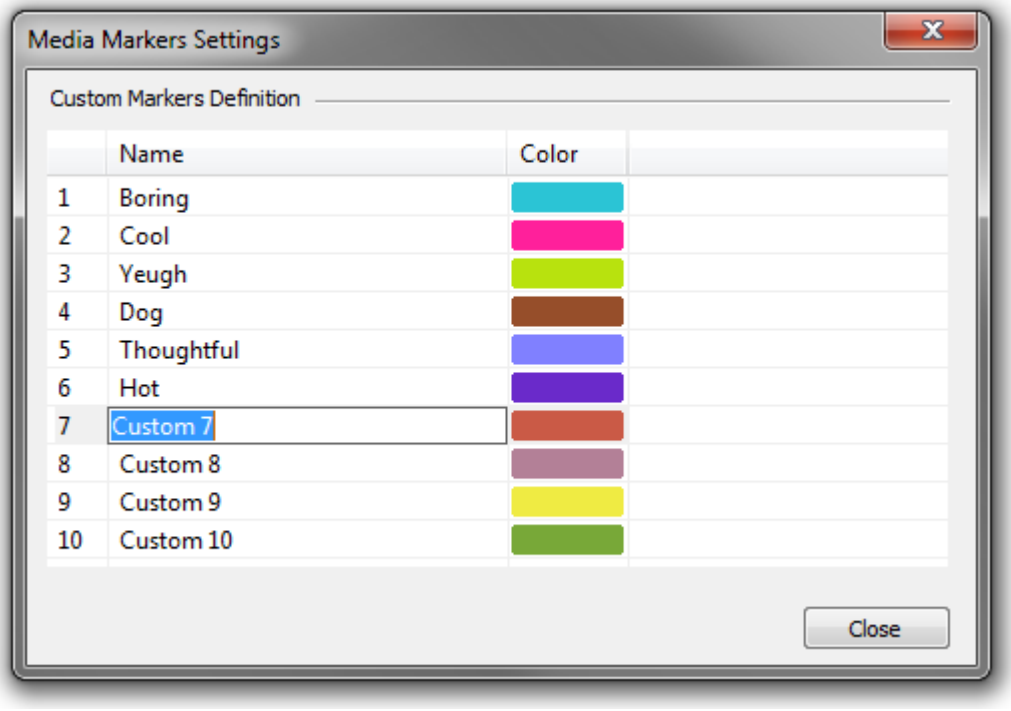


Media Markers section of Markers tab

- The selected Clip name is shown at the top.
- The Media Marker section displays the list of Media Markers in the Clip selected currently.
- Media Markers can be added, deleted and modified here like standard Markers.
- To change a **Rating** click the marker you wish to change in the **Rating** column. A list drops-down with the standard ratings and the ten custom ratings. (See immediately below.)

Media Markers Settings - Custom Markers

Clicking on the **Media Markers Settings** button opens the **Media Markers Settings** dialog:



By default the 10 Custom Markers are labelled **Custom 1** to **Custom 10**. Click in the field and type to rename the Marker. Clicking on the Color pops-up a color picker where any color desired can be selected.

Note: Custom Media Markers have no effect on the Rating Line when inserted between standard Media Markers.

Media Markers - Undo

Undo /Redo operates as normal when Adding, Deleting and Modifying Media Markers of an existing Clip/Media File.

When Adding, Deleting and Modifying Media Markers while recording a Media File:

- In the Timeline: Undo / Redo works as normal while the recording continues. When the recording is stopped nothing that has been done during recording can be undone.
- With Background Recorders whose recordings are being edited in the Timeline in the active Project: **Undo / Redo** works both during recording and after the recording is stopped.
- With Background Recorders whose recordings are NOT being edited in the Timeline of the Active Project (I.e. when using the Take Logger.) There is NO undo for Media markers.

Editing Media Markers During a Recording in the Timeline:

If there is a Recording happening in the Project Timeline (and there are no selected Clips),the Marker Tab displays the Markers for the current Recording.

Media Markers for the current Recording can be added, deleted and modified exactly like for the selected Clips.

Media Markers created during a Recording are saved automatically in an **.mmd** file in the same location as the recorded file.

Note: This is not available in Dubbing Mode.

Editing Media Markers during a Background Recording:

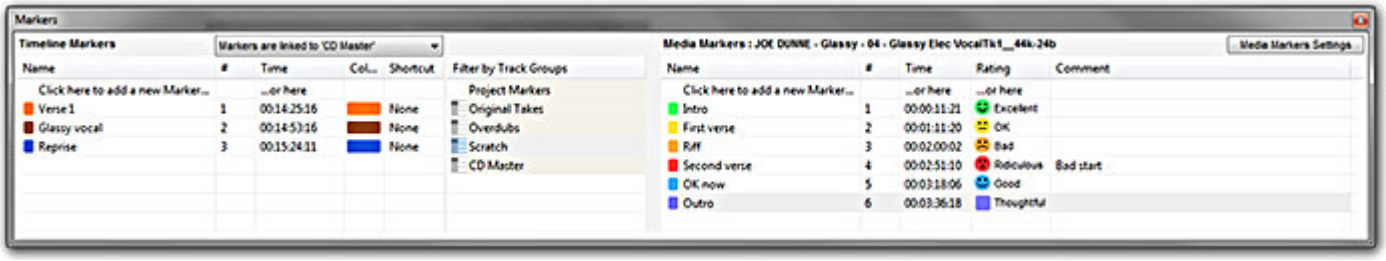
Media being recorded with a Background Recorder can be added Media Markers by using the **Edit while Recording** option.

The growing Media in the timeline being recorded by a Background Recorder can have Media Markers added in exactly the same way as any other Media placed in the Timeline.

Media Markers created during a Background Recording are saved automatically in an **.mmd** file in the same location as the recorded file.

Markers Tab Window

Markers can also be added and managed from within the **Markers** Tab Window.



Markers Tab Window

Different lists of Markers can be edited by selecting the desired **Track Group** or the main **Project Markers** list in the **Markers** Tab Window. Markers are numbered in ascending order by their position in time. If a Marker is moved before or after another Marker, the affected markers are automatically re-numbered.

Clicking on the first entry in the **Name** or **Time** Fields **'Click here to add a new Marker... or here'** Adds a new Marker at 00:00:00:00 This value can be edited in the usual way.

Marker colors are user selectable. Clicking in the **Color** field drops down a list box with all the available colors.

Double-clicking on a Marker's Name Field jumps the Playhead Cursor to the Marker.

Double-click with CTRL pressed plays from the marker TimeCode

Double-click with SHIFT pressed plays from the marker TimeCode with the first Preroll. This also applies to CD markers

Right-click to open a menu that enables Markers to be **Cut / Copy / Paste**d between Groups or Projects.

Jog / Shuttle

Shuttle

The transport can be shuttled with audio output at up to 8 times speed.

Jog Wheel Settings

Jog Wheel Mode

Jog Wheel Mode is selected in **Machines > Controllers**.

Jog Wheel Settings

Jog / Scrub parameters are set in **Settings > All Settings > Application > Jog / Chase**.

Auto Jog on move

When checked moving the jog-wheel enters **Jog** mode. When **Auto-Jog** is enabled, all Jog Commands are processed a slightly different way. Pyramix temporarily stops chasing and starts Jogging while sending Goto commands to the External Machine. The audio is therefore perfectly scrubbed and the external machine follows the audio as well as it possibly can. When the user stops Jogging, Pyramix automatically returns to chase mode.

Geared Jogging

When checked the jog wheel "gearing" I.e. the amount you have to turn the wheel for a given amount of cursor movement is related to the current Zoom level.

Jog Speed ceiling

Sets the maximum jog speed from a choice of **1X**, **2X**, **4X** or **8X** play speed

Jog Sensitivity

The value typed in the box (in seconds) determines the number of seconds the transport will move per revolution of an attached physical jog wheel.

Flywheel responsiveness and inertia

Responsive follows the actual movements as sent by the jog wheel. **Smooth** passes the actual movement through a smoothing filter. So, when the slider is set to **Responsive** the **Smoothing Filter** parameters have no effect. For sound to picture work where tight sync to picture is required use a setting biased to **Responsive**. For a more pronounced flywheel effect choose a **Smooth**er setting. The Middle position is a good starting point.

Jog - sensitivity [0.33] second(s) per revolution

Sets the time moved in one revolution of the jog wheel. Type the required value in the box.

Shuttle - sensitivity [2] revolution(s) for nominal speed

Sets the fraction of a revolution or number of revolutions required to maintain nominal speed. E.g. an entry of 0.25 will require a quarter of a turn clockwise to achieve nominal speed.

Navigate - sensitivity [3] revolution(s) to traverse the timeline

Navigate is silent jog mode. Sets the number of revolutions of the jog wheel required to traverse the visible timeline. I.e. the actual speed varies with the zoom setting.

Geared Jog mute when timeline view range is > 00:00:10:00

Audio will be muted when the TimeLine view range exceeds the value in the register.

Fine Jog sensitivity factor [ ]

Sets the fraction of the regular Jog Sensitivity Setting that will be invoked when **Fine Jog** is selected in the **Machines > Controllers** menu.

Mouse Scrubbing Settings

There are two scrub modes, **Analog Tape Mode** and **Repeat Loop Mode**. Check the appropriate box for the required mode. The length of the loop in **Repeat Loop Mode** is related to the base sampling frequency so the loop will be 116mS long at 44.1, 88.2 and 176.4 kHz or 106ms at 48, 96 and 192 kHz.

Analog Tape Mode gives a similar response to 'reel-rocking' on an analogue tape machine.

Jog anyway

When lit, **Jog Mode** is used regardless of how much audio is visible in the **Timeline**

Shuttle when more than 10 [s] is shown in the Timeline

When lit, if there is more than 10 seconds of audio visible in the Timeline scrub will be in **Shuttle Mode**

Repeat Loop Mode continuously repeats a short loop starting at the cursor position.

Vari Speed Audio Quality

High when playing less than of equal to [6] track(s)

Best when playing less than or equal to [2] track(s)

MassCore : the varispeed quality is set automatically according to the current core load.

Native : the playback quality is defined by the playback streams numbers set above.

Fast Speed Settings

F.FWD and REW nominal speed ratio [20]

Type in the box to set the nominal **F.FWD** and **REW** speed. (I.e. a value of **20** means 20 times sync play speed)

Transport Controls

The **Transport Bar** brings together the most commonly used Transport Controls, Chase and Capture Offset buttons, and a Counter / transport status display.

Transport Bar

From left to right, the controls are as follows:

The counter shows the current **Active Machine** position and transport mode.

Counter in **Record** mode.

The **Rewind** button moves the **Active Machine** at an accelerated speed backwards. A second press doubles the speed.

The **Play Selection** button plays the current highlighted selection area when the **Active Machine** is the **Internal Machine** (Pyramix).

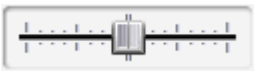
The **Play** button plays the **Active Machine** at normal speed forward. A subsequent press **Pause**s playback and another **Restarts**.

The **Record** button puts the **Active Machine** into **Record** mode.

The **Fast Forward** button moves the **Active Machine** at an accelerated speed forwards. A second press doubles the speed.

The **Stop** button stops playback.

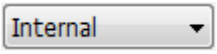
The Loop **Play** toggle button puts the **Active Machine** into a Loop Play Mode, which continuously plays between the current **In** and **Out** points.



In the default, Shuttle, mode the Shuttle Control slider shuttles the Play Head forward (right) or backward (left) at up to 8 X play speed. (Depending on the **Jog Speed Ceiling** Setting in **Settings > Jog Chase**. When **Machines > Controllers > Jog Wheel Mode - Pitch** is selected the slide varies playback speed plus or minus 25% when the transport is in **Play**. When the transport is not in **Play** the slider operates in normal, Shuttle, mode.

When the **Chase** toggle button is active, the **Active Machine** will only play back when valid time code is detected on the chosen TimeCode input port.

The **Controllers Online / Offline** button. (Grey = Online Red = Offline) Toggles external hardware controllers **On** and **Off** line.



The drop-down list selects which machine is currently controlled. Select **Internal** from the list to ensure you are directly controlling the **Pyramix Composition Play Head** and not some external device (I.e.RS-422 Sony 9-pin P2 controlled machine)

The colored buttons indicate the presence of a Background Recorder or recorders. One button will be shown per Background recorder. Clicking on a button switches the Transport Bar controls to the associated Background Recorder. **Please see also: Background Recorders on page 149**

To the right of this is an area where any of the Floating Tool Palettes can be 'Docked'. By default this will have the **Automation** Toolbar docked. **Please see: Global Dynamic Automation Modes on page 429**

Transport Control Panel

Pressing the Transport Control Panel button or **[Alt T]**, or selecting **View > Windows / Tools > Transport** opens a floating **Transport Window** displaying all available machines with individual sets of buttons and status indicators.

Transport Control Panel floating Window

Note: This Window contains a set of transport controls for each machine installed and enabled with the **Internal** Transport (Pyramix) at the top. Below the machines are displays for LTC and VT2 (and MIDI when applicable) TimeCode Sources and at the bottom of the panel there are controls which indicate and control hardware Remote Controllers Online/Offline (red = Offline), Jog-Wheel Mode, and Shuttle.
Clicking on the black name bar toggles the individual area between collapsed and full.

Important! For details of machine installation and settings **Please see: Machine on page 803** and for details of these Transport Controls **Please see: Internal / External Machine panels - Features on page 603**

Zooming and Panning

The **Project Editing Panel** allows two kinds of zoom: horizontal or **Time Scale** zooming; and vertical or **Track Height** zooming.

Time Scale Zoom and Pan

Icons on the **View Toolbar** zoom in or out at the current Play Head location.

The **Fit in window [Alt 1]**icon on the Toolbar automatically adjusts the horizontal scale to fit the selected area inside the Project Editing Panel with a small margin.

The **Previous zoom [Alt 2]** icon restores the horizontal scale to the previous size.

Zoom In [Alt 3]and

Zoom Out [Alt 4]

Holding down the **Alt** key, then selecting an area of the **Composition** by clicking and dragging the mouse to the left or right zooms in horizontally on the selected area.

Similarly, an area of the **Composition** can be selected by clicking and dragging.

The **Scrollbar** beneath the **Tracks** Pans the view of the Timeline horizontally left or right.

Track Height Zoom

1, **2**, **4**, **8**, **16**, and **A** buttons at the bottom left of the **Project Editing Panel** automatically scale the vertical Track size so that 1, 2, 4, 8, 16 or All (as many as possible given the vertical space) **Tracks** fit in the vertical space allocated to the **Project Editing Panel**.

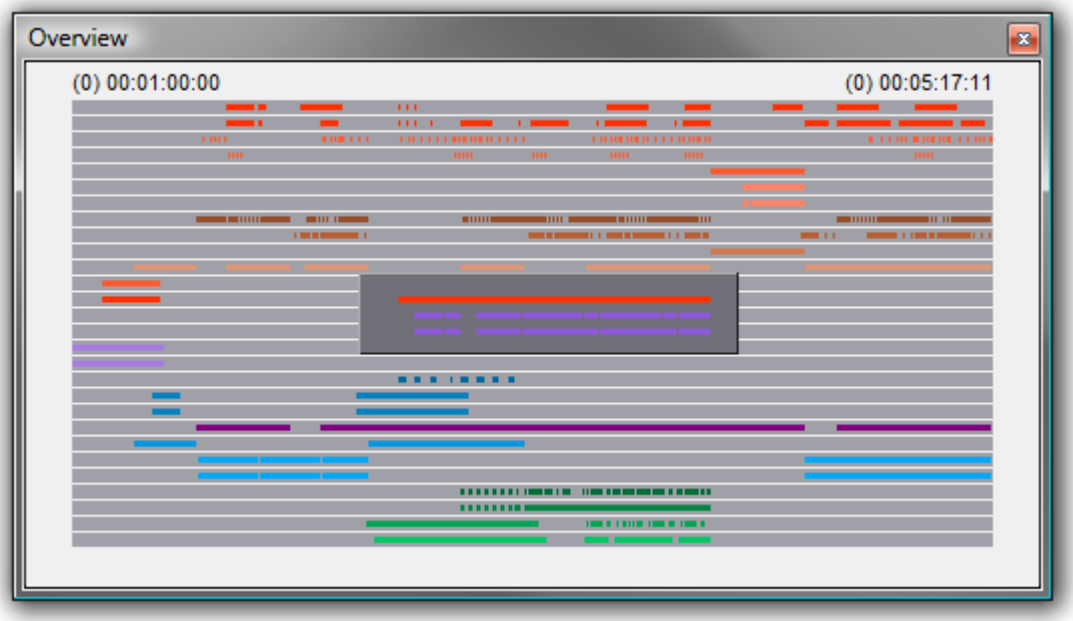
The horizontal Scrollbar adjacent to these buttons enables continuous adjustment of the Track height.

Scroll Wheel

It is well worth while using a three button mouse with a scroll wheel.

Scroll	Scrolls vertically through the Tracks shown in the Project Editing Panel
Scroll + Ctrl	Scrolls the Timeline
Scroll + Alt	Zooms the Timeline timescale
Scroll + Shift	Changes the Track height

The Overview



Overview Tab Window

The Project Management Panel **Overview Tab** offers a powerful and simple means of navigating around the Project Editing Panel.

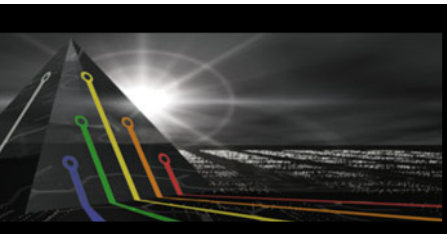
Overview displays a graphic representation of the entire current **Composition**, showing the location of all **Clips**. A shaded gray box indicates the location and zoom range of the part of the **Composition** which is currently displayed in the **Project Editing Panel**. **Clip**s are shown as rectangles in the same color as their background on the Timeline.

Click anywhere in the **Overview** to center the Project Editing Panel display on that point. Click and drag on the shaded gray box to move the section of the Composition shown in the Project Editing Panel without changing the current horizontal zoom. The zoom range of the Project Editing Panel can be adjusted by dragging the edges of the shaded gray box in the **Overview**. An alternative method for adjusting horizontal zoom is to press the **Alt** key while clicking and dragging across the desired range for the zoom, just as you can do directly in the Project Editing Panel itself.

Virtual Transport 2

VT 2 is a built in synchronizer. It synchronizes VCube with Pyramix running on the same machine or on a remote machine connected over the network. **Please see: Virtual Transport 2 on page 813**
VT 2 also provides MIDI Sync capabilities. **Please see: MIDI Sync on page 756**

7 Recording and Acquisition



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Getting Audio into Pyramix Virtual Studio

There are four primary methods of getting audio into Pyramix: You can record audio directly into the Timeline of a Pyramix Editing Project, record audio using a Digitizing Session, use Background Recorders or you can import audio files existing previously.

Please see also: Digitizing Sessions on page 165, **Background Recorders on page 149** and **Importing Audio Files into Pyramix Virtual Studio on page 162**.

Check Sync

Before attempting to record any audio please check Pyramix and the audio source(s) are synchronized as you intend.

MassCore

Verify **PTP sync** (green) under RAVENNA.

Native

Project sampling rate should match ASIO interface sampling rate.

File Format and Disk Limitations

File Size Limitations

By design legacy SD2, WAV or BWF files are limited to a maximum of 2GB due to their 32bit signed addressing (thus 31 available bits) formats, while 32bits unsigned addressing AIF files are limited to 4GB. Please keep this in mind when recording and/or exporting to any of these formats, the 2GB/4GB limit might in fact be quite close, particularly when working with high sample rate multitrack files.

As a comparison, Pyramix, thanks to its own PMF 64bit addressing file format, can generate PMF files of virtually limitless size. This makes it the file type of choice for creating single file, large multitrack projects at high sampling rates.

The WAV file format can now accommodate RIFF64 removing the 2GB limitation. **Please see: WAV and BWF on page 504**

Hard Drive Limitations

A very similar 2GB/4GB* limit can also be encountered the hard way when attempting to write large files, even in PMF format, onto storage units (hard drives, memory cards etc.) formatted using an old 32bit file system such as FAT32 or HFS.

Yet another, higher, limitation also exists with IDE ATA/ATAPI drives. This will show up at around 137GB. This may be caused by part of a system (drivers, controllers and/or old Windows version) only recognizing the 28bit addressing of the original ATA specifications, and not the enhanced 48bits available on newer equipment. This is usually solved by installing fresh and or updated Bios/Drivers/OS.

*The official limit is 4GB, but serious trouble can start at around 2GB.

Pyramix audio file format

Unless there is a good reason for using another file format for recordings we strongly recommend using the default **.PMF** file format. This will give the best performance in a number of key areas. For further information **please see: Optimizing Pyramix on page 697**

Recording Audio into a Pyramix Virtual Studio Project

Start a new Project, or open an existing one. Make certain the **Mixer** sample rate and sync source is set as desired. You will need to configure at least the same number of **Mixer** channels as **Tracks** you wish to record.

Before beginning audio capture, check or select appropriate record settings. Open the **Settings > All Settings > Project** > **Record** page (alternatively use the keyboard short-cut **Ctrl - f** and click the **Record Tab**) There are many settings in this dialog page, but for now you need only be concerned with; **Destination Drive** (**Media File** folder),

Resolution (bit depth or word length) and **Format** (file type). As previously mentioned, unless you have a specific reason for using a different format we recommend using the default **PMF** format.

Note: These settings are completely independent of the settings for **Mix-down** and **Render**.

Record Source Before or After Effects

The record source can be before or after any effects in the Mixer Strip. This can be set globally from the **Gain +-** pop-up menu or individually from the right-click context menu when hovering the mouse pointer over the relevant strip.

Track Record Modes

Each **Track** has a tri-state **Record Ready** toggle button, located to the left of the **Track** itself in the **Track Information and Setup Area**.

Tip: Right clicking on a Track arming button opens the **Settings > Project** page immediately on the **Record** page.

Play

The **Green Dot** in the **Track Header** indicates **Record Safe** mode, the default when **Tracks** are newly created. When in this state, the **Track** cannot be recorded to.

Record Ready (Manual)

Click on the **Green Dot** once to toggle to **Record Ready** mode. This is indicated by the dot turning into the **Red Dot**. The Track will now go into **Record** mode immediately when the **Master Record** button is pressed in the **Transport Strip** or **Transport window**.

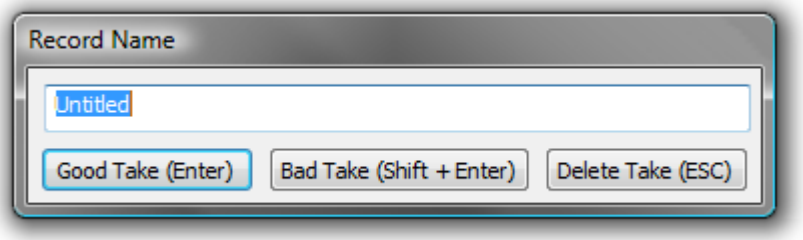
Record Punch In (Auto)

Alt-Click on the **Red Dot** to toggle to **Record Punch In** mode. This is indicated by a **Red Dot flanked by 2 red vertical lines**. In this mode, when the **Master Record** button is pressed in the **Transport Strip** or **Transport window**, the **Track** will stay in **Play** mode until the current **Mark In** point is reached, then the **Track** will go into **Record** mode. It will stay in **Record** mode until the current **Mark Out** point is reached.

After Recording

New recordings will be processed according to the settings made in the **Settings > All Settings > Project > Record** page. **Please see: Record on page 771**

If the **Prompt for name after recording** box is checked the **Record Name** dialog appears when the recording is finished and the transport stopped.



Record Name dialog

Type a name for the recording (or leave the default) then select one of the button options.

AutoPunch Mode

AutoPunch when Chasing TimeCode

If Tracks are set to **Auto-Punch** mode (**Alt+Click** on Rec Ready button) then the system will start recording (after locking to TC) when it reaches the **Mark In** point and punch out when it reaches the **Mark Out** point.

If the Mark In is located before the current location (and the Mark Out far after) then the system will immediately record once locked and stop recording when unlocking.

Recording from a tape with Discontinuous TimeCode

Pyramix AutoPunch Mode makes this a simple operation.

- Place the Mark In at 00:00:00:00 and Mark Out at 23:59:59:24 (default values for a new project)
- Connect LTC Out from the tape machine into Pyramix
- Set Chase mode to **HARD CHASE**
- Rewind the tape
- Press Play on the tape machine

Each time a valid TC is encountered Pyramix will lock and start recording a new Clip, then stop when the timecode stops or jumps. A separate media will be created for each continuous section of timecode on the tape.

SafetyRecord Mode

Pyramix is equipped with a Safe Record mode for the Internal Machine.

Safety Record is turned off by default. It can be activated by selecting **Machines > Internal Machine >Safety Record**. When this mode is active an **S** is superimposed on the Transport Controls Record button.

Once a recording has begun the only way to stop it is to go to the Menu and de-activate **Safety Record** mode. Apart from this no key presses, mouse clicks or external control inputs will stop the recording.

> **Note:** Whilst it is possible to assign a Keyboard Shortcut to the **Safety Record** toggle, for maximum security, it might be wiser not to.

Background Recorders

Pyramix is equipped with a very powerful **Background Recorder**. Up to four Background Recorders may be set up with one or two sets of record locations and parameters per recorder. (Format, Media File Count, Waveform Media destination and edit while recording settings.) Each Recorder has its own Mixer. This is configurable in exactly the same way as the 'normal' Pyramix Mixer. The default mixer has 8 strips for 8 track recording. To record greater track counts reconfigure the mixer with the number and type of strips required.

Typically, Background Recorders will be used in the following ways:

- When recording a concert a backup or backups can be recorded simultaneously.
- In live broadcasting. While recording the recorded file is accessible and can be output for transmission with a few minutes delay for safety reasons.
- Archiving - record multiple sources and manage the process from a single interface without the need to switch between digitizing sessions.
- Multitrack recording without the distractions of the Timeline.
- Pre-buffering enables up to a minute of audio to be recorded *before* the record button is pressed.

Editing While Recording

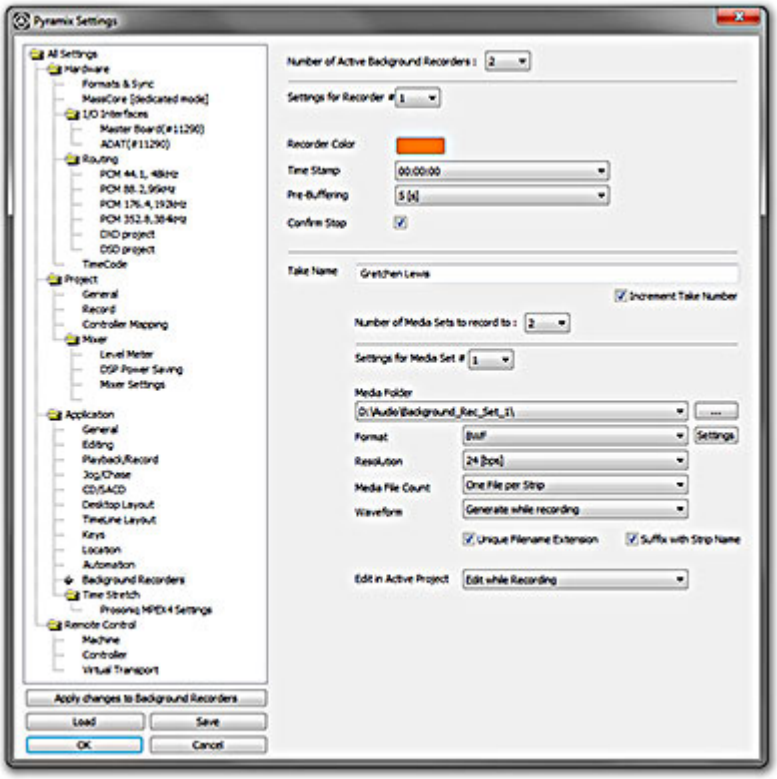
Clips can be edited while they are still recording. This will be useful in the situations above and also for any application where a lot of voice is recorded. E.g. in radio, when recording talking books and anywhere fast turnaround is a priority.

- Record two or more wild voice-overs and edit while still recording.
- Transfer from a linear master tape and begin clean-up and eq while the transfer continues.

Set-up and Operation

Set-up

Background Recorders are set up in the **Settings > All Settings > Application > Background Recorders** page.



Settings > All Settings > Application > Background Recorders

Please click here to see: **Background Recorders on page 799**.

Mixer

Each Background Recorder has its own Mixer. This is fully configurable in exactly the same way as the main Pyramix mixer. Please see: **Mixer on page 206**

> **Note:** The default Mixer is configured with 8 mono strips. For multi-track recording up to the capabilities of the system reconfigure the Mixer accordingly.

Operation

Once one or more Background Recorders have been set up they are operated from the **Transport** window or the Main Pyramix Window Transport Controls or the Take Logger.

Main Pyramix Window Transport Control Bar

Main Window Transport Control Bar

The orange and green buttons show the presence of two Background Recorders. The button color will reflect the color selected in the Background Recorders Settings page.

Background Recorder Indicator buttons

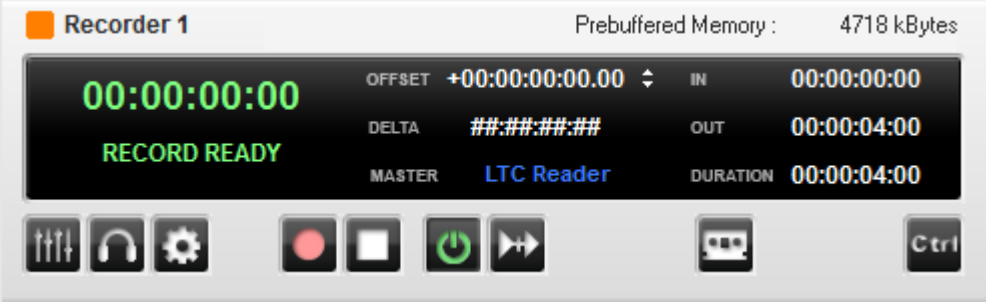
Clicking on the buttons focuses the Transport Controls on the Background Recorder clicked on. This is exactly the same as selecting the Recorder in the adjacent drop-down list.

Transport Window

(Click on the icon to open or **View > Windows / Tools > Transport**.

Transport Window

Background Recorder Transport Control Panel



Background Recorder Transport Control Panel

Clicking on the title bar toggles the panel between collapsed and full. When pre-buffering is active the amount of memory used is shown in the title bar.

Upper Section of Panel

For detailed information on the upper section of the panel please see: **Internal / External Machine panels - Features on page 603**

Controls

Toggles the **Mixer** window associated with the Background Recorder open/closed.

Toggles the **Monitor** source between the Pyramix Timeline Mixer and the Background Recorder Mixer. Lights yellow when Monitor source is the Background Recorder.

Opens Pyramix Settings on the **Background Recorders** page.

Starts Recording.

Stop - One press Stops the recording but leaves the Recorder **Enable**d.

Enables the Recorder.

Enables/disables **Chase**. Lights blue when Chase is enabled.

Opens a floating Media Management Window showing the recordings.

Ctrl Control, lights orange when active. Pressing **Ctrl** or selecting it in the Transport Toolbar combo box routes keyboard shortcuts, Sony 9-Pin commands or controllers to the Background Recorder.

Notes

- Each recorder acts as an independent machine like the Internal or any External Machine.
- Background Recorders are started and stopped manually from the Transport Window.
- When set to **Chase** Background Recorders follow the current Master.

- The Mixer has all the same features as the main Pyramix Mixer and is configured and operated in the same manner.
- The Mixer is saved on quitting the application and when the settings are confirmed by clicking **OK**.
- Tracks can be armed from the Mixer with a button next to the strip number at the bottom of the fader. The button turns red when the associated Track(s) are Rec armed.
- All Mixer inputs are pre-buffered but only the Armed Strips are recorded when Recording commences.
- The Background Recorder Mixer can be monitored in the **Monitoring Section** by clicking on the monitoring button in the transport control panel.
- Background Recorders can also be controlled from the Transport Control Toolbar in the main Pyramix window by selecting them from the drop-down list.

Enable Record

- When the **Enable** button is active or **Play** is active in the Transport Toolbar, the Recorder starts to pre-buffer data. (When pre-buffering is active.)
- The amount of pre-buffered data is visible in the **Duration** counter in the machine display.
- The amount of memory consumed by the pre-buffer is shown in the title bar of the recorder control panel.
- The **In** and **Out** counters show the Timestamps for the recording that WILL be performed when Record is initiated.
- Entering Chase mode enables the recorder and starts to pre-buffer data once the machine is locked to the selected incoming Timecode. The **In** and **Out** registers then refer to the incoming chased timecode.

Recording

- When record is initiated the all pre-buffered data is sent to the media file(s).
- When the recording is Stopped the file(s) of both Media Sets are closed and data is once again pre-buffered immediately. I.e. One click on Stop leaves the Recorder in Enabled mode. A second click on Stop or clicking on the Enable button or disabling Chase ends the buffering.
- The amount of memory used to pre-buffer data and cache the recording is displayed in the header of the Background Recorder machine on the right of its name. An ever increasing amount here shows that the system may stall rapidly.

Edit while Recording

- When recording a new file or files with the Background Recorders, the file(s) being recorded can be edited in a Timeline while the recording continues.
- This is also possible for recordings in the Timeline but only in non-dubbing mode and only when using the MTFF file formats for the recording. (lossless only available as an output format)
- When a recording starts the new media being recorded appears in the media manager immediately, colored the same as the recorder color for easy identification.
- The media can be dragged to the Timeline and edited while it grows in size.
- The clips in the Timeline are also colored with the Recorder color and the end of the edited clips continues to extend automatically as the recording progresses. This only applies when the clips are the last clip on the Track to avoid undesired collisions.
- Multiple recordings coming from different machines can be edited at the same time.
- The media being recorded can be sent for editing automatically when the recording begins. Please see: **Background Recorders on page 799**.

Recording Status

The **Recording Status** window is opened from **View > Windows / Tools > Recording Status** or [**Alt + R**].

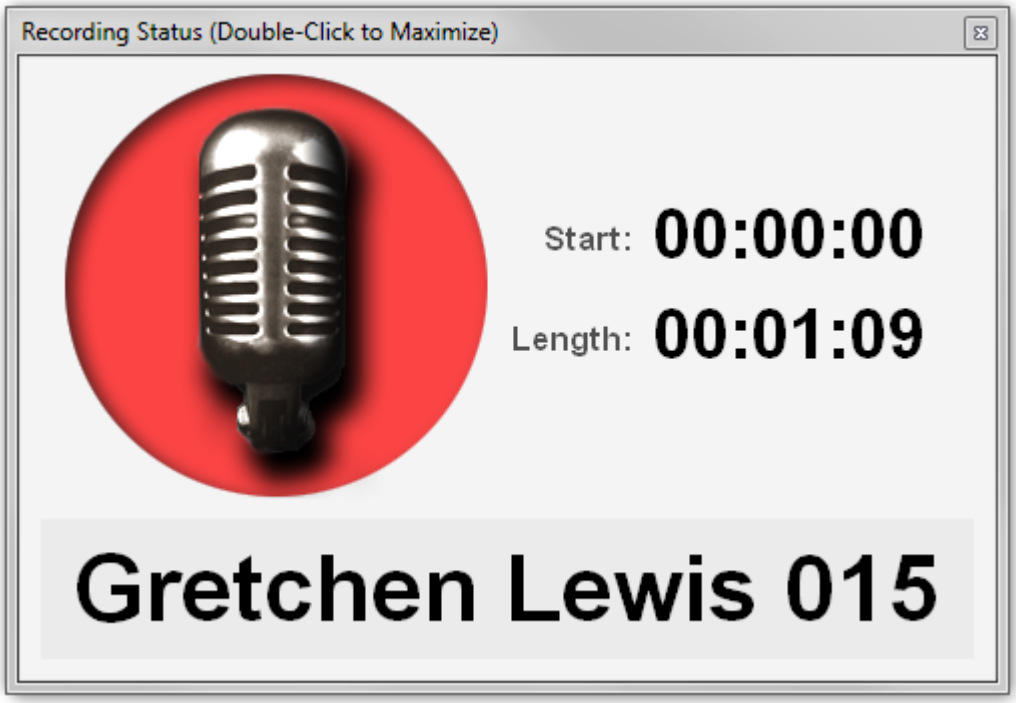
Recording Status Window - Stopped

The window can be maximised to full screen by double-clicking anywhere on the window. A subsequent double-click restores to the original size. The Window can also be resized in the normal Windows manner.

The **Start** and **Stop** fields are blank until recording is initiated.

When specified in the **Record Settings** page, in the **Background Recorders Settings** page or in the **Take Logger** the **Take Name** is shown at the bottom. When no Take Name is specified it will show **Untitled**. The Take name is updated in real time when modified in the **Take Logger**.

When in Record the window changes. The “mic” turns red and the **Start** and **Length** fields are populated:



Recording Status window - Recording

Note: If the current recorder is the **Active Project** and this Project is displaying the **Bars & Beats** ruler then the **Start:** time is displayed as a Bars - Beats counter.

Take Logger

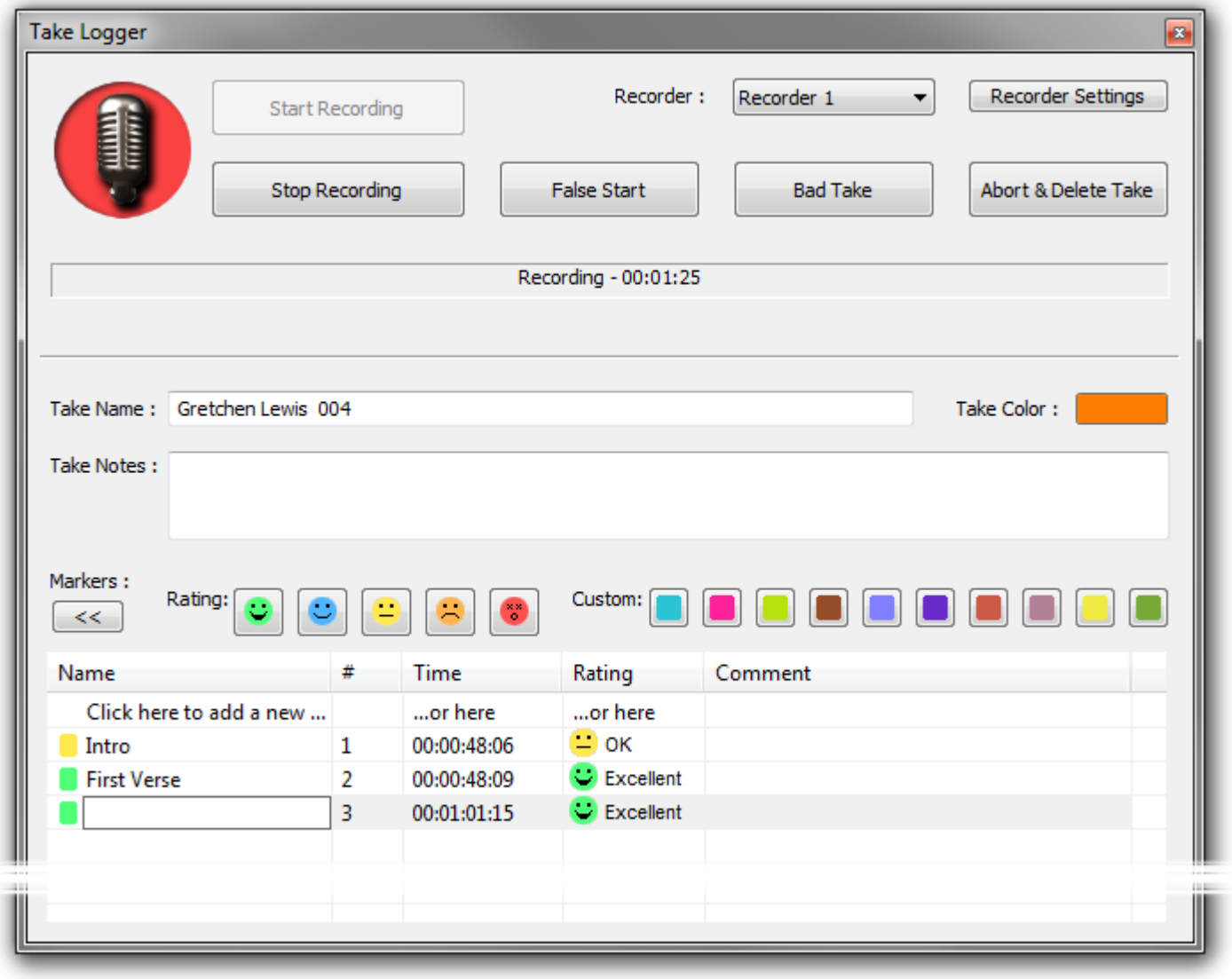
Scope

The **Take Logger** can control any available recorder, the **Active Project** or any **Background Recorder**. The Active Project cannot be in **Dubbing Mode**.

Operation

Note: When the Take Logger has the focus **ALL** regular keyboard shortcuts are disabled. keyboard shortcuts specific to the Take Logger become active. These shortcuts are assigned in the Keyboard Shortcuts Editor. **Please see: Customizing Keyboard Shortcuts on page 538**.

The **Take Logger** window is opened from **View > Windows / Tools > Take Logger**:



Take Logger window

Start Recording

Clicking on the button Starts the recording on the selected recorder.

Stop Recording

Clicking on the button Stops the recording on the selected recorder. If this is a Background Recorder it is left in Enabled mode. I.e. continuously pre-buffering for the length of time specified in Background Recorder Settings. Use **Stop Recording** to end a successful recording. The Take number is incremented automatically.

False Start

Clicking on the button adds a Media marker with the rating **False Start** (colored dark gray). All preceding Media Markers are also changed to dark gray to indicate that this portion of the recording is bad.

Bad Take

Clicking on the button Stops the recording on the selected recorder. A **Bad (xxx)** suffix is added to the file name(s) and to the Take Name. The resultant Clips will be colored in the **Bad Take** color specified in **Settings > All Settings > Application > Timeline Layout : Clips & Waveforms**.

Abort & Delete Take

Clicking on the button Stops the recording on the selected recorder. The recorded file(s) are deleted and the Take number is not incremented.

> **Note:** If the Take Logger is being used to control a Background Recorder, the Media and Clips in the Timeline are NOT deleted.

Recorder :

The field shows the recorder selected currently. Clicking on the field drops down a list of available recorders. This will include the Active Project and any Background Recorders which have been set up.

Recorder Settings

Clicking on the button opens the Settings page for the selected recorder.

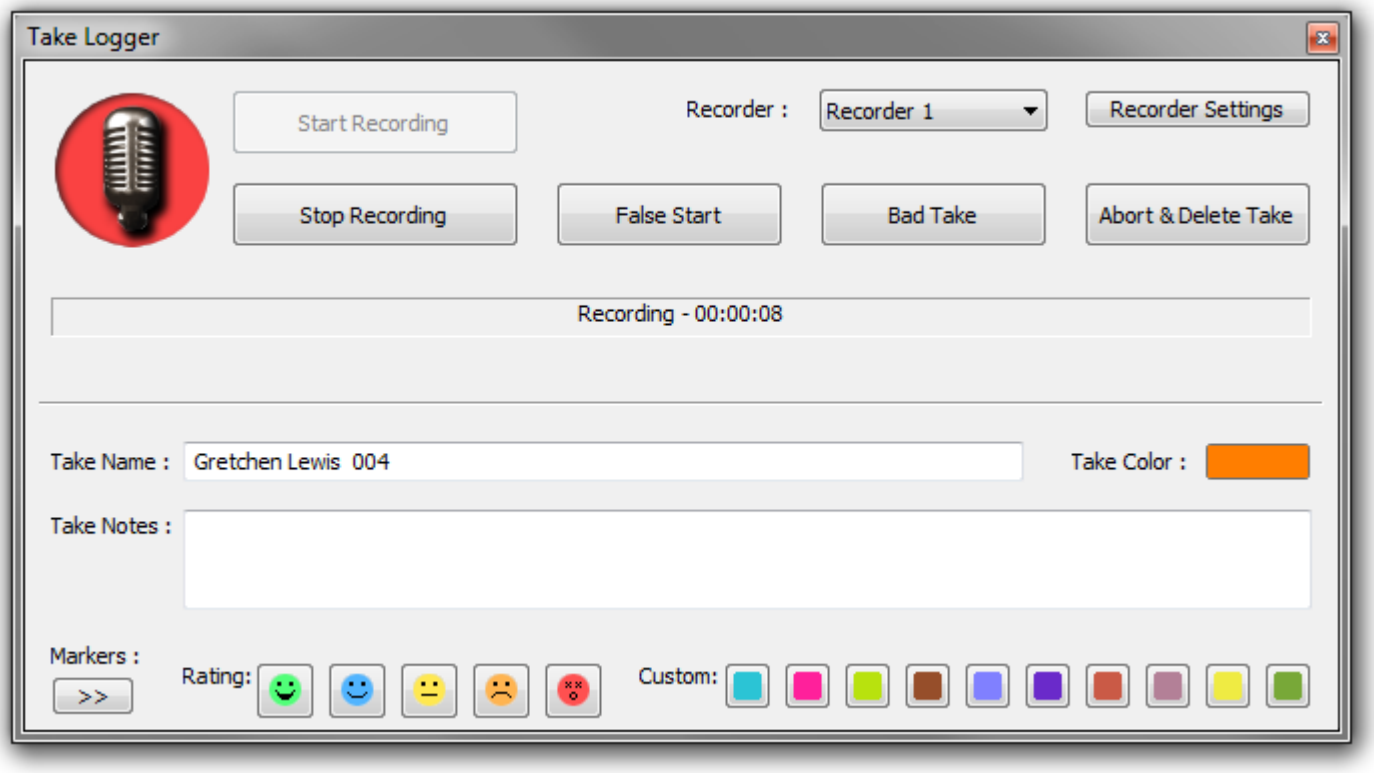
Status Field

The Status Field shows information about the current state of the recorder being controlled by the Take Logger. This will be one of the following:

Stopped

Ready	The selected Recorder is Enabled and ready to record.
Ready - Prebuffering	The selected Recorder is in Enabled mode and is buffering audio to the duration set in Background Recorder Settings.
Recording - 00:12:23	The selected Recorder is recording. The counter shows recording duration.

When recording the background of the mic symbol flashes red:



Take Logger window recording

Take Name :

The **Take Name** will be displayed automatically if specified for the selected Recorder. If no Take Name is specified the field will show **Untitled**. Clicking in the field produces a cursor. Typing a Take Name here is the equivalent of typing it in the Recorder's Settings. A Take Number suffix is appended automatically where this is specified in the Recorder's Settings.

The Take Name is applied to the recorded file name(s), to the recorded file(s) metadata and to the recorded clips shown in the Timeline.

Take Color :

Clicking on the box pops-up a choice of colors and **More Color...** which opens a color picker. The color chosen is used to color the resultant clips in the Timeline.

> **Note: Take Name**, **Take Notes** and **Take Color** can all be changed *during* recording. The information is only stored when the recording is stopped.

Take Notes :

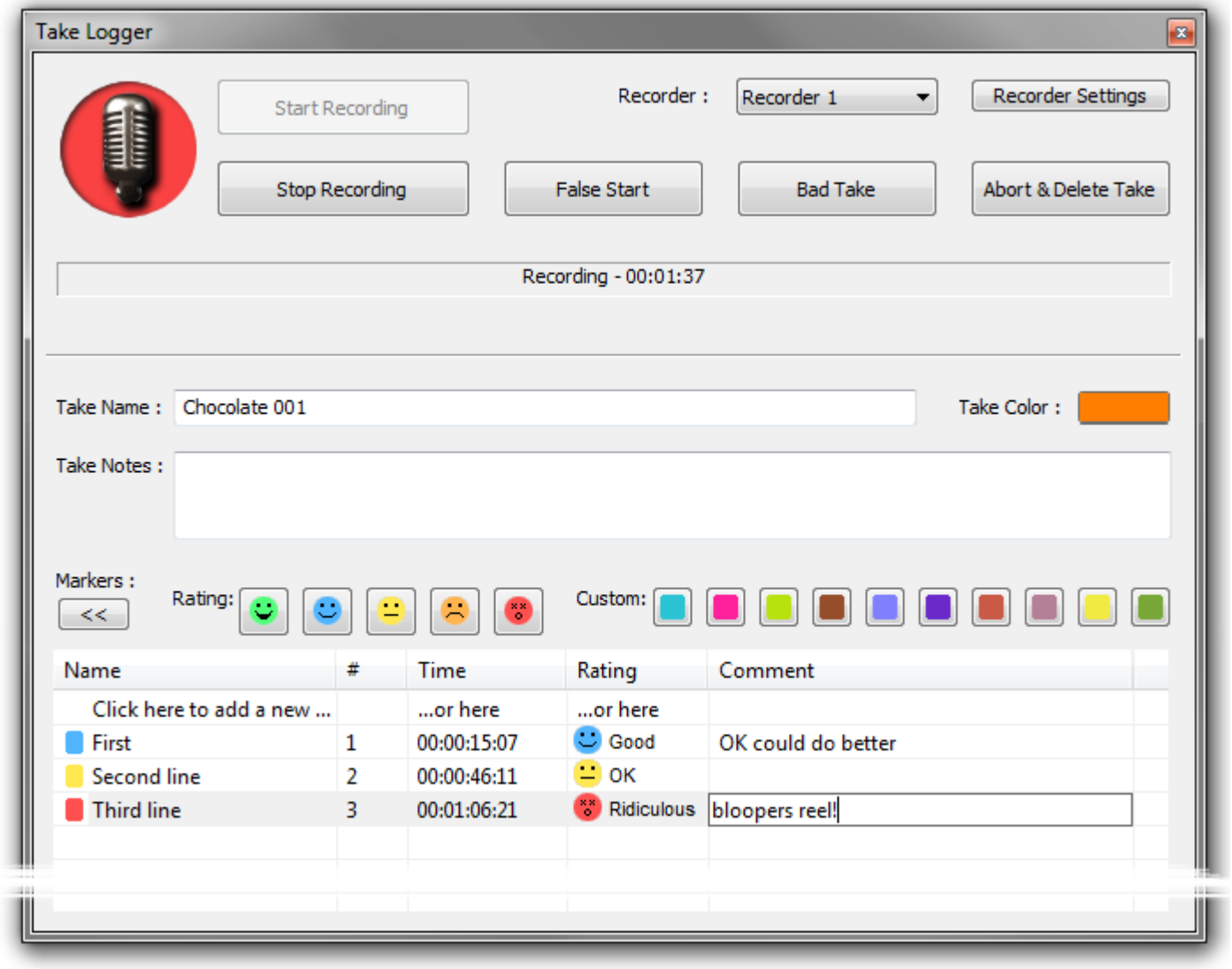
This is a free form text field. Information entered here is shown in the resultant Clips in the Timeline. Take Notes are also saved in the **MMD** (**M**edia **M**eta**D**ata) file in the same location as the recorded Media file(s).

Markers

Media Markers can be added in the Take Logger during recording by clicking on one of the Rating buttons. The Media Marker is created at the elapsed time when the button is pressed.

Lower Section

>> Clicking on the [>>] button expands the Take Logger window to show Media Markers added to the recording in progress. The button changes to [<<] clicking it contracts the window again.



Take Logger window recording

Clicking on the first entry in the **Name**, **Time**, or **Rating** columns also creates a new Media Marker. In this case it is given the rating **Good** by default.

Name	A free text field
#	Media Marker Number. This field is filled in automatically.
Time	Shows the position of the Marker.
Rating	Shows the Rating selected. To change a Rating click in the field to drop-down a list with the five options and select.
Comment	A free text field.

Note: Media Markers shown in the list remain editable whilst the recording continues. When the recording is Stopped the list is removed.

Note: Media Markers are saved in the MMD (Media MetaData) file in the same location as the recorded Media file(s).

Managing Takes

When using the Take Logger the Take Name and Take Notes are also saved in the MMD file in the same location as the recorded Media file(s). This data will populate the Media Manager fields. Take Name in the Name field and Take notes in the Notes field.

You can sort by columns in the Media Manager in the usual way and use the right-click context menu > Locate to select any Clips using that take in the Timeline.

Importing Audio Files into Pyramix Virtual Studio

Different file types with different bit depths (word lengths) can be freely combined in a Composition. Simply **Mount** the **Media Drive** or **Media Folder** and drag-and-drop the required material into the Timeline.

Files with different sample rates can also be freely combined.

> **Note:** If a Clip has a different sample rate to the current project the Clip will play at the 'wrong' speed! E.g. in a 48kHz project a 96kHz Clip will play at half speed. With most material this will be glaringly obvious, however with sound effects, smaller differences in rate (E.g. 44.1kHz - 48kHz) may well go unnoticed.

Mounting Media Folders

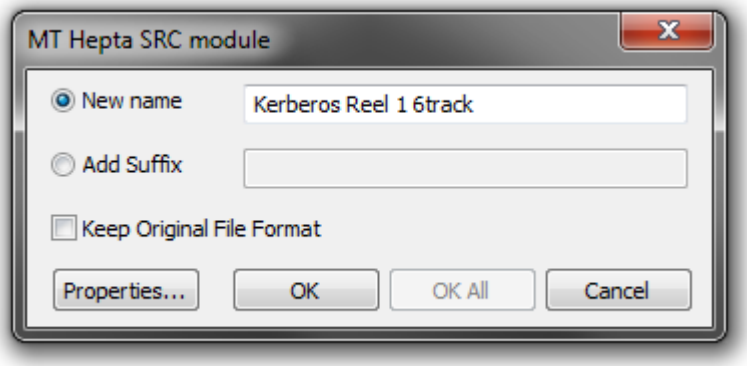
If many audio files already exist in a single Windows directory or folder, it is easy to mount that Windows folder as a Pyramix **Media Folder**. Once mounted, the supported files become available for use in a Project.

1. Start a **New Project** or **Open** an existing one.
2. Click the **Media Management** Tab in the Project Management Panel to open the **Media** window, or double-click to open it as a floating window.
3. Select **Media Folder > Mount Media Folder**. This opens the **Choose a media folder to mount** dialog box.
4. Click the **Browse...** button, then navigate to the Windows directory containing the audio files you wish to import.
5. Click the **OK** button to mount that Windows directory as a **Media Folder**. All supported audio file types will be seen by Pyramix, and be available for use in the Project. A check in the **Recursive** box means Pyramix will look in sub-directories of the chosen folder as well as the root. A check in the **Permanent mount** box means Pyramix will attempt to mount the folder whenever the application is launched. I.e. make it available to all **Projects**.

Sample Rate Conversion

Where the sampling rate of a **Media File** is different to the current **Project**, Pyramix offers a simple means of converting the **Media File**'s sample rate at very high quality. Using the Merging Technologies **HeptaCon** Sample Rate Converter.

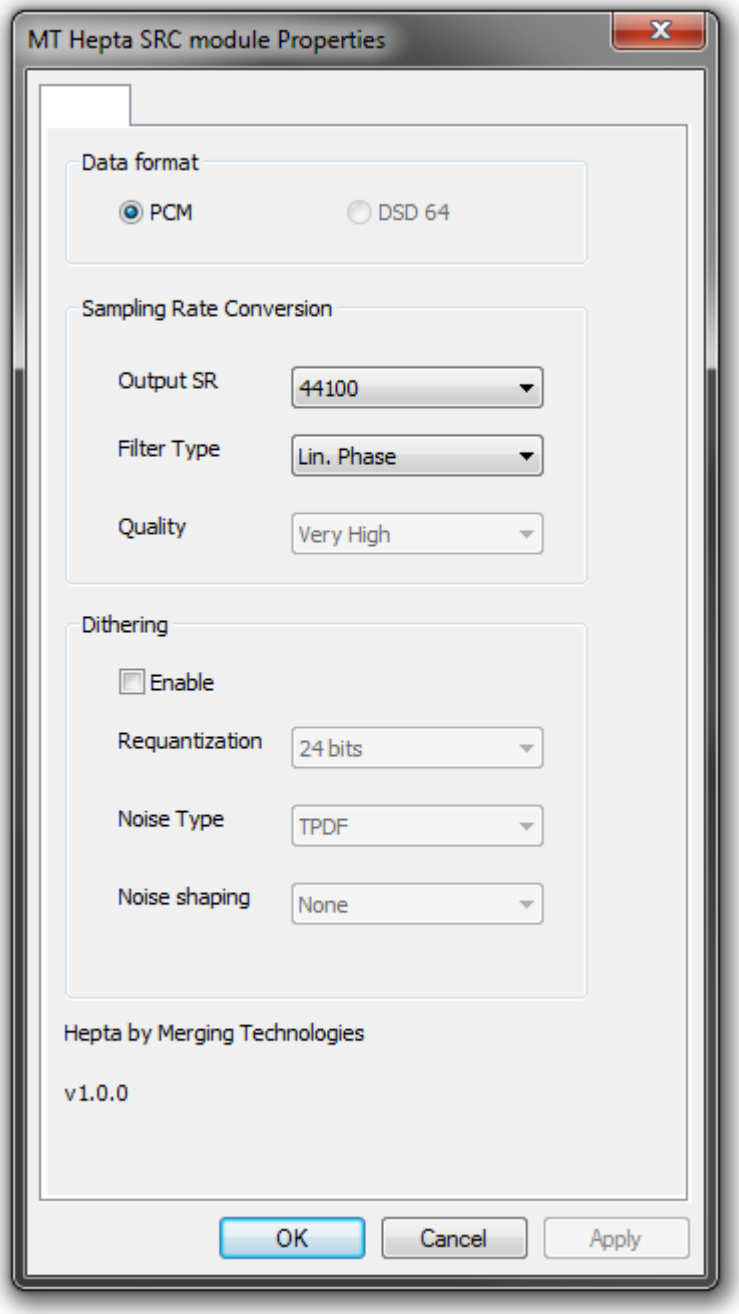
1. Select a **Master Clip** file or files in the main **Media Management window.**
2. Choose **Convert > Sampling Rate Conversion**. The **MT Hepta SRC module** dialog box appears:



MT Hepta SRC module dialog

Radio buttons offer the choice of two text entry fields, **New name** for the file or **Add Suffix** to the existing file-name. A check box selects **Keep Original File Format** otherwise the file will be converted to **PMF** format as well as sample rate converted.

3. Selecting **Properties** opens the **MT Hepta SRC module Properties** dialog:



MT Hepta SRC module Properties dialog

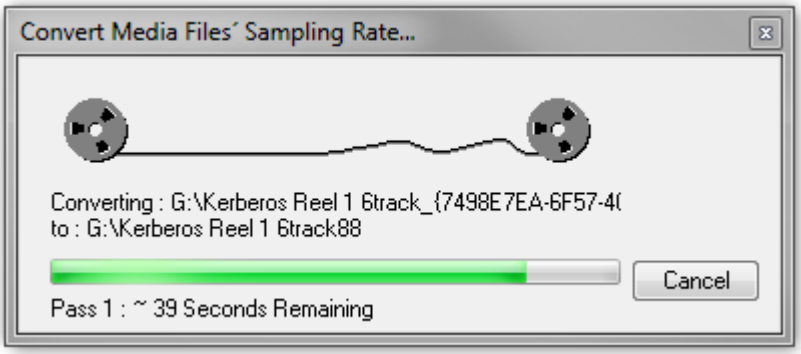
4. Choose the required target sample rate by clicking on the **Output SR** down arrow to drop-down the list of all available Sample Rates.

5. **Filter Type** offers the choice of **Lin. Phase**, **Min Phase** or **Apodising**.

- **Linear Phase** features constant group delay, thanks to the linear phase, and has a symmetric impulse response, but also longer rings. This offers the best preservation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.
- **Minimum Phase** features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spectrum and allows slightly better results for transient sounds.
- **Apodizing** offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between linear and minimum phase types

6. **Conversion Quality** defaults to **Very High**. In the **Dithering** section there is a check box to enable dithering, a **Requantization** drop-down to select the desired bit depth and a further drop-down to select the desired **Noise Shaping**. Finally click on **OK** to close the dialog

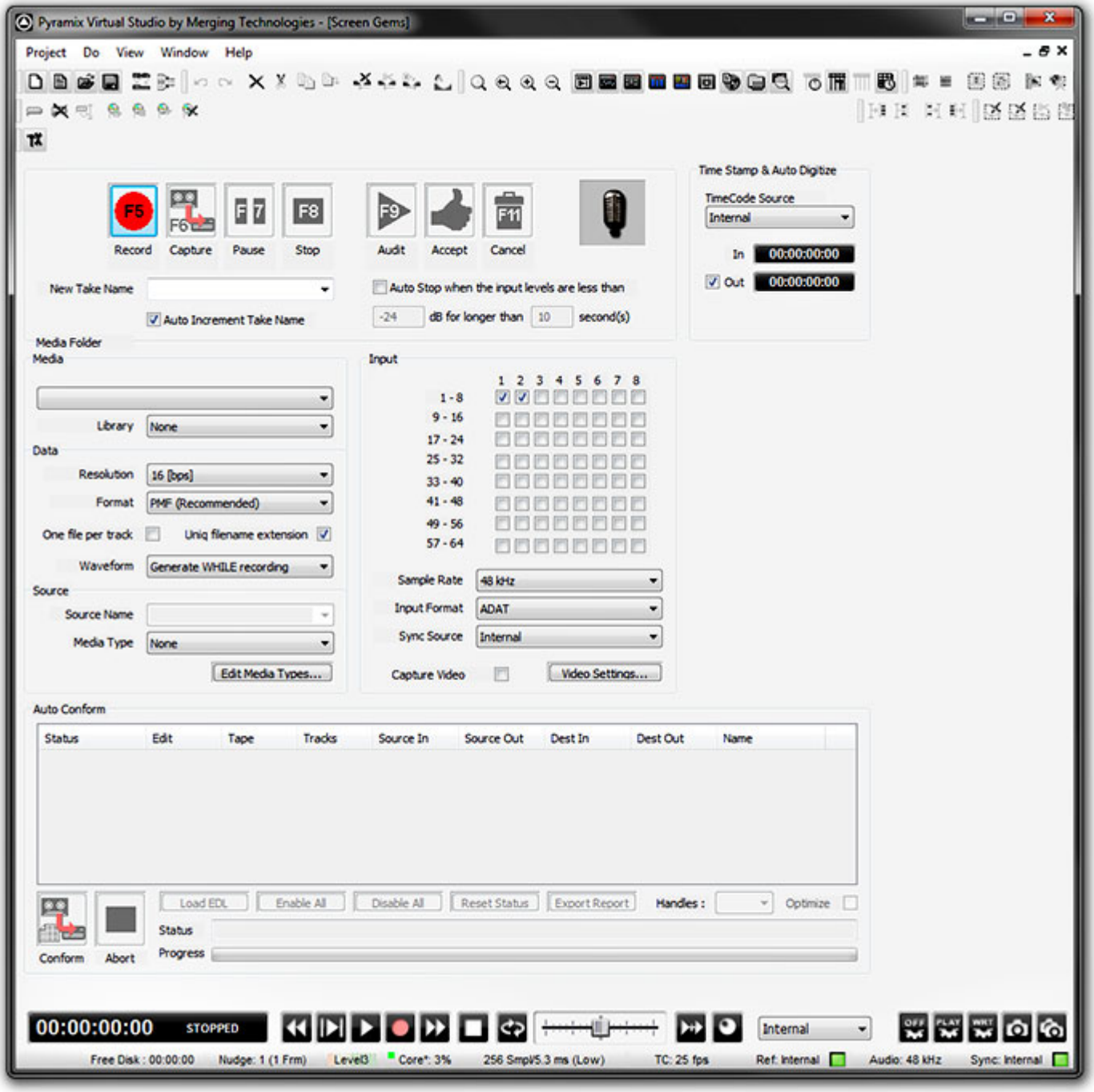
7. Choose **OK** in the **MT Hepta SRC module** dialog box to begin the conversion. When converting multiple files, choose **OK** to convert the files one at a time with the possibility of changing parameters on each file or, if **Add Suffix** was chosen in **step 2,** you can choose **OK All** to convert all the selected files in one operation.



Convert Media Files Sampling Rate... dialog

Digitizing Sessions

A **Digitizing Session** is a special type of Pyramix **Project** which is intended for efficiently loading audio material into **Pyramix.** One advantage to using a **Digitizing Session** for capture is that **Master Clips** referencing the audio **Media Files** can be generated and saved directly into a specified **Library** for later placement.



Digitizing Session Project Window

Manual Digitizing

1. In the **Media** section, choose an appropriate **Media Folder** to which to your captured files will be saved. If you wish to simultaneously save **Master Clip** references to these **Media Files** into a previously created **Library**, select that **Library** from the **Library** drop-down list.
2. In the **Data** section, choose the appropriate **Resolution** (bit depth or word length) and **Format** (file type) for the saved audio files. Check **One File per track ON** to generate a separate file for each **Track** recorded. I.e. two files for a stereo source, six for a discrete 5.1 source and so on.
3. In the **Input** radio button matrix, check **ON** for each **Input** you wish to record from. Also set the **Sample Rate**, **Input Format** and **Sync Source** as appropriate.
4. Type in a **New Take Name** to name the captured files. If the **Auto Increment Take Name** box is checked all subsequent takes will use the name typed in the **New Take Name** field as a 'seed' with a numerical suffix to denote the individual takes. E.g. Enter 'Vocal' as the New Take Name, check the **Auto Increment Take Name** box and record a few seconds, stop then record another few seconds. The first take will be called 'Vocal' and the second 'Vocal 2'
5. You can monitor incoming audio through the **Mixer**. Click on the **Show/Hide Mixer** icon to display the **Mixer**, and set levels as appropriate.
6. Any external machine can be used as the source. However, it is much more convenient to use a machine which can be controlled by Pyramix. A machine can be selected from the **Machine** drop-down list. It's control panel appears below the list.
7. Locate the required material on the source tape.
8. Click on the red **Record** button to begin recording. The system will remain in record until the **Stop**, **Pause** or **Cancel** button is pressed.
9. Press the **Stop** button to stop recording.
10. You can press the **Audit** button to audition the recording just made.
11. Press the **Accept** button to save the recording to the destination Media Folder, or press the **Cancel** button to delete the recording without saving it.
12. To Auto Stop on silence, e.g. at the end of a tape, use the **Auto Stop when the input levels are less than** check box to stop recording when the input level is lower than the value in: -XX **dB for longer than** XX **second(s)**

Autoconforming

1. Pyramix can record audio selectively according to an EDL (Edit Decision List) in the CMX format.
2. Follow the set-up suggestions above and ensure the source machine is working correctly under 9-pin control.
3. Click the **Load EDL** button, navigate to the directory containing the EDL you wish to load the audio for.
4. If the list is not already in **Reel** order, click the **Optimize** button. This will sort the list so that audio is digitized with the minimum of reel changing and spooling. All overlapping edits will be merged.
5. Load the first reel in the list, click the **Capture** button and Pyramix will automatically control the source machine. All the required audio in the reel will be digitized.
6. Change the reel when prompted until all the required audio has been digitized.

If you know the audio is not available for certain edits in the list, or you wish to digitize only certain edits, uncheck the box(es) in the **Status field** for the relevant entries before clicking **Capture**. The **Status** filed will show when Clips have been captured which match the edits.

Enable All

Checks all the boxes in the **Status Field** for capture.

Disable All

Un-checks all the boxes in the **Status Field**. I.e. no edits are selected for capture.

Reset Status

Restores the **Status Field** check boxes to their previous state.

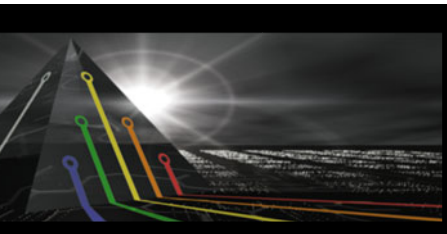
Export Report

Exports an **.rtf** file detailing the edits which were captured and those which were not.

Handles

Sets an extra amount of audio to be captured at each end of the edits. This allows greater freedom in editing but may cause problems in some circumstances. The drop-down list gives a choice of from **0** to **10** frames.

8 Editing



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

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Editing in the Timeline

The **Timeline** is the place in Pyramix where audio **Clips** can be edited, faded up and down and otherwise arranged into a mono, stereo or multi-channel digital audio **Composition**.
A **Project Editing Panel** containing the **Timeline** will be visible as soon as you open a **Project**.

The **Fade Editor** provides elegant alternative methods of viewing and adjusting the parameters of edits in the Timeline.

Clips and Compositions

Clips in a Composition

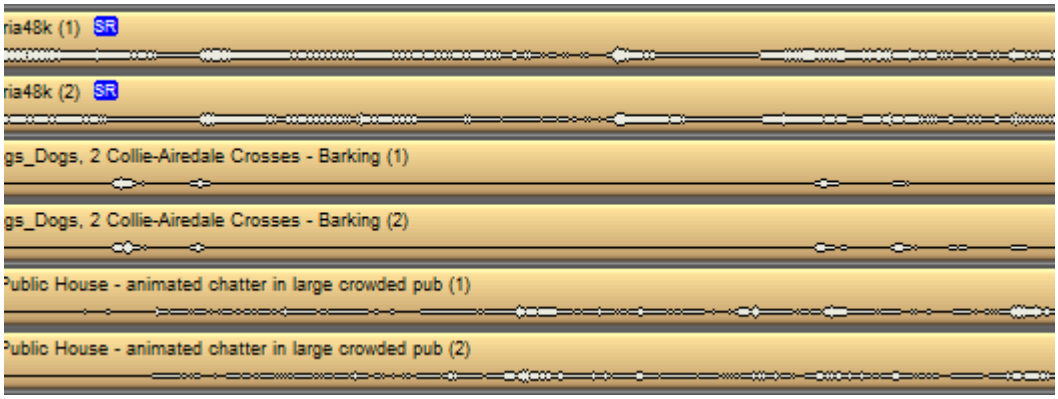
As with **Clips** in a **Media Drive** or **Library**, **Clips** in a **Composition** are just pointers to the original audio **Media File**. Any actions performed on a **Clip** in a **Composition** will affect neither the original audio **Media File**, nor the **Master Clip** in the **Media Folder** or **Library** it came from. In the **Project Editing Panel**, a **Clip** can be edited, shortened, split into 2 **Clips**, moved, level controlled, deleted, etc., and all actions will **ONLY** affect the **Composition**.

Once placed in the Composition, each Clip by default displays a Waveform of the Media file to which it points. This Waveform display can be enabled, disabled or scaled by the user.

Sample Rate Mismatch

Pyramix allows Clips of any supported sample rate to be placed in the Timeline. By default Clips that do not match the Project sample rate are converted 'on-the-fly' to the project sampling rate. (**Please see also: Real-time Sampling Rate Conversion on page 785**)

To help avoid inadvertent placement of Clips that do not match the project sample rate, if **RealTime Sampling Rate Conversion** is active a discreet blue **SR** icon is added in such Clips or a red **SR** icon if not :



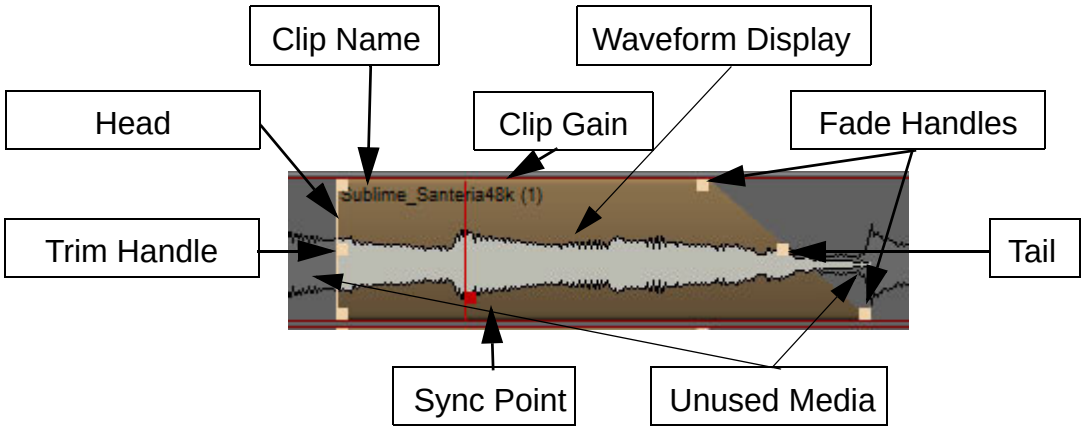
Sample Rate Mismatch

If desired, this can be made more obvious by changing the Waveform color of Clips deviating from the Project sampling rate in **Settings > All Settings > Application > Timeline Layout : Clips & Waveforms**.

Note: Each Clip's assumed sample rate is determined by information contained in the file header. If this information is incorrect (as with certain DAR files) the Clips will not play back at the correct speed or pitch.
Please see also: DAR WAV file Import on page 94

Anatomy of a Clip

Many Edit Commands refer to parts of a Clip rather than the entire Clip.



Features of a Clip in the Timeline

Once a **Clip is** selected, **Trim Handles** appear at each end which are used to manipulate the **Clip**. Each **Trim Handle** consists of **3 Control Points**. The **Control Points** on the left side of the **Clip** allows adjustment of the beginning of the **Clip**, and the **Control Points** on the right side allows adjustment of the end. Click and drag on the middle **Control Point** to move the head or tail of the **Clip** as desired to shorten or lengthen the **Clip**. These can be moved out to the full extent of the original audio **Media File** to which the **Clip** is pointing. Select **View > Show Media** to view the unused audio (if any) as a grayed out waveform.

Head

The beginning of a Clip on a Track is referred to as the **Head**. The Head may or may not represent the actual beginning of the Media File for the Clip, since the Clip is just a set of pointers to an area of the whole media file.

Tail

The end of a Clip on a Track is referred to as the **Tail**. The Tail may or may not represent the actual end of the media file for the Clip, since the Clip is just a set of pointers to an area of the whole Media File.

Sync Point

The Sync Point is an internal reference point inside the Clip. This defaults to the start of a Clip until moved.The Sync Point may be moved by dragging its handle within the Clip. If the Play cursor is positioned over some part of the Clip, the Sync Point may be snapped within the Clip to the position of the Play Cursor by choosing **Clips > Set Sync Point to Cursor**.

Trim Handle

The Trim Handle is the middle handle available at either end of the Clip when the Clip is selected. This handle is used to shorten or lengthen the Clip (trim the Clip in or out) up to the limit of the available media. To trim the Clip, drag the handle.

Fade Handles

The Fade Handles are the top and bottom handles available at either end of the Clip when the Clip is selected. The handles are used to create a fade in at the beginning of the Clip, or a fade out at the end of the Clip. To create or adjust a fade, drag one of the trim handles to create the desired fade in or fade out. The top handle adjusts the fade within the Clip and the bottom handle trims the Clip in or out as you adjust the fade. If the Top Handle is used with the CTRL key modifier, a symmetrical crossfade is created with any adjacent Clips, centered at the original end point of the selected Clip. If no adjacent Clip exists, then it extends or shrinks the duration of the fade while maintaining the duration of the selected Clip.

Waveform Display

Clips can appear either as a block with the Clip name inside, or can show the audio waveform of the media referenced by the Clip.

Clip Name

The name of the Clip is shown unless suppressed. **View > Waveform Display > Hide Clip Name when Waveform Shown**.

Clip Gain

The overall **Gain** applied to the Clip is shown. This value is displayed in decibels.

Gain can be adjusted by selecting **Clips > Clip Gain**. The **Gain** window appears. Please see: **Gain Window on page 113** If a **Region** is selected the Gain will be changed on all Clips in the selection.

Locking Clips

Clips can be protected from being displaced during editing by selecting **Clips > Lock**. A locked Clip cannot be moved in time or to another Track until it is unlocked. **Clips > Unlock.** If you simply wish to prevent loss of sync select **Clips > Lock Horizontal Drag**.

Grouping Clips

To **Group** multiple **Clips**, whether they are on the same or different **Tracks**, select the **Clips** you wish to **Group** together. Now choose **Clips > Group**. When any **Clip** in a **Group** is selected, copied, deleted or moved, all **Clips** in its **Group** will be similarly selected, copied, deleted or moved.

To ungroup previously **Grouped Clips** in order to treat them separately, select the **Group** and choose **Clips** > **Ungroup**.

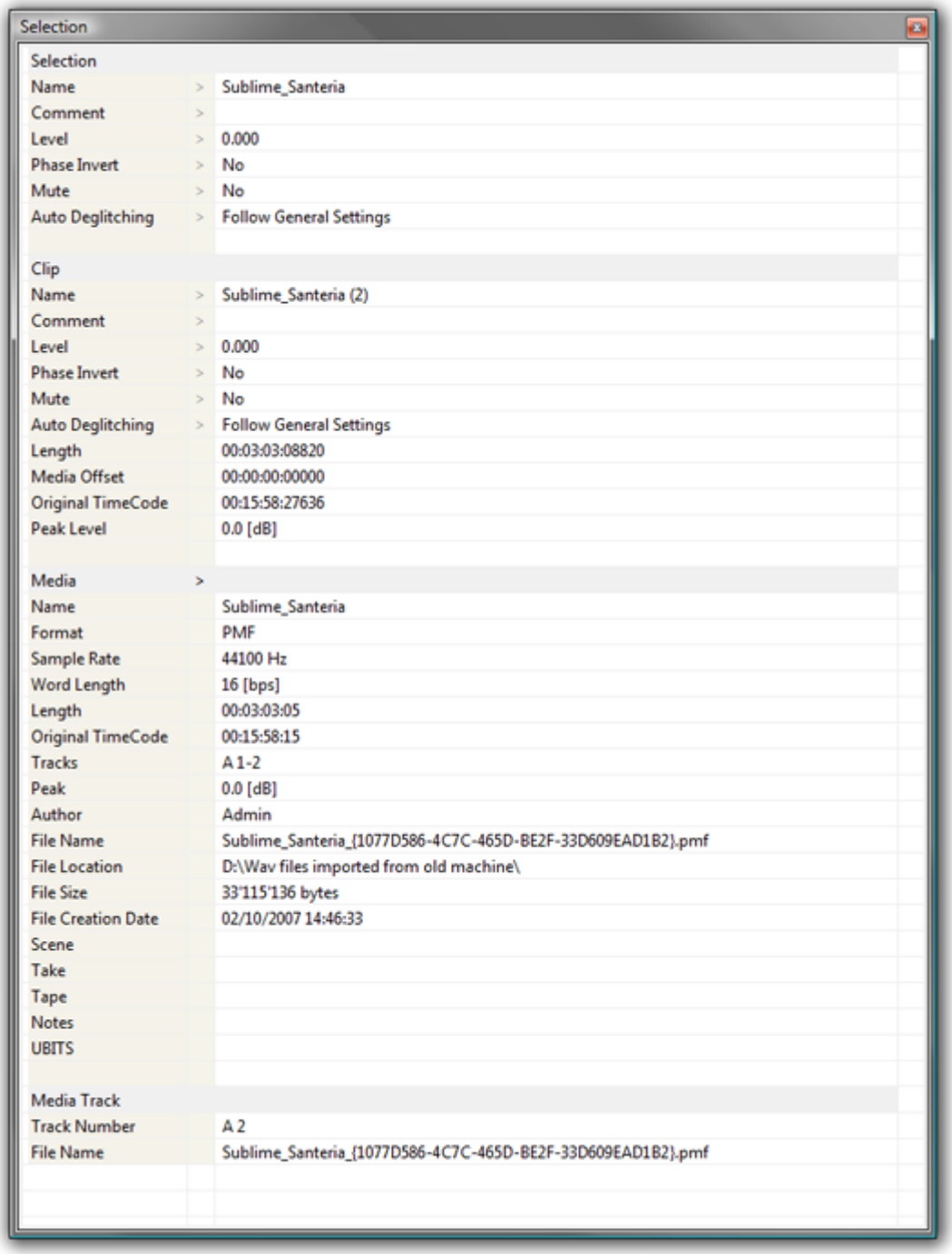
Groups can be nested. I.e. one Group may be inside another Group. For example a stereo or multi-channel **Clip** is simply a group of mono **Clips**. Stereo or Multi-channel **Clips** may be ungrouped into individual mono ones in the same way as any other group.

Clip and Selection Editing

Master Clips appear in the Timeline as blocks which can be edited on a Track (or Tracks, depending on how many channels the Master Clip contains) The Clip can be trimmed, split, crossfaded, and have many other operations performed on it without ever affecting the underlying media file. Each instance of a Clip references the entire media file, and can always be "opened up" by using the Trim Handles to reveal more of the Clip until the complete underlying Media File is visible. Clips can be dragged in the Timeline while the transport is playing.

Clip Properties

Clips > Properties opens the Properties window for the selected Clip. If multiple Clips are selected, opens the Properties window for the first Clip selected.

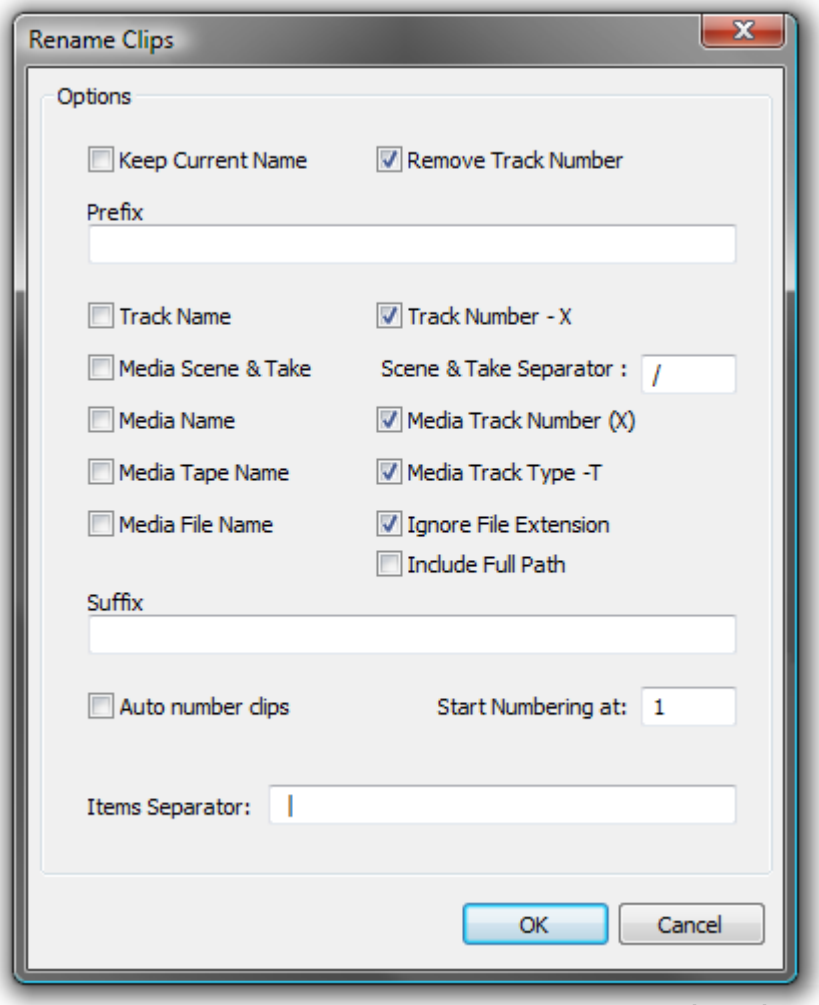


Selection Window

Renaming Clips

Although Clips can be renamed in the **Clips > Properties** Selection Window, Pyramix offers a more convenient method of renaming Clips in a logical and orderly manner.

Clips Rename open the **Rename Clips** dialog:



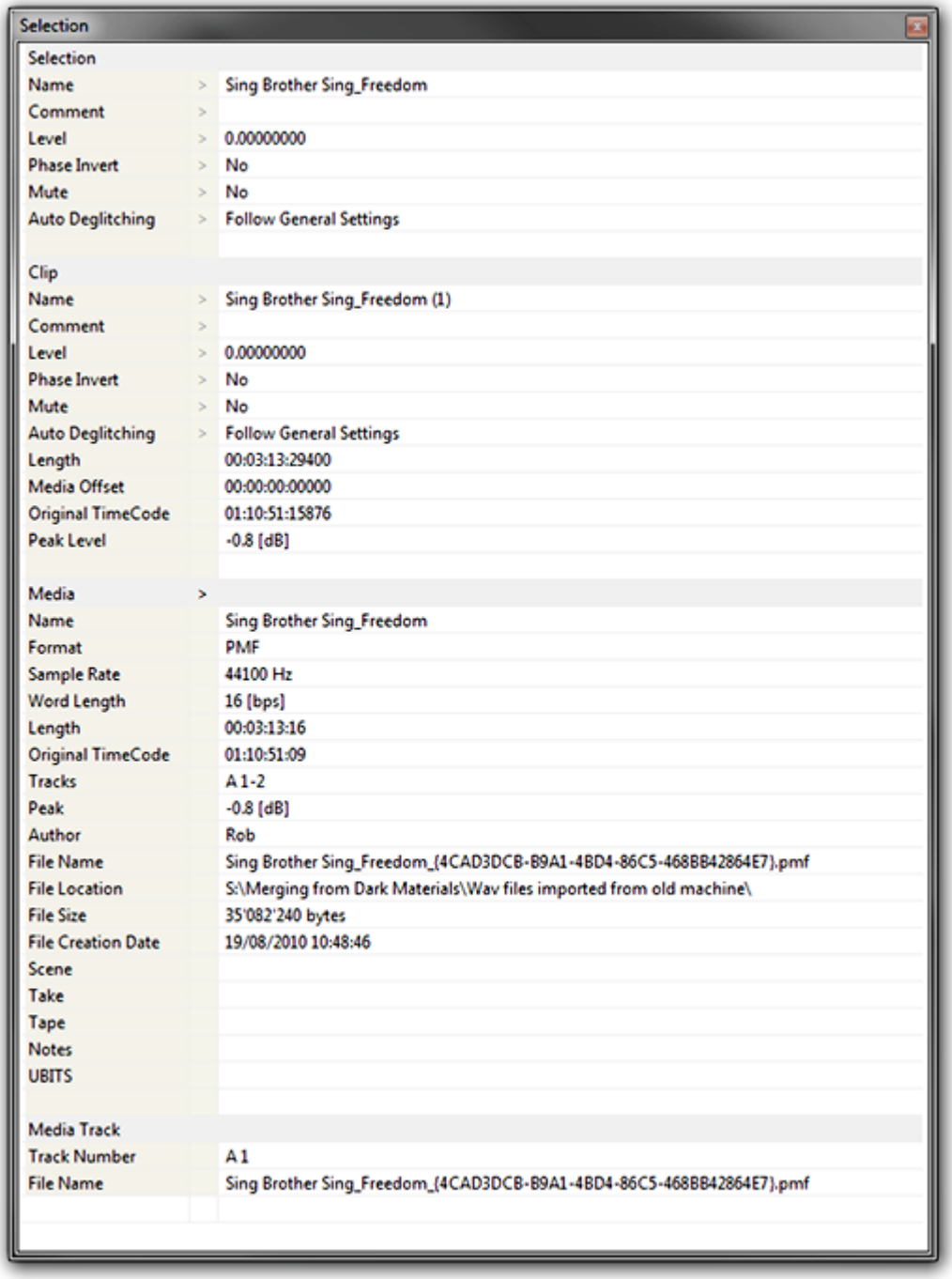
Rename Clips Dialog

The Clip Name can be composed out of user text, automatically generated data or a combination of both. The dialog box is largely self explanatory. Auto numbering is relevant where a number of Clips are selected when the Rename Clips dialog is opened.

Show Media

To view the full extent of the underlying Media in the selected Clip as a “ghost” waveform select **Show Media** from the **View** menu.

Selection Tab Window



Selection Tab Window - floating

The Selection Tab Window groups together **Selection**, **Clip** and **Media** Properties fields in a table.

When choosing **Selection Properties** or a **Properties** Menu item, this Tab Window is displayed. If the Tab Windows section is hidden, then the Selection Tab Window is undocked to ensure it is visible. Parameters that can be modified are marked with a '>' sign. Click on the '>' sign or on the parameter itself to change/edit it.

Selection and Clip Modifiable Fields

Name

This field shows the name of Clip as it appears in the composition. This name will also be displayed in the Clip block when the Clip is set to Show Text.

Comment

This field shows a user comment concerning the Clip. The information displayed here will also be shown in the Comment field in the EDL Tab window

Level

Available in both

Pops up a window with a fader and numerical entry box for level, and two check boxes, **Sel.**ection and **Rel.**ative. When neither box is checked any gain change is only applied to the Clip on which you last right clicked (even if others are selected). If **Sel.** is checked, the gain will be applied to the whole selection (selected by default). If **Rel.** is checked and you have a grouped series of Clips the gain change is relative to pre-existing levels.

If you click on the > in the "selection" part gain is applied to the whole selection, and if you click in the "Clip" part, the gain is applied only to the Clip which was under the mouse when you clicked.

E.g: Three Clips are selected, the first at -1 dB, the second at -2 dB and the third at -3 dB. You wish to increase the gain of all the selected Clips by 1dB. Check the **Rel.** box and add 1 dB either with the fader or in the numeric box. This will result in the first Track at 0 dB, second at -1, third at -2.

Phase Invert

Toggles between **No** and **Yes** (Phase inverted)

Mute

Toggles between **No** and **Yes** (Muted)

Auto Deglitching

Drops down a list box with choice of **None**, **Follow General Settings** or fade settings between **1.0 [mS]** and **5.0 [mS]** in 0.5[mS] increments. This feature avoids the necessity to manually make short fades when quickly making cut edits. On any Clips that do not already have a fade a small ramp is automatically applied to avoid clicks at the beginning and end. Any Clips with fades previously applied bypass the Auto-Deglitching feature.

> **Note:** the global Automatic -Deglitching value is set in the **Settings > All Settings > Application > Playback/Record** page in the **Automatic Deglitching** section.

Clip Information Only Fields

Apart from the modifiable fields listed above, **Clip** also shows the following information fields:

Length

This shows the total length of the selected Clip segment.

Media Offset

This field shows the amount by which the start of the selected Clip segment is offset from the beginning of the entire Master Clip.

Original TimeCode

This field shows the original TimeCode stamp at the head of the Clip.

Peak Level

This field shows the highest level (in Decibels Full Scale) reached by any sample within a Clip. This is only shown for Clips which have had a Waveform display generated.

Media Information Only Fields

Name

Shows the original short name of the audio media.

Format

Shows the media format as PMF, Wave etc.

Sample Rate

Word Length

Length

Shows the total length of the media file referenced by the Clip.

Original TimeCode

Tracks

Shows the Tracks the media was originally recorded to.

Peak

This field shows the highest level (in Decibels Full Scale) reached by any sample within a media file.

Author

Shows the user who was logged in when the file was created.

File Name

Shows the full media filename including the unique identifier and extension.

File Location

Shows the full Windows path to the media file

File Size

Shows file size in bytes.

File Creation Date

Scene

Take

Tape

Notes

UBITS

Media Track Information Only Fields

Track Number

Shows the Track number within the media file. I.e. a stereo file will have A1 and A2 for the two Tracks.

File Name

Shows the full media filename including the unique identifier and extension.

> **Note:** The values shown in the **Clip**, **Media** and **Media Track** sections reflect the Track clicked on in the Timeline. Where a selection contains several, possibly multi-channel, Clips, clicking on the individual items in the Timeline updates the information to reflect the last item clicked.

The **Selection** Tab Window is automatically updated when the selection changes and can therefore remain floating.

Selections and Region Selections

Selection Operations

Many Pyramix editing operations can only be carried out if a Clip or Region is selected.

There are two ways of selecting material in the Timeline. Whole **Clip**s and **Region**s.

Clip Selection

Clicking in a Clip selects it (the color becomes darker and **Handles** appear). The whole Clip is ready for editing. Clicking on other Clips while holding down the **Shift** key adds them to the selection. If the Clip is grouped with other Clips, this will select the entire group. To select a single Clip in a group, first ungroup the Clips, then select the desired Clip.

Region Selection

A **Region Selection** is a selected area of the **Composition**. A Region can include many Clips on many Tracks or only a portion of a single Clip. It is indicated as a darker gray rectangular area over one or more **Tracks**. When selecting a Clip within a group, the **Region** is automatically extended to the whole group. To avoid auto-selecting the entire Clip Group and to select a range within the Clip Group Left-click the mouse while the cursor is over the clip group at the start of the area to be selected, then while continuing to hold down the Left mouse button, press and hold SHIFT, then drag across the clip group to make the selection. A **Region** can be made by clicking and dragging the mouse across one or more **Tracks**.

Of course, keyboard shortcuts exist for making **Regions**, and this is one of the most useful ways to mark a Region. The **Pyramix** default method of marking a **Region** in point is to press **[** on the keyboard: this selects everything to the right of the current **Play Head Cursor location** on the currently selected Track. **]** marks a Region out point: this selects everything to the left of the current **Play Head Cursor** location, up to a previously marked in point. Once a **Region** has been defined in this manner it can be extended or 'grown' across more Tracks by using **Ctrl +Shift +Cursor UP** or **DOWN arrows**. **Ctrl +Alt +Shift +Cursor UP** or **DOWN** shrinks. (Assuming the standard Pyramix keyboard shortcut assignments are in use.)

Using the keyboard short-cuts, **Regions** can be easily made on-the-fly while playing or scrubbing the **Timeline**. This is particularly efficient when used in conjunction with the **Numeric Keypad** transport control short-cuts.

Working with Selections and Regions

Any selection of Clips or selected Region can be manipulated as a single object. This object will include all Clips, fades, envelopes and automation. It can be Copied and Pasted elsewhere in the Timeline or "Snapshot" copied to a library for future use. The object can be given a suitable name and is treated in the same way as any other library object for searching etc. This function can be used, for example, to keep complex composite effects for future use in the current or future Projects.

With the ability to open the same Library from multiple Pyramix on a network, editors can share parts of compositions in real-time between systems (when dropping something in a library from one system it will pop in the other within seconds) and not only within the same Pyramix system.

Snapshot a Selection or Region

To Snaphot a Selection or Region:

- Make a Selection or select a Region
- Hold down **Alt + Shift**
- Cursor changes to:
- Click anywhere in the Selection or Region and drag to a library.
- The resulting object will appear in the library labelled, **Region of {Project Name}**.

Snapshot Timeline

To Snapshot the entire Timeline:

- Open the Overview Tab
- Hold down **Alt + Shift**
- Cursor changes to:
- Click anywhere in the Overview and drag to a library.

- The resulting object will appear in the library labelled, **Region of {Project Name}**.

Dragging Clips into a Composition

The simplest way to place an audio **Clip** into your **Composition** is by dragging it from a **Media Folder** or **Library**.

To drag from a **Media Folder**:

1. Click on the **Media Management** Tab to open the **Media Management** tab window.
2. Double-click on a mounted **Media Folder** or subfolder to open it. The **Master Clips** will all be listed on the right side of that window.
3. Select a **Master Clip** by left-clicking and holding. Drag the **Master Clip** into a **Track**. You can place it into any **Track**, at any point on the **Track**.

The procedure for dragging an object from a **Library** is virtually identical to that outlined above for **Media Drives**. However, access the required **Library** using the **Global Libraries** or **Document Libraries Tabs** in the **Project Management Panel.**

Copy and Paste

Another way to get objects into a **Composition** is by copying and pasting them.

1. Select an object in a **Media Folder** or **Library**.
2. Right-click on the **Master Clip**, and choose **Copy** from the pop-up.
3. Place the **Play Head Cursor** where you want to paste the beginning of the **Master Clip**.
4. Right-click on the **Track** to which you wish to place the **Clip**, and choose **Paste to Cursor** from the pop-up. The beginning of the object will be placed at the **Play Head** in the **Track** on which you right-clicked. Alternatively, simply click the mouse on the Track and at the time you want the **Clip** to start, right -click and choose **Paste to Mouse** to insert the **Clip** where you placed the mouse cursor.

Selecting a Clip

Click on any Clip in the Composition to select it. It will change color to indicate selection. Shift-click to select multiple Clips at the same time.

Simple Copy and Paste

1. Left-click a **Clip** to select it.
2. Right-click and choose **Copy** from the pop-up. (or use menu **Edit > Copy** or use **Ctrl + C**)
3. Place the **Play Head Cursor** where you want to paste the beginning of the **Master Clip**.
4. Right-click on the **Track** to which you wish to place the **Clip**, and choose **Paste to Cursor** from the pop-up. (or use menu **Edit > Paste to Cursor** or use **Ctrl + V**). The beginning of the **Clip** will be placed at the **Play Head** in the **Track** on which you right-clicked. Alternatively, simply place the mouse cursor on the Track and at the time you want the **Clip** to start, right-click and choose **Paste to Mouse** to insert the **Clip** where you placed the mouse cursor.

Selecting a Region

To select a Region, click the mouse at one end of the Region you wish to select, and drag the cursor to the other end of the Region you wish to select.

A Region can include more than one Clip, and may extend across multiple Tracks. The selected Region may also include the area(s) on a Track where no Clip is present.

Adding Tracks to a Selected Region

With a Region selected, **Shift + Click** on other Tracks to add them to the selection. The Tracks do not have to be continuous.

Note: Discontinuous Regions cannot be selected horizontally.

Clip Selection Behavior

The following lists the various behaviors for a selected Clip depending on different modifier keys.

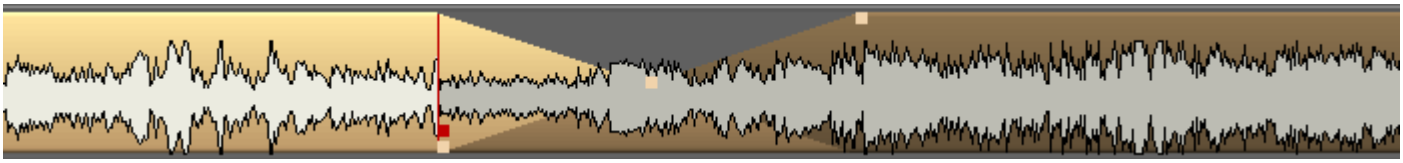
When a Clip is selected:

No Modifier Key

With no key modifier, the Clip can be manipulated in standard **Edit Mode**.

Ctrl Key Modifier (Auto Crossfade Mode)

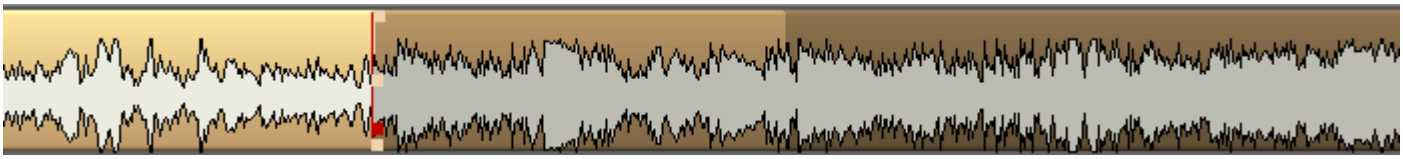
While a Clip is selected, pressing and holding the **Ctrl** key before clicking and dragging automatically creates a cross-fade when the Clip is moved to overlap any adjacent Clip. The mouse cursor changes to a hand with an X over it to indicate Auto Crossfade Mode is engaged. While in Auto-Crossfade Mode selected Clips can only be moved in time, not to other Tracks.



Auto Crossfade Mode

Ctrl Key Modifier Option (Layering Mode)

When in the **Ctrl** Crossfade mode, if the Ctrl Key is released (while still holding the left mouse button) **Layering Mode** is entered. This mode allows Clips to be overlapped. (Technically, the result is a crossfade with zero length fades.)



Layering Mode

Ctrl SHIFT Key Modifier (Slip Media Mode)

While a Clip is selected, pressing the **CTRL** and **SHIFT** keys will allow the audio contents of the Clip to be slipped in time. The Media can be slipped to the extent of its availability.

Ctrl Alt Key Modifier (Slip Clip Mode)

While a Clip is selected, pressing the **CTRL** and **ALT** keys will allow the In and Out point of the Clip to be slipped together in time while the Media remains where it is in time. Think of this as moving a "window" within the media.

Alt ShiftKey Modifier

While a Clip is selected, pressing the **ALT** and **SHIFT** keys will allow the Clip to be dropped into a **Library** as a new Composition.

Note: When a Clip is moved over another in either within the TimeLine in Layering or Auto-Crossfade Modes or from a Library or Media Management, the Clip color temporarily changes to red. This is particularly helpful where there are hidden Clips on the right side of the screen that may be erased by the new Clip or move.

Auto-Crossfade By Default

Auto Crossfade / Layering can be set as the default editing mode. This reverses the functionality described above. When this mode is engaged, pressing the **Ctrl** key enables the Edit mode.

This mode can be engaged by selecting **Edit > Auto-Crossfade** or by checking the **Auto-Crossfade by Default - Control key for Drag & Drop** box in **Settings > All Settings > Editing**.

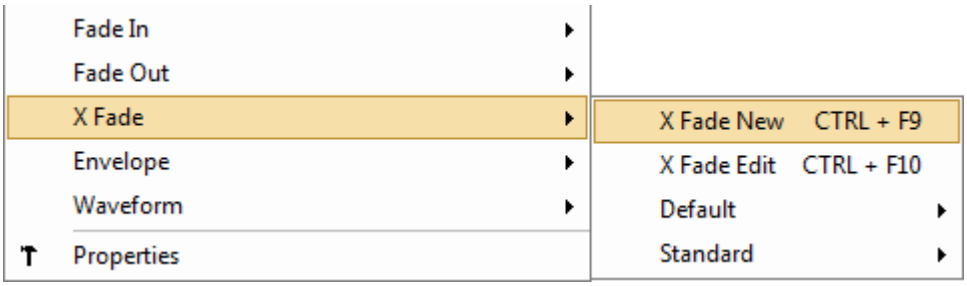
Clip Fade Commands

Fade In

Fade Out

X Fade

Each of these three entries on the **Clips** menu lead to sub-menus which all look like this:



Crossfade sub-menu

New Creates a fade when a Region is defined at the beginning (**Fade In**) the end (**Fade Out**) or across overlapping Clips (**X Fade**)

Edit When chosen from either the Fade In or Fade Out sub-menus, opens the Fade Editor with the current fade. From the Cross Fade sub-menu opens the Fade Editor only when a Region is defined across an existing cross fade. (**Please see: Fade Editor Tab Window on page 199**)

Default When a Clip is selected or a Region is defined which includes the Clip start or end, **Fade In** or **Out > Default > Complete** recalls the length and shape of the **Default Fade In** or **Out** and applies it to the selection.**Default > Curve Only** recalls only the curve shape.

When a Region is defined on a Clip or Clips which are cross-faded **X Fade > Default Complete** or **Curve Only** recalls and applies the Default Crossfade length and shape or shape only respectively.

Standard Sub-menu offers a choice of fade types

Power Linear

Tension Linear

dB Linear

Cosine

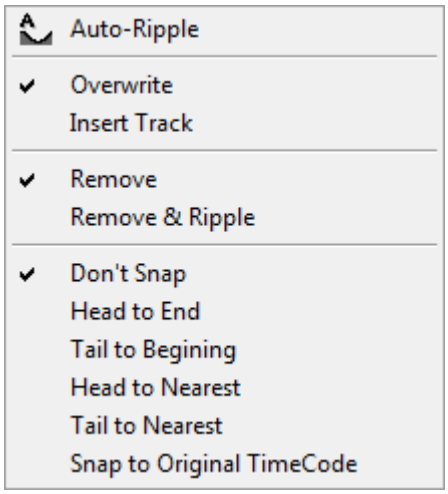
Root Cosine

Editing Modes

The current **Editing Modes** are shown in the Cursor Toolbar. If either **Remove**, **Insert** or **Snap** modes will result in rippling of other Clips. I.e. loss of sync, the **Editing Modes** are shown in **Red** Some of the editing commands which delete Clips from, or paste Clips into the Timeline behave differently depending on the current settings of the **Insert** mode and the **Remove** mode.

Edit Modes Context Menu

Clicking on the current Edit Mode indication in the **CUR**sor Toolbar header pops up the **Edit Modes** menu:



Edit Modes Menu

Auto-Ripple When this option is checked (enabled) all **Insert** or **Remove** operations ripple the rest of the Track

Overwrite When checked, any Clip placed so that it overlaps an existing Clip will overwrite the part of that Clip where the two overlap.

Insert Track When checked, any Clip placed on a Track will be inserted into the Track and will ripple all other material on the Track later in time (to the right) by the length of the Clip being inserted.

Remove When checked any selected material will simply be removed from the Timeline. Everything else will be left intact and in the same place.

Remove and Ripple When checked any selected material will be removed from the Timeline. Everything else to the right (after) the removed material will be Rippled (moved) to the left (earlier) to take up the space left by the removed material.

Don't Snap No snap mode set. This mode doesn't affect the behavior of objects placed on a Track. Behavior follows the existing Insert and Remove modes.

Head to End This mode will cause the beginning of any Clip placed on a Track to snap to the end of the last Clip on the Track, abutting the head of the new Clip to the end (tail) of the last Clip.

Tail to Beginning This mode will cause any Clip placed on a Track to snap to the beginning of the first Clip on the Track, abutting the tail of the new Clip to the head of the first Clip.

Head to Nearest This mode will cause any Clip placed on a Track to snap the head of the Clip to the nearest edit point or mark on the Track. This includes the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Tail to Nearest This mode will cause any Clip placed on a Track to snap the tail of the Clip to the nearest edit point or mark on the Track. This include the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Snap to Original TimeCode This mode will cause any Clip placed on a Track to snap the head of the Clip to the time location represented by the Clips original TimeCode. The Clip will interact with existing Clips according to the Insert Mode setting.

Splitting Clips and Regions

Splitting a Selection

Splitting Clips

Edit > Split (or **Ctrl + T**) makes an edit on the selected Clip(s) at the cursor position splitting it (them). If a Region is defined within a Clip or Clips then this Region is Split (edited) by using this command. Each split portion of the original **Clip**(s) now becomes a new, independent **Clip** in its own right.

Splitting Regions

If the Play Cursor is positioned over a selected Region rather than a whole Clip or Clips, then choosing the **Edit > Split** command will split the selected Region from the surrounding material at the edges of the selection area, not under the Playhead Cursor.

Once a **Region** is marked on a **Clip**, simply clicking on the **Region** makes an edit. (same effect as the **Edit > Split** menu command.) This will split the **Clip** or **Clips** at the Region boundaries. If a **Region** is across several **Tracks**, Edits will be made on all **Tracks** within the **Region**.

Cutter

Holding down the **C** key changes the mouse pointer to a cutter. Edits (cuts) are made wherever the user clicks. To make an edit with the cutter on a range of Clips at the same position, just select them before cutting.

Duplicate Selection

Holding down the **D** key while clicking on the selection then dragging to a new location duplicates the selected material and moves the copy.

Holding down the **F** key while clicking on the selection then dragging to another Track (or Tracks if the selection covers more than one Track) duplicates the selected material and moves the copy locked in time.

Moving a Selection

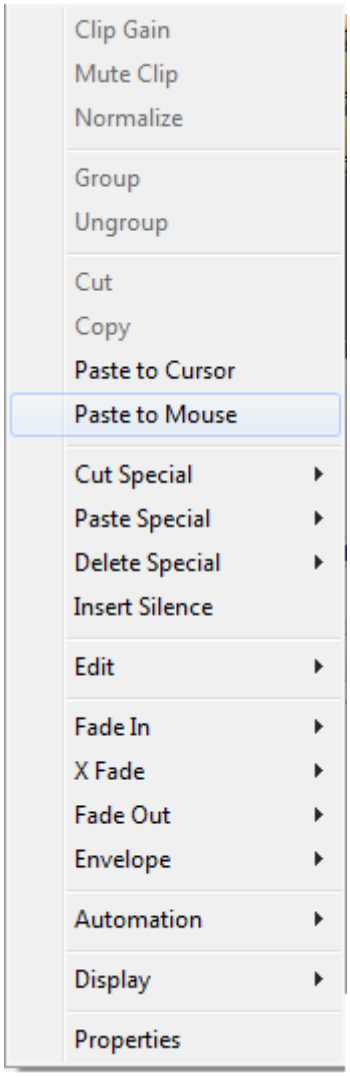
Simply drag a selected Clip move or reposition it to another location on the same Track or a different Track. If a Region is selected, clicking on it will split it from the surrounding material. The resulting separate Clip can then be dragged to a different location or Track. To constrain a Clip in time when moving it to another Track, hold down the Alt, Shift and Ctrl keys at the same time while dragging the Clip to the new Track.

Adjusting a Region Selection

Simply position the Arrow Cursor at the edge (beginning or ending) of the Region. The cursor will change shape to indicate the Region can now be adjusted by clicking and dragging. You may drag the edge beyond the other end of the Region. Doing so ensures that the new selection Region begins (or ends) exactly where the original Region ended (or began). This also applies to the top and bottom edges of the Region. For example, you can extend the selected Region on one Track up or down to include additional Tracks.

Editing Context Menu

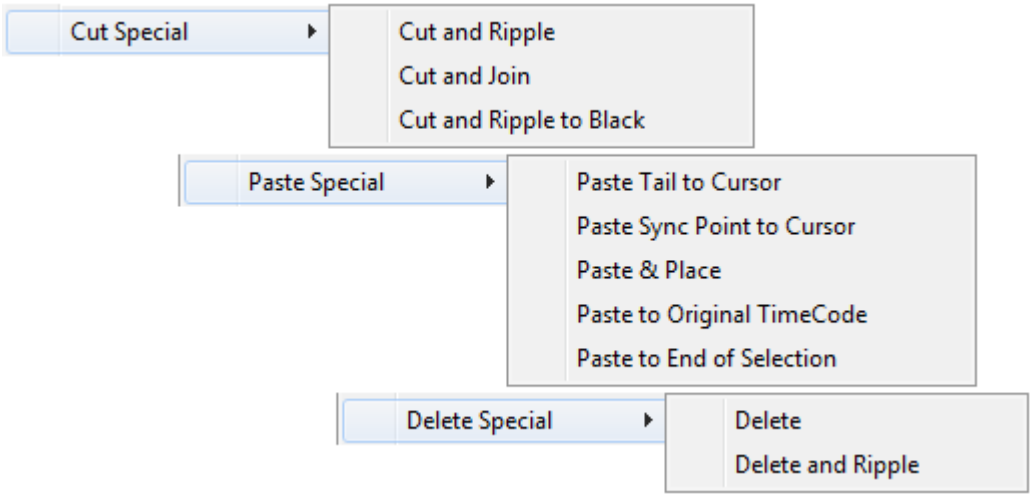
Right-clicking in the Timeline opens a context menu with extensive editing options. Some options will be grayed out when they are inapplicable. E.g. unless a Clip is selected, or if there is nothing on the Clipboard to Paste.

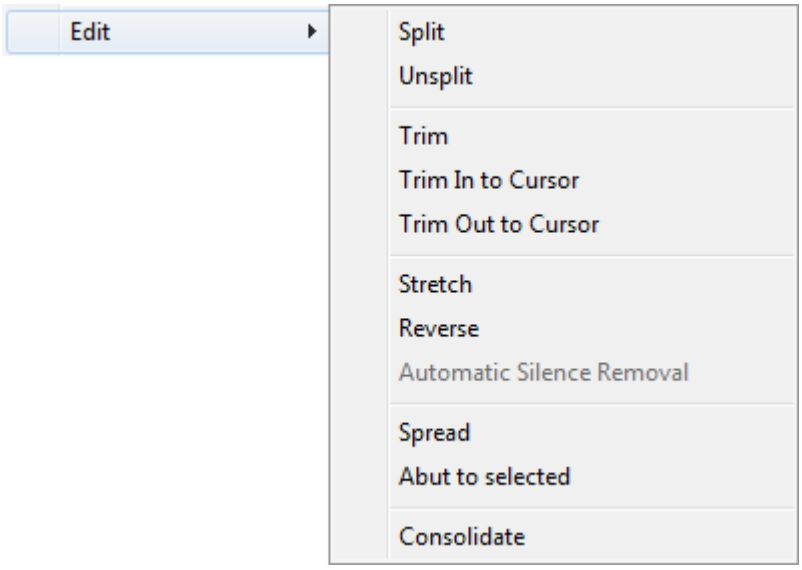


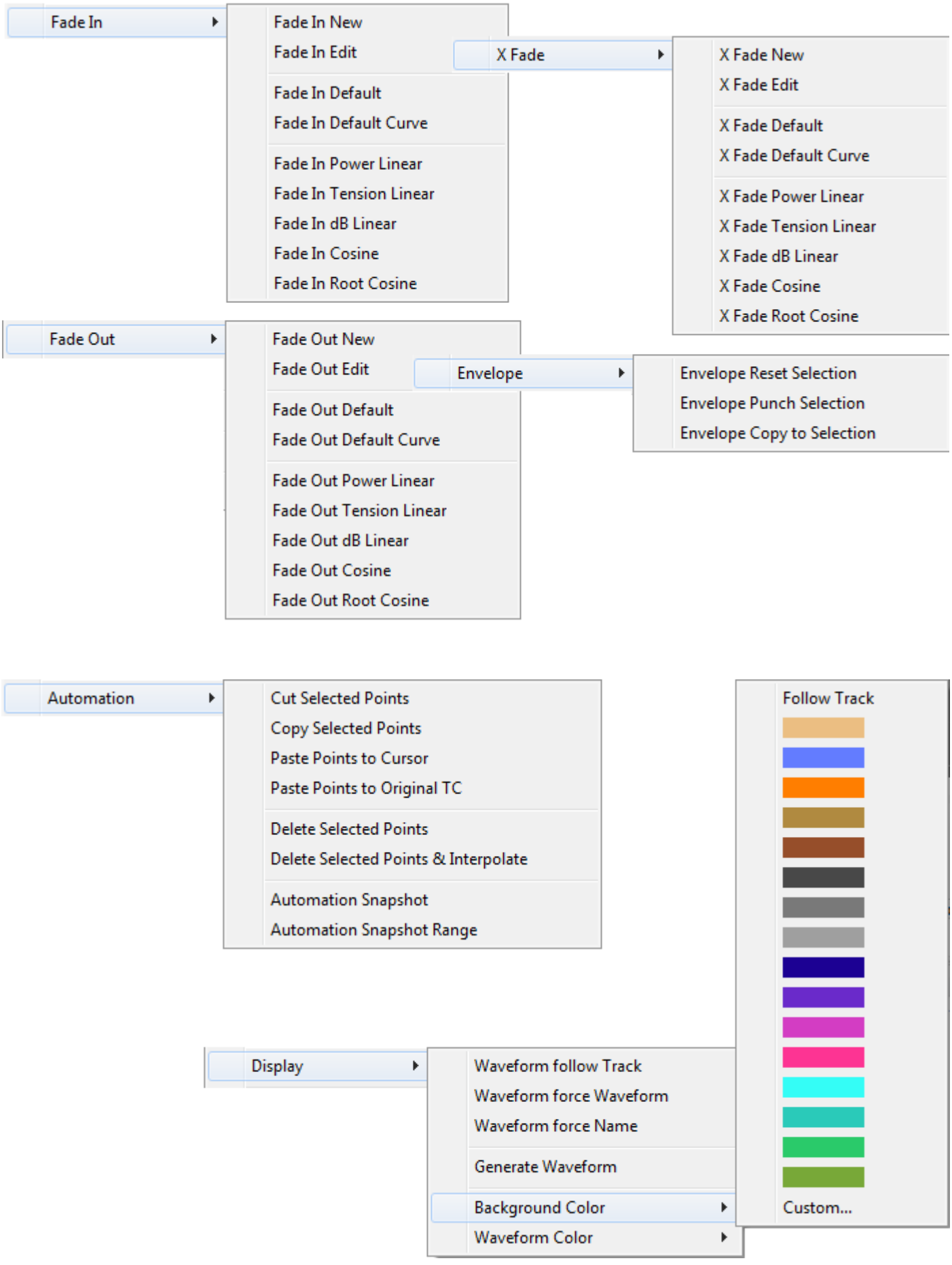
All the commands in the context menu and sub-menus can be found elsewhere, principally in the **Edit** and **Clip** menus. However, here they are grouped in a convenient way for quick access.

For power users, keyboards shortcuts are the way to go.

Editing Context Sub-menus






Fade In
Fade In New
Fade In Edit
Fade In Default
Fade In Default Curve
Fade In Power Linear
Fade In Tension Linear
Fade In dB Linear
Fade In Cosine
Fade In Root Cosine
X Fade
X Fade New
X Fade Edit
X Fade Default
X Fade Default Curve
X Fade Power Linear
X Fade Tension Linear
X Fade dB Linear
X Fade Cosine
X Fade Root Cosine
Fade Out
Fade Out New
Fade Out Edit
Fade Out Default
Fade Out Default Curve
Fade Out Power Linear
Fade Out Tension Linear
Fade Out dB Linear
Fade Out Cosine
Fade Out Root Cosine
Envelope
Envelope Reset Selection
Envelope Punch Selection
Envelope Copy to Selection
Automation
Cut Selected Points
Copy Selected Points
Paste Points to Cursor
Paste Points to Original TC
Delete Selected Points
Delete Selected Points & Interpolate
Automation Snapshot
Automation Snapshot Range
Display
Waveform follow Track
Waveform force Waveform
Waveform force Name
Generate Waveform
Background Color
Waveform Color
Follow Track
Custom...

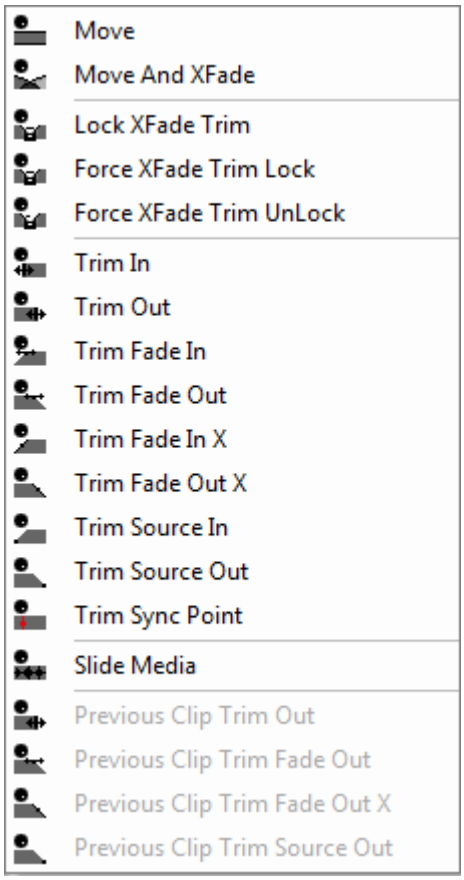
Jog-Wheel Editing

A number of editing actions may be undertaken on a selected Clip or group of Clips using a jog-wheel on an external hardware controller.

First select the Clip or group of Clips, then select the desired Jog-Wheel Editing Mode from:

Edit > Jog-Wheel Editing >

- **Move**
- **Move And XFade**
- **Lock XFade Trim**
- **Force XFade Trim Lock**
- **Force XFade Trim Unlock**
- **Trim In**
- **Trim Out**
- **Trim Fade In**
- **Tim Fade Out**
- **Trim Fade In X**
- **Trim Fade Out X**
- **Trim Source In**
- **Trim Source Out**
- **Trim Sync Point**
- **Slide Media**
- **Previous Clip Trim Out**
- **Previous Clip Trim Fade Out**
- **Previous Clip Trim Fade Out X**
- **Previous Clip Trim Source Out**



Now simply move the jog wheel to **Move**, **Trim**, **Slip** or **Slide** the Clip(s)

The last four options are included for mapping to physical buttons on the controller.

Pressing the **Spacebar** or **Enter** confirms the change(s), **Esc** cancels.

Edit Command highlights:

Further **Edit**ing commands are to be found on the main **Edit** menu. **Please see: Edit on page 707**

Undo Pyramix keeps Track of all edit decisions and operations so they can be undone if necessary. This menu item shows the name of the last operation. To undo this operation, simply click on the Undo (operation) menu item and the listed operation will be undone. Whenever an item is undone, it immediately shows up as the most recent item in the Redo list.

Undo History Pyramix keeps Track of the most recent edit decisions and operations and shows them here in a sub-menu. These are listed from the most recent at the top, to the oldest at the bottom of the list. To undo a whole block of operations, click on the name of the oldest operation and everything since that time (from that point in the list to the top of the list) will be undone. The name of the next operation in the list will be shown as the next Undo item, and all the items that have been undone are immediately added to the **Redo History** list. The size of the undo history is set to 32 steps by default, but it can be adjusted in the **All Settings > Settings > Application > General** page.

Redo If an operation has been undone using the **Undo** commands in this menu, the most recently undone operation will be shown here. To **Redo** the operation, simply click on **Edit > Redo** and the operation will be Redone. Whenever an item is Redone, it immediately shows up as the most recent item in the **Undo** list in this menu. The next edit operation carried out in Pyramix will then purge this item since the operation could cause a conflict with previous operations and therefore renders the **Redo** invalid.

Redo History Pyramix keeps Track of the most recent operations that have been undone, and shows them here in the **Redo History** sub-menu. To **Redo** a whole block of operations, click on the name of the oldest operation and everything since that time (from that point in the list to the top of the list) will be Redone. The name of the next operation in the list will be shown as the next **Redo** menu item, and all the items that have been Redone are immediately added to the **Undo History** list. The next edit operation carried out in Pyramix will then purge this list since the operation could cause a conflict with previous operations and therefore renders the **Redo** list invalid.

Delete This command deletes the selected Clip or Region. When a selection is deleted, other material on the Track behaves according to the current **Remove** mode setting.

Cut Cuts the current selection from the project and places it on the Clipboard. When a Selection is **Cut**, other material on the Track behaves according to the current **Remove** mode setting.

Copy Copies the current selection from the project and places it on the Clipboard

Paste>

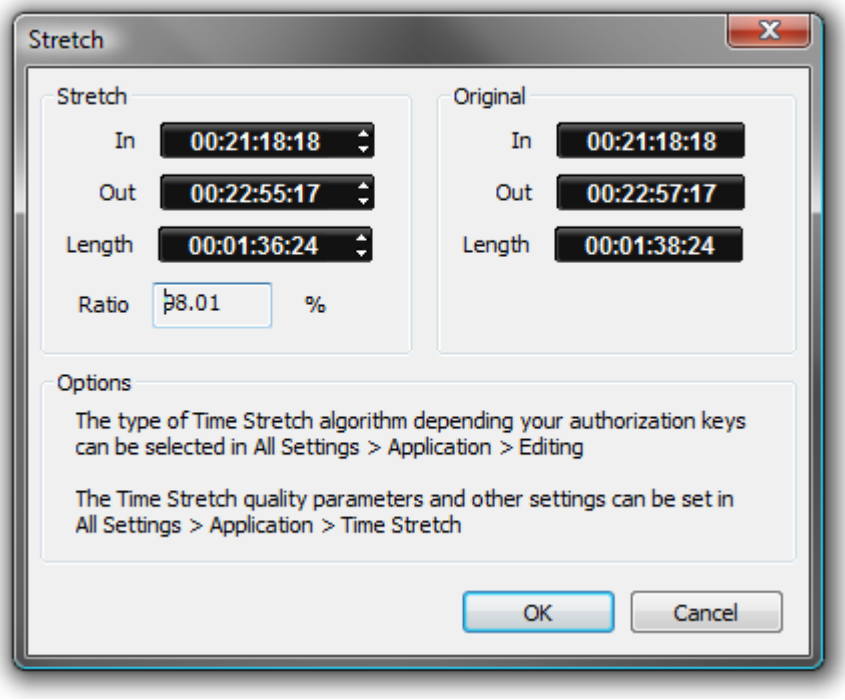
- **Paste to Cursor** Inserts the contents of the Clipboard starting at the current Playhead Cursor position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.
- **Paste to Mouse** Inserts the contents of the Clipboard starting at the current Mouse Cursor position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.
- **Paste Tail to Cursor** Inserts the contents of the Clipboard ending at I.e. immediately before, the current Playhead Cursor position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.
- **Paste Sync Point to Cursor** Inserts the contents of the Clipboard with the first sync point in the Clipboard contents at the current Playhead Cursor position. Depending on where the first sync point is, the material pasted may start, end or straddle the current Playhead Cursor Position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.
- **Paste & Place** Opens the Placement Tool with extensive placement options. **Please see: The Placement Tool on page 194**

Paste to Original TimeCode	If the Clipboard contains a single Clip, insert this at its original TimeCode * Works differently with Clips and Range Selections. If the Clipboard contains a single Clip this will be pasted to its original TimeCode. If the Clipboard contains more than one Clip or a selection of a Clip or Clips this will be pasted to the TimeCode at the beginning of where the selection was made on the next Track(s) where there are no Clips which would be overwritten.
Paste to End of Selection	Inserts beginning of contents of Clipboard to end of current selection.

Fill Selection	This command will substitute the Clipboard contents for the selected Clip or Region for the duration of the Clipboard contents. No Ripple of following Clips will occur.
Replace Selection	This command will substitute the Clipboard contents for the selected Clip or Region and will ripple all subsequent Clips if the duration of the clipboard contents is greater or shorter than the selected Clip or Region.
Loop Selection	This command will substitute a loop of the Clipboard contents within the selected Clip or Region boundaries, creating a 10ms cross-fade between the inserted iterations of the Clipboard contents. No ripple will occur. **Note**: all Clips within a region's boundaries will be replaced.
Fit Selection	This command allows a Clip on the Clipboard to be fitted into a user defined Region on the Timeline by stretching or squeezing it. (to maxima of 50% and 200%) This requires one of the optional Time compression/Expansion plug-ins to be present.
Delete and Ripple	Deletes the current Selection forcing a Ripple to occur on all affected Tracks.
Cut and Ripple	Cuts the current Selection and places it on the Clipboard forcing a Ripple to occur on all affected Tracks.
Paste and Ripple	Inserts the contents of the Clipboard to the current Playhead Cursor position forcing a Ripple on all affected Tracks.
Insert Silence	Inserts silence (blank space) into the current selection, forcing a ripple on all selected Tracks.

Delete and Join	Deletes the currently selected Clip/Selection and ripples the end of the Clip.
Cut and Join	Cuts and saves to the Clipboard the currently selected Clip/Selection and ripples the end of the Clip.
Delete and Ripple to Black	Deletes the currently selected Clip/selection and ripples all following butted or cross-faded Clips.
Cut and Ripple to Black	Cuts and saves to the Clipboard the currently selected Clip/Selection and ripples all following butted or crossfaded Clips.

Stretch Opens the Stretch plug-in dialog.



Stretch dialog

The Increment and Decrement buttons allow the In point, Out point or Length of the selection to be adjusted. The **Ratio** of stretch or squeeze is shown as a percentage. Clicking the **OK** button starts the process. **Cancel** aborts.

Depending on the available authorization keys, the Time Stretch algorithm can be selected in:

All Settings > Application > Editing : Time Stretch Tool : Selected combo box

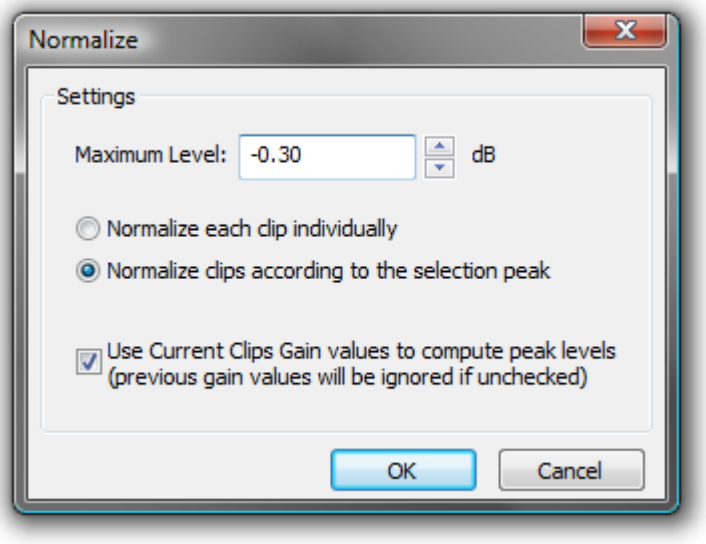
Settings for the chosen algorithm can be made in:

All Settings > Application > Time Stretch > 'Plug-in name' Settings

Note: The percentage of Stretch and Shrink is limited to 200% and 50% respectively.

Reverse Reverses the Clip in the Timeline so it plays backwards.

Normalize Opens the **Normalize** dialog.



Normalize dialog

The **Maximum Level** can be set by typing or using the increment / decrement buttons. The process can be applied to:

- **Normalize each clip individually**
- **Normalize clips according to the selection peak**

Clicking on **OK** starts the process. The selected **Clip** or **Clips** are examined to locate the highest peak, then the overall gain of the Clip(s) is increased so that this reaches the maximum level specified. All other selected Clips are either treated individually or raised in level by the same amount.

When in **Normalize clips according to the selection peak** mode, if the following box is checked:

- **Use Current Clips Gain values to compute peak levels (previous gain values will be ignored if unchecked)**

Then:

MaxPeak of the selection will be computed using the level of Clips:

MaxPeak = Max(peak + Level)

DeltaGainToApply = DesiredMaximumLevel - MaxPeak

And then for each Clip, of the selection:

Level = Level + DeltaGainToApply

Note: this check-box is grayed out when **Normalize each clip individually** is selected.

Normalize Example:

In this case with Maximum Level = -0.3 dB and "**Use Current Clips Gain values to compute peak levels (previous gain values will be ignored if unchecked)"** selected:

	Peak Level	Original Gain Value	New Gain Value
Clip 1	-18.0	4.0	3.8
Clip 2	-16.0	4.5	4.3
Clip 3	-12.0	-1.0	-1.2
Clip 4	-9.0	-2.6	-2.8
Clip 5	-3.0	1.0	0.8
Clip 6	0.0	-0.1	-0.3
Clip 7	-40.0	2.0	1.8
Clip 8	-20.0	4.2	4.0

Consolidate — Opens the **Consolidate** Project dialog box. **Please see: Consolidating Projects on page 478**.

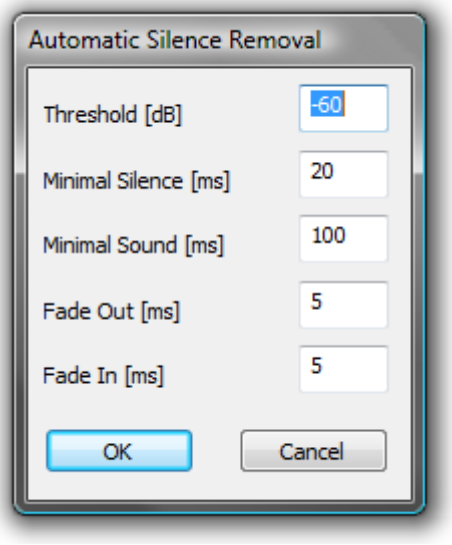
Spread — Opens the **Enter gap time** dialog which enables a space (silence) to be inserted between selected Clips.

Abut to selected — This command abuts all Clips between the Mark In and Mark Out on a Track to a selected Clip between the Marks on the same Track.

Auto Silence Removal

Edit > Automatic Silence Removal

Automatic Silence Removal operates by scanning the Selection and then automatically editing it into smaller Clips by removing Regions which fall below the threshold level and meet the 'Minimal Sound' and 'Silence' criteria set in the **Automatic Silence Removal dialog**.



Automatic Silence Removal dialog

Note: This function is non-destructive of the Media file - it edits the Clip by breaking it up into smaller Clips, not by deleting any actual audio from the hard drive.

Threshold [dB]

This field determines the threshold level in dB below which material in the Clip will be removed.

Minimal Silence [ms] / Minimal Sound [ms]

Sets the shortest periods of silence and sound which can be created by removing material that drops below the threshold. Some audio material (E.g. speech) contains very short gaps. If all of these were removed, the audio would become too "chopped up". On speech the object of the exercise is usually to break it into areas where speech is present not remove small gaps between words or sentences. Some audio material may have very short transient peaks in the midst of a segment that falls below the threshold. If all of these short transients were created as Clips the end result might well sound worse than the original.

The minimum setting is 10 ms and the maximum is 5000ms (5 seconds).

Fade Out [ms] / Fade In [ms]

Sets the length of the automatic **Fade Out** and **Fade In** that will be applied to all new Clips created by the **Automatic Silence Removal** operation. The range for this setting is between 5 ms and 500ms (1/2 second).

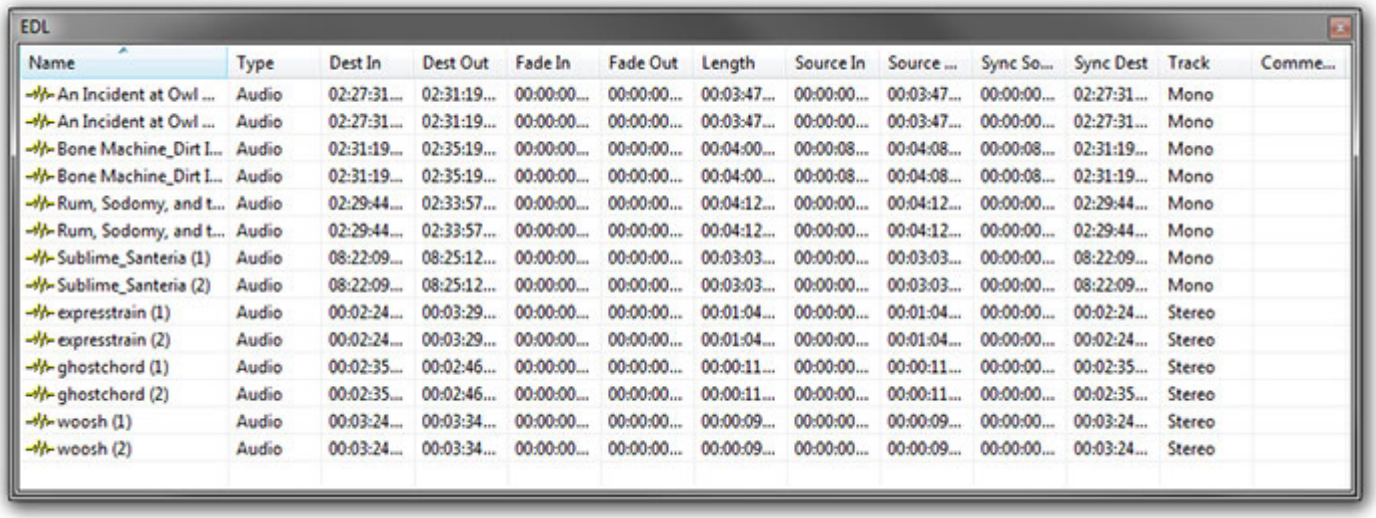
Once the parameters have been set, click **OK**.

This process takes into account the current **Remove Mode** to determine whether to leave gaps between the newly created Clips, or to join or ripple the Clips on the Track together.

Automatic Silence Removal cannot be executed on cross-faded Clips.

EDL Tab Window

The EDL (Edit Decision List) Window, is a textual and numeric representation of the same information shown graphically in the Timeline and Fade Editor.



Changes made here are reflected in the Timeline and vice-versa The list shows information concerning the Clips in the form of a list of text and TimeCode fields, most of which can be edited. This provides an alternate way of viewing and editing the composition. To edit a field, click in it to produce a cursor, or drag across the text in the field to select it, then type the desired information using normal text entry procedures.

Fields can be adjusted in width in the usual Windows way. Clicking in a Field label will sort all entries in the list in ascending order, sorted on that field. A second click sorts in descending order.

Fields available in the Edit Decision List Panel are:

Field	Description	Editable
Name	Clip Name	Yes
Type	Type of Clip(e.g. audio, video, midi etc.)	No
Dest In	Clip's In time in the Timeline	Yes
Dest Out	Clip's Out time in the Timeline	Yes
Fade In	Clip's Fade In length	Yes
Fade Out	Clip's Fade Out length	Yes
Length	Length of Clip in the Timeline	Yes
Source In	Media TimeCode value at Master Clip's Head	Yes
Source Out	Media TimeCode value at Master Clip's Tail	Yes
Sync Source	Media TimeCode value at the Clip's sync point	Yes
Sync Dest	Clip's sync point time in the Timeline	Yes
Track	Name of Track Clip is assigned to	No
Comment	Comments about the Clip from the properties page	Yes

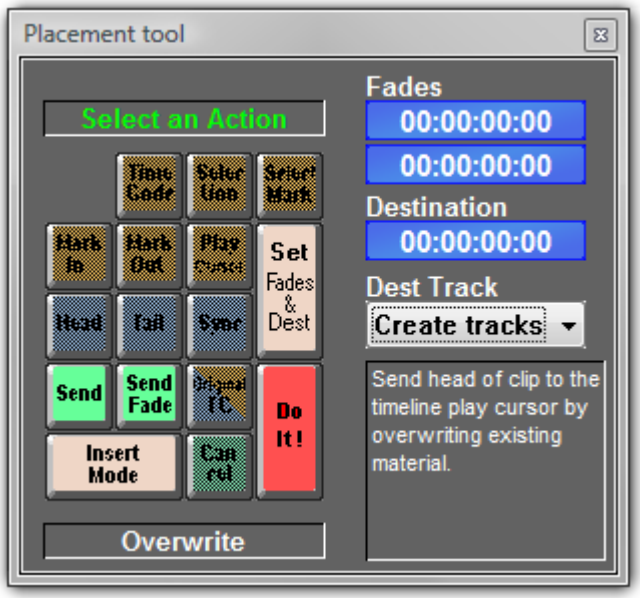
Absolute Sources in EDL View

When **View Sources in EDL View** is checked in the **Settings > All Settings > Application > TimeLine Layout** page, the original **Source In**, **Source Out** and **Sync Point** times are shown in **Absolute Time** in the **EDL** View. Absolute time is the incoming TimeCode recorded at the audio capture. When this mode is disabled, the default start time of TimeCode for the captured Clip is 00:00:00:00.

The Placement Tool

Although the **Placement Tool** remains an extremely flexible paste option, most important operations are directly available as single commands in the **Edit** menu. All these commands can be mapped to a keyboard key or included in a macro. In most cases, this is a far more efficient way to work.

Several different placement options for a Paste action can be chosen from the **Edit** menu or from the pop-up menu which appears if there is something to be pasted and the cursor is over a Track when you right-click E.g. **Paste to Cursor**.



Placement tool floating Window

Open the **Placement Tool** window by selecting **Paste & Place...** from the right-click Paste options above, or choose **Edit > Paste > Paste & Place** from the **Edit** menu.

The **Placement Tool** window allows the user to customize the placement of a **Clip** in extremely powerful and flexible ways.

The button layout corresponds to the numeric pad on a standard keyboard.

.Select a **Paste Place** action by choosing amongst the sequence of lit buttons in the window.

For example, you could choose to **Send** the **Sync Point** of a Clip to a typed **Time Code** location on a **Destination Track** chosen from a pop-up list; or you could **Send** the **Tail** of a Clip to the **Play Cursor**. Nearly every permutation of placement is possible. Whatever action you choose, the results of your choices will be displayed as text in the lower-right corner of the window before you choose to **Do It!**

Remember to choose an **Insert Mode** to determine how the surrounding **Clips** will be adjusted when the new **Clip** is placed in the **Track**.

Source - Destination Editing

Concept

Source - Destination Editing is a powerful method of viewing and editing material especially applicable to editing multiple, multi-track, takes into one, 'ideal' take. Special Source and Destination Track Groups allow multiple Timelines to be visible simultaneously. Each Source and destination Timeline has its own zoom level and Playhead cursor. By taking advantage of the 'Collapse' feature, editing 48 track source material becomes almost as simple as editing mono or stereo.

Source - Destination editing can also be extremely useful in broadcast and tracklaying applications. Pyramix can have as many Clip editors as you wish. Just create some Tracks, group them, set the group as a Source. Set the Clip Editor Track or Tracks as '**always visible**' (in the **Tracks** Tab Window, so each Clip Editor always stays on top of the composition and that's it.

If there is no Destination group in your composition then the section between the Gates in the Source Group/Clip Editor is sent to the positions delineated by the **Mark In**/**Mark Out** on the selected Track(s) in the composition.

Setting up a Source - Destination Environment

Templates

The quickest and easiest way to get started with Source - Destination editing is to use one of the supplied **Templates.** Choose the one which most closely matches your requirements, modify to taste and save as a **Template** for future use.

Starting from Scratch

In the Track Groups window, Create as many Source groups as there are alternate versions of the material you are editing and select their type as **Source**.

Tip: Create a Group, select its type as **Source** then choose **Tracks > Duplicate Selected Track Group** repeatedly until you have the required number of **Source** groups.

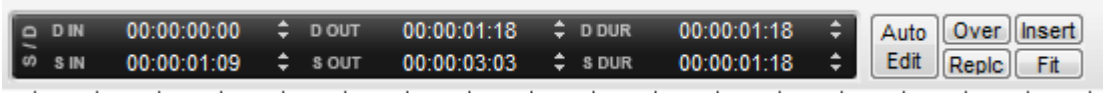
Create as many Destination groups you want to edit to (generally only one) and select its (their) type as **Destination**.

Create as many **Tracks** for each source take as you need for your editing and associate a **Group** to each of them.

Set these groups as **Keep Cursor**, **Free Zoom**, **Auto-Solo** and **No Selection**.

Select the option **Tracks > Auto Select Tracks**.

Show the Source - Destination Toolbar, **View > Scales > Toolbars > Source - Destination**.



Source-Destination Timescale Ruler Toolbar

You are now ready to proceed with Source - Destination Editing the following manner:

Source and Destination Groups have special markers called **Gate In** and **Gate Out** which can be Set, Nudged and Auditioned:

Set the selected Track Group Gate In/Out of the selected Track Group to Cursor with the menu **Cursor & Marks > Gate In/Out to Cursor**

To remove a Gate set it again in the same position.

Gates can be dragged with the mouse by clicking on them and moving.

Gate colors:

By default, **Gates** are displayed in **Grey**.

The **Source Gates** currently selected for the next edit operation are displayed in **White**.

The **Destination Gates** currently selected for the next edit operation are displayed in **Black**.

The current Source and Destination Gates for the next edit operation are the selected group Gates or if no groups are selected the last group where Gates have been set/removed/modified.

In 3 point editing, the “virtual” missing gate of the group that has only one gate set is displayed in Grey.

Set the Cursor to the selected Track Group Gate In/Out

Cursor & Marks > Cursor to Gate In/Out

Zoom to the selected Track Group Gate In/Out.

Cursor & Marks > Show Gate In/Out

Nudge the selected Track Group Gate In/Out with the menu selection

Cursor & Marks > Nudge Gates > Nudge Gate In/Out to Left/Right.

Each nudge operation can be auditioned automatically by setting **'Audition**

after Nudge' in the **Settings > All Settings > Application > Editing** page

Audition the selected **Track Group Gate In/Out Pre/Through/Post** with the

menu selection: **Machines > Internal Machine > Audition > Audition Gate In/Out**

Pre/Audition/Post.

The space between **Gate In** and **Gate Out** can be selected with the menu

Selection > Select between Gates.

Positions of **Gate In** and **Gate Out** for each selected groups can be displayed and manually modified with the **Source-Destination Toolbar** (If not already visible show with **View > Scales > Toolbars > Source-Destination**)

Once Gates In and Out have been set, Source - Destination operations can be applied FROM either the selected Source Track Group or the last Source Track Group whose Gates have been set TO either the selected Destination Track Group or the last Destination Track Group whose Gates have been set.

Both Source and Destination Gate In and Gate Out can be set or removed

(by setting them twice at the same position) to perform any combination of Source - Destination editing operation described in the table below.

When Gates are set the following Source-Destination operations available in the Edit menu (**Edit > Source-Destination > [edit command from list below]** can be applied:

- **Auto-Edit Source to Destination**
- **Overwrite Source to Destination**
- **Insert Source to Destination**
- **Replace Source to Destination**
- **Fit Source to Destination**

When the Source has only 1 Gate then the Region to edit can be automatically adjusted to the end (or beginning in case of a single Gate Out) of the Clip under the Gate when the edit operation is performed. This is available by choosing the menu item:

Edit > Source – Destination Settings > Limit 1 Gate Sources to End/Beginning of Clip.

When the Source has 2 Gates set and the Destination has 1 Gate set, then the behavior of the Auto-Edit Source to Destination operation can be chosen between Overwrite or Insert by choosing the menu item:

Edit > Source- Destination Settings > 3 Gates Auto-Edit does Overwrite

or:

Edit > Source- Destination Settings > 3 Gates Auto-Edit does Insert

The menu item:

Edit > Source - Destination Settings > Auto Set Destination Gate In after Edit

allows the Destination Gate In to be set to the previous Destination Out point after any Source-Destination operation. This automatically prepares the Destination for the next operation. The Destination is also automatically centered around the new Gate In.

The menu item **Edit > Source - Destination Settings > Auto Set Destination Gate In after Edit** allows the Destination Track Group to be automatically selected after any Source-Destination operation.

All these operations works independently of the **Auto-Ripple** mode (they have their own overwrite/ripple modes described in the table on the next page) but follow the Auto-Crossfade settings accessible in the menu **Edit > Auto-Crossfade**.

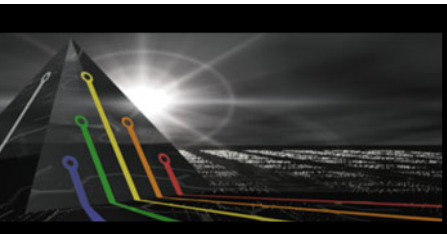
Keyboard Shortcuts

Most **Source - Destination** operations are available as **Keyboard Shortcuts.**

2,3 and 4 Point Edits

Source-Destination operations	Source Gate In OR Gate Out Only	Source Gate In & Gate Out
Destination **Gate In OR Gate Out Only**	**Auto-Edit:** Performs **2 points** editing by doing the following **Overwrite** operation. **Overwrite:** Copies material **FROM** Source Gate In to the end of the Track or from start of Track to Gate Out **TO** Destination Gate In or Destination Gate Out by overwriting Destination material	**Auto-Edit:** Performs 3 point editing by doing the following Overwrite or Insert operation depending which one is selected in the menu **Edit > Source-Destination Settings**. **Overwrite:** Copies material between Source Gate In and Source Gate Out to Destination Gate In or Destination Gate Out by overwriting Destination material **Insert:** Copies material between Source Gate In and Source Gate Out to Destination Gate In or Destination Gate Out by rippling Destination material
Destination **Gate In & Gate Out**	**Auto-Edit:** Performs 3 points editing by doing the following **Overwrite** operation. **Overwrite:** Copies material from Source Gate In or Source Gate Out to Destination Gate In and Gate Out by overwriting Destination material	**Auto-Edit:** Performs 4 point editing by doing the following **Replace** operation. **Overwrite:** Copies material between Source Gate In and Source Gate Out to Destination Gate In by overwriting Destination material. **Insert:** Copies material between Source Gate In and Source Gate Out to Destination gate In by rippling Destination material **Replace:** Replaces material between Destination Gate In and Gate Out by material between Source Gate In and Source Gate Out by rippling the Destination material **Fit:** Replaces material between Destination Gate In and Gate Out by material between Source Gate In and Source Gate Out by stretching or squeezing the Source material

Fade Editor 9



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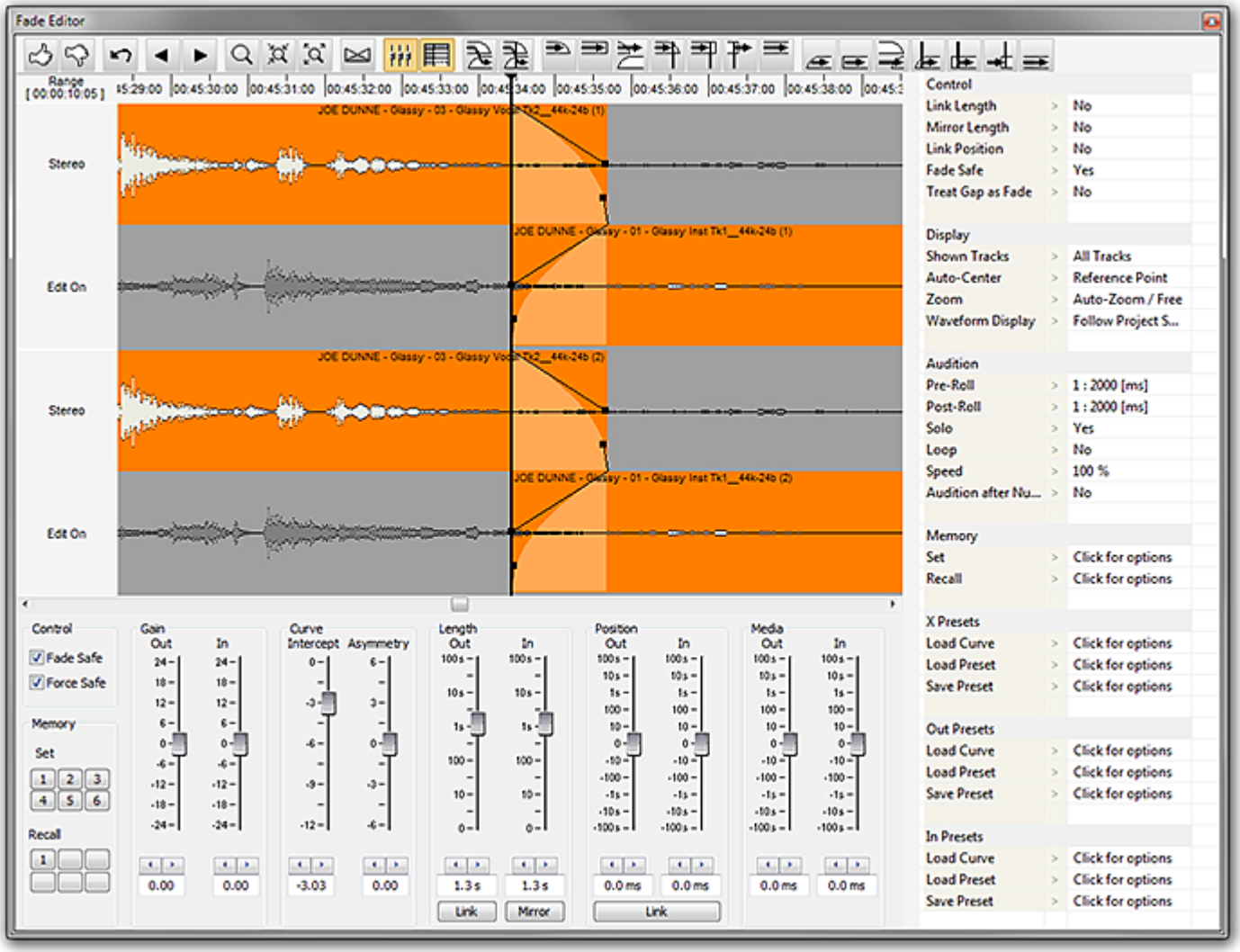
Fade Editor Tab Window

The Pyramix Fade Editor offers several methods for creating fades and cross-fades. Fades can be made graphically by simply clicking and dragging appropriate points on the display or by using a specialized set of faders and buttons or by directly entering numeric data. A comprehensive set of auditioning options is provided together with libraries for user defined fade shapes and fades.

The Fade Editor always displays the fades for the current selection in the main Editor. The nearest fade to the click point is automatically selected.



Fade Editor Tab floating Window

Toolbar

Contains these buttons. If your Fade Editor has a different selection you can change that in **Settings > All Settings > Application > Desktop Layout : Fade Editor** :

Accept & Close Editor (Close the Fade Editor and keep the changes, in effect an '**OK**' button)

Restore & Close Editor (Restore the fade to its state prior to opening the Fade Editor or selecting a new fade, effectively a **Cancel** button)

Undo last fade change

Select/Edit Previous Fade

Select/Edit Next Fade

Zoom around the current Fade (Reset Zoom)

Zoom In

Zoom Out

Crossfade (Makes an asymetric fade symmetrical by using the fade length and curve from the side of the crossfade that is not selected and applying it to the selected side. E.g. to create the mirror image of a fade out select the incoming clip and choose **Crossfade**)

Show/Hide Faders & Control Section

Show/Hide Parameters & Options Section

Audition Crossfade

Audition Crossfade around the Reference Point

Audition Out with Curve

Audition Out without Curve

Audition Out after Fade

Audition Out up to the Reference Point with Curve

Audition Out up to the Reference Point without Curve

Audition Out from the Reference Point without Curve

Audition Out Original Material

Audition In with Curve

Audition In without Curve

Audition In after Fade

Audition In from the Reference Point with Curve

Audition In from the Reference Point without Curve

Audition In to the Reference Point

Audition In Original Material

Undo Note:

By default **Undo** in the fade editor is restricted to the last action only in order to conserve memory. In a complex mix the sheer number of actions to be remembered for undo can lead to excessive memory consumption. This behavior can be changed in **Settings > All Settings > Application > Editing : Fade Editor**. Simply check the box for **Enable Undo for every Fade Editor change**.

The Graphical Display

Consists of the following elements:

- The TimeCode scale displaying the Zoom range on its left.
- A Reference Point which is set by default at the edit point or in the middle of the (X) Fade. This marker can be moved by clicking in the TimeCode Scale and is just a Reference Point for Auditioning (see above) or for Auto-Center (see below)
- All Tracks or a selection can be displayed (see Parameters & Options below)
- At the left of each Track display The Track name of each Clip is shown, with a toggling **Edit On/Off** selector. This allows one or more Clip's/Fades to be excluded from further modification.
- A Vertical Scrollbar navigates through hidden Tracks if any
- An Horizontal Scrollbar navigates before and after the Fade position
- The outgoing and incoming Clip fades are displayed with curves
    - The Fade Position can be moved by clicking and dragging within the Fade area (Cursor changes to hand)
    - The Fade Length can be changed by clicking and dragging on the left or right side of the Fade area. (cursor changes to **<|>**)
    - The Media of the Clips can be moved by clicking and dragging outside the Fade area. (Cursor changes to hand with tape reel)
    - The Fade Curves can be modified by clicking and dragging on the Bezier Control Point Handles in the Fade black box

Waveform Color Change

The waveform color can be used to indicate where the main Playhead Cursor is in relation to the **Reference Point**. When the **Update waveform color with cursor position** check box is ticked in **Settings > All Settings > Application > Editing : Fade Editor** the waveform(s) color will change to the color chosen in **Settings > All Settings > Application > TimeLine Layout : Clips & Waveforms - FadeEditor Waveform Position Color** according to the location of the main Playhead Cursor and the **Reference Point** (default is centre of crossfade)

Context Menu

Right-clicking in the graphical display pops-up a context menu:

The **Fade In**, **Fade Out** and **X Fade** sub-menus offer choices of **Default** (complete or Curve Only), **Standard**, (any of the standard fade curves) and **Load** (from the list of previously saved presets)

The Faders & Control Section

Has the following controls and displays:

- The **Fade Safe** check box in the Fader section ensures (when checked) that all following fades to the right of the one being edited are left intact while editing the current fade. This enables Auto-Ripple to be used without **Auto-Ripple** while keeping Fade synchronization clean.
- When the **Force Safe** box is checked the Fade Editor forces **Fade Safe** to enabled after each edit change.
- Six **Memory Set** and six **Memory Recall** buttons store and recall all the settings in the **Fade Editor**. The recall buttons are only numbered when there are stored parameters to recall.
- **Gain** Faders, Nudge buttons (in 0.5dB steps) and Manual Entry Value Box for both **Fade Out** & **Fade In**
- **Intercept** and **Asymmetry** Faders, Nudge buttons and Manual Entry Value Box (in dB)
- **Length** Faders, Nudge buttons and Manual Entry Value Box (in milliseconds. Type an **s** after any numeric entry to obtain a value in seconds) for both Fade Out & In
  - Length of Fade Out & In can be linked by clicking the **Link** button
  - Length of Fade Out and In can be changed symmetrically (centered) by clicking the **Mirror** button.
- **Position** Faders, Nudge buttons and Manual Entry Value Box (in milliseconds, type an s after any number entry for a value in seconds) for both Fade Out & In
  - Position of Fade Out & In can be linked by clicking the **Link** button
- **Media Position** Faders, Nudge buttons and Manual Entry
- **Value** Box (in millisecond, type an s after any number entry for a value in seconds) for **Fade In**

Parameters & Options Section

In this table parameters and options may be modified by clicking on **>**.

There are these sections and fields:

Control

- **Link Length** (see above)
- **Mirror Length** (see above)
- **Link Position** (see above)
- **Fade Safe** (see above)
- **Treat Gap as Fade**. When set to **Yes** enables two Clips which are not overlapping but with overlapping Media to be edited in the Fade Editor as a fade. Default is **No**.

Display

- **Shown Tracks** offers these choices:
  - **All tracks**

- **Follow TimeLine Display**
- **Choice of tracks**. The number of Tracks selected in the TimeLine controls the available choices. So, if 4 Tracks are selected, there will be the option of 1, 2, 3, or 4 Tracks

- **Auto-Center**, enables automatic re-centering of the display around the Fade or Reference Point after certain operations
  - **None**
  - **Fade**
  - **Reference Point**
- **Zoom**, can be one of the following:
  - **Free**, follows only Zoom Reset, In and Out
  - **Auto-Zoom**, automatically Zooms around the current Fade after some operations
  - **Auto-Zoom / Free**, automatically Zooms around the current Fade but only when it enters the Fade Editor, thereafter, the Zoom is Free
  - **Timeline**, follows the Timeline Zoom factor
  - Choice of User defined Zoom Presets (see menu **View > Zoom**)
- **Waveform Display** Can be any of the following:
  - **Follow Project Settings**
  - **X1**
  - **X2**
  - **X4**
  - **X8**
  - **X16**
  - **X32**
  - **X64**
  - **Auto-Scale Visible**

Audition

- **Pre-Roll** from the choices defined in the **Settings > All Settings Application Playback/Record** Page
- **Post-Roll** from the choices defined in the **Settings > All Settings Application Playback/Record** Page
- **Solo**, when **On** only the edited Tracks are auditioned, when **Off** all Tracks of the composition are auditioned as well
- **Loop**, any audition operation is repeated until Stop is pressed
- **Speed**, allows choice between 100%, 50% and 25% of normal play speed for auditioning
- **Audition after Nudge**, to automatically audition the Fade after nudging any parameter

Memory

- **Set**, allows saving up to 6 temporary Fades for comparison
- **Recall**, allows recall of one of the 6 temporary saved Fades

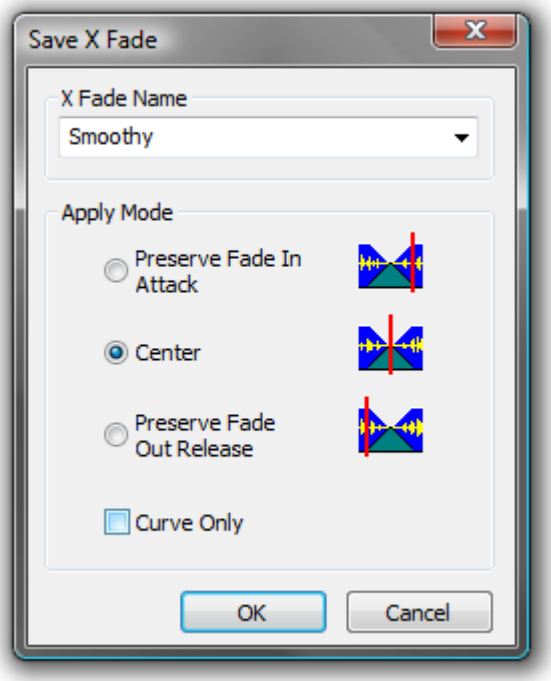
X Presets / Out Presets / In Presets

- **Load Curve**, allows loading the Curve **SHAPE** only from a choice of:
  - **Default**
  - **Power**
  - **Linear**
  - **dB**

- **Cosine**
- **Root-Cosine**
- Any **User-defined** curves

- **Load Preset**, allows loading a Fade from a choice of:
  - **Default** Fade
  - Any user defined Fades
- **Save Preset**,
- **Default** Fade
- New opens the Save X Fade or Save Fade pop-up dialog box (See below)

Save X Fade



Save X Fade dialog

The dialog box opens with the cursor in the **X Fade Name box**. Simply type a name for the new preset or choose an existing one to over-write using the dropdown list. Choose appropriate options and click **OK** or hit the **Enter** key to save the preset.

Apply Mode Options

A number of options are provided which affect the way the Fade will be applied when recalled.

Curve Only

When this box is checked only the curve shape will be recalled and applied to the overlapping Tracks for the duration of the existing cross-fade. If left unchecked, the original duration and positions of the start, end and reference point will also be applied to the existing cross-fade.

Preserve Fade In Attack

Fade will be aligned to the left, relative to the edge of the Clip, when recalled.

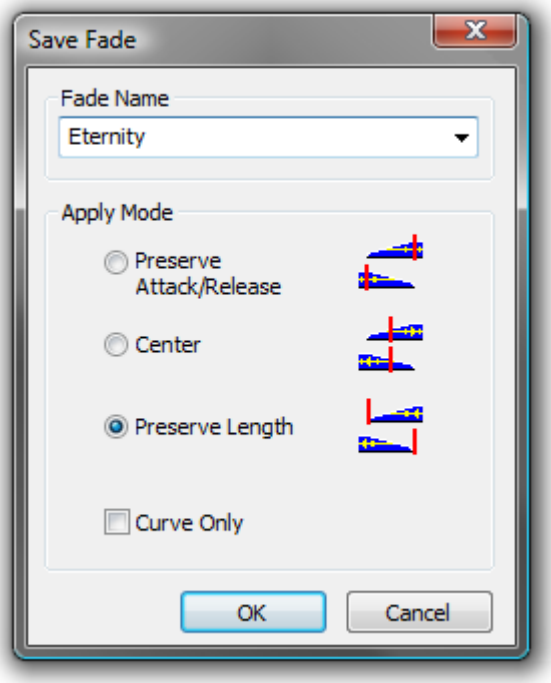
Center

Fade will be centered, relative to the edge of the Clip, when recalled

Preserve Fade Out Release

Fade will be aligned to the right, relative to the edge of the Clip, when recalled.

Save Fade



Save Fade dialog

The dialog box opens with the cursor in the **Fade Name box**. Simply type a name for the new preset or choose an existing one to over-write using the dropdown list. Choose appropriate options and click **OK** or hit the **Enter** key to save the preset.

Apply Mode Options

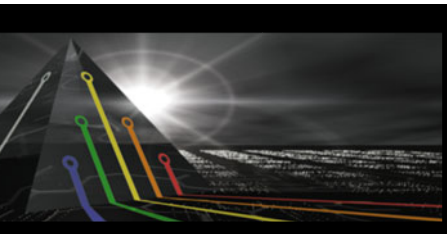
A number of options are provided which affect the way the Fade will be applied when recalled.

Preserve Attack or Release

Center

Preserve Length

10 Mixer



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Overview

The Pyramix Mixer has evolved into an extremely powerful tool kit. The extensive range of components and the routing and automation possibilities can be a potential source of confusion. However, the basic principles are simple and logical. Signals enter mixer strips at the bottom, go through various controls and processing to the top of the strip where they are routed to a bus or buses. The buses run horizontally and the sum of the bus signals enters the bus master strip at the top and moves down through a master fader and other controls to the output(s).

Native VS3, VST and External Insert plug-in effects can be inserted in Input Strips, Aux Send Bus masters, Mix-Groups and Mix Buses.

> **Note:** For low latency foldback when recording an artist the Direct Monitoring Strip type should be used.

The mixer can also take the output from an ASIO enabled application and merge it into the MassCore engine and I/O and send audio to the ASIO enabled application.

To facilitate copy and paste between projects and importation of AAF/OMF/EDL etc. projects the Mixer has a shared mode where the same mixer is used for more than one open Project.

If you are new to Pyramix, please use one of the simpler mixer templates to become familiar with the basic features. E.g. **Mix 08 X 02 (Stereo)**

Bus Architecture and Panning

For Pyramix Version10 and subsequent versions the mixer has been modified and enhanced extensively.

> **Important!** When deciding on which types of buses to use, **Legacy** or the new **General Mixing Buses**, it is crucial to understand the limitations that are inherent in a system with two ways of employing busing. Please ensure that if you are going to use the new busing and panning that you convert **ALL** of your buses to the new type. Or, if you are building a new Project, please choose the new buses only.

- - **Legacy subgroups will not feed into new buses.**
- - **A mix of legacy and new buses may confuse some control surfaces.**

Bus Architecture

The current type of Mix/Aux bus is the **General Mixing Bus**. This comes in five varieties:

- Mix Bus
- Mix Group
- Aux Bus
- Aux Group
- Object Bus

The **Object Bus** is provided for sending any Input Strip's output(s) to a specialized Object Bus for new 3D, immersive formats such as Dolby Atmos.

The bus type is selected from a dialog when the bus is added.

Aux v Mix Groups

In Pyramix **Aux** buses are intended solely for foldback purposes. They are not intended to be used as a means of applying effects, internal or external, to a collection of sources, with the bus output re-routed back to an input strip. Effects can however be inserted into **Aux** buses in order to enhance the artists experience.

Mix-group buses are intended to be used as conventional Sub-groups and, of course, can have internal VS3 and VST effects inserted and or external inserts.

Using **Mix Group** buses for mix effects ensures that the full automatic (and manual) delay compensation features will function correctly.

General Mixing Bus Channel Configuration

All General Mixing Buses channel configuration can be changed at any time in the 3D Room Editor. **Please see: The 3D Room Editor on page 267**

Room Models

Two types of room model are available:

Virtual Rooms use a Stereo panning based algorithm using either a Square Root or Sin/Cos panning law extended to all three dimensions. In this mode speaker positions are fixed. This mode is designed for Film, Post Production or Music where no real world room definition is needed or known in advance and precision is needed to focus on each individual speaker.

Sized Rooms use a sound in air propagation/attenuation based algorithm. In this mode speaker positions are editable. The panning algorithm uses real distances to compute levels. In this mode all speakers will output some level even if it is very low, wherever the Panner is positioned.

The room type can be switched at any time in the **Room Editor**.

Panning Control Buses

Panning is achieved using **Panning Control Buses**. These are purely control buses, they don't process any audio and have no channels, no associated Output Strip and no I/O. Instead of having a separate panner on each Input Strip Bus Send there is one or more Panning Control Buses. Input Strip Bus Sends are assigned to Panning Control Buses or routed direct using a **Channel Router** matrix. One Panner can control several Bus sends in different formats. E.g. when Mono, Stereo, Surround and Auro3D Buses are present. Equally, if it is desired to pan differently to different Buses, this can be achieved by adding more Panning Control Buses.

The Panning Control Bus user interface in each Input Strip can be switched to one of three different panner types or a direct Channel Router Matrix. Left-click on the Bus Send **Pan 1** etc. label to open the **Routing** context menu with the choice of:

Channel Router

Panner 1

Panner 2

etc.

Panner Types

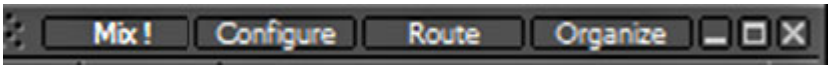
Panner Type is selected by right-clicking on a Panner in the Strip to open the context menu and choosing: **Set Panner Type** The sub-menu offers the choice of:

- **None** useful if you wish to hide the panner in a Strip using a **Router**
- **3D Panner**, which gives access to the standard 2D surround control plus the Height/Z axis, divergence and LFE gain.
- **2D Panner**, which gives access to the standard 2D surround control plus divergence and LFE gain.
- **Pan/Balance** (1D Panner), which gives access to three types of panning (below) plus divergence and LFE gain.
    - On a Mono strip the control is always pan.
    - On a Stereo strip the following choices are offered as **Dual Source Mode**
      (Right-click on the Panner in the Strip to open the context menu and choose: **Dual Source Mode**
        - None (Hides the Panner in the Strip. Useful if you don't want to see the Panner in a Strip where the Router is in use.
        - Single Pan
        - Dual Pan
        - Balance

Note: Width control is the **Source Size** parameter when in **Single Pan** mode.

Mixer Pages

The Mixer user interface is arranged in four pages grouping functions in a logical manner. Most time will be spent working in the main **Mix !** page. The other pages, **Configure**, **Route** and **Organize**, toggle with the **Mix !** screen and are accessed from buttons at top right of the screen...



Mixer Window Tabs and control buttons

Mix !

Overview

This is the operational Mixer user interface page. It is necessarily complex when used to the fullest extent since Pyramix' capabilities are prodigious. However, it can also be kept very simple. The Mixer surface is divided into a number of areas both vertically in strips and horizontally in rows. A number of features help to keep track of what is going on in large and complex mixers. Strips and buses can be colored and there is a powerful bi-directional signal flow display. I.e. when signal **FL**ow is active, clicking on an input strip highlights all the buses it is feeding. Similarly, clicking on a Bus highlights all the Input Strips feeding it. A modal context menu is available by right-clicking on the mixer. The options available depend on which area of the mixer the cursor is over.

Controls

Rotary Controls, sliders and Faders are adjusted by grabbing them with the mouse and dragging. Rotary controls and horizontal sliders are adjusted by dragging left or right and faders by dragging up or down. Double-clicking a Fader, slider or Rotary knob returns the value to the default. E.g. unity gain on a Channel Strip Fader. Holding down the **Ctrl** key increases resolution to 0.1dB. Keyboard up and down arrows adjust gain by 0.1dB per press, with **Shift** 0.5dB per press and with **Ctrl + Shift** 1.0dB per press. Bargraph shows peak level.

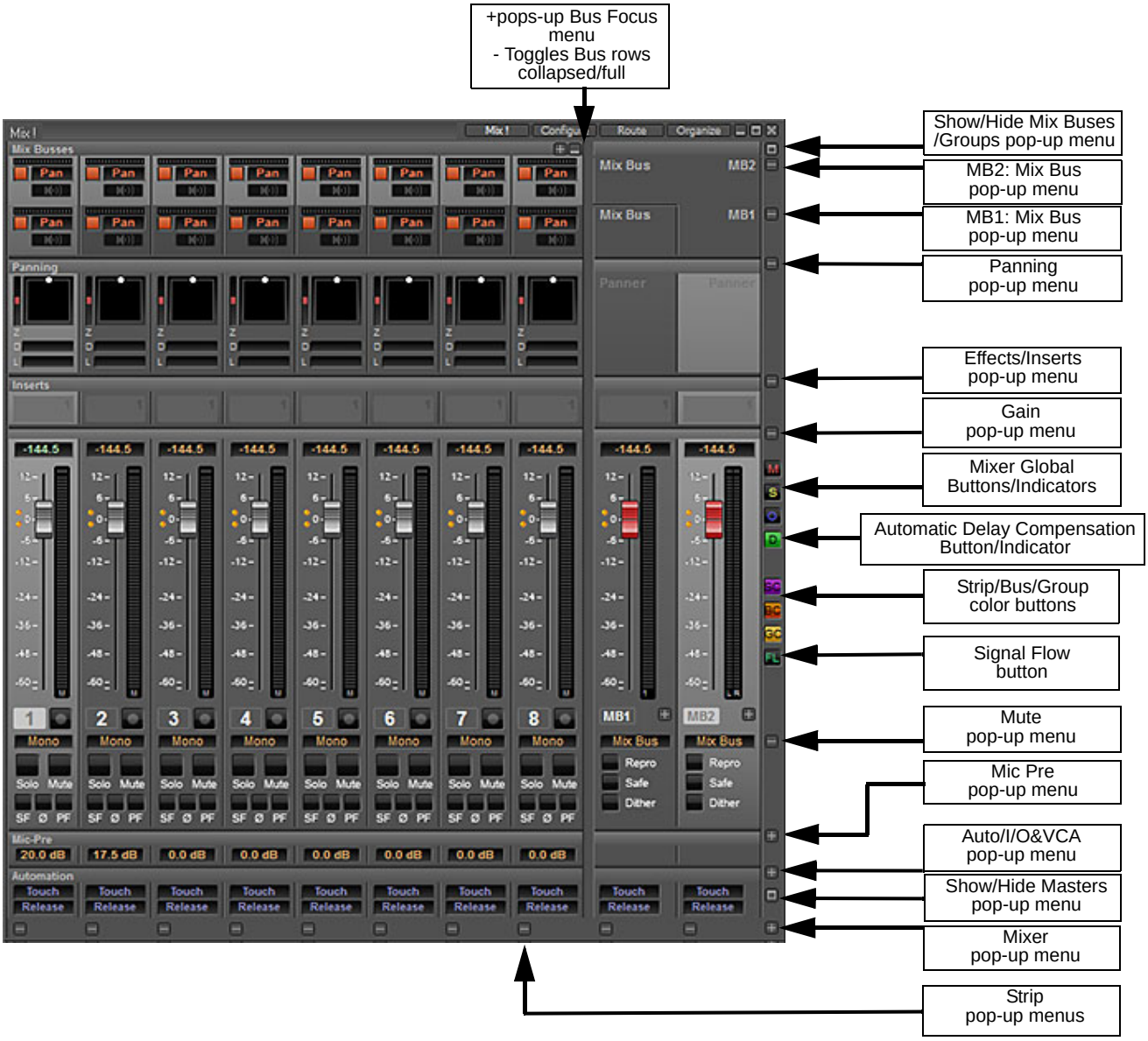
Mix Window

The Mix Window can be resized vertically or horizontally by placing the Mouse pointer over an edge until it turns into a double-headed arrow, then clicking and dragging. Dragging the right edge changes the size of the Masters Strips section and dragging the left edge changes the size of the Inputs Strips section.
Dragging the top or bottom edges reduces the Mix, Aux and Groups portion and any which are hidden can be scrolled.

Scrolling Strips

When the Mix Window is too small to show all the Strips scroll bars appear. These may be operated by clicking and dragging or by using the mouse scroll wheel. Using the scroll wheel without modifier, scrolls the Buses. Using the scroll wheel with the **Ctrl** modifier the Input Strips are scrolled if the mouse pointer is in the Inputs Strips section or the Master Strips are scrolled if the mouse pointer is in the Master Strips section.

Basic Mixer



Simple 8 X 2 X 1 mixer

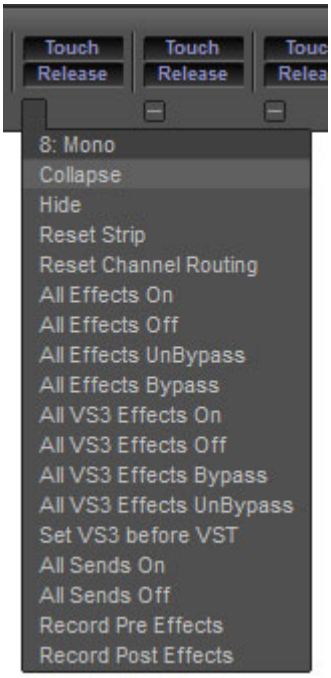
\+ Clicking on this pops-up a menu which enables individual Buses to have the focus and or All Mix Buses to be collapsed or expanded.

Focus Mix Bus pop-up

Clicking on a single bus in the list collapses the others.

\- Clicking on this toggles the Buses between collapsed into a single row and expanded to full height in separate rows.

Strip Pop-up Menus



Strip pop-up

The precise contents of the Strip pop-up menu will vary according to the Strip type. The following is a selection of important functions:

Collapse	Collapses the Strip to a narrower Strip. If the Strip is collapsed the **-** changes to **+**. Clicking on **+** restores the Strip to full width.
Hide	Removes the Strip from the Console UI. To restore hidden Strips hover over the Mixer **+**button and select **Show All** in the **Input Strips** or **Masters** section as appropriate.
Reset Strip	Resets all Strip controls to their defaults.
Reset Channel Routing	Creates a diagonal unity routing when both the Strips and the Buses channel types are set to none.

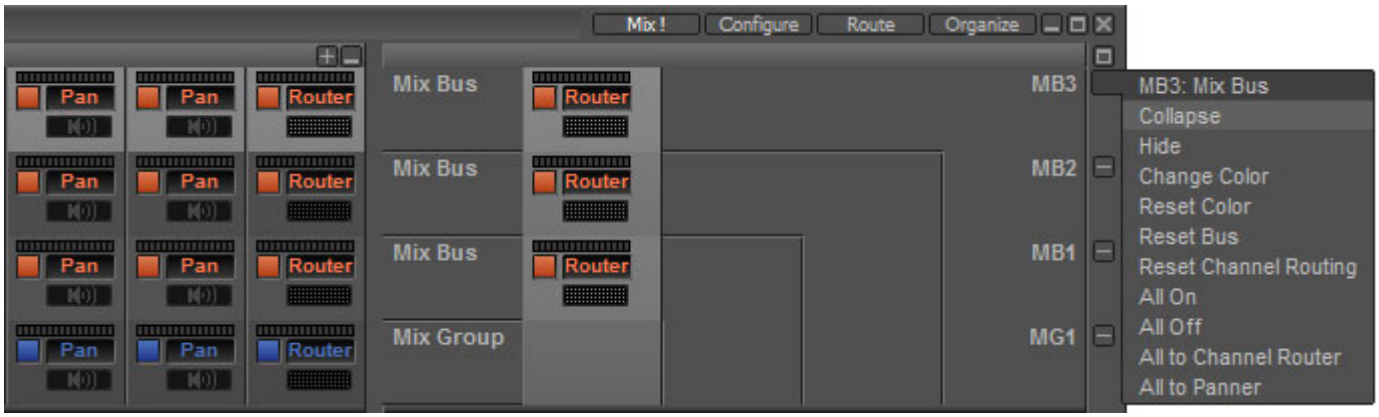
The other entries are self explanatory.

Mixer Rows

Starting at the top a mixer can contain rows as follows:

Mix & Mix Group Buses Every mixer contains one or more summing Mix Buses. Mono, Stereo and Multi-channel are all available. The Mix Bus rows also contain the On/Off switch and the output meter to the target Bus(es).

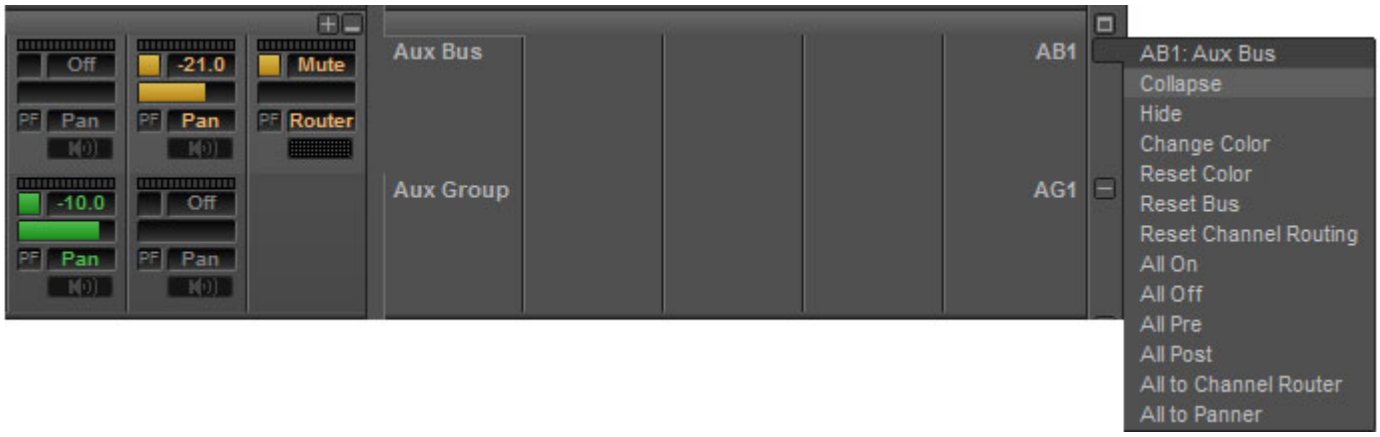
Note: Mix & Mix Group Bus sends are switched **OFF** by default.



Mixer & Mix Group Buses rows & Mix Bus drop-down

Aux & Aux-Group Buses If Aux and or Aux-group Buses are present in the mixer their send controls appear here.

Note: Aux & Aux-Group Bus sends are switched **OFF** by default.



Aux & Aux Group Buses rows & Aux Bus drop-down

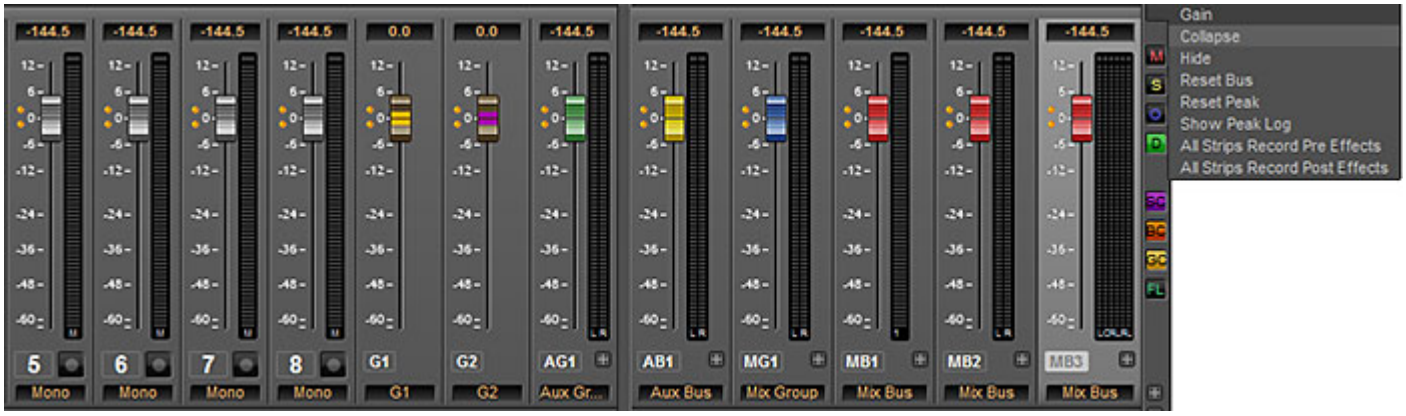
Effects The Effects row has one or more slots per strip for Plug-ins. In Pyramix all processes are considered to be effects. Plug-ins can be either native VS3 or VST. The effects row expands to accommodate the number of plug-ins instantiated in the strips.

Panning The panning row has a surround panner section in Input Strips, Mix Group and Aux Group Strips.

Aux & Aux Group Buses rows & Aux Bus drop-down

Gain

The Gain section includes the Fader, Meter(s) and Record Arm button/indicator (on applicable strips).



Aux & Aux Group Buses rows & Aux Bus drop-down

Mute

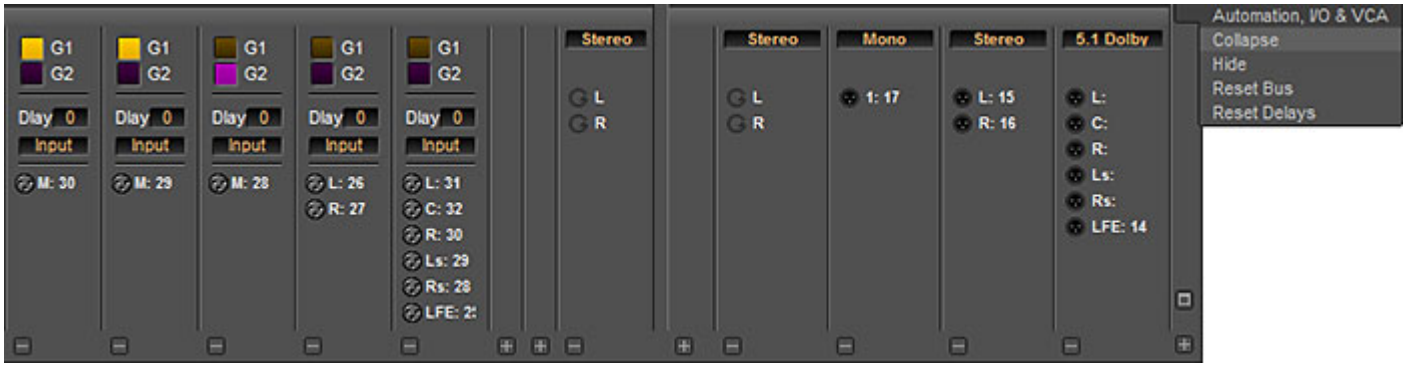
The Mute row includes the Mute and Solo buttons along with Solo Safe, Phase reverse and Pre-fade on Input Strips, Repro, Safe and Dither on Aux and Mix Buses, Mute, Safe Re-Pan and Pre-Fade on Aux and Mix Group Strips.

Mute & Solo row & Mute drop-down

Mic Pre

Only present in a system including a HORUS or Hapi with an A to D card installed. Includes all the controls necessary to set source type, gain, phantom powering etc.

Mute & Solo row & Mute drop-down

Automation, I/O & VCA This row is modal. When collapsed it shows two Automation buttons per strip. When expanded it shows the I/O and VCA Group assignments.

Input, Delay & VCA Group row & Automation, I/O & VCA drop-down

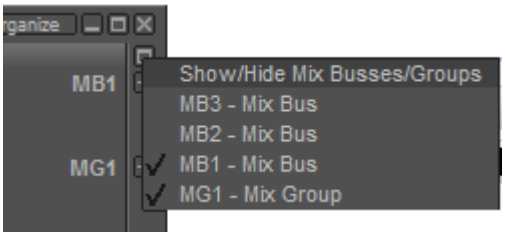
Expand / Collapse Vertical

Expand / Collapse and Hide can reduce clutter by concealing unused controls. This is a simple mixer with all areas Collapsed vertically:

Simple 8 X 2 X 1 mixer Window with all areas hidden

The small, grey **+ -** boxes on the right of the mixer surface toggle horizontal areas of the mixers surface shown full size or collapsed. They also pop-up context menus when the cursor is above them. (see below)

This button near the top of the mixer on the right-hand edge pops up a **Show/Hide Mix Buses/Groups**menu:



Show/Hide Mix Buses/Groups menu

Ticked Bus rows are shown full height. If all Buses are hidden a single row is displayed to represent all the Buses present in the mixer.

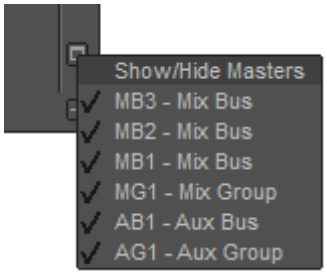
The individual Bus rows expand/collapse when clicked on the meter area in an Input Strip and collapse all other bus rows.

mixer + - pop-up menus

Expand / Collapse Horizontal

The **-** buttons at the bottom of each Strip collapse the strip to a narrow gray band and also pop-up a menu. The button changes to **+** when the Strip is collapsed. Clicking again restores the strip to full with. Bus strips also have a **+** button to the right of the Bus label. It toggles the meters between narrow and wide. In the case of a Bus with many channels the strip width is increased to accommodate the meters when expanded.

This button near the bottom of the mixer on the right-hand edge pops up a **Show/Hide Masters** menu:

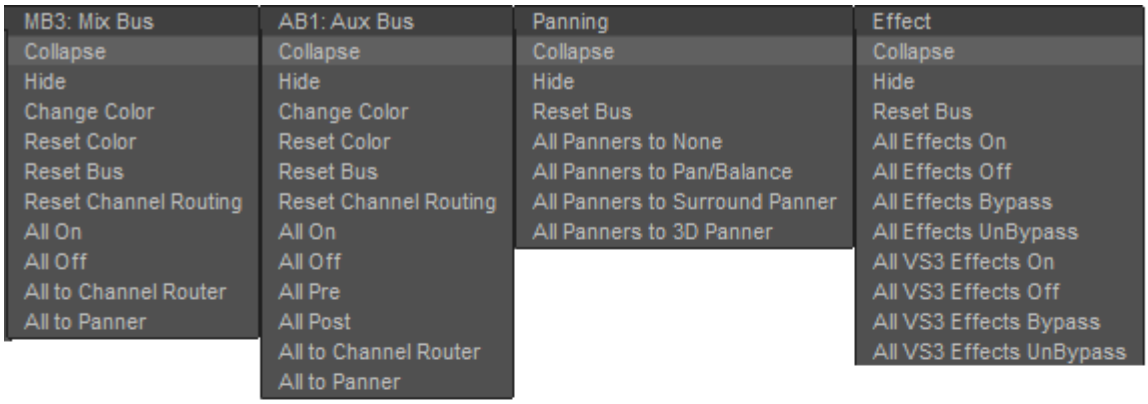


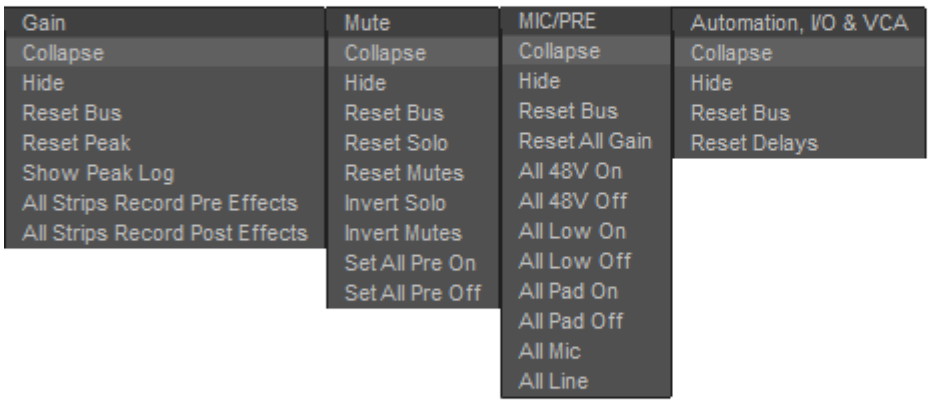
Show/Hide Masters menu

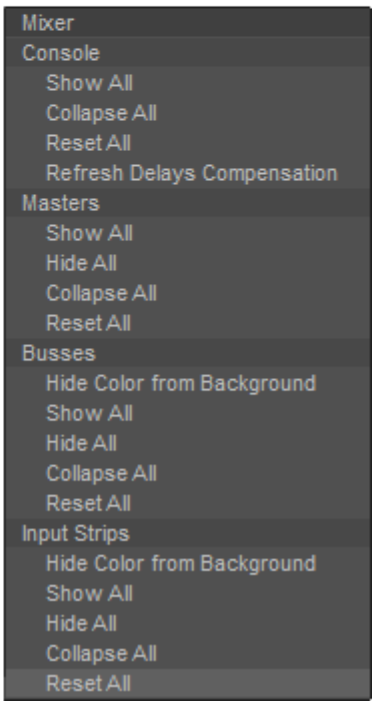
Ticked Bus Master Strips are shown. Unticked Strips are hidden.

+- Row Menus

Each **+ -** box also pops-up a menu relevant to the row of the mixer it deals with when the cursor is above it. E.g. :







Collapse Versus Hide

Choosing **Collapse** leaves a small artefact of the mixer area visible, a gray horizontal bar with a **+** box at the right-hand side which restores. **Hide** completely removes the area from view. Choosing **Show All** in the **Mixer + -** pop-up will restore.

Resets

These context menus also provide a convenient way to restore all controls of specific types or, in the relevant sections, the entire Strip or Mixer to the default condition.

Bus + - Pop-up Menus

Collapse	Collapses the Bus Send row.
Hide	Hides the Bus Send row.
Change Color	Opens the Color Picker window.
Reset Color	Resets Color to the default.
Reset Bus	Turns Bus **Off**.. In an **Aux Bus** reduces the send level to -144.5dB and turns Bus **Off**.

Note: Aux Buses set to Pre-fader are NOT affected.

Reset Channel Routing	As it says.
All On	Turns **On** the Strip sends to the bus for every Input Strip.
All Off	Turns **Off** the Strip sends to the bus for every Input Strip.
All Pre	**Aux only** All sends are switched to **Pre Fader**.
All Post	**Aux only** All sends are switched to **Post Fader**.
All to Channel Router	All sends are set to **Channel Router** Matrix.
All to Panner	All sends are set to the **Panning Bus** (One entry will be present per Panning Bus in the mixer.)

Panning Pop-up Menu

Collapse	Collapses the Panner row.
Hide	Hides the Panner row.
Reset Bus	Resets the bus to the default condition.
All Panners to None	Removes the Panner from all Input Strips and leaves a thin placeholder row.
All Panners to Pan/Balance	Sets every Input Strip Panner to **Pan** for Mono Strips, **Balance** for Stereo Strips and **Pan** for multi-channel Strips.
All Panners to Surround Panner	Sets every Input Strip Panner to **Surround** mode.
All Panners to 3D Panner	Sets every Input Strip Panner to **3D** mode.

Effect Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Effects row.
Reset Bus	Nothing.
All Effects On	Turns all **Effects** in the Mixer **On**.
All Effects Off	Turns all **Effects** in the Mixer **Off**.
All Effects Bypass	Switches all **Effects** in the Mixer to **Bypass**.
All Effects Unbypass	Switches all **Effects** in the Mixer to in circuit.
All VS3 Effects On	Turns all **VS3 Effects** in the Mixer **On**.
All VS3 Effects Off	Turns all **VS3 Effects** in the Mixer **Off**.
All VS3 Effects Bypass	Switches all **VS3 Effects** in the Mixer to **Bypass**.
All VS3 Effects Unbypass	Switches all **VS3 Effects** in the Mixer to in circuit.
All VST Effects On	Turns all **VS3 Effects** in the Mixer **On**.
All VST Effects Off	Turns all **VS3 Effects** in the Mixer **Off**.

All VST Effects Bypass	Switches all **VS3 Effects** in the Mixer to **Bypass**.
All VST Effects Unbypass	Switches all **VS3 Effects** in the Mixer to in circuit.

Gain Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Faders row.
Reset Bus	Resets all faders to 0dB.
Reset Peak	Resets all latched Peak indicators to Off.
Show Peak Log	Opens a window with a list of all Peaks since the last Reset.
All Strips Record Pre Effects	Record source for all Input Strips is taken before any Effects present in the Strip.
All Strips Record Post effects	Record source for all Input Strips is taken after any Effects present in the Strip.

Mute Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Mutes and Solos row.
Reset Bus	Cancels any active Solos and Mutes.
Reset Solo	Cancels any active Solos.
Reset Mutes	Cancels any active Mutes.
Invert Solo	Any Strips in Solo will be un Soloed and vice-versa.
Invert Mutes	Any Strips Muted will be Unmuted and vice-versa.
Set All Pre On	Sets all Input Strips to **Prefade On**.
Set All Pre Off	Sets all Input Strips to **Prefade Off**.

Mic/Pre Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Mic/Pre row.
Reset Bus	Resets the Mic Pres to the default condition.
Reset All Gain	Resets all Preamp gains to the default value.
All 48V On	Turns **48V** Phantom Power **On** on all Preamps set to **Mic**.
All 48V Off	Turns **48V** Phantom Power **Off** on all Preamps set to **Mic**.
All Low On	Turns the High Pass Filter **On** on all preamps.
All Low Off	Turns the High Pass Filter **Off** on all Preamps.
All Pad On	Turns the **Pad On** all preamps set to **Mic**.
All Pad Off	Turns the **Pad Off** all preamps set to **Mic**.
All Mic	Switches all Preamps to **Mic** mode.
All Line	Switches all Preamps to **Line** mode.

Automation, I/O & VCA Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Effects row.
Reset Bus	Nothing.
Reset Delays	Resets all **Delays** to zero.

Mixer Pop-up Menu

Console

Show All Shows every section of the Console Unhidden and Uncollapsed. Use this to see sections of the Mixer which have been hidden from View.

Collapse All Collapses every section of the Console to its minimum height and width.

Reveal All Maximizes the Mixer Window to reveal all Input Strips, Masters and Buses.

Reset All Resets every Console setting to the default value.

Refresh Delays Compensation Recalculates and applies the required delays to time align the Mixer.

Input Strips

Hide Color from Background Where Input Strip Colors are active, hides the Colors.

Show All Shows all Input Strips at normal width including those hidden or collapsed previously.

Hide All Hides all the input Strips from view in the Mixer window.

Collapse All Collapses all Input Strips to narrow bars.

Scroll Half Reduces the currently visible Input Strips section by half.

Reset All Resets all Input Strips.

Masters

Show All Shows every section of the Console Unhidden and Uncollapsed. Use this to see sections of the Mixer which have been hidden from View.

Hide All Hides all Master Strips from view.

Collapse All Collapses all Master Strips to narrow bars.

Scroll half Reduces the currently visible Masters Strips section by half.

Reveal All Maximises the Mixer Window to reveal all Masters Strips.

Reset All Resets every Master Strip setting to the default value.

Buses

Hide Color From Background Where Bus Colors are active, hides the Colors.

Show All Shows all Bus Send rows, the Panner & Effects rows uncollapsed.

Hide All Collapses all Bus Send rows to a single row, collapses all Aux Send rows to a single row, collapses the Panner row(s), Collapses the Effects row.

Collapse All Collapses all Bus Send rows to minimum height.

Scroll Half Reduces the currently visible Mix/Aux Bus section by half.

Reveal All Maximises the Mixer Window to reveal all Mix/Aux Buses.

Reset All Resets all Buses.

Faders/Effects/Pan

Show All Shows all Faders, Mutes, Preamps, Effects and Pans Unhidden and Uncollapsed.

Hide All Hides all Faders, Mutes, Preamps, Effects and Pans to focus on the maximum of number of Buses available in the mixer height.

Collapse All Collapses all Faders, Mutes, Preamps, Effects and Pans to narrow rows.

Mixer Components

Input Strips

Mixer Input Strips associated with Tracks (the main number top-left in the Track Header) are fed by and control the monitor output of the Tracks. The Mixer Strip Channel **Live** (physical) or **Internal Return Bus** Input goes direct to the associated Track. When a strip has no associated Track it is fed by and controls the **Live** (physical) or **Internal Return Bus** input assigned to it.

When the strip has an associated Track, the Track output is automatically switched between input and playback output depending on transport mode, the monitoring setting in the Track header and the setting of the **Settings > All Settings > Application > Playback/Record : Auto-monitoring** option, **European Monitoring (all tracks turn to INPUT on stop)** or **US Monitoring (only Record Ready tracks turn to INPUT on stop)**.

> **Note:** When strip channels have an associated Track **NONE** of the strip controls, fader, mute, affect the signal fed to the Track input. The Record feed can be Pre or Post Effects, selected from the Strip pop-up menu.

Mixer Input Strips have the same functions as the input strips of any standard mixing console providing level control, pan, mute, etc.

The following types of input strips are available:

Mono

Mono - Direct Monitoring

Stereo

Stereo - Direct Monitoring

MS

MS - Direct Monitoring

Multi-Channel Strip)

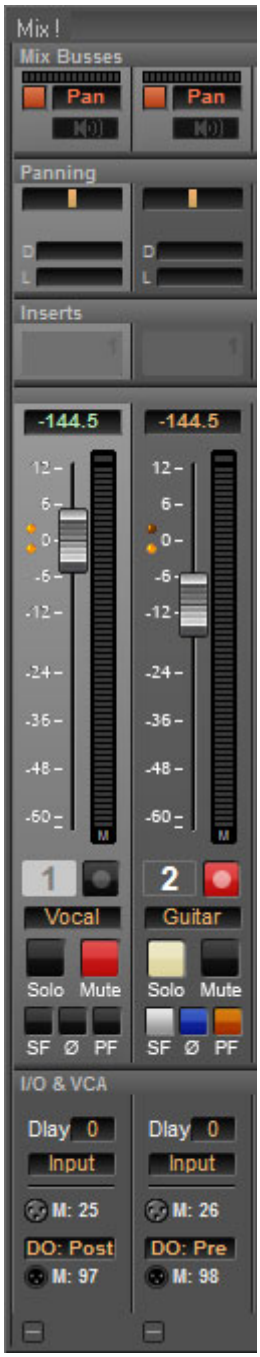
Basic Strip

Controls and Faders

Rotary Controls, sliders and Faders may be adjusted by grabbing them with the mouse and dragging. Rotary controls and horizontal sliders are adjusted by dragging left or right and faders by dragging up or down. Double-clicking a Fader, slider or Rotary knob returns the value to the default. E.g. unity gain on a Channel Strip Fader. Holding down the **Ctrl** key increaes the resolution to 0.1dB Keyboard up and down arrows adjust gain by 0.1dB per press, with **Shift** 0.5dB per press and with **Ctrl + Shift** 1.0dB per press.

Buttons

Buttons on the main mixer surface are black when inactive. When active they 'light up'.



Basic Strip

A basic mono channel strip contains:

Mix Bus Send

Output Meter
On /Off toggle switch, Pan / Router Click in the box to select.
Bus Trim. click on the button to open the **Bus Trim** pop-up.

Panning

Pan Slider Panner type can be **3D**, **2D** or **Pan/Balance** as shown here.

Divergence and **LFE** Sliders. LFE only relevant if present in Bus

Inserts

Slots for VS3 and VST Plug-ins and External Inserts.

Numeric display of fader output level value, if cursor is over a fader knob shows fader gain. If a pan-slider is being moved, shows current pan position. May be clicked to enter a fader gain value directly.

Fader and Post-Fader (default) Input bargraph Peak Meter(s)

Bargraph shows peak level.

Rec enable(d) Enables/disables recording for the associated track. Lights red when enabled. (Purple when source is after effects.)

Solo solos the strip, **Mute** mutes the strip. **Ctrl + Solo** cancels all other Solos.

Sa**F**e prevents the strip being muted by solo operations elsewhere. **Ø** reverses the channel phase. **PF** changes the metering position to Pre-Fader.

I/O &VCA - If a **VCA Group** or Groups is present the select buttons also appear here.

Delay A delay value (in samples) can be set in this box.

Input Clicking on **Input** pops-up a box with the choice of the strip taking its input from a physical connection or any output bus.

Input and **Direct Output Assignment**

Right-click on the XLR icons to pop-up a drop down list of valid assignments.

Note: Direct Outputs must first be enabled in the **Mixer : Route** page.
Please see: Channel Direct Outputs on page 223

Stereo Strips

In a Stereo Strip the single bargraph meter is replaced by a pair and the Panner can be set to **Dual-Source Mode** with a choice of **Balance** control, **Single Panner** or **Dual Panner** (accessible from the right-click context menu.)

Stereo Strips can reverse the **Phase** of both the Left and Right channels. The single button has four possible states:

Black:	No phase inversion
White:	**Left** channel inverted
Red:	**Right** channel inverted
Blue:	**Both channels** inverted

M&S Stereo Strips

What is M&S?

M&S stands for **Middle** and **Side**. **M&S** is a microphone technique which outputs **Sum and Difference** signals instead of **Left** and **Right** (also known as **LR**, **AB** or **XY**). These Sum and Difference signals are often known as **M&S** although this nomenclature is often a source of confusion...

Sum and Difference signals can be created from a conventional Left, Right source. For example, by using the Pyramix **MS Encoder** plug-in.**(Please see: MS Encoder on page 381)**.

Decoding M&S

A **Sum and Difference** or **M&S** decoder reconstitutes Left and Right by adding the **Difference (S)** signal to the **Sum (M)** signal to produce Left and adding the **phase-reversed Difference (S)** signal to the **Sum (M)** signal to produce Right. This is often represented as:

L = M + S and **R = M - S**

Benefit of M&S

In mixing as opposed to recording, the main practical benefit of manipulating a signal in the Sum and Difference domain is true control over the **width** of the image. Pyramix can handle these signals directly thanks to the provision of **M&S Stereo** strips.

The new **General Mixing Bus** decodes **MS** directly and without any additional user interface. Users can feed An MS strip can be fed with Middle and Side information as before and the **Panner** will decode the Left and Right information and feed it directly to the connected Buses.

If you wish to route the raw **M** & **S** signals, switch the **Bus** connection to use the **Channel Router** instead of the **Panner**.

Width Control

The Middle and Side Mixing controls which existed in the old-style busing connection are absent temporarily. So, when using the new **General Mixing Buses**, users will need to change the balance between the **Middle** and **Side** levels by using **Clip Gains** & **Clip Envelopes**.

The direct M&S mixing functionality will return in a subsequent release of the Pyramix software.

Phase Button in an M&S Strip

The **Phase** of both the Sum and Difference channels can be reversed. The single **Ø** button has four possible states:

Black:	No phase inversion
White:	**Sum (M)** channel inverted
Red:	**Difference (S)** channel inverted
Blue:	**Both channels** inverted

Inverting either Sum or Difference results in the image being reversed left to right.

> **Note:** If the **Input meters** consistently show **S** higher than **M** then either the image is very wide and unlikely to be compatible for a mono listener or the **M** and **S** inputs have become reversed at some point. Regrettably, this is extremely common when dealing with location recordings in film and TV.

Multi Channel Strips

Multi Channel Strips are available in these formats:

Mono	**7.1 / ITU-I (0+7+0)**	**Auro 8.0**
Stereo	**7.0 SDDS**	**Auro 9.1**
2.1	**7.1 SDDS**	**Auro 10.1**
Stereo Surround	**7.0 / ITU-C (2+5+0)**	**Auro 7.4 / ITU-J (4+7+0)**
3.0 / LCR	**7.1 / ITU-C (2+5+0)**	**Auro 11.1**
3.1 / LCR	**8.0 / LCR**	**Auro 13.1**
3.0 Surround	**8.1 / LCR**	**KBS 10.2 / ITU-F (3+7+0)**
3.1 Surround	**9.0 / LCR**	**NHK 22.2 / ITU-H (9+10+3)**
4.0 Quadro	**9.1 / LCR**	**Cube**
4.1 Quadro	**9.1 / ITU-D (4+5+0)**	**Cube + Mid Layer**
4.0 Surround	**9.1 / ITU-E (4+5+1)**	**Cube (Corners + Faces)**
4.1 Surround	**11.0**	**Cube (Corners + Faces + Edges)**
5.0 / LCR	**11.1**	**30.2 La Totale**
5.1 / LCR	**Dolby 5.0**	**4 x Stereo**
5.0 / ITU-B (0+5+0)	**Dolby 5.1**	**1st Order Ambisonic (4 ch)**
5.1/ ITU-B (0+5+0)	**Dolby 7.0**	**2nd Order Ambisonic (9 ch)**
6.0 / LCR	**Dolby 7.1**	**3rd Order Ambisonic (16 ch)**
6.1 / LCR	**Dolby Atmos 5.1.2**	**4th Order Ambisonic (25 ch)**
6.0 / LRC	**Dolby Atmos 5.1.4**	**5th Order Ambisonic (36 ch)**
6.1 / LRC	**Dolby Atmos 7.1.2**	**6th Order Ambisonic (49 ch)**
7.0 / LCR	**Dolby Atmos 7.1.4**	**7th Order Ambisonic (64 ch)**
7.1 / LCR	**10.2 TMH**	
7.0 / ITU-I (0+7+0)	**12.2 TMH**	

In a Multi Channel Strip there are as many bargraph meters as there are channels. The Panner type can be **None**, (which hides the Panner if you are using the Router) **3D, 2D or Pan/Balance**.

Channel Direct Outputs

All Input Strip Channels can have **Direct Outputs**. The **Direct Out** connection is disabled by default. It can be enabled in the Mixer Route Tab using the Strips Direct Out Page by clicking on **(Click to Enable)** in the Strip Header in the routing matrix. When active **(Click to Enable)** disappears. Clicking again in the Strip Header disables the Direct Out and(Click to Enable) reappears.

The **Direct Out** can be routed per Channel to any output by clicking on a crosspoint in the matrix. The Direct Out can be sent **Pre** or **Post** Fader. Click on the **DO: Post** box in the Mixer I/O section to toggle. The Direct Out is currently always **Post Effects**. Direct Outs are not shown in the I/O section of the mixer unless they are activated in the **Route** page.

Direct Monitoring Input Strips

Direct Monitoring Input Strips are a special version of the basic Input Strip designed specifically for recording. The principal feature of these strips is minimum monitoring latency for the artist. This is achieved by applying automatic delay compensation only to the signal fed to the main output bus. For this reason, Aux Sends and Effects cannot be installed in Direct Monitoring Input Strips and they cannot be routed to SubGroups. Three types are available:

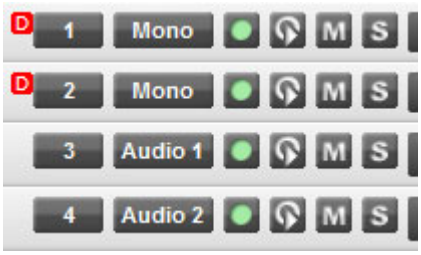
Mono - Direct Monitoring

Stereo - Direct Monitoring

MS - Direct Monitoring

Note: Track returns to these strips do not have automatic delay compensation applied and are intended for monitoring only. When mixing down the Track outputs should be connected to

'normal' strips. To indicate this clearly, Tracks feeding Direct Monitoring Input Strips show a small red box with '**D**' in the header:



Track Header Direct monitoring Indicators

Adding Direct Monitoring Input Strips

To add a Direct Monitoring Strip right-click on a blank area of an existing strip to the right of where you wish to add it. Select **Strip > Add > Mono** -**Direct Monitoring**, **Stereo** - **Direct Monitoring** or **MS - Direct Monitoring** from the context menu as appropriate.

Note: If **Auto-Delay Compensation** is turned on for the Mixer then the recording from a Direct Monitoring Input Strip will be in sync with the existing Tracks while maintaining minimum latency for foldback to the artist.

Input Strips Fed From Internal Return Buses

Note: A Strip fed from an Internal Return Bus will NOT be fully Delay Compensated when in Auto-Monitoring mode and when in Repro mode the red '**D**' will be highlighted due to non-compensation. On the other hand the recorded material will be Compensated correctly and in sync with the current timeline events.

Global Indicators / Buttons

The small indicators/buttons on the right-hand side of the mixer window, adjacent to and Shown / Hidden with the Fader row, have the following functions::

MUTE - Lit when a Mute or mutes are active. Clicking on the lit button cancels all active Mutes.

SOLO - Lit when a Solo or Solos are active. Clicking on the lit button cancels all active Solos.

Overload - Lit when an Overload indicator is latched. Clicking on the lit button cancels all active Overload LEDs.

Automatic Delay Compensation Status
Please see : Delay Compensation on page 272

Color and Signal Flow Buttons

These small buttons on the right-hand side of the mixer window, adjacent to the Fader row, have the following functions:

Strip Color - When lit shows the Tracks Clip background colors in the Input Strips background.

Bus Color - When lit the bus colors are shown.

Group Color - When lit the VCA-group fader knob(s) and Strip fader knob(s) of Strips assigned to VCA groups is(are) colored according to the VCA group.. Color is fixed.

Signal Flow - When lit Bus and Strip colors are switched off (if active) and the signal flow for the strip selected currently is shown. If an Input Strip is selected then the Strip and all Buses it feeds are colored green. If a Bus strip is selected then the Bus and all Strips feeding it are colored green.

Signal Flow [FL]

When the **Signal Flow** button is active (lit):

When an Input Strip is selected it is colored light green and the complete signal path where the signal is sent from that strip is colored a darker green. Loops are taken into account in the signal flow coloring.

Signal Flow coloring applies whether signals are actually present or not.

If an output Bus Strip is selected it is colored blue and the complete signal path of all sources feeding the Bus is also colored blue. Loops are not taken into account.

If a VCA Group is selected, the signal flow of all members of the group is colored green.

If multiple strips are selected (hold down the **Ctrl** key and click on Strip numbers) then the signal flow for all strips selected is colored green.

If the **Ctrl** key is pressed when clicking on the [**FL**] button, the Mixing console UI contracts to show to only components participating to the signal flow. **Ctrl** clicking the [**FL**] button again restores the mixer UI to its original state.

Buses

In a MassCore system the only limitation on the number of audio I/O buses is the available power. For now the maximum number of buses is artificially limited in code to 512 (at 1FS, 256@2FS, 128@4FS, 64@8FS).

The Pyramix Mixer uses a number of different types of Bus:

General Mixing Buses	Sum audio and are available in several types. (**see below**)
Control Buses	Do not carry audio. There are two types; the **Panning Control Group** and the so-called **VCA Group**.
Object Buses	These are a special type of General Mixing audio bus provided for new 3D immersive formats including Dolby Atmos.
Internal Return Buses	These are a special type of Bus used to return the output of General Mixing Buses back to Input Strips.

General Mix Buses

General Mix Bus Types

Mix Bus	Master Output Buses. May be routed to physical outputs.
Mix Group	Used as a Sub-Group principally for Effects, e.g. reverb. Can only be rerouted into another **General Mixing Bus**.
Aux Bus	Used principally for artist foldback. May be routed to physical outputs.
Aux Group	Used as a Sub-Group. Can only be rerouted into another General Mixing Bus. Aux Groups can be moved anywhere in the Input Strips section of the Mixer.

Note: Please be aware that a Mix Group Bus or Aux Group Bus will auto-take **Internal Bus** connection resources, starting from the last one. E.g. IB384-IB385 for the first two Group Channels added to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

General Mix Bus Features

General Mixing Buses can have a virtually unlimited number of channels. (Only limited by the maximum supported by the Pyramix engine.

Each channel can be assigned a type, including 3D specific types, from the extensive list of Channel Types. **Please see: Channel/Speaker Types on page 268**

When creating a new General Mixing Bus, (Right-click context menu **Bus > Add > New General Mixing Bus**) the choice is given for one of the five types, the number of channels and a choice of predefined **Channel Types** (AKA **Speaker Arrangements** e.g. **Mono**, **Stereo**, **5.1 Dolby**, **9.1 Auro** etc.) or **Custom**. (Please see next page)

General Mixing Busses can also be given an optional Room Size. In this case the panning algorithm changes to a distance based algorithm. **Please see: Room Models on page 208**.

An existing General Mixing Bus topology can be modified after its creation by using the Room Editor. **Please see: The 3D Room Editor on page 267**.

General Mix Bus Formats

All of the General Mix Bus types apart from **Object Bus** can be created in any of the formats listed here plus **Custom**:

Mono	**7.1 / ITU-I (0+7+0)**	**Auro 8.0**
Stereo	**7.0 SDDS**	**Auro 9.1**
2.1	**7.1 SDDS**	**Auro 10.1**
Stereo Surround	**7.0 / ITU-C (2+5+0)**	**Auro 7.4 / ITU-J (4+7+0)**
3.0 / LCR	**7.1 / ITU-C (2+5+0)**	**Auro 11.1**
3.1 / LCR	**8.0 / LCR**	**Auro 13.1**
3.0 Surround	**8.1 / LCR**	**KBS 10.2 / ITU-F (3+7+0)**
3.1 Surround	**9.0 / LCR**	**NHK 22.2 / ITU-H (9+10+3)**
4.0 Quadro	**9.1 / LCR**	**Cube**
4.1 Quadro	**9.1 / ITU-D (4+5+0)**	**Cube + Mid Layer**
4.0 Surround	**9.1 / ITU-E (4+5+1)**	**Cube (Corners + Faces)**
4.1 Surround	**11.0**	**Cube (Corners + Faces + Edges)**
5.0 / LCR	**11.1**	**30.2 La Totale**
5.1 / LCR	**Dolby 5.0**	**4 x Stereo**
5.0 / ITU-B (0+5+0)	**Dolby 5.1**	**1st Order Ambisonic (4 ch)**
5.1/ ITU-B (0+5+0)	**Dolby 7.0**	**2nd Order Ambisonic (9 ch)**
6.0 / LCR	**Dolby 7.1**	**3rd Order Ambisonic (16 ch)**
6.1 / LCR	**Dolby Atmos 5.1.2**	**4th Order Ambisonic (25 ch)**
6.0 / LRC	**Dolby Atmos 5.1.4**	**5th Order Ambisonic (36 ch)**
6.1 / LRC	**Dolby Atmos 7.1.2**	**6th Order Ambisonic (49 ch)**
7.0 / LCR	**Dolby Atmos 7.1.4**	**7th Order Ambisonic (64 ch)**
7.1 / LCR	**10.2 TMH**	
7.0 / ITU-I (0+7+0)	**12.2 TMH**	

Custom

When **Custom** is selected as the General Mix Bus **Channel Mapping** the Bus is created with the number of channels specified but not set to any Type. Clicking on the **Custom** box in the Bus Master I/O section will open the **3D Room Editor** where custom channel assignments may be made. **Please see: The 3D Room Editor on page 267**

Bus Sends

General Mixing Bus sends have similar controls in the Mixer user interface

Mix Bus & Mix Group Send:

Mix Bus Send Pan

Send peak meter Clicking on the meter collapses/expands the Bus Send.

An On/Off button **Click** to toggle the Send on and off. When lit the Bus Send is active. **Ctrl +Click** resets the Send Gain to **Mute**.

Panning/Routing option box

Clicking in the box pops up the Routing context menu. This lists all Panning Control Buses present in the mixer and Channel Router.

When **Panner** is selected (or **Panner 1**, **Panner 2**, etc.) the Bus send follows the selected Panning Control Bus parameters to pan/mix the signal in its channels. **Please see: Panning Control Group Buses on page 233**.

Bus Trim

Bus Trim Only present when **Bus Send** is set to **Pan**. Clicking on the button opens the **Bus Trim** pop-up:

Bus Trim pop-up

The sliders are used to trim the send level to each speaker present in the Bus. Values may also be entered directly by clicking in the numeric field and typing a value (e.g. **-22.5**)

Bus Trim level is adjustable from **-144.5dB (Mute)** to **+20dB**. When the Send Level is above 0dB the numeric indicator and the slider change color to light red.

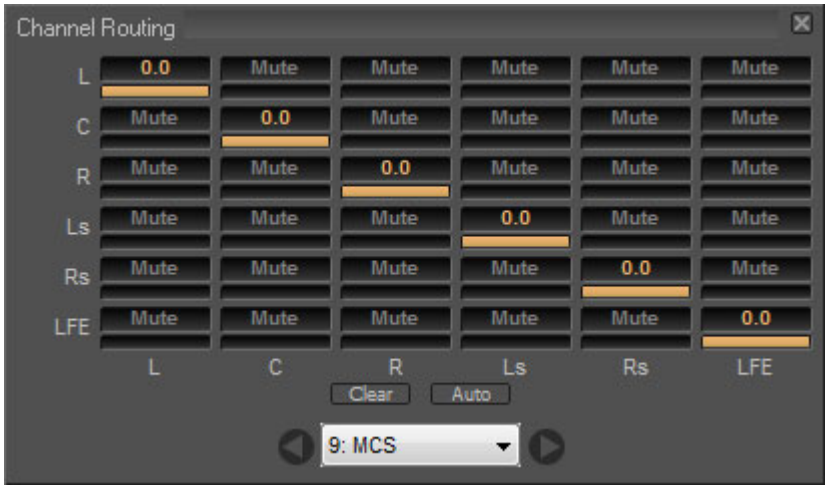
Double-clicking on the left of a Trim value resets it to **Mute**, double clicking on the right resets to 0dB.

When **Channel Router** is selected, a small grid icon appears below the box.

Mix Bus Send Router

Clicking on this opens a Channel Routing grid window

Channel Routing Grid:



Channel Routing Grid

Click in a crosspoint field and type a level value (or **mute**) to route individual Strip Outputs to the bus. Strip Outputs run vertically.

Clear	Clears all routing assignments.
Auto	Routes the Strip Outputs automatically. Where the destination bus is not the same configuration as the Strip only Channels with matching designations are routed.
9: MCS	The box shows the Bus being routed to. the down arrow drops-down a list of all Buses available in the Mixer.
<>	The left and right arrows step along the buses according to their positions in the Mixer.

Aux Bus & Aux Group Send:

Aux Bus Send

Send peak meter	Clicking on the meter collapses/expands the bus send.
An On/Off button	When lit the Bus send is active.
Send Level box	Shows the current Send Level. Click in the field to enter a precise value manually. Send Level is adjustable between -144.5dB (Mute) and +12dB. When the Send Level is above 0dB the numeric indicator and the slider change color to light red.

An horizontal Send Level display and control Click and drag the bar to set the Send gain.

PF button When lit (as here) the Bus Send is Pre-fader.

Panning/Routing option box

Clicking in the box pops up the **Routing** context menu. This lists all Panning Control Buses present in the mixer and **Channel Router** .

When **Panner** is selected (or **Panner 1**, **Panner 2,** etc.) the Bus send follows the selected Panning Control Bus parameters to pan/mix the signal in its channels. **Please see: Panning Control Group Buses on page 233**.

Bus Trim Only present when **Bus Send** is set to Pan. Clicking on the button opens the **Bus Trim** pop-up. Please see: **Bus Trim on page 228**

When **Channel Router** is selected, a small grid icon appears below the box.

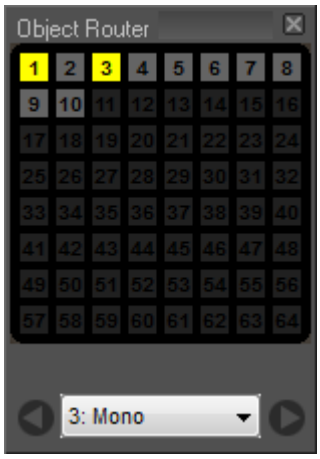
Mix Bus Send Router

Clicking on this opens a Channel Routing Grid window. Please see previous page.

Object Bus Send

The Object Bus is a specialised type of General Mix Bus intended for use with formats such as Dolby Atmos which use conventional “Bed” tracks along with Audio “Objects”.

An Object Bus Strip Send has an **Object Router**:



The Objects Router shows each Object Channel as a button. All Input Channels of the Strip shown in the box are sent to the Object Channel(s) selected. (button(s) lit)

> **Note:** When an Input Strip is routed to an Object bus, all other Buses for that strip input are muted, as for a Solo.

- Objects Bus Routing is automated. Input sound can be sent for a limited time to any Objects Channel.
- Objects Buses can be Enabled and Disabled via the right-hand side [+] popup menu. This enables any Object sending in the Object Bus to be disabled temporarily keeping all input audio in its Bed for editing and monitoring.

Bus Master Strips

There are as many Output bargraphs as there are Channels in the Bus. The + button to the right of the Bus label increases the strip width to make the meters easier to see and makes the Channel labels visible.

Mix Bus & Aux Buses

I/O Section:

Mute Section

Repro/Re Mutes the Bus when in **Stop** to prevent howl round from auto input switching.

Safe/SaFe Prevents the strip being Muted by Solo operations elsewhere.

Dither The button turns Dither on and off. Lit yellow when on. Clicking on the **Dither** label opens the **ReDithering** dialog. **Please see: Dithering Options on page 282**

Bus Format Label **Stereo**, **5.1 Dolby, 30.2 La Totale** etc. Clicking on the label opens the **Room Editor** window.

1-8 For Buses with more than 8 outputs this box appears. Clicking on the box steps through the Bus outputs in banks of 8.

XLR icons Route Bus Channels to physical outputs or Internal Buses or MT ASIO Bridge. (Where these are present.) Right-click to pop-up a list of available destinations.

Mix Group & Aux Group Buses

These Group Buses have the same Mix Bus Send and Panning Options as Input Strips. Aux Groups have Aux Sends, Mix Groups do not.

Mute Section

Mute **M**utes the strip

SF/ **S**a**F**e prevents the strip being muted by Solo operations elsewhere.

Re Mutes the Bus when in **Stop** to prevent howl round from auto input switching.

PF Switches the Bargraph meters to **P**re-**F**ader.

I/O Section

Bus Format Label **Stereo**, **5.1 Dolby, 30.2 La Totale** etc. Clicking on the Bus format label opens the **Room Editor** window.

1-8 For Buses with more than 8 outputs this box appears. Clicking on the box steps through the Bus outputs in banks of 8.

Remix icons A label next to each icon indicates the Channel Type or Number if no Type is assigned.

Panning Control Group Buses

This Bus allows for controlling panning information in 1D (Left/Right), 2D (Surround) or 3D (Full

Space).

The Panning Control Bus does not process audio and has no Channels, no associated Output Strip and no I/O. Any General Mix Bus / Mix Group / Aux Bus / Aux Group uses the information generated by a Panning Control Bus to pan sound sent to their respective channels.

The same Panning Control Bus can pan sound for any channel mapping of any General Mix Bus. I.e. the panning parameters of an input strip can control for example, the sends to a 9.1 Mixing Bus, a 5.1Mix Group and a Stereo Aux Group simultaneously.

Generally, only one Panning Control Bus is required for all Mixing Buses, however multiple Panning Control Buses can be created if different panning information is required for an Strip to different Mixing Buses. (Right-click context menu: **Bus > Add > Panning Control Bus**)

The in-strip User Interface for the Panning Control Bus is switchable between three different Types of Panner. (Right-click over the Panner in the Strip to open the context menu: **Set Panner Type**):

None

2D Panner Pans in **2D** space. I.e. Left/Right and Front/Back and provides control of Divergence and LFE gain.

3D Panner Pans in **3D** space. I.e. Left/Right and Front/Back, Up/Down and provides control of Divergence and LFE gain.

Pan/Balance Pans in **1D** space. I.e. Left/Right and provides control of Divergence and LFE gain. When the Strip is **Mono** the control is always **Pan**.

When the Strip is **Stereo** there are three different types of Pan/Balance available as **Dual Source Mode**. Right-click over the Panner in a Stereo Input Strip to open the context menu and select **Dual Source Mode** and one of the following options:

Single Pan Pans the Stereo Channels as a point source.

Dual Pan Pans each Channel independently.

Balance Changes the balance between Left and Right.

Divergence

Divergence has a type which can be changed per Strip. The type may be changed in the **Panning Control Bus** window or by right-clicking over the Panner in an Input Strip and selecting the Divergence type from the list:

1D (Left/Right)	The divergence only spreads over the front Left and Right channels.
2D (L/R - F/R)	The divergence spreads over the surround space.
3D (L/R - F/R - T/B)	The divergence spreads over the whole 3D space.

The Divergence Type selected is displayed in the Panning Control Bus window.

The Automation for the panning information is associated with the Panning Control Bus and is the same for any General Mixing Bus sharing the Panning Control Bus. Automation for the **Send On/Off**, **Send Gain**, **Pre/Post Fader** is associated with each General Mixing Bus, independently.

Internal Return Buses

Some of the time slots within MassCore can be reserved to convey **Aux Send** or **Master Output** Buses back to input strips. In effect, these are internal send/return paths. To change the number of available Internal Return Buses, close all open Projects (if any) and go to:

Settings > All Settings > Mixer > Mixer Settings.

The number of Internal Return Buses can be set using the **Internal Buses** combo box. Click on the **OK** button to memorize the setting and exit.

The number of **Internal Return Buses** you assign here will be available as possible channel strip sources in the mixer.

Note: Please be aware that a Mix Group Bus or Aux Group Bus will auto-take Internal Bus connection resources, starting from the last one. E.g. IB384-IB385 for the first two SubGroup Channels added to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

Note: A Strip fed from an **Internal Return Bus** will **NOT** be fully Delay Compensated when in Auto-Monitoring mode and when in Repro mode the red '**D**' will be appear to indicate that automatic delay compensation will not be applied. On the other hand, recorded material will be Compensated correctly and in sync with the current timeline events.

Groups / VCA

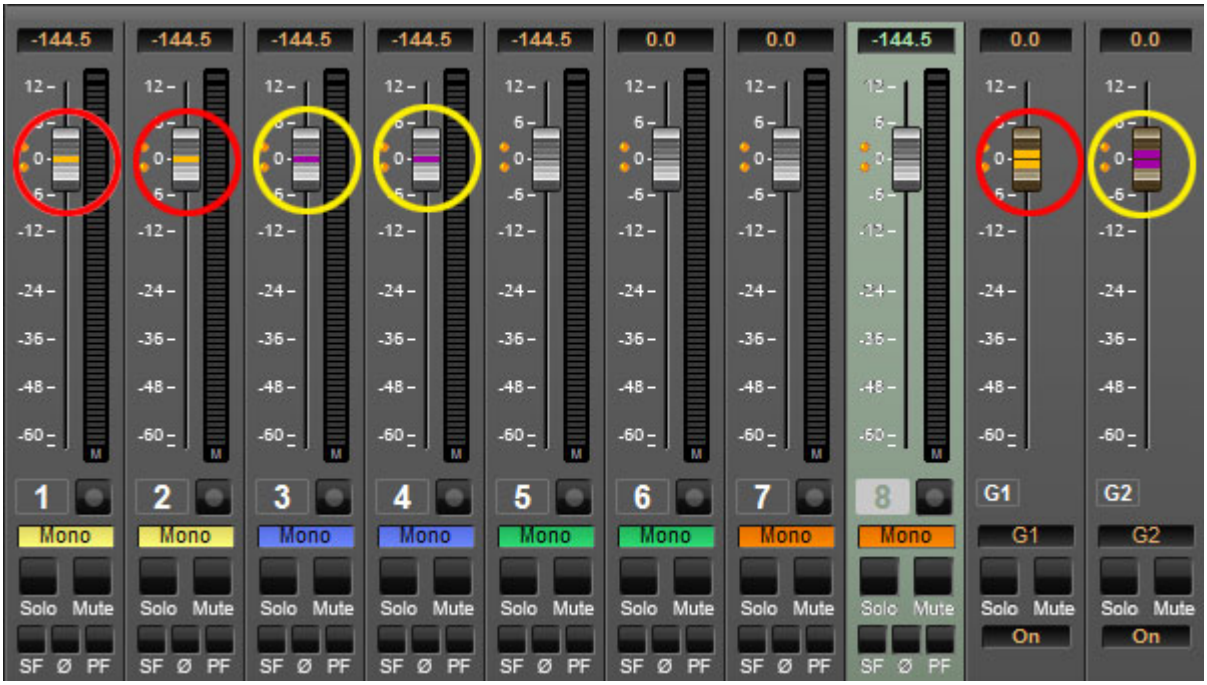
VCA Master

•VCA Master Group Strips - allow the grouping of faders of several mixer strips. Analogous to VCA grouping. When a group or groups are added (from the mixer contextual menu **Strip > Add Strip > VCA/Group**) A group button for each group created will appear above the I/O section on each input strip. When selected, the associated Group strip will control the grouped input strips if the **On** button is lit on the Group strip.
Pressing and holding the **Ctrl** key when moving a VCA master fader disables the delta between the faders in the group.

Note: If an input Strip with Horus/Hapi Preamp controls is added to a VCA Group then Preamp Controls will appear under the VCA Master Fader section.

Note: VCA Strips can be moved anywhere in the Input Strips section of the Mixer.

Each VCA group is assigned a color automatically. When the **GC** button is lit (on the right-hand edge of the console) the VCA Group fader knobs and the knobs of faders in strips belong to the groups are colored accordingly.



VCA Groups Knob colors

Horus/Hapi Preamp Remote Controls

If you are using the Merging Technologies Horus/Hapi I/O with analog inputs, remote control of the analog pre-amps is available in the Pyramix Mixer. The controls appear automatically in the mixer when a strip's input is patched to a Horus/Hapi analog preamp.

Mixer showing Horus Preamp Remote Controls

Note: Please ensure that AD inputs have first been connected in the RAVENNA Easy Connect application. Once connected they will be available in the Pyramix Mixer.

If the Horus/Hapi Preamp Remote section is not visible click on the **+** Expand button on the right-hand side of the mixer.

The controls enable analog gain to be set, the Pad and High-pass Filter to be activated, 48V Phantom Power to be switched, Phase to be reversed and the Preamp to be switched between Mic and Line. If Channels patched to Horus analog preamps are 'VCA' grouped then the Preamp Remote Controls in the VCA Group strip will affect all members of the Group.

Note: GPS Channels do not support the Horus/Hapi Preamp Remote controls when connected to Horus/Hapi analog inputs.

Horus/Hapi Preamp Remote Controls - Detail

HORUS Preamp Remote Controls

The field at the top shows the Preamp Gain set with the knob. Adjustable between **0dB** and **60dB** when the pre-amp is switched to **Mic** or **Line**. May also be clicked to enter a fader gain value directly.

Pad	Lights purple when the Pad is active.
HPF	Lights green when the 80Hz Filter is active.
Phase	Lights Blue when Phase is reversed.
48V Phantom	Lights red when the 48V Phantom Power is switched on.
Mic/Line	Displays the current preamp mode. Clicking on the box pops-up a list with the choice of Mic or Line.

Notes

When the last mouse click was somewhere in the Preamp Control section of the mixer strip the gain can be adjusted from the keyboard up and down arrows in 0.5dB increments.

Control of Individual Channels in Stereo Strips

Clicking the **+** button next to the **Mic** or **Line** indicator in a stereo channel opens the **Preamp Channels Control** panel.

Preamp Channels Control panel

This panel enables the same parameters found in a mono Strip to be set per channel. If a gain offset is applied this is indicated on the single knob in the strip by a second orange dot. The left and right arrows either side of the channel numbers step left and right across the mixer. Alternatively channels may be selected from the drop down list.

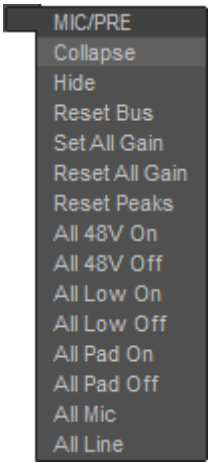
VCA Group Strip

When changes are made in a VCA Group Strip all controls of all group members will update to match. However, if the Gains of each strip are different the gain will not go below 0dB for the lowest strip's PreAmp Gain value when using the VCAGroup control. This 0dB barrier can be broken by using **Ctrl** while changing the gain. Of course this means that any strips affected will lose their gain relationship with the other strips in the group.

Note: Where a button is half lit this indicates there are mixed settings "behind" the button. E.g. buttons on a VCA Group Strip. When a buttin in this condition is pressed the parameter is switched **On** in all channels affected.

HORUS Preamp Remote Controls Context Menu

Hovering over the expand/collapse **+** or **-** button for the section pops-up a context menu:



Collapse	Hides the controls but leaves the gain value visible.
Hide	Removes the Preamp control section from the Mixer display. It can be restored by hovering the mouse over the bottom **+** button and selecting **Console > Show All**.
Reset Bus	Resets all the Preamp Gain settings to **0dB**.
Set All Gain	Sets all the Preamp Gain settings to **30dB**.
Reset All Gain	Resets all the Preamp Gain settings to **0dB**.
All 48V On	As it says.
All 48V Off	As it says.
All Low On	Switches all the **HPF**s **On**.
All Low Off	Switches all the **HPF**s **Off**.
All Pad On	As it says.
All Pad Off	As it says.
All Mic	Switches all the Preamps to **Mic** mode.
All Line	Switches all the preamps to **Line** mode.

Mic Preamp Recall Options

When opening an existing project, opening or switching between multiple projects and when creating a new project from scratch or from a template the Mic Preamp settings behavior is customizable in **All Settings > Hardware > Mic/Pre Remote**. Please see: **Mic/Pre Remote on page 755**

Effects and Plug-ins

Please see also: Effects and Plug-Ins on page 368

Mixer Strip Controls

When **Native VS3 Effects**, **VST Plug-ins** and **External Inserts** are instantiated in mixer strips each instance has a block of one or two buttons. The full Effect name, Plug-in name or **External Insert** pops-up along with the required delay compensation when you hover the mouse pointer over each block:

Mixer Strip Plug-in Controls with Name and Delay pop-up

Buttons

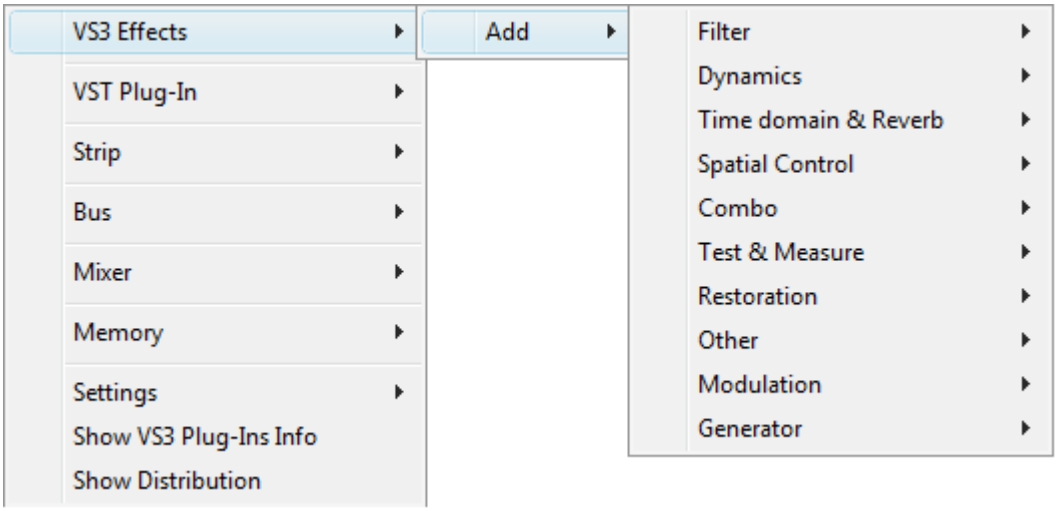
Each block has one or two buttons. The left-hand, yellow button is lit when the effect or insert is switched on. Switching an effect or insert off removes it from the signal chain and this may well be audible.The right-hand, red button indicates that the effect is **Bypass**ed when lit. Bypassing an effect retains the same delay as when the effect is active. Further, well behaved effects will continue to calculate internal parameters when bypassed making seamless switching possible.

When **Full Delay Compensation** is selected, Effects and Plug-ins that correctly report their latency will have their delay compensated. This delay is maintained when the Effect or Plug-In is in **bypass** mode.

Please see also Mixer Delay Compensation on page 272

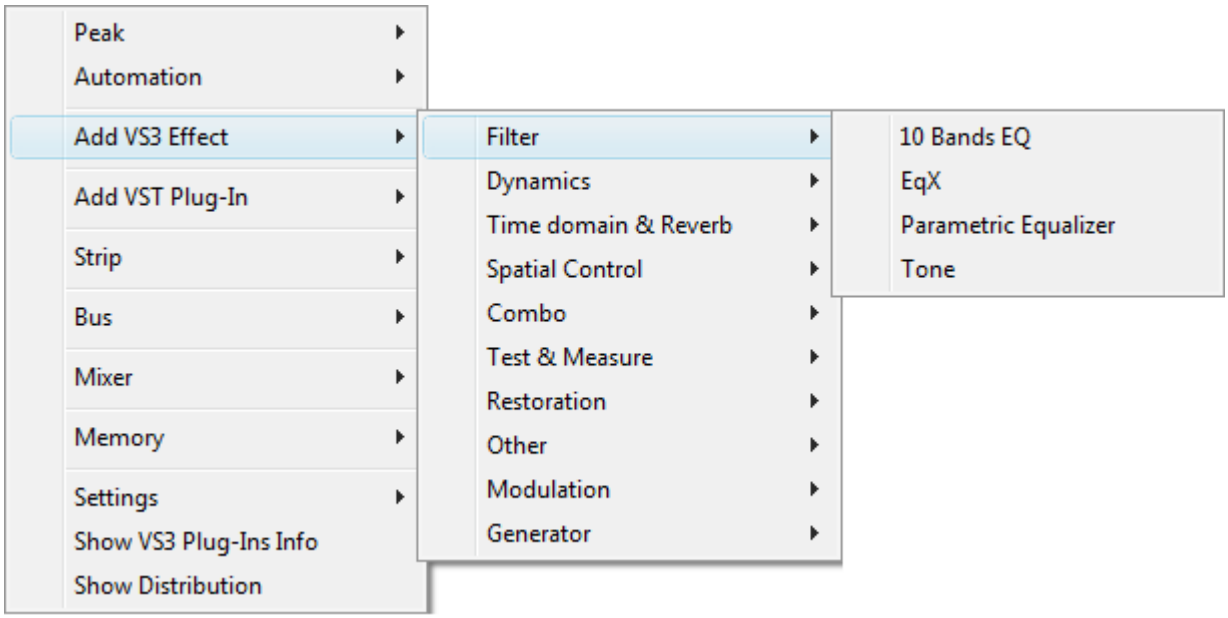
Native VS3 Plug-ins

These include the eq and dynamics found on a conventional hardware mixer's channel strip. To add a native plug-in when in **Mix !** mode, right-click with the mouse cursor over the strip where the plug-in is to be added.



Mixer Strip Context Menu

If you right-clicked in the effects area of the strip select **VS3 Effects > Add**.



Mixer Strip Context Menu

If you clicked somewhere else, select **Add VS3 Effect**. Select an effect from the sub-menu. It will appear in the strip.

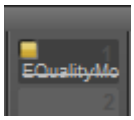
VST Plug-Ins

To add a VST plug-in the procedure is the same except select **VST Plug-In > Add** or **Add VST Plug-In**.

> **Note:** Although VS3 and VST Plug-ins can be added at any time, even during playback, without rebuilding the mixer, if the plug-in reports a Delay Compensation Value, the mixer must be rebuilt before this is compensated for.

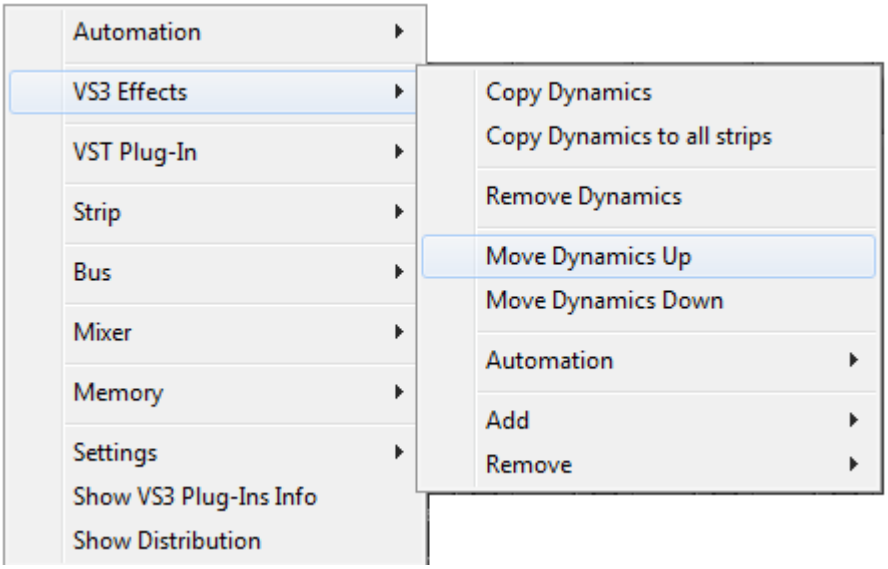
Ghost Effects and Plug-ins

Essentially, **Ghost** Effects or Plug-ins mean that if you load a project containing an effect or plug-in which is unavailable on your machine, this plug-in will appear in the mixer strip as a Ghost plug-in. Subsequently saving the project will not trash the missing Plug-in's state information. When a plug-in is a Ghost its name appears crossed out in the mixer :



Ghost Plug-in

Removing, Copying or Moving VS3 Effects and VST Plug-Ins



VS3 Effects Context Menu

VS3

Right-click on an Effect in a Strip to open the context menu and hover the cursor over **VS3 Effects**. Here you can make a number of changes to the Effects

Copy "Effect Name" Copies the effect for pasting into another Strip (**Copy** the Effect then right-click in the target Strip and select **Paste**).

Copy "Effect Name" to all strips Copies the Effect you right-clicked on to all Input Strips, but not to any Buses, regardless of whether the original effect is instantiated in an Input Strip or Bus.

Remove "Effect Name" Removes the Effect you right-clicked on.

Remove Accesses a list of all effects currently instantiated in the strip. You can select any of them for removal.

Move "Effect Name" Up Moves the effect you right-clicked on **Up** the list.

Move "Effect Name" Down Moves the effect you right-clicked on **Down** the list.

Note: The **Up** and **Down** options are only shown when a move is possible.

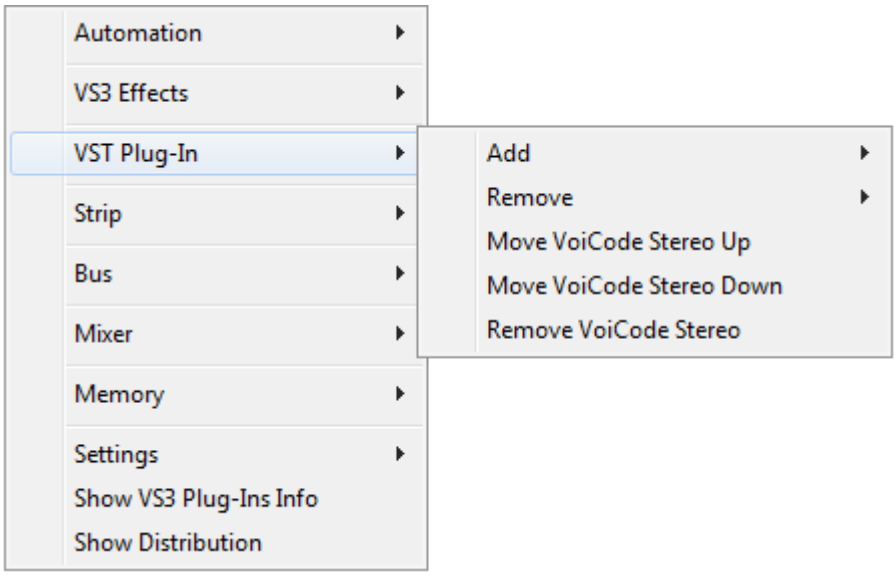
Automation Enables the Automation mode to be set for the entire Effect.

Remove "Effect Name" Removes the Effect you right-clicked on.

Add Accesses the Effects list to add a further Effect to the Strip.

Remove Accesses a list of all effects currently instantiated in the strip. You can select any of them for removal.

VST



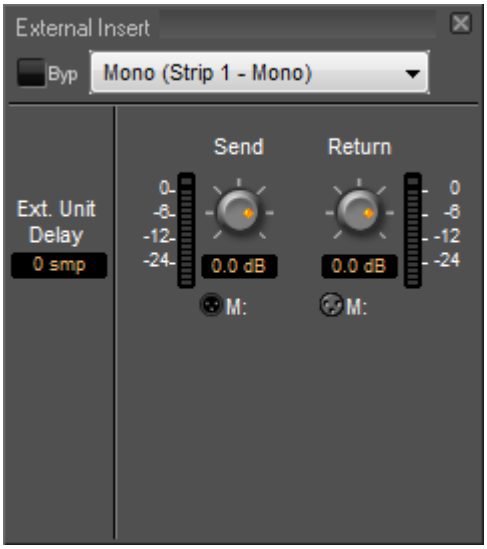
VST Effects Context Menu

As the image above shows, the options are similar for **VST Plug-Ins**

Add	Accesses the Plug-Ins list to add a further Plug-In to the Strip
Remove	Accesses a list of all Plug-Ins currently instantiated in the strip. You can select any of them for removal.
Move "Effect Name" Up	Moves the effect you right-clicked on **Up** the list.
Move "Effect Name" Down	Moves the effect you right-clicked on **Down** the list.
Remove "Effect Name"	Removes the Plug-In you right-clicked on.

External Insert

To add an External Insert simply right-click over the strip where the plug-in is to be added and choose: **VS3 Effects > Add > Other > External Insert**



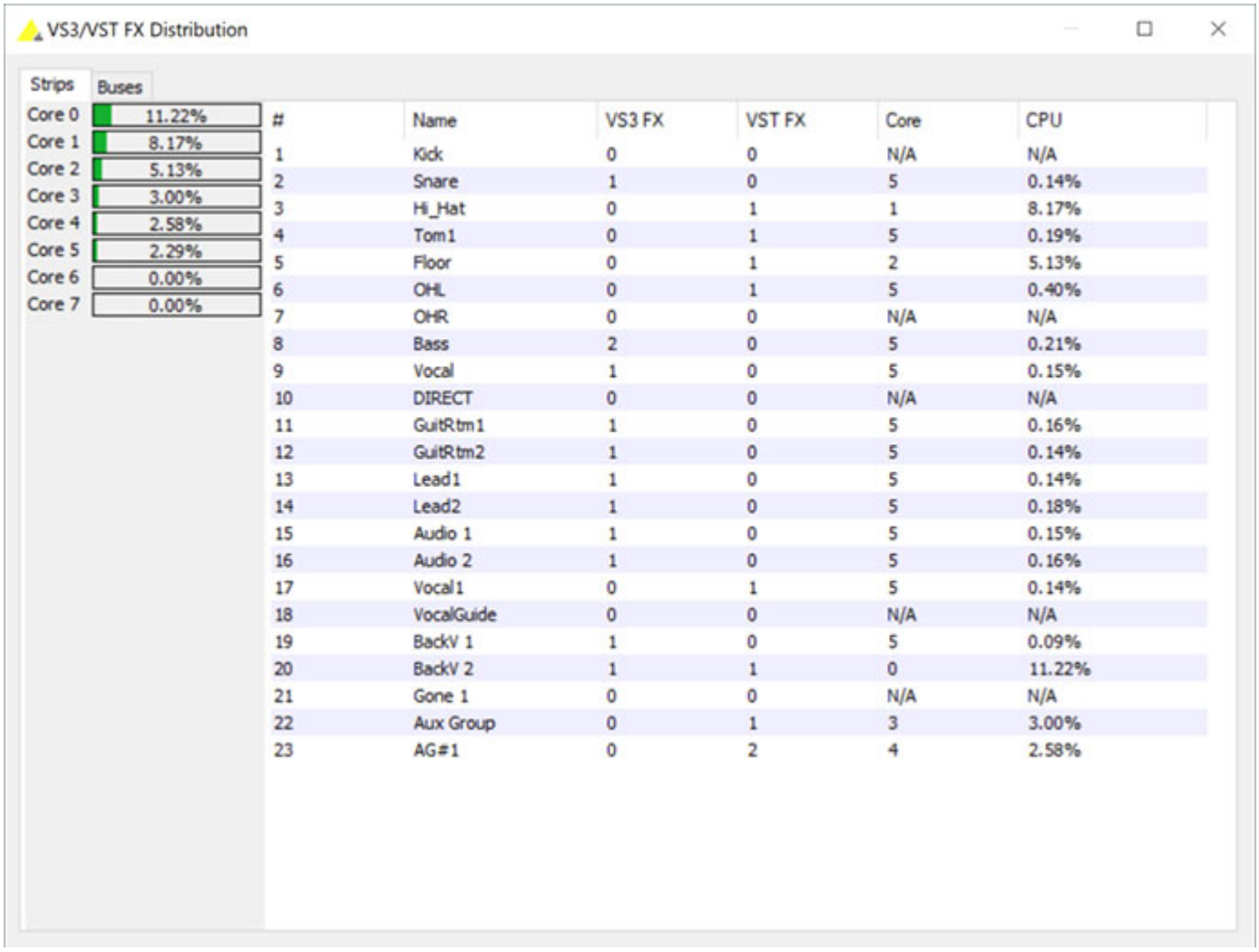
Mixer Strip External Insert Plug-in Control Window

Clicking on the **External Input** name in the strip opens the **External Insert** Control Window.

Send and **Return** Connections can be made by clicking on the XLR icons and levels set with the knobs. When you have determined the delay introduced by the I/O loop including the external effect the value in samples should be entered in the **Ext. Unit Delay** field.

Show Distribution

Available from the right-click context menu invoked anywhere on the mixer surface, the **Show Distribution** dialog shows the current **VS3/VST** plug-ins distribution and load.



#	Name	VS3 FX	VST FX	Core	CPU
1	Kick	0	0	N/A	N/A
2	Snare	1	0	5	0.14%
3	Hi_Hat	0	1	1	8.17%
4	Tom1	0	1	5	0.19%
5	Floor	0	1	2	5.13%
6	OHL	0	1	5	0.40%
7	OHR	0	0	N/A	N/A
8	Bass	2	0	5	0.21%
9	Vocal	1	0	5	0.15%
10	DIRECT	0	0	N/A	N/A
11	GuitRtm1	1	0	5	0.16%
12	GuitRtm2	1	0	5	0.14%
13	Lead1	1	0	5	0.14%
14	Lead2	1	0	5	0.18%
15	Audio 1	1	0	5	0.15%
16	Audio 2	1	0	5	0.16%
17	Vocal1	0	1	5	0.14%
18	VocalGuide	0	0	N/A	N/A
19	BackV 1	1	0	5	0.09%
20	BackV 2	1	1	0	11.22%
21	Gone 1	0	0	N/A	N/A
22	Aux Group	0	1	3	3.00%
23	AG#1	0	2	4	2.58%

VS3/VST FX Distribution dialog

The Distribution Dialog shows two Tabs **Strips** and **Buses**:

Strips Tab

- Available Cores with the percentage utilisation of each
- Strip/Aux number
- Strip/Aux name
- VS3 FX - number of plug-ins
- VST FX - number of plug-ins
- Core Assignment
- CPU load.

The Plugins Distribution Core Reading:

Buses Tab

- Available Cores with the percentage utilisation of each
- Bus number
- Bus name
- VS3 FX - number of plug-ins

- VST FX - number of plug-ins
- Core Assignment
- CPU load.

The time duration of the plugin itself is measured. Time to process Audio Frame / Duration of the plugin itself * 100 = Load for a single plugin. Multiple plugins (on a selected **Strip** or **Bus** for example) are then computed and the sum of those calculated.

Note: Other load readings:

The Pyramix CPU reading:

The CPU load displayed in the Pyramix window bottom bar is not the CPU usage as computed in Windows Task Manager. CPU load in Native is computed in this way: (time to process audio frame) / (duration of one frame) * 100. Thus, it is the percentage of time used to process in one audio frame duration; this indicator is more useful than CPU Usage because it takes into account CPU stall during processing time. In MassCore based systems the CPU: load indicator is supplemented by a VST: Core load indicator in the Title Bar.

Windows Task Manager:

Windows with its Task Manager CPU display measures the CPU time as a percentage of the CPU's capacity. So these three windows cannot be expected to show the same readings.

Highlighting

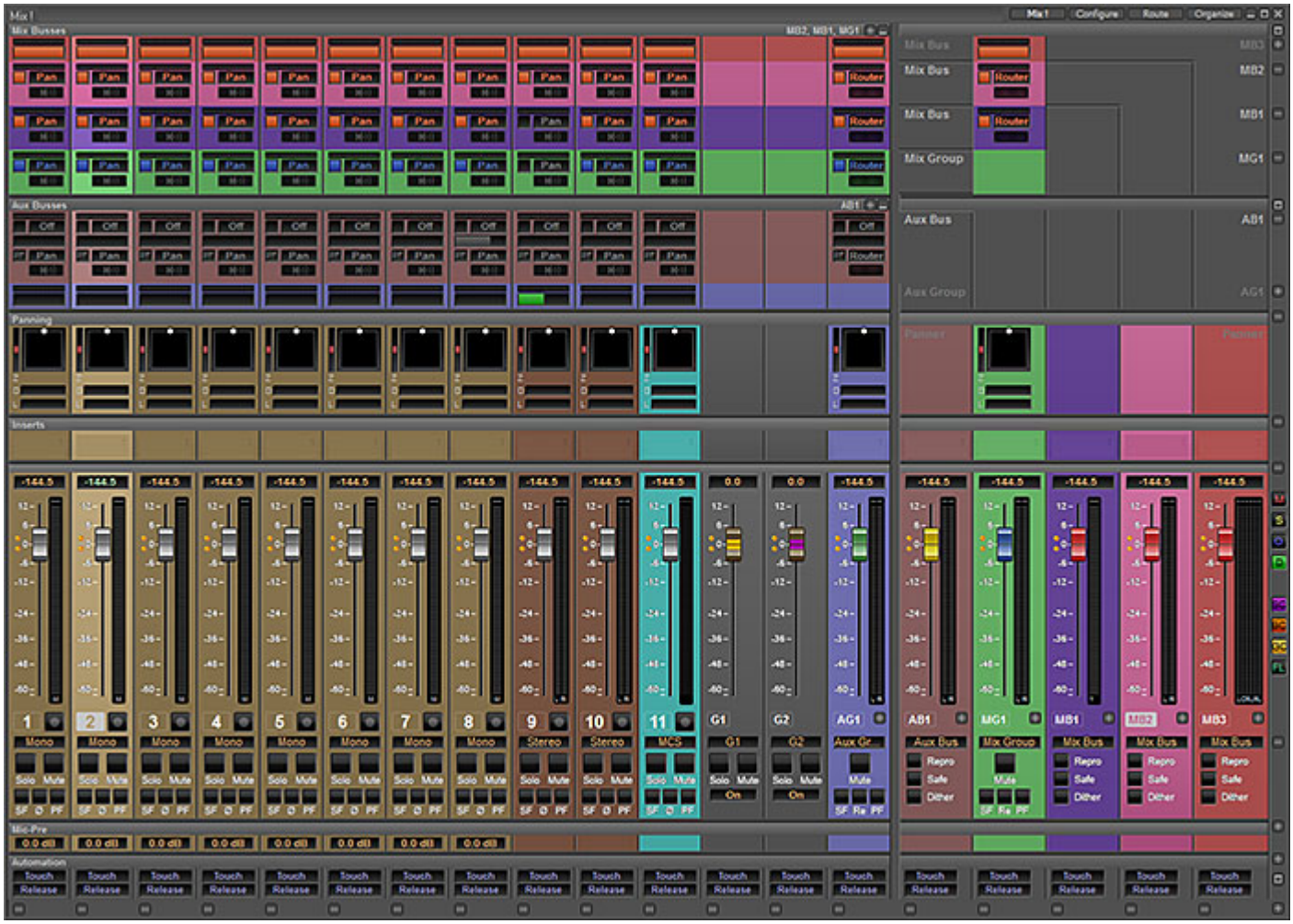
To aid in comprehension Strips and Buses are highlighted when selected. Highlighting a bus strip also highlights all its bus sends in all the strips feeding it.

Mixer with Strip 8 selected

In this screenshot Strip 8 is selected. The Stereo Bus **MB2** is also selected. Strip highlights follow the Tracks selected in the Timeline. Multiple selections are possible.

Colors

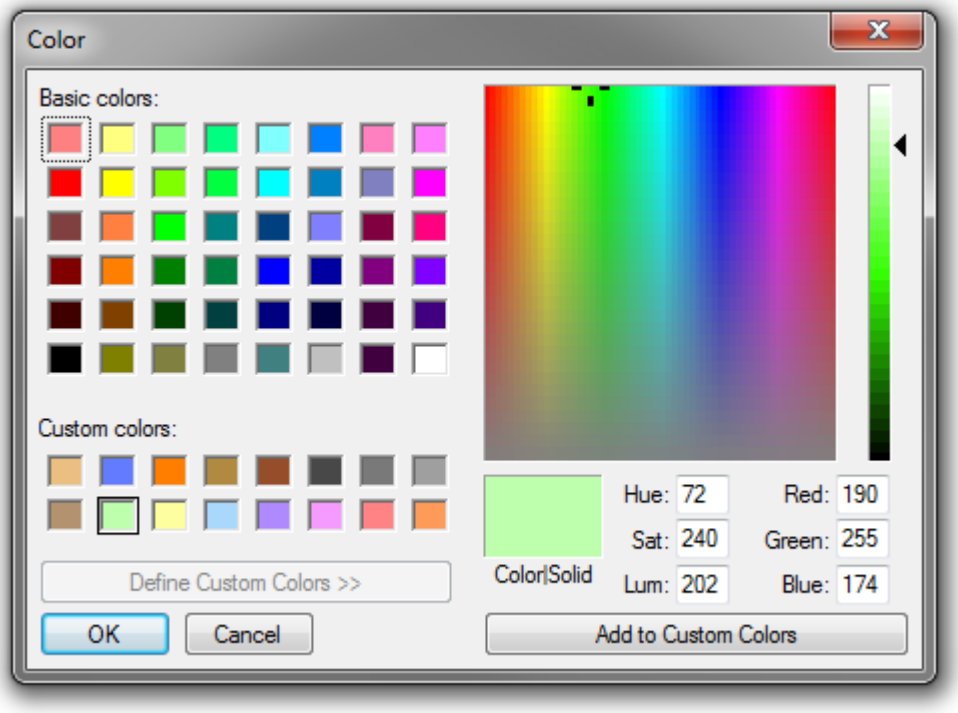
Color can be added to Input Strips, Buses, Auxes, Sub-Groups and VCA Groups to improve comprehension.



Mixer with Strip Bus and Group colors active

Bus, Aux and Sub-group colors are set via the +- pop-up menus. Input Strips follow the color set in the Track Header or in the Tracks Tab window.

Change Color Opens a **Color** picker:



Color Picker window

Hide or **Show Colors** hides or restores the colored lines. **Change color** allows the color of an individual bus to be altered. **Reset color** restores the color to its previous state.

Multiple Strip Selection and Operations

Multiple Console Strips can be selected together.

Select Multiple Strips

Click on a Strip then press and hold the **Ctrl** key and click on the Strip **number (**below the fader) to add or remove other strips to or from the selection.

Click on a Strip then press and hold **Shift** and click on another Strip **number** (below the fader) to select all Strips between the first selected and the last.

To cancel the multiple selection click on a Strip **number** (below the fader) on any of the selected strips.

Linked Actions on Multiple Selected Strips

Press and hold **[Ctrl] + [Shift]** to perform any of the following on all selected (highlighted) strips:

- Double-click on any of the Faders, Gain Knobs or Pans in the selected strips to reset all of them to the default value.
- Move Faders or Gain Knobs in any of the selected Strips moves all of the faders or knobs in the selected strips while preserving their delta.
- Click on any button, e.g. On/Off, Mute, Solo, IP, Phase, Record Ready, etc… to set the same state on all the selected strips.
- Add or subtract all selected Strips to or from a VCA group. (When subtracting the **Leaving VCA Group** dialog appears for each Strip which is assigned to the VCA Group.)
- Adding Effects (Support for VS3 effects)
- Copying Effects (Support for VS3 effects)
- Stem change

Note: If [**Shift**] only is pressed and held the above actions are performed on **ALL** Strips regardless of any selections.

On a MultiBus Matrix router if [**Control**] + [**Alt**] are pressed and held then the patching is performed on the selected Strips by incrementing the patched slot for each Strip.

General Mixing Bus Sends Matrix Grid

The General Mixing Bus section in the **Mix** page can be operated as a big Matrix Grid.

Clicking on any **On/Off** button of the **Send** components and dragging the mouse in any direction will create a diagonal patching (or unpatching) on neighbouring components.

Pressing the **Ctrl** key while clicking and dragging creates a rectangular block of **On/Off** instead of a diagonal. Useful for quick unpatching of a region.

This feature is best used when the complete mixer is collapsed, both Strips and Buses, however it is still functional if some strips or bus are not collapsed.

Mixer Configuration from the Mix! page

Adding Strips

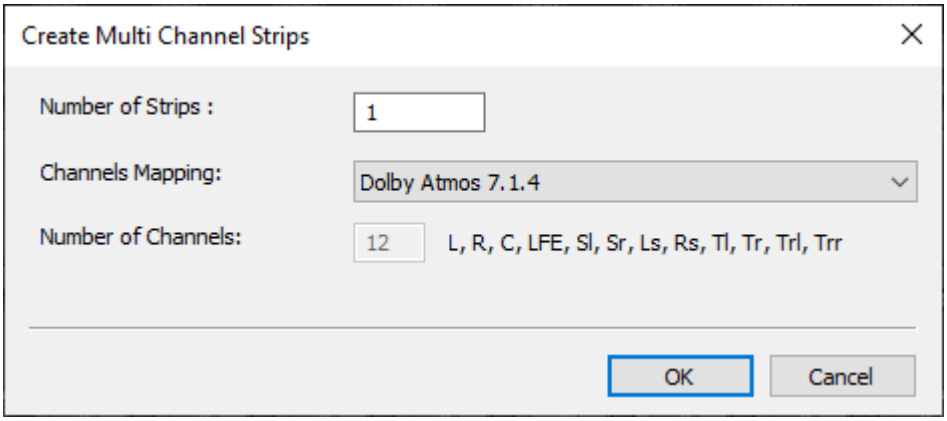
Adding Input Strips

Access the right-click context menu with the mouse cursor over a blank area in an existing strip.

Choose **Strip > Add**:

Mono	Opens a dialog to set the number of **Mono** Strips to be created.
Mono - Direct Monitoring	Opens a dialog to set the number of **Mono-Direct Monitoring** Strips to be created.
Stereo	Opens a dialog to set the number of **Stereo** Strips to be created.
Stereo - Direct Monitoring	Opens a dialog to set the number of **Stereo Direct Monitoring** Strips to be created.
MS	Opens a dialog to set the number of **MS** Strips to be created.
MS - Direct Monitoring	Opens a dialog to set the number of **MS Direct Monitoring** Strips to be created.
Multi - Channel Strip	Opens the **Create Strips** dialog (see below)
VCA Group	Opens a dialog to set the number of **VCA Group** Strips to be created.

Multi Channel Create Strips :

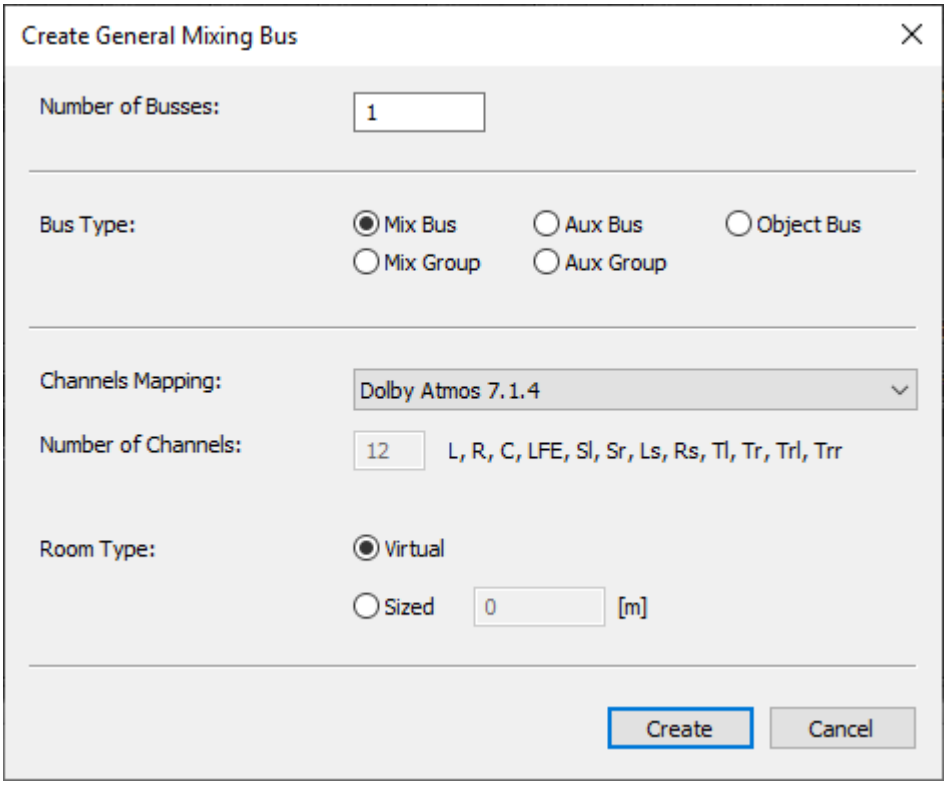


Create Strips dialog

Number of Strips :	Type the number of strips required in the field.
Channels Mapping:	Select a Mapping from the drop-down list plus **Custom**.
Number of Channels	Shows the number of Channels and their designations. The number field is grayed and can only be typed in when **Custom** is chosen as the Mapping.

Adding Audio Buses

Select **Bus > Add > General Mixing Bus**. The **Create > General Mixing Bus** dialog opens



Create General Mixing Bus dialog

Number of Buses: Type the number of Buses to be created in the field. (Default is **1)**

Bus Type: The radio buttons determine which type of General Mixing Bus will be created:

- Mix Bus
- Aux Bus
- Object Bus
- Mix Group
- Aux group

Channels Mapping: The drop-down lists all the pre-defined Room / Channel mappings and **Custom**. In most cases there will be a suitable mapping in the list. If you choose **Custom** then set the number of Audio Channels:

Number of Channels: Only available when **Custom** is chosen in **Channel Mapping:**

Room Type The radio buttons give the choice of **Virtual** Or **Sized**. If sized is selected enter a value in meters in the field.

Create Creates the Bus or Buses with the parameters selected and exits the dialog.

Cancel Exits the dialog without creating any Buses.

Panning Control Buses

Access the right-click context menu with the mouse cursor over a blank area in an existing strip. Select **Bus > Add > Panning Control Bus**. A new panning control Bus is created in the Mixer.

Input Strips

Select **Strip > Add** and choose the type of Input Strip to Add from the list below, or choose **VCA Group**.

- Mono
- Mono - Direct Monitoring
- Stereo
- Stereo - Direct Monitoring
- MS
- MS - Direct Monitoring
- Multi Channel Strip
- VCA Group

Rearranging Strips

Input strips, VCA group strips and Sub-group strips are moved directly in the console UI and may be moved anywhere in the Input Strips section.

Only Input Strips, VCA Groups and SubGroups can be moved. The Bus Masters Strips cannot.

Using Context Menu:

- Select one or more Strips
- In the right-click context menu choose **Strip > Copy Selected Strips**
- Select a destination Strip <x>
- In the right-click context menu choose **Strip > Move Copied Strips Before <x>** or **Move Copied Strips After <x>**

Using Drag & Drop:

- Select one or more Strips
- Press **Ctrl + Shift + Alt**
- Drag the selected Strips onto any other Strips

Note: If a Sub-group or VCA group is not moved, i.e. located at the far right of all the input strips, it is locked in place when scrolling the input strips. When a Sub-group or VCA group is moved in between other input strips it is then scrolled with them.

Effect Management

Add Effects on all Strips Selected

Select the Strips you wish to add the effect to.

Press and hold **Ctrl + Shift** keys.

From the right-click context menu select the required effect **VS3 Effects > Add > xxx** or **VST Plug-In > Add > xxx**

Remove Effects on all Strips selected

Select the Strips you wish to remove effects from.

Hover the Cursor over the Effects Slot you wish to clear.

Right-Click to open the context menu.**VS3 Effects > Remove > xxx**

Press and Hold the **Ctrl + Shift** keys.

Clicking on the Effect removes it from the Slot on all Strips selected.

Configure Page

Mixer Configure Page

In the **Configure** page multiple changes may be made to the mixer without it rebuilding after each change. The rebuild only occurs when you exit the page.

Synchronized Creation/Deletion of Tracks/Strips

Note: When Creating, Deleting or Moving Strips in the Mixer Configuration page (or with the right mouse button context menus) the connected Tracks are also Created/Destroyed or moved accordingly.

- This behavior will apply when **Tracks > Synchronize Tracks & Strips** is checked.
- When Strips are Created or Moved the Tracks are Created or Moved seamlessly.

On Deleting a Strip or Strips, only empty Tracks are destroyed. Tracks containing Clips are preserved, disconnected and set to minimum size.

Settings

Mixer Settings

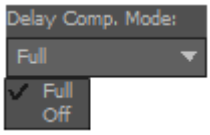
Opens the **Mixer Settings** window at the **All Settings > Misc > Mixer Settings** page.

Meter Bridge

When turned on (lit) the **Meter Bridge** Window is available to be opened from **View > Windows / Tools > Meter Bridge** or the Toolbar icon. **Please see: Meter Bridge on page 361**

Delay Comp Mode

Drop down list menu:



Offers the choice of **Full** and **Off**.

Please see: Mixer Delay Compensation on page 272

Mixer Configuration Summaries

The two panels at bottom right summarize the current mixer configuration. **Input Strip Summary** lists the total number of Channels and Input Strips and the quantity of each type. **Buses / Masters Summary** lists the total number of bus channels and buses strips with the quantity of each type.

Note: Rebuilding a large mixer with many effects can take some time.

Direct Outputs

The **Direct Out** connection is disabled by default. It can be enabled in the **Configuration** Page by selecting the strip and clicking on the **DO: Off** box or disabled if the box shows **DO: On**. Alternatively Direct Out can be set in the **Route** Page by clicking on the Strip Header.

The **Direct Out** can be routed by Channel to any physical output. The Direct Out can be sent Pre or Post Fader. Click on the **DO: Post** box in the Mixer I/O section to toggle. The Direct Out is currently always **Post Effects**. For multi-channel strips clicking in the box above the **DO:** box pops-up a **Set Direct Out** list:

Set Direct Out

Highlight the required channel. This will be fed to the logical output assigned in the **Mixer Route** page or by clicking on the **DO** XLR icon in the **Mix** page.

Selecting Strips

Strips can be selected by clicking on the label at the top of the strip which turns orange to show it is selected. Selection uses the conventional modifier logic: Clicking a second strip while holding **SHIFT** selects all strips in between and strips can be individually added or subtracted from a selection by clicking with the **Ctrl** key held down. **Ctrl + A** selects all strips. Strips can be selected by type using the **Select** context menu.

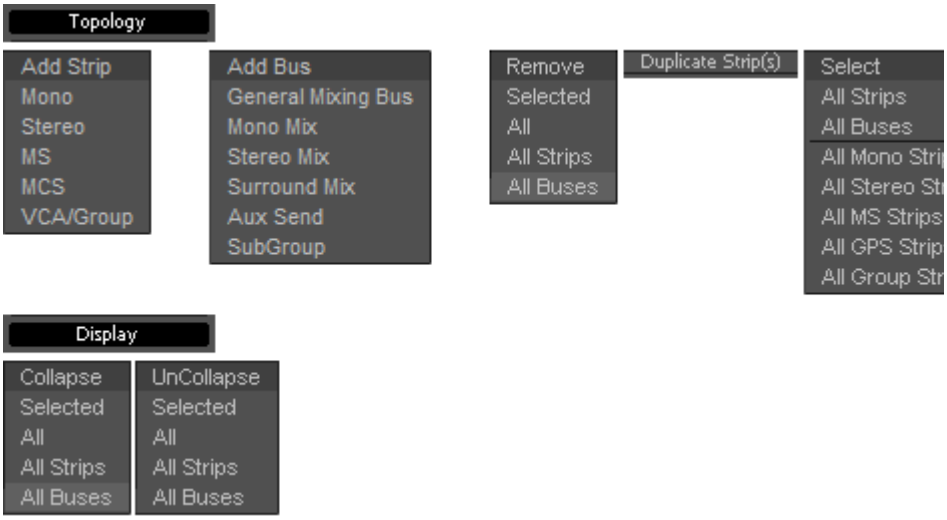
Strip Display

Click and drag the separator bar between Strips and Buses to show more or less Buses. The scroll bars give access to Strips and buses currently off screen.

Double-clicking the label at the top of a strip minimizes the strip. Double-clicking the label button on a minimized Strip restores it to full width.

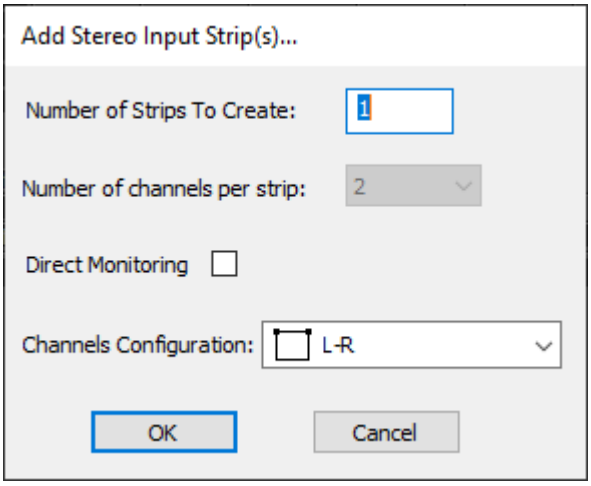
Strip and Bus operations

Once selected, strips can be dragged and dropped to reorganize. Other strip operations make use of the **Topology** and **Display** menu buttons. Each button pops up a list of options:



Topology and Display menus

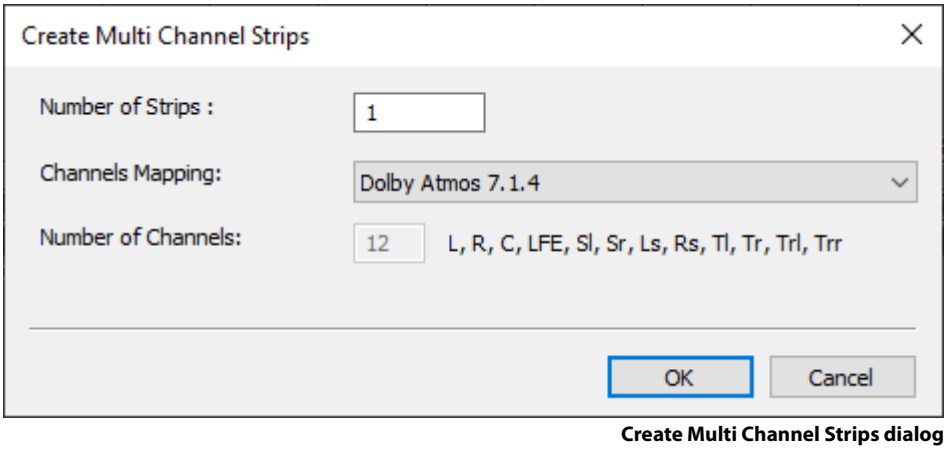
Add Strip - Mono, **Stereo**, **MS** and **VCA/Group** pops up a dialog with appropriate options:



Add Stereo Input Strip(s)... dialog

Note: Notice the **Direct Monitoring** check box. When checked, the strip added will be a Direct Monitoring Strip. This option is Grayed out if add VCA Strips is chosen.) **Please see Direct Monitoring Input Strips on page 223**.

Add Strip - MCS pops up this dialog:

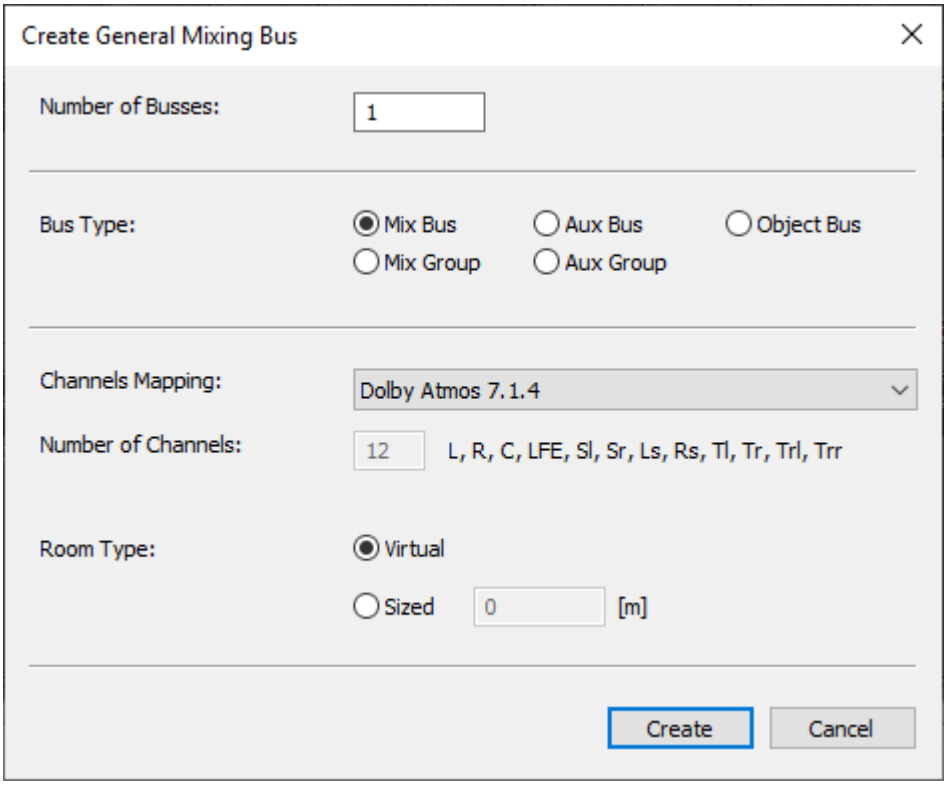


Create Multi Channel Strips dialog

The **Channels Mapping:** drop-down list gives the choice of the following formats:

Mono	**7.1 / ITU-I (0+7+0)**	**Auro 8.0**
Stereo	**7.0 SDDS**	**Auro 9.1**
2.1	**7.1 SDDS**	**Auro 10.1**
Stereo Surround	**7.0 / ITU-C (2+5+0)**	**Auro 7.4 / ITU-J (4+7+0)**
3.0 / LCR	**7.1 / ITU-C (2+5+0)**	**Auro 11.1**
3.1 / LCR	**8.0 / LCR**	**Auro 13.1**
3.0 Surround	**8.1 / LCR**	**KBS 10.2 / ITU-F (3+7+0)**
3.1 Surround	**9.0 / LCR**	**NHK 22.2 / ITU-H (9+10+3)**
4.0 Quadro	**9.1 / LCR**	**Cube**
4.1 Quadro	**9.1 / ITU-D (4+5+0)**	**Cube + Mid Layer**
4.0 Surround	**9.1 / ITU-E (4+5+1)**	**Cube (Corners + Faces)**
4.1 Surround	**11.0**	**Cube (Corners + Faces + Edges)**
5.0 / LCR	**11.1**	**30.2 La Totale**
5.1 / LCR	**Dolby 5.0**	**4 x Stereo**
5.0 / ITU-B (0+5+0)	**Dolby 5.1**	**1st Order Ambisonic (4 ch)**
5.1/ ITU-B (0+5+0)	**Dolby 7.0**	**2nd Order Ambisonic (9 ch)**
6.0 / LCR	**Dolby 7.1**	**3rd Order Ambisonic (16 ch)**
6.1 / LCR	**Dolby Atmos 5.1.2**	**4th Order Ambisonic (25 ch)**
6.0 / LRC	**Dolby Atmos 5.1.4**	**5th Order Ambisonic (36 ch)**
6.1 / LRC	**Dolby Atmos 7.1.2**	**6th Order Ambisonic (49 ch)**
7.0 / LCR	**Dolby Atmos 7.1.4**	**7th Order Ambisonic (64 ch)**
7.1 / LCR	**10.2 TMH**	
7.0 / ITU-I (0+7+0)	**12.2 TMH**	

Add Bus offers the choice of **General Purpose Bus** or **Legacy Bus**. Selecting **General Purpose Bus** opens the **Create General Mixing Bus** dialog:



Create general Mixing Bus dialog

Choose the **Number of Buses**, The **Bus Type**, The **Channels Mapping:** from the drop-down list. (This offers the same options as in the table above.) **Number of Channels:** is for information only. Also select the **Room Type**.

Click on **Create** to create the Bus or **Cancel** close the dialog without creating a Bus.

Duplicate Strip(s) adds a copy of the selected strip(s) to the right of the selected strip(s) including settings (pan, gain etc.) and effects.

Select Offers selection choices to speed up configuration.

All Strips

All Buses

All Mono Strips

All Stereo Strips

All MS Strips

All GPS Strips

All Group Strips

Productivity Shortcuts

Ctrl + A selects All Strips, **DEL**ete, deletes all selected strips.

Selected Strips can be dragged to a new location in the mixer. The screen scrolls horizontally when you hit the edges of the Strip panel.

Double-clicking a Strip toggles it's collapsed/uncollapsed states.

Strip names can be edited by clicking in the name box and typing. **Tab** moves to the name box of the next strip to the right, **SHIFT + Tab** moves to the name box of the next Strip on the left.

Effect Management

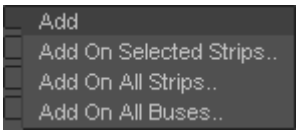
Clicking on **Effects >>** expands the Effects section.

Configure Page - Effects section

This offers several methods of managing effects on strips and buses.

Configure: Effects Buttons

Add Pops up a sub-menu with options

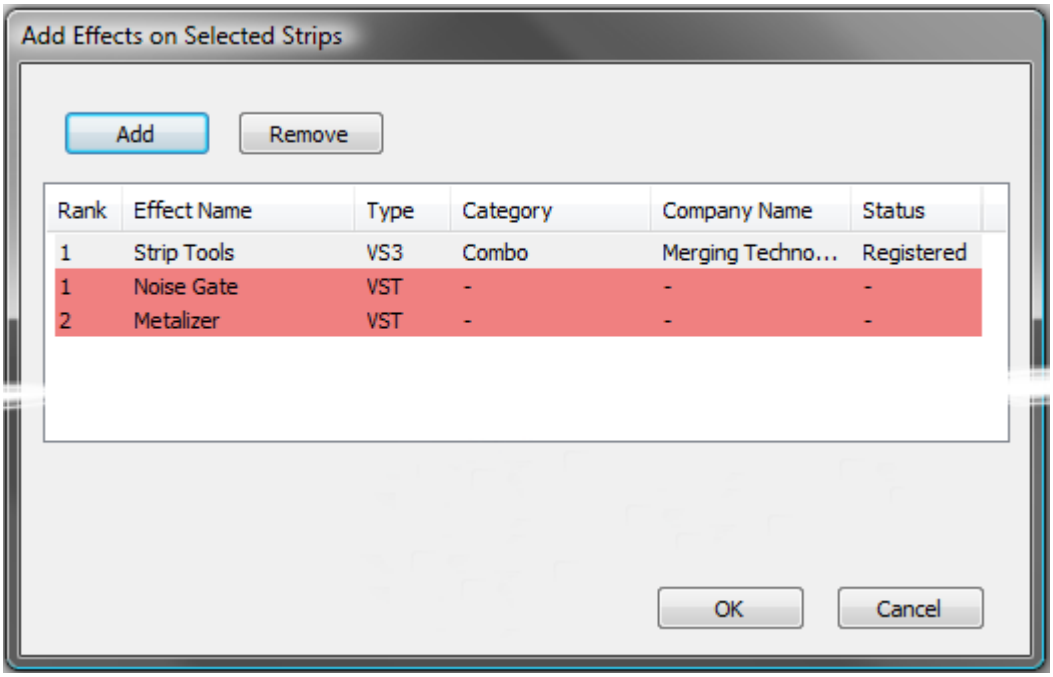


Add On Selected Strips..

Add On All Strips..

Add On All Buses..

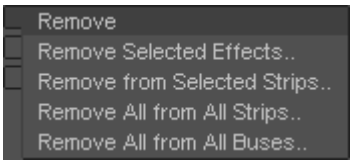
Each of these three options opens an **Add Effect On XXX** dialog, identical apart from the title



Add Effects On Selected Strips dialog

Note: That the different types of effect are shown by color. Pale Gray for VS3 and Red for VST. These colors are also used when effects are shown in containers in the Strips display.

Remove Pops up a sub-menu with options:



Remove Selected Effects..

Remove From Selected Strips..

Remove All From All Strips..

Remove All From All Buses..

Move Up Moves the selected effect(s) up in the list.

Move Down Moves the selected effect(s) down in the list.

Effects Section Containers

The Effects section of each strip is divided into two container areas by plug-in type, **VST** at the top and **VS3** below. Clicking on the **Click to Add** buttons in each container pops-up a list of available plug-ins in the relevant format sub-grouped by type. E.g. Dynamics, Restoration etc. Simply select from the list by clicking on an entry to install the plug-in, in the Strip. When a Strip or Bus has many effects, the container expands to accommodate them.

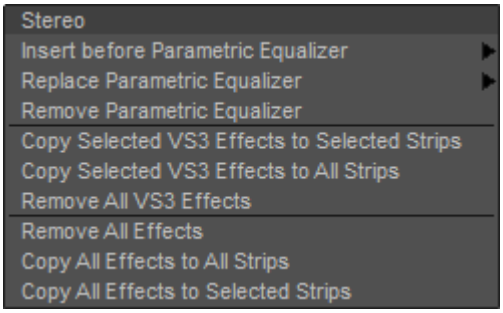
Shift Order

You can change the order of the VS3 and VST containers by clicking on the **Shift Order** buttons below the containers.

Selecting, Copying and Moving Effects

You can select an installed effect with a **left-Click** then **drag and drop** to move or **Ctrl + drag and drop** to copy effects of the same type to a Strip or Bus of the same dimensions or change the order of effects within the effect type container of the strip. **SHIFT + Click**ing a second effect with an effect already selected, selects all effects between the first and last selected. **Ctrl + Click** adds to selection.

Right-clicking on an installed plug-in pops-up a context menu, for example:



Effect context popup

Insert before (effect clicked on) > drops down a list of effects of the same type that can be inserted before current the effect.

Replace (effect clicked on) > drops down a list of effects of the same type that can replace the current effect. **Double-Click**ing an installed effect does the same thing.

Remove (effect clicked on) Uninstalls the current effect from the Strip or Bus

Copy Selected (Effect type) Effects to selected strips As it says. Target strips can be selected before or after selecting the effect(s)

Copy Selected (Effect type) to All Strips As it says.

Remove All (Effect type) Effects Removes all effect of the current type clicked on from the Strip.

Remove All Effects Removes all effects of all types from the current Strip.

Copy All Effects to All Strips Copies all the effects installed in the current Strip to all other Strips.

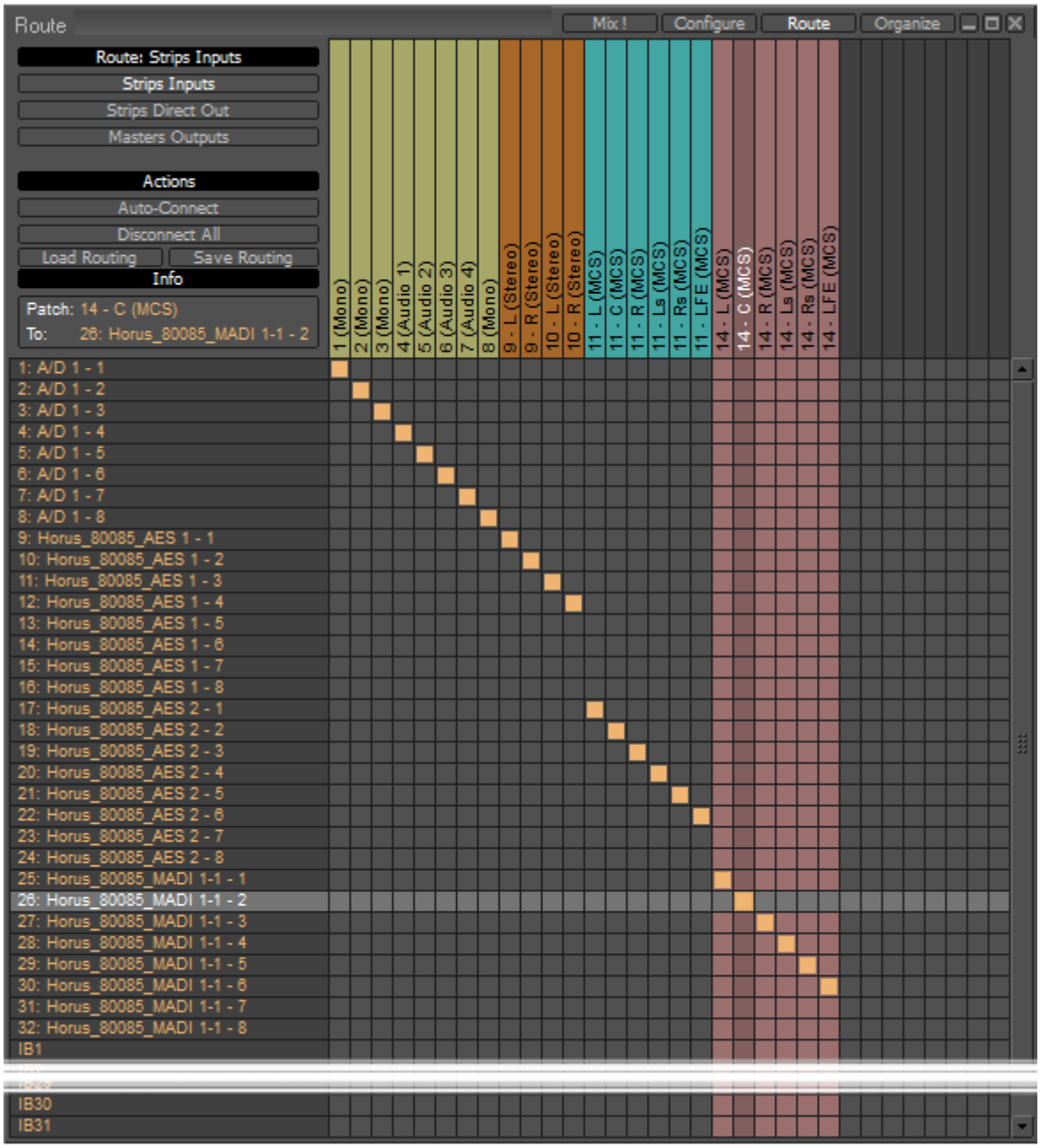
Copy All Effects to Selected Strips Copies all the effects installed in the current Strip to all selected Strips.

External Effects Inserts

External Inserts are added in the same way as VS3 Effects. Click on **Click to Add** and choose **Other > External Insert**

Route Page

Route brings together all routing to and from physical I/O in an intuitive matrix routing grid environment. It opens in the **Strips Input** page:



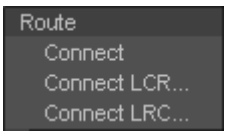
Mixer Route Page

Strips Direct Out and **Masters Outputs** are similar.

Making Connections

When the cursor is hovering over a destination crosspoint the column and row are highlighted for ease of viewing. Bus colors are carried across from the Mixer. If the cursor is over a crosspoint which is part of a multichannel strip or bus the other channels in the group are also highlighted dimly. In **Strips Inputs** clicking on a crosspoint routes the source in the left hand column to the destination in the top row. In **Strips Direct Out** and **Masters Outputs** sources are horizontal and destinations vertical. Clicking and dragging allow multiple assignments to be made rapidly.

Right-clicking a crosspoint pops-up a context menu with options appropriate to the destination.:



Auto-Connect

Connects all the **Strip Input Channels** to physical inputs in ascending order.

Disconnect All

Removes all crosspoint assignments.

Load Routing Save Routing

Loads and Saves the current console Inputs, Outputs and Direct Out routing from/to an XML file.

Info

The **Info** box shows detail about the currently highlighted crosspoint.

I/O Bus Capacity

In a MassCore system the only limitation on the number of I/O buses is the available power. For now the maximum number of buses is artificially limited in code to 512 (at 1FS, 256@2FS, 128@4FS, 64@8FS).

Internal Return Buses

Some of the time slots within MassCore can be reserved to convey **Aux Send** or **Master Output** Buses back to input strips. In effect, these are internal send/return paths. To change the number of available Internal Return Buses, close all open Projects (if any) and go to:

Settings > All Settings > Mixer > Mixer Settings.

The number of Internal Return Buses can be set using the **Internal Buses** combo box. Click on the **OK** button to memorize the setting and exit.

The number of **Internal Return Buses** you assign here will be available as possible channel strip sources in the mixer.

> **Note:** Please be aware that a Mix Group Bus or Aux Group Bus will auto-take Internal Bus connection resources, starting from the last one. E.g. IB384-IB385 for the first two SubGroup Channels added to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

Organize Page

Here, Mixer Presets and Settings can be managed:

Mixer Organize Page

Presets

Global & User Presets

All the Factory **Global** and **User** Presets appear in the list in the right-hand pane. Global Preset are available to any user logged on the current machine, User Presets are available only for the User that created the Preset.

Recall Default — Recalls the Default Mixer - see below.

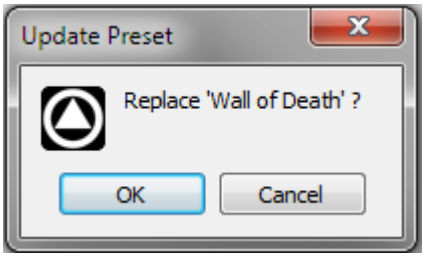
Recall Selected — Recalls the selected Preset.

Recall Selected State — Recalls parameters, panning, levels etc. from a saved Mixer Preset and applies these to the current Mixer.

> **Note:** This only applies to strips and effects common to both configurations. If the current mixer does not have the same plug-ins etc. non-coincident items will be ignored. Similarly if you recall the state of a 100 strip mixer to a 10 strip mixer the last (right-hand end)90 strips are ignored.

Store Default — Makes the current Mixer the default. E.g. when called from the **New Project Wizard**.

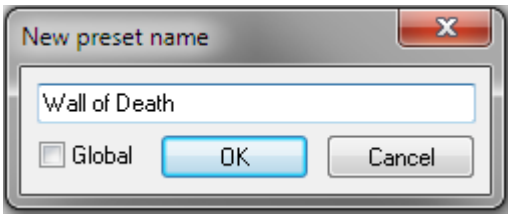
Update Selected — Opens the **Update Preset** dialog:



Update Preset dialog

Replaces the Preset selected currently to match the current Mixer. Click on **OK** to save it and close the dialog. **Cancel** closes the dialog without saving, leaving the selected Preset unchanged.

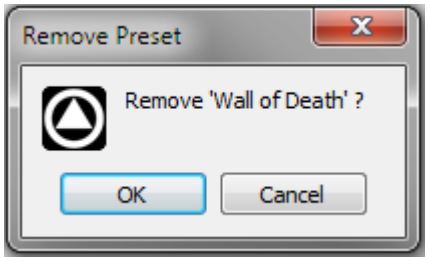
Store New... Opens the **New preset name** dialog:



New preset name dialog

Type a suitable name for the Mixer. If the Global box is ticked the Mixer Preset will be available in all Projects in the Global section of the Presets list. If unchecked it will appear in the User Presets section. Click on OK to save it and close the dialog. Cancel closes the dialog without saving.

Remove Selected Opens the **Remove preset** dialog:



Remove Preset dialog

OK deletes the selected Preset and closes the dialog. **Cancel** leaves the Preset intact and closes the dialog.

Load from file... Opens a Windows File Browser window to enable a Preset to be loaded from a Windows Folder.

Save to file... Opens a Windows File Browser to enable the current Preset to be Saved to a Windows Folder.

Wizard... Opens the **Mixer Configuration Wizard**. **Please see: Mixer Configuration Wizard on page 276**.

3D Panning Control Bus Window

The **Panning Control Bus** window offers far more information and a greater degree of control over all the 3D panning parameters than could be shown on an individual Input strip. It is opened from **View > Windows / Tools > Surround Panner** or the icon in the **View** Toolbar.

Views

The left hand pane is the view looking down on the virtual room from above.

The right hand pane is the view looking into the virtual room from the back.

Here is the Panning Control Bus window displaying controlling a Mono strip feeding a 32 Speaker Room/Bus:

Panning Control Bus window - Mono Source

Layers

Speakers are grouped in three layers plus LFEs.

Speakers in he “normal” layer are colored red, the top layer green and the bottom layer blue, LFEs are yellow.

Controls

The controls present at the bottom of the window vary depending on the source type.

Mono Source

Left/Right	Pans all source channels between left and right.
Front/Rear	Pans all source channels between front and rear.
Bottom/Top	Pans all source channels between bottom and top.
Divergence	Sets the amount of divergence.

LFE Sets the LFE level.

LFE2 Sets the LFE level to the second Sub-woofer. (Only shown when present in the Room Configuration.)

Divergence Type Clicking in the field cycles through **1D**, **2D** and **3D**

- **1D** Divergence is applied Left and Right.
- **2D** Divergence is applied Left, Right, Front and Rear.
- **3D** Divergence is applied Left, Right, Front, Rear, Top and Bottom.

Virtual Pan Law Clicking in the field switches between **Sin/Cos** and **Square Root**.

Sized Pan Attenuation Only applicable to Sized room models. Enables the effect of distance on the attenuation to be exaggerated or reduced by a factor of 5 times. Central position means default attenuation is 1/d, moving the parameter to the right exaggerates the effect of distance, moving the parameter to the left reduces the effect of distance.

Stereo Source

All of the above PLUS:

Rotation LR Rotates the image in the horizontal plane. No Change in height.

Rotation FR Tilts / Rotates the image in the vertical plane Left and Right. Center is fixed.

Rotation BT Tilts / Rotates the image in the vertical plane from Front to Back

Source Size

Dual Source Mode Clicking on the field cycles through:

- **Balance**
- **Single Pan** Pans the stereo source as a mono source.
- **Dual Pan** **Rotation** and **Source Size** controls are hidden and replaced by:

2nd Left/Right

2nd Front/Rear

2nd Bottom Top

2nd Divergence

Thus in **Dual Pan** mode the two source channels are dealt with independently.

Dual Pan Modifiers

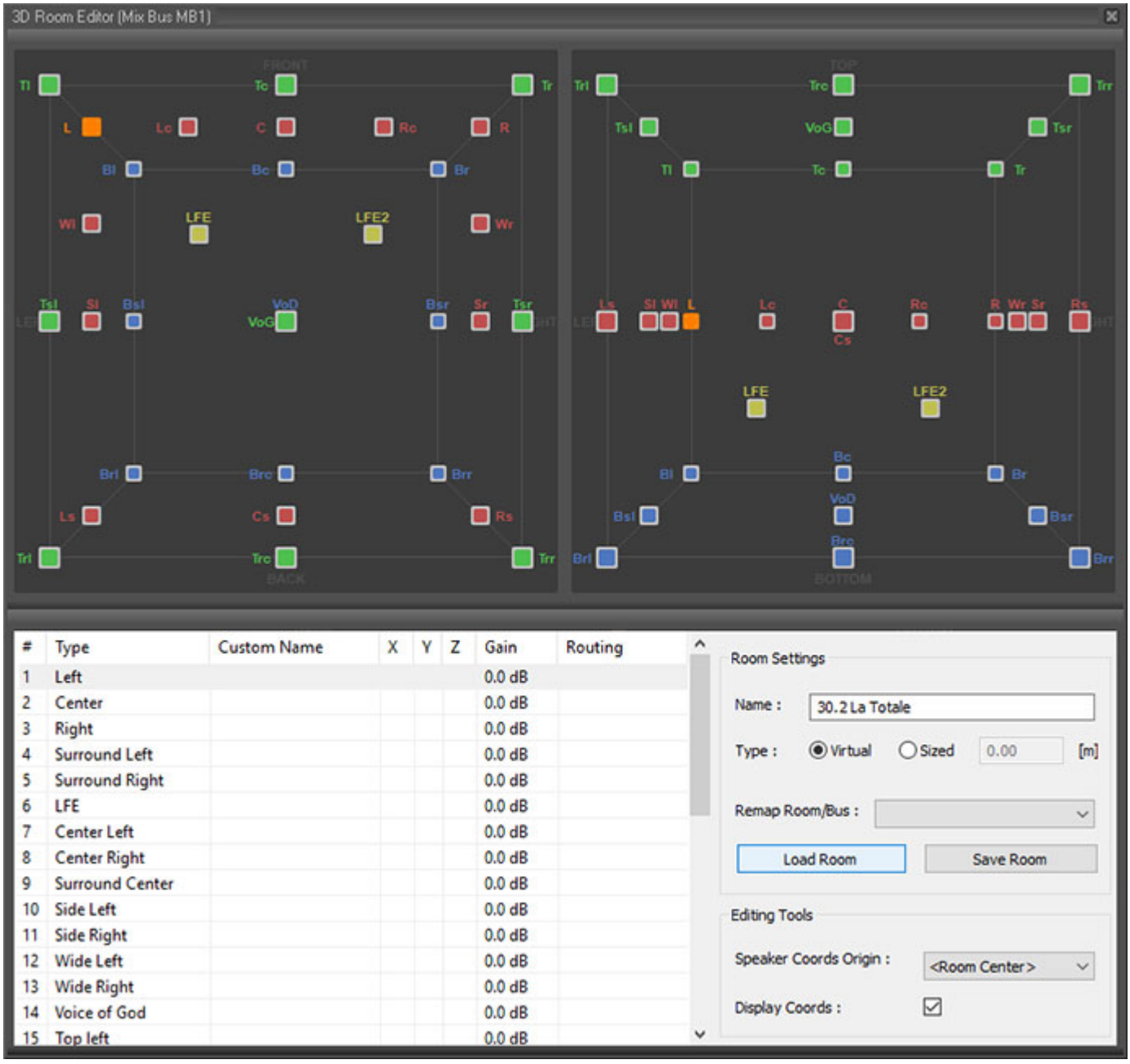
- **Double-click** on **White** sends it to **Front-Left**.
- **Double-click** on **Red** sends it to **Front-Right**.
- **Double-click** on a **Speaker** sends the **White** to it.
- **Ctrl + Double-click** on a **Speaker** sends the **Red** to it.

Note: The **3DConnexion Space Navigator** and **SpaceMouse Pro** mice are supported for panning. Please follow the configuration guide which may be found here:

https://confluence.merging.com/display/PUBLICDOC/3DConnexion+Mouse+-+Configuration+Guide

The 3D Room Editor

All **General Mixing Buses** are configurable in the **3D Room Editor** window. This is opened by clicking on the Bus label in the **Automation, I/0 and VCA** section of the Bus Strip.



3D Room Editor - Virtual mode

GP Bus Channel Configuration or '3D Room' types

Virtual Room Model

The Virtual Room model uses a Stereo Panning based algorithm using either a Square Root or Sin/Cos panning law, extended to all 3 dimensions.

The only User parameter is the Square Root - Sin/Cos choice available either in **All Settings > Mixer > Mixer Settings : Virtual Room / Stereo Pan Law** or **Virtual Pan Law** in the 3D Panner Window.

Channel/Speaker Types

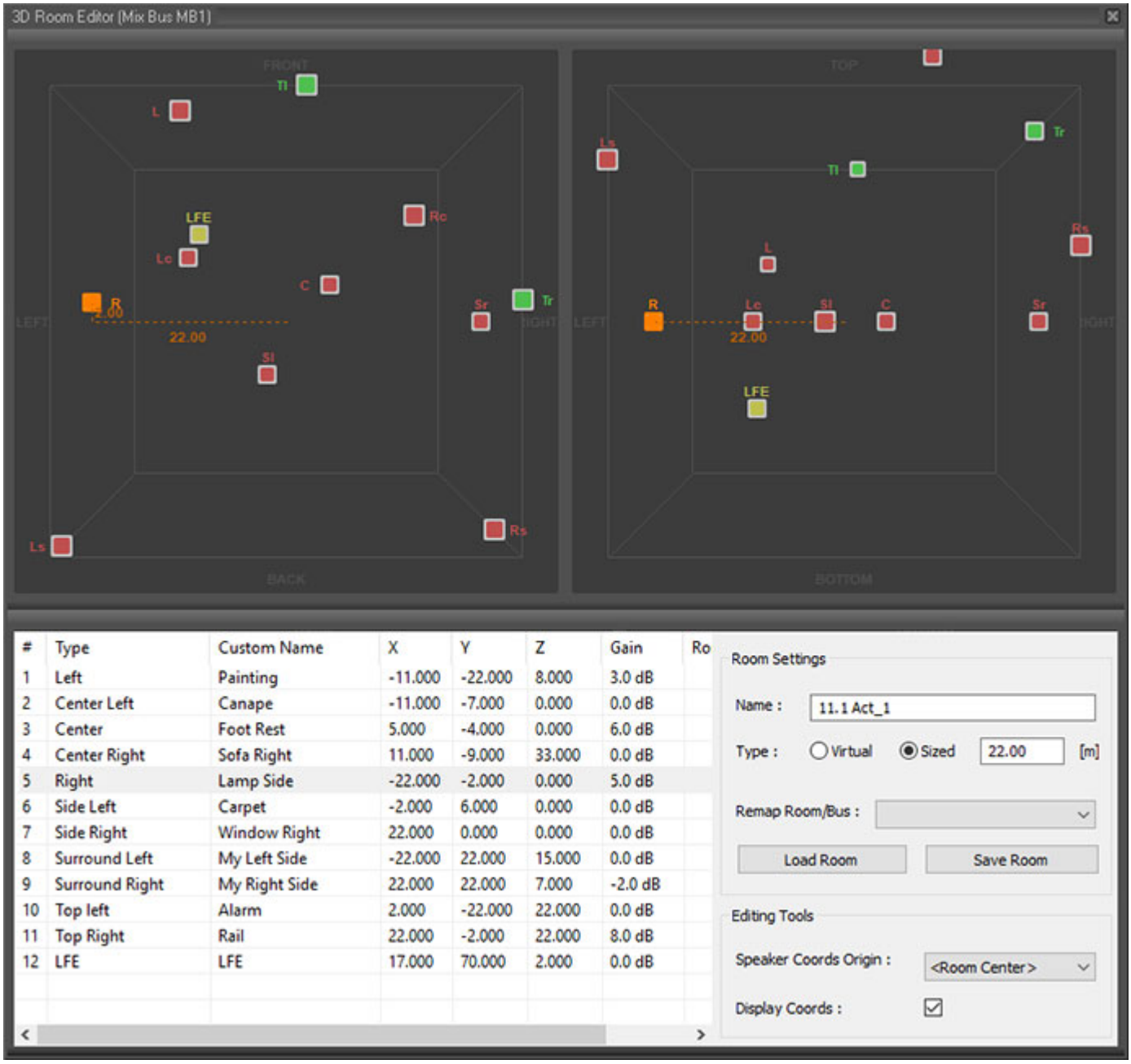
In Virtual Room mode the Channels or Speakers can only be of the 32 types listed below:

1	L	Left	17	Tr	Top Right
2	C	Center	18	Trl	Top Surround Left
3	R	Right	19	Trc	Top Surround Center
4	Ls	Surround Left	20	Trr	Top Surround Right
5	Rs	Surround Right	21	Tsl	Top Side Left
6	LFE	Low Frequency Effects	22	Tsr	Top Side Right
7	Lc	Center Left	23	Bl	Bottom left
8	Rc	Center Right	24	Bc	Bottom Center
9	Cs	Surround Center	25	Br	Bottom Right
10	Sl	Side Left	26	Brl	Bottom Surround Left
11	Sr	Side Right	27	Brc	Bottom Surround Center
12	Wl	Wide Left	28	Brr	Bottom Surround Right
13	Wr	Wide Right	29	Bsl	Bottom Side Left
14	VoG	Voice of God	30	Bsr	Bottom Side Right
15	Tl	Top left	31	VoD	Voice of Devil
16	Tc	Top Center	32	LFE2	Low Frequency Effects E2

Note: Speakers belonging to the three **Height Layers** and **LFE(s)** are color coded as in the above table in the **3D Room Editor** window and the **Advanced Panning Control Bus** window. The speaker selected currently is colored orange.

- The Channel Type directly defines the position of the Speaker in the Room
- The Room has no real-world size, the panning algorithm only uses amplitude for computing levels based on the position of each Speakers/Channels, that is defined by its Channel Type.
- The algorithm ensures that the levels are sharply focused near the closest speaker to the Panner's coordinates.
- This mode is designed for Film, Post-production or Music where no real-world room definition is needed or known in advance and precision is needed to focus on a given Speaker.

Sized Room Model



#	Type	Custom Name	X	Y	Z	Gain	Ro
1	Left	Painting	-11.000	-22.000	8.000	3.0 dB	
2	Center Left	Canape	-11.000	-7.000	0.000	0.0 dB	
3	Center	Foot Rest	5.000	-4.000	0.000	6.0 dB	
4	Center Right	Sofa Right	11.000	-9.000	33.000	0.0 dB	
5	Right	Lamp Side	-22.000	-2.000	0.000	5.0 dB	
6	Side Left	Carpet	-2.000	6.000	0.000	0.0 dB	
7	Side Right	Window Right	22.000	0.000	0.000	0.0 dB	
8	Surround Left	My Left Side	-22.000	22.000	15.000	0.0 dB	
9	Surround Right	My Right Side	22.000	22.000	7.000	-2.0 dB	
10	Top left	Alarm	2.000	-22.000	22.000	0.0 dB	
11	Top Right	Rail	22.000	-2.000	22.000	8.0 dB	
12	LFE	LFE	17.000	70.000	2.000	0.0 dB	

3D Room Editor - Sized mode

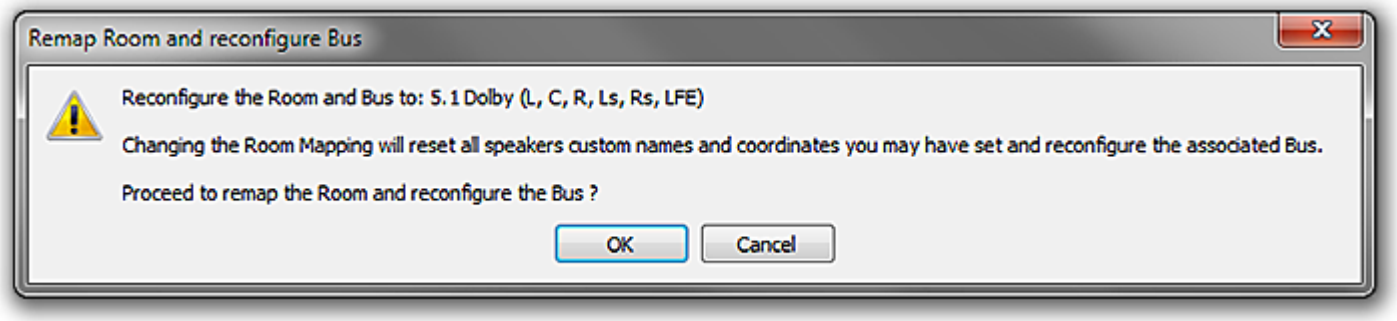
- Sized Rooms use a Sound in Air propagation/attenuation based algorithm.
- In this mode the panning algorithm uses real distances to compute levels.
- All Speakers output some level, even if very low, wherever the Panner is positioned.
- The position of each Speakers is editable in the Room Editor. The selected Speaker is highlighted in Orange and its coordinates can be changed using the editor.
- By default the sound attenuation depends on the distance from the panning source to each speakers by 1/d. (One divided by the distance.)
- A parameter called **Sized Pan Attenuation** in the 3D Panner Window enables the effect of distance on the attenuation to be exaggerated or reduced by a factor of 5 times.
- Central position means default attenuation is 1/d, moving the parameter to the right exaggerates the effect of distance, moving the parameter to the left reduces the effect of distance.
- In this mode the Room has a size and the Speakers have a editable position, independently of their Type, that is only useful in this model.
- The Room Size definition is the Radius of the cubic Room, i.e. half its boundary size. E.g. if 3m is entered the room is 6m x 6m x 6m.

Left Hand Pane

#	The number of the Channel (Not editable).
Type	Clicking in the field pops-up the list of **Pre-defined Channel Types**, as above, plus **<Custom>**. Choosing one of the predefined Types sets the **X**, **Y** and **Z** co-ordinates accordingly. However, they are editable.
Custom Name	Type in this field to add a Custom Name. This is applicable to pre-defined channel Types and Custom Channels.
X	Click and type in the field to set the Left - Right co-ordinate for the speaker.
Y	Click and type in the field to set the Front - Rear co-ordinate for the speaker.
Z	Click and type in the field to set the Top - Bottom co-ordinate for the speaker.
Gain	Click in the field and type a value to trim the Speaker output level.
Routing	Click in the field to pop-up a list of all destinations available.

Room Settings

Name	Click in the field and type to name the Room/Speaker Arrangement.
Remap Room/Bus	The drop-down lists all the Pre-defined Room Types available. Choosing one in the list opens the **Remap Room and reconfigure Bus** dialog:

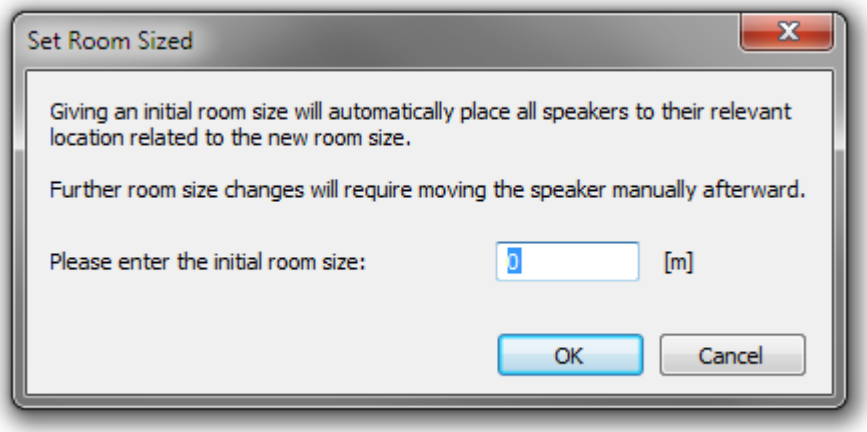


Remap Room and reconfigure Bus dialog

Note: As the dialog indicates, **Changing the Room Mapping will reset all custom speaker names and coordinates you may have set and reconfigure the associated Bus.**

Options are **OK** to reconfigure or **Cancel** to retain the current configuration.

Type:	The radio buttons toggle between **Virtual** and **Sized**. If **Sized** is selected the **Set Room Size** dialog appears:



Set Room Size dialog

Click in the **Please enter the initial room size:** field and enter a value (in Meters)

Click on **OK** to change mode and set the initial room size or **Cancel** to retain the current mode.

Load Room Save Room

When a **Custom Bus** has been created it can be Saved and Loaded into another Bus obviating the need to recreate it. A Saved Custom Bus can be exported to or imported from another Pyramix or Ovation Session. The saved bus includes Sources, X,Y and Z coordinates and Gain.

Editing Tools

Speaker Coords Origin : Determines the base point in space for the XYZ coordinate settings. The drop-down offers the choice of: **<Room center>** or any of the speakers present in the room (by number). Speaker position is either relative to the center of the room, or to the selected reference Speaker.

Display Coords: When checked the coordinates for the selected speaker are shown numerically and by a dotted orange line from the point of origin.

Predefined Room types listed below:

Mono	**7.1 / ITU-I (0+7+0)**	**Auro 8.0**
Stereo	**7.0 SDDS**	**Auro 9.1**
2.1	**7.1 SDDS**	**Auro 10.1**
Stereo Surround	**7.0 / ITU-C (2+5+0)**	**Auro 7.4 / ITU-J (4+7+0)**
3.0 / LCR	**7.1 / ITU-C (2+5+0)**	**Auro 11.1**
3.1 / LCR	**8.0 / LCR**	**Auro 13.1**
3.0 Surround	**8.1 / LCR**	**KBS 10.2 / ITU-F (3+7+0)**
3.1 Surround	**9.0 / LCR**	**NHK 22.2 / ITU-H (9+10+3)**
4.0 Quadro	**9.1 / LCR**	**Cube**
4.1 Quadro	**9.1 / ITU-D (4+5+0)**	**Cube + Mid Layer**
4.0 Surround	**9.1 / ITU-E (4+5+1)**	**Cube (Corners + Faces)**
4.1 Surround	**11.0**	**Cube (Corners + Faces + Edges)**
5.0 / LCR	**11.1**	**30.2 La Totale**
5.1 / LCR	**Dolby 5.0**	**4 x Stereo**
5.0 / ITU-B (0+5+0)	**Dolby 5.1**	**1st Order Ambisonic (4 ch)**
5.1/ ITU-B (0+5+0)	**Dolby 7.0**	**2nd Order Ambisonic (9 ch)**
6.0 / LCR	**Dolby 7.1**	**3rd Order Ambisonic (16 ch)**
6.1 / LCR	**Dolby Atmos 5.1.2**	**4th Order Ambisonic (25 ch)**
6.0 / LRC	**Dolby Atmos 5.1.4**	**5th Order Ambisonic (36 ch)**
6.1 / LRC	**Dolby Atmos 7.1.2**	**6th Order Ambisonic (49 ch)**
7.0 / LCR	**Dolby Atmos 7.1.4**	**7th Order Ambisonic (64 ch)**
7.1 / LCR	**10.2 TMH**	
7.0 / ITU-I (0+7+0)	**12.2 TMH**	

Mixer Delay Compensation

Summary

Mixer Delay Compensation offers a choice between:

Full

Off

This choice is made in the **All Settings > Project > Mixer > Mixer Settings** page along with a switch to turn Automatic Compensation on or off and a slider to set the **Maximum Mixer Delay Compensation**.

Delay Compensation Switching

As detailed above, Compensation can be selected in the **All Settings** menu. It can also be toggled **On/Off** in the Mixer context menu. Right click and select **Settings** then click on **Enable Delay Compensation** to toggle On or Off.

1. Input strip set as a (normal) Input: no compensation. If a Delay is applied manually the output signal of this strip will be delayed by the applied value.
2. Input strip used as a Bus return, i.e. patched to an Internal Bus and set as a bus return (see **Input Strip Mode on page 274**): all other Output Strips are automatically delayed by the amount equal to the Bus internal processing delay.
3. Input strip used as a Bus return, i.e. where the bus signal is sent outside the workstation and returned to a physical Input: All other Strips are automatically delayed by the amount equal to the Bus internal processing delay providing the Input is set as a Bus (see **Input Strip Mode on page 274**). If a Delay is applied manually, for example to compensate for the delay in an external processor, the signal of all other output strips will be further delayed, according to the value entered.

When **Full** is selected, Plug-in effects that correctly report their latency will also have their delay compensated. Further, this delay will be maintained when the plug-in is in **bypass** mode.

Please see also Mixer Settings on page 765

Delay Compensation

Delay Compensation Indicator

A small button labeled **D** on the right-hand side of the mixer adjacent to the Fader line indicates the current state of delay compensation in the mixer:

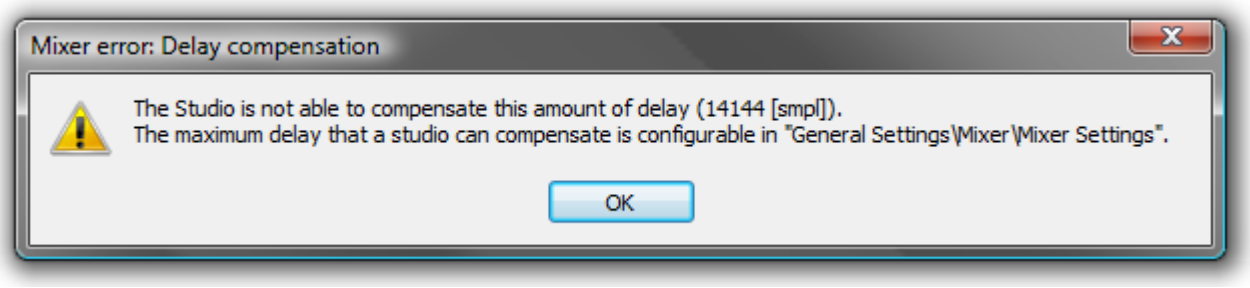
A stable **green** indicates that delays are compensated.

Stable red indicates that delays are **not** compensated.

Blinking red indicates that you need to adjust the maximum length of delay that can be compensated in order to achieve proper compensation.

Maximum Delay Compensation

Pyramix sets a default value for the maximum number of samples of delay that can be compensated automatically. As effects are added the required total delay value is calculated. If an Effect is instantiated that will exceed this limit the **Mixer error: Delay compensation** dialog appears:



To deal with the problem either remove an effect or effects or go to **Settings > All Settings > Project > Mixer > Mixer Settings** and increase the **Max Mixer delay Compensation - Delay** setting to a value slightly in excess of that proposed in the dialog.

MassCore

Note: Increasing the Delay value too much steals valuable memory from MassCore.

Outboard Latency

Typical latency in ms of outboard gear ranges from 2 to 5 ms. The following chart may help you to compute the proper delay compensation values for outboard equipment:

Delay Chart

Ms	samples@44.1kHz	samples@48kHz	samples@88.2kHz	samples@96kHz	samples@176.4kHz	samples@192kHz	samples@352.8kHz
1	44	48	88	96	176	192	352
3	132	144	265	288	529	576	1058
5	221	240	441	480	882	960	1764
7	309	336	617	672	1235	1344	2470
9	397	432	794	864	1588	1728	3175
10	441	480	880	960	1764	1920	3528
12	529	576	1058	1152	2117	2304	4234
Max Delay (Auto PLUS Manual)	**1216**	**1216**	**2432**	**2432**	**4864**	**4864**	**9728**

Time Alignment of Recorded Clips

All recordings from Input Strips designated as **Input** are automatically time-aligned. E.g. recordings from live inputs.

Recording Bus Returns

When recording the output of an input strip taking an Aux or Bus return, for example to "freeze" a reverb Track, the recorded media will be placed too early in the Timeline. In this situation it may therefore be desirable to designate this Aux or Bus return as a normal **Input** in order to ensure correct time-alignment of the recorded Clip.

> **Note:** For Power Users the **SABR** debug windows show the delay values applied to each bus / aux node and may prove useful. (Accessible by right-clicking on the Info Bar and selecting from the **Debug** sub-menu.)

Delay Compensation Detail

All digital processing takes a finite amount of time. When **Internal Return Buses** are used to route **Master** output buses back into channel inputs (by selecting an **Internal Return Bus** input from the routing pop-up for the **Bus** output, and selecting an **Internal Return Bus** output as the return channel input) all other buses not so routed must be delayed if the Mixer is to be 'time-aligned' I.e. If a signal is fed to two inputs, the first feeding the Main Output direct and the second routed back to an input via (say) a **Stereo Send** bus with the return input strip routed to the Main Output, then the second will be delayed with respect to the first. Selecting **Settings > Enable Delay Compensation** from the mixer context pop-up menu will automatically ensure both signals remain in sync by delaying the signals directly routed to the Main Output by an amount equivalent to the delay introduced by the extra processing in the second path.

> **Note:** For obvious reasons a strip fed by an Internal Bus or buses cannot be routed back to the same internal buses.

Input Strip Mode

Input Type pop-up

In order for Pyramix to correctly calculate the required delay you have to tell it which bus is the source for the Internal Return Bus. Clicking on **Input** at the bottom of the strip, above the XLR icon, pops-up a list of all the output buses and **Input**. **Input** is the default and means the strip is fed from a physical live input and no delay compensation is required. If any Internal or External Return Bus is ticked and **Automatic Delay Compensation** is turned on, Pyramix calculates the required delay and applies it to all Output buses not feeding a Return Bus.

Delay vs. Delay Compensation

When the Input Strip Mode is set to **Input** the delay setting affects the only the delay on the strip's signal. When **{any Bus name} Return** is selected as the Input Strip Mode the delay setting affects the delay on all other output bus signals to ensure correct time-alignment.

Delay Compensation of External Inputs

Where an Output Bus is used to feed an external processor via a physical output and the external processor output is fed back into Pyramix via an external live input, then the necessary delay compensation must be computed and applied by the operator since Pyramix has no means of determining the delay of the external device. However, the Input Strip Mode (Click on **Input** to pop-up the menu) should be set to the bus feeding the external processor (as above) so that the input channel delay setting affects delay compensation rather than simply delaying the signal through the input strip.

Input Type pop-up

In the illustration, Group Bus **Ext Rev** feeds an external device via physical outputs **17** & **18**. The outputs of the external device are connected to physical inputs **1** & **2**. The channels' **Mode** has been set to **Ext Rev Return** and delay compensation of **256** samples applied.

In contrast **Int FX** SubGroup bus has VS3 and VST plug-ins inserted in the strip and feeds the output buses directly. There is, of course, no reason why an external insert cannot be used in a Group Bus instead of using an Output bus for this purpose.

External Insert Plug-ins

Internal VS3 Engine latency is automatically compensated except for the audio interface I/O latency. Thus you have to manually set the delay of the external unit plus the I/O latency. It is not possible to change the delay or change the bypass status during playback or recording.

Determining Delay Compensation for External Effects Loops

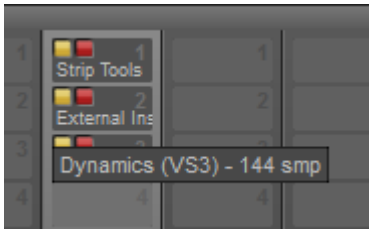
One strategy for achieving this is to route a signal directly to an Output Bus and, via a physical output from a second Output Bus, to the external processor's input. The processor's output is connected to a physical Pyramix input and routed to an input strip. The strip mode must be set to the Bus used as the source. Then you can use impulse sounds, clicks, rimshots etc. to aid manual adjustment of the delay compensation by comparing the direct sound with the sound returning from the external processor.

Determining Delay Compensation for External Insert Plug-ins

A similar strategy can be employed here. Route the signal you wish to treat with an External Insert Plug-in to two input strips. Add the External Insert in one strip only, complete with the external processor in circuit. Delay the untreated strip until the audio is in sync with the treated audio and note the delay value. Then apply this value in the **Ext. Unit Delay** field in the **External Insert** window.

Effects Delay Indication

When the mouse cursor is hovered over a plug-in, in a strip, the required delay value is displayed:



Plug-in Name and Delay pop-up

Here you can see that **Dynamics** currently requires a 448 sample delay to be applied to the other output buses. This is applied automatically when **Full Delay Compensation** is switched on.

Creating and Configuring Mixers

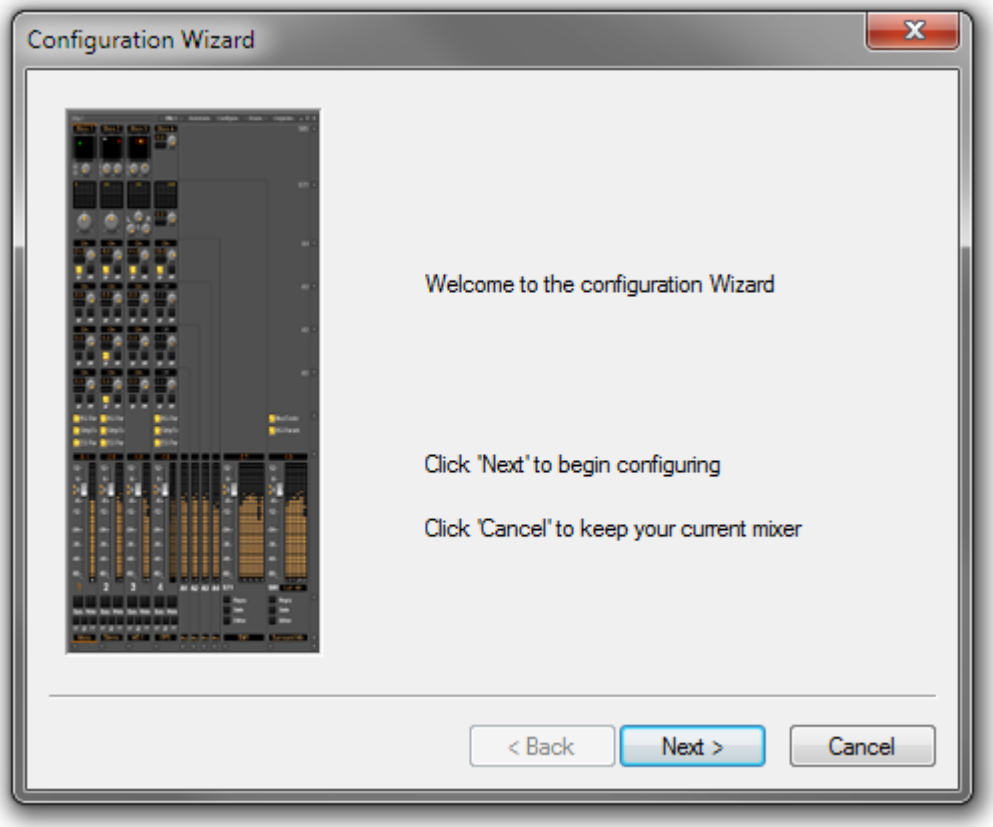
If one of the numerous mixer presets does not quite suit your application it is simple to modify an existing mixer, create one using the Mixer Wizard or design one from scratch. The Wizard can be started from the **New Project Wizard** (**Please See: New Project on page 40**) or from an existing mixer by right-clicking anywhere on the mixer surface and selecting **Settings > Wizard...**

Mixer Configuration Wizard

The **Mixer Configuration Wizard** can be started from within the **New Project Wizard** or from the right-click context menu in an existing mixer, **Settings > Wizard...**

Each dialog has **<Back**, **Next>** and **Cancel** buttons at the bottom.

Note: If the **<Back** button is used to return to a previous page, settings already made in subsequent pages are retained when they are returned to using **Next>**

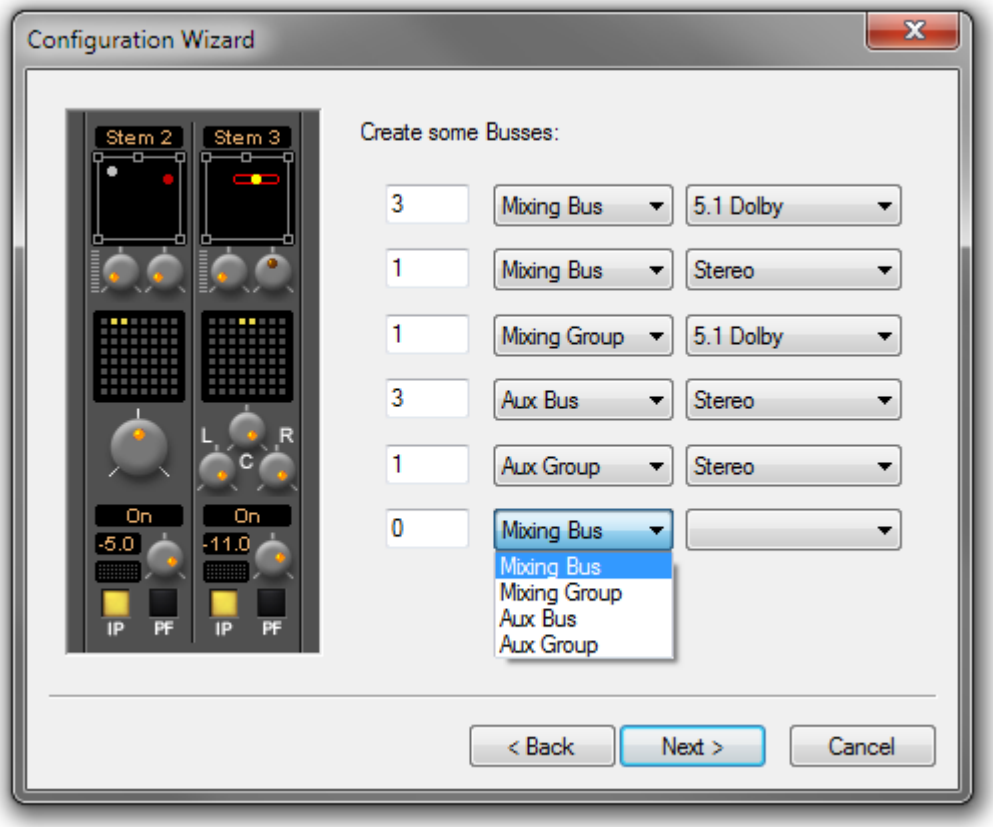


Configuration Wizard Welcome dialog

Back	Grayed out since this is the first page.
Next>	Moves to the next Wizard page.
Cancel	Keeps the current Mixer and closes the Wizard.

Click on **Next** to move to the next page:

Create some Buses:

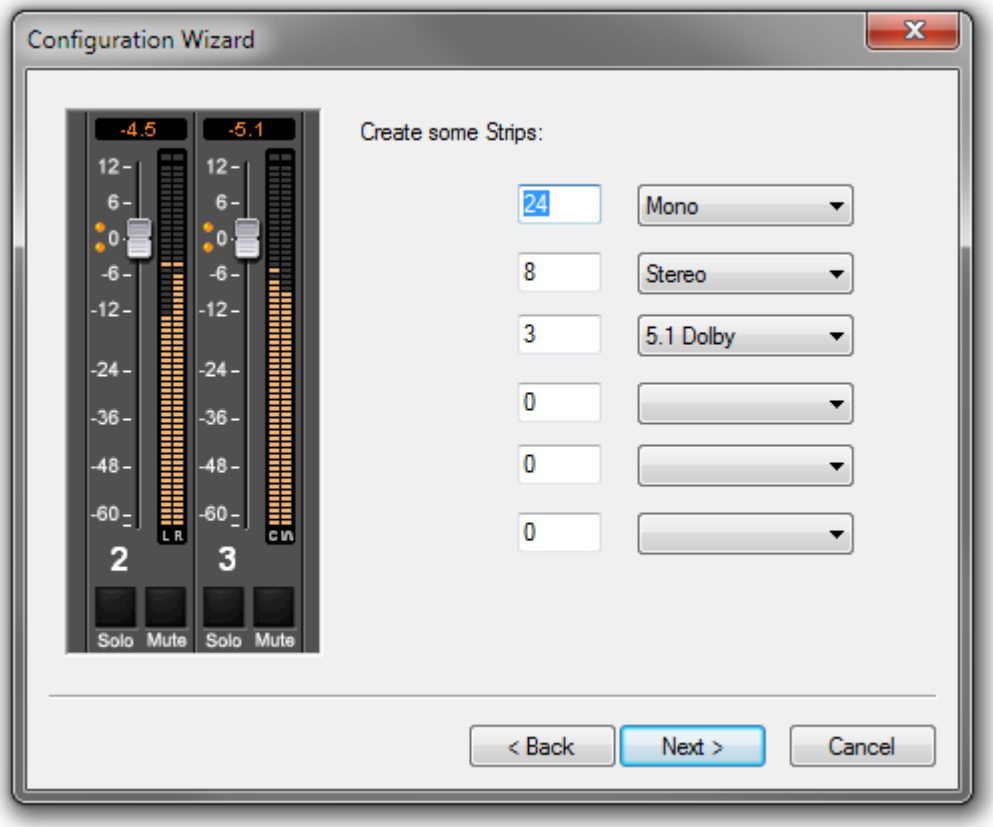


Configuration Wizard Buses dialog

Column 1		Field for the number of Buses to be created.
Column 2		Drop-down list with the four **General Purpose Mixing Bus** Types:
	Mixing Bus	
	Mixing Group	
	Aux Bus	
	Aux Group	
Column 3		Drop-down list with the 32 Bus Formats available.
Back		Moves to the previous page page.
Next>		Moves to the next Wizard page.
Cancel		Keeps the current Mixer and closes the Wizard.

Type the number of buses required in the left-hand field and select the Type needed from the middle drop down list. choose the Bus Format from the right-hand drop-down list. The six rows are used to create different Bus Types and formats simultaneously. Click the **Next** button to move on to the next page:

Create Some Strips

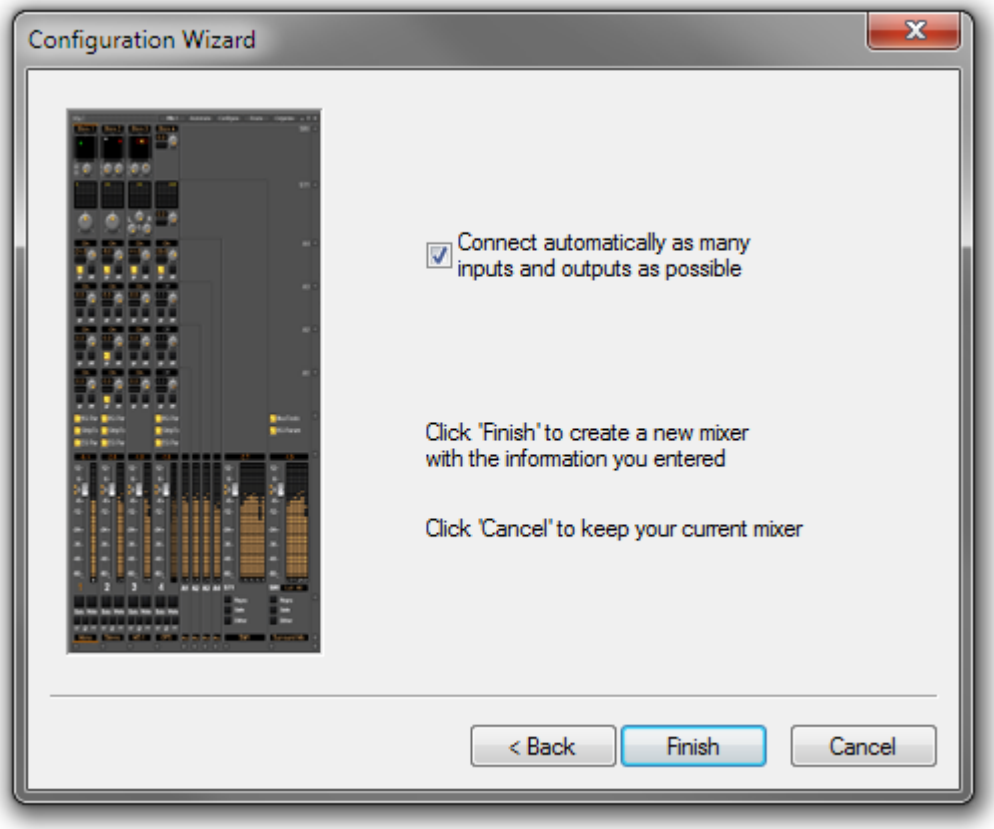


Configuration Wizard strips dialog

Column 1	Field for the number of Buses to be created.
Column 2	Drop-down list with the 32 Strip Formats available.
Back	Moves to the previous page page.
Next>	Moves to the next Wizard page.
Cancel	Keeps the current Mixer and closes the Wizard.

Type the number of Strips required in the left-hand field and choose the Strip Format from the right-hand drop-down list. The six rows are used to create different Strip Types and formats simultaneously. Click the **Next** button to move on to the next page:

Connect & Finish



Configuration Wizard auto Connect & Finish dialog

Connect automatically as many inputs and outputs as possible Check the box to auto connect.

Back	Moves to the previous page page.
Next>	Moves to the next Wizard page.
Cancel	Keeps the current Mixer and closes the Wizard.

Checking the **Connect automatically as many inputs and outputs as possible** check-box will create the same number and types of **Tracks** as there are **Input Strips** and connect as many as possible to the available physical inputs in ascending order and connect output Buses to the physical I/O and Track outputs to Mixer Input Strips, although you can easily reconfigure this later. If the box is not ticked, the Tracks will be created in the same way with Track outputs connected to Mixer strips but no physical Inputs or Outputs will be connected.

Note: When the Wizard is run from **New Project Wizard** clicking **Cancel** opens the new Project with a **Blank Mixer Window** (to configure see below).

Configuring a Blank or Existing Mixer

Configuration of the mixer control surface is accomplished via contextual menus. The precise options available will depend on where you click on the mixer. If you wish to affect the entire mixer, right-click on the top bar of the Mixer window. To change options for a Bus, right-click on a blank area of the Bus strip. Similarly, for a channel input strip, right click on a blank area of the Strip. Right-clicking within a function block adds menu entries to the top of the list, relevant to the specific block.

Adding Strips

Right-click anywhere on the Faders, choose **Strip** > **Add** and select the appropriate type of strip to add or right-click anywhere on the Faders, choose **Bus** > **Add** and select the appropriate type of bus to add.

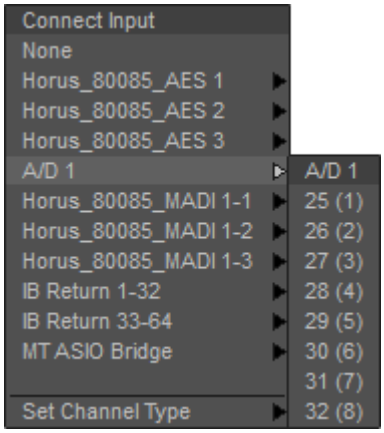
Removing Strips

To remove a given input strip, bus or group, right-click directly on it and choose **Strip** > **Remove (Strip, Bus** or **Group)** as appropriate.

Mixer I/O Assignments

To or from physical I/O

To change **I/O** assignments to or from physical **I/O** or the **Internal Return Buses,** click on the appropriate **XLR icon**. Choose **Connect Input** or **Connect Output** from the pop-up menu and choose the desired connection.



I/O assignment pop-up

When connecting a multichannel strip clicking on the header **A/D1** in the above illustration) will connect all channels consecutively.

From Tracks

Note that several Tracks may be routed to the same mixer input strip. Tracks are assigned to mixer input strips either automatically or manually from the **Track Header**. See: **Track Header Panel on page 101**

Further Mixer Configuration Options

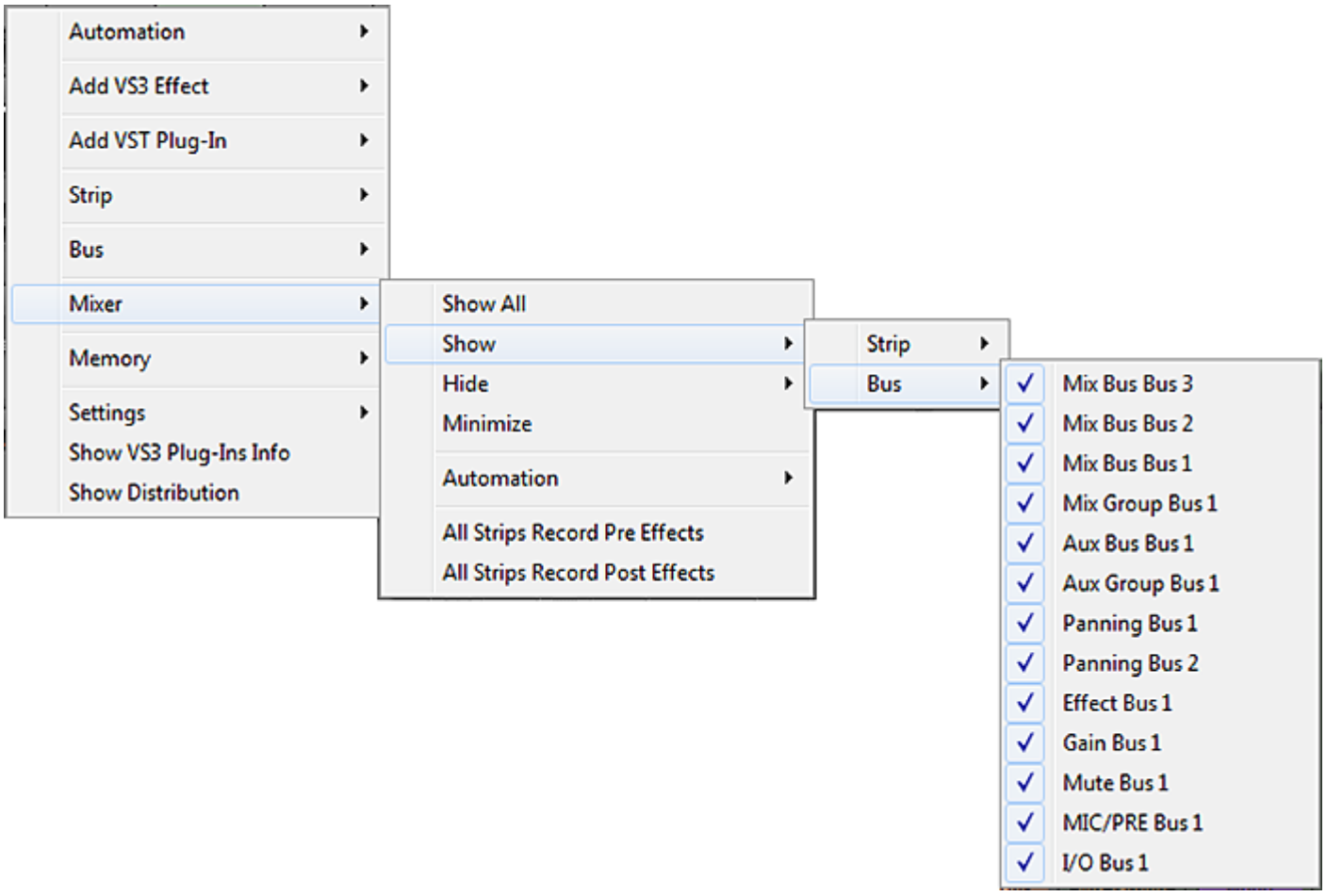
Mixer Context Pop-up menu

The entries on this menu vary according to where you right-click on the mixer surface. At the top of the menu the entries concern the specific mixer component under the mouse cursor when you right click. The next section of the menu has entries which affect the Strip. Entries from **Mixer** to the end of the menu affect the entire mixer and are available wherever the mouse is right-clicked.

Mixer > Show

Show All Makes all input strips and buses visible

Show / Hide > Selects **Strip**s and **Bus**es to be shown or hidden. When checked, the Buses or strips are visible on the console surface. Both **Show** and **Hide** access the same lists.



Mixer Show / Hide context menu

Minimize When checked, Mixer window is minimized

Automation > These menu choices toggle the Automation mode for the entire mixer.

Follow Strip Mode

Isolate

Play

Record

Please see: Dynamic Automation Transport Modes on page 432

Memory > The choices here enable mixer presets to be saved loaded and managed.

Please see: Mixer Presets on page 284

Settings >

General... Opens the Mixer Settings window at the **All Settings > Hardware > Hardware > Formats & Sync** page. **Please see: Formats and Sync on page 750**

Dithering... Opens the **Dithering** window. **Please see: below and Dither on page 469** for an explanation of the need for dither.

Enable Delay Compensation Enables Delay Compensation for the mixer.

Add Strip

Add Bus

Remove Select **All Strips**, **All Buses** or **All** to remove groups of mixer components or every component.

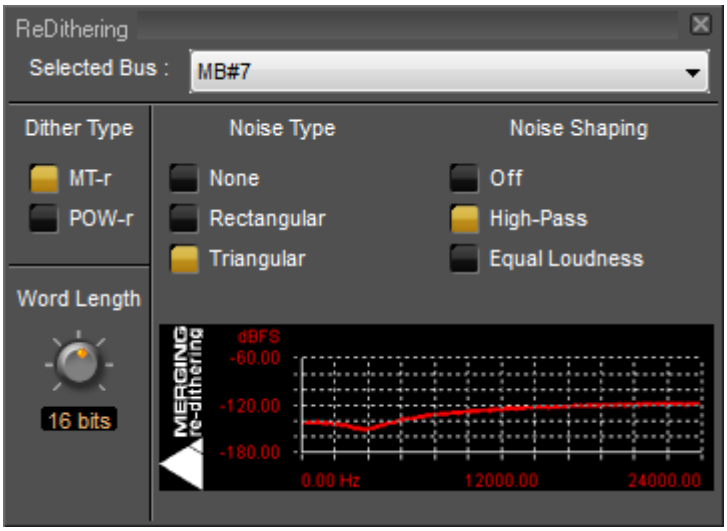
Auto-connect Automatically connects the Mixer inputs and outputs using the available inputs and outputs of the installed daughter card (s) and the Mixers Preferred Monitoring Outputs

Wizard... Launches the Configuration Wizard. **Please see: Mixer Configuration Wizard on page 276**

Show VS3 Plug-Ins Info Pops up the **VS3 Plug-Ins Information** window. **Please see: VS3 Plug-Ins Information on page 372**

Show Distribution **Redundant**

Dithering Options



Dithering MT-r floating Window

To open the **ReDithering** window, right-click anywhere on the mixer surface and select **Settings > Dithering...** The **Dithering** window opens.

Selected Bus :

The combo box allows the choice of any of the Mixer's buses.

Dither Type

The Pyramix Mixer offers a choice of dither algorithms. **MT-r** and **POW-r** click the box to choose. The bottom-right hand panel changes to reflect the options available with the selected dither process.

Word Length

The output word length of the digital audio data can be varied from 8 bits to 24 bits. Click on the rotary knob and drag left and right to adjust the value.

MT-r Options

PDF (Probability Density Function)

Refers to **Dither Noise Type**. In basic terms, the addition of a dither signal (noise) into the digital audio streams improves linearity in the reproduction of low-level signals. In other words, as signal level drops (such as in a fade out) dithering helps to maintain a smooth decay. There are three options:

None

No dither signal will be added to the data.

Rectangular

A rectangle shape dither signal will be added to the data. Rectangular distribution is a family of symmetric probability distributions such that for each member of the family, all intervals of the same length on the distribution's support are equally probable.

Triangular

A triangle shape dither signal will be added to the data. Triangular distribution is a continuous probability distribution with lower limit **a**, upper limit b and mode **c**, where **a < b** and **a = c = b**.

Noise Shaping

Noise shaping is a technique that is used to push quantization noise energy, which in linear digital systems is normally spread over the whole audio spectrum (0 Hz up to half the sampling frequency), into higher frequencies where the human ear is less sensitive to its effects. There are three noise shaping options and the graph shows the curve applied:

Off

No noise shaping added.

Hi Pass

This provides a first-order high-pass filter for the noise transfer function. This type of noise shaping takes little computational power to produce, but at the expense of not Tracking the characteristics of the human ear very accurately when compared with:

Equal Loudness

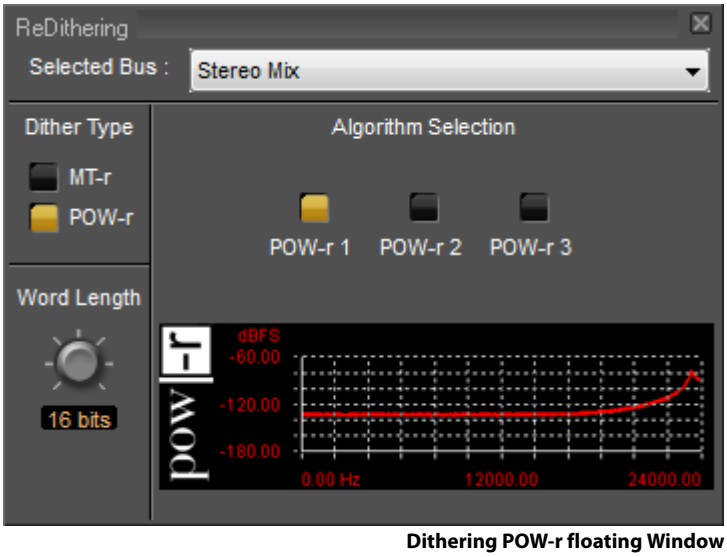
Psycho acoustically noise shaped dither inserts an FIR-filter in the feedback path. This shapes the noise as closely as possible to the characteristics of the human ear. More taps in this type of filter allow a closer approximation to the response curve of the ear, but each tap, of course, increases the computational instructions required. The filter implemented here is a 9-tap FIR-filter, which closely approximates the curve of the human ear.

> **Note:** As usual there is no "free lunch". So **Acoustic** noise-shaping uses more resources than **Hi Pass**.

POW-r

> **Note:** POW-r is a set of licensed noise shaping which requires the **Pow- R Redithering** Key

POW-r offers the choice of three settings, **POW-r 1**, **POW-r 2** and **POW-r 3**. The graph indicates the effect of the noise-shaping.



Dithering POW-r floating Window

- **POW-r**: Is essentially a combination of dither technologies and settings
- **POW-r 2**: Similar to **MT-r Triangula**r with high pass noise shaping
- **POW-r 3**: Similar to **MT-r Triangular** with equal loudness noise shaping

Mixer Presets

Mixer Presets can be saved in a user folder or added to the main **Mixer Preset** list either for the current user or all users.

Default Mixer

To Save the current Mixer setup as the default Mixer, right click on the Mixing Console and select **Memory > Presets > Store > Default**.

Storing New Mixer Presets

To add a preset to the main list of available Mixer presets I.e. the list which appears when starting a new project, right click on the Mixing Console, select **Memory > Presets > Store > New…** and enter a name for your Mixer Preset. If the **Global** check box is checked then the preset will be available for any user logged on the current machine, if not the preset will be available only for the user that created the new preset.

Removing Mixer Presets

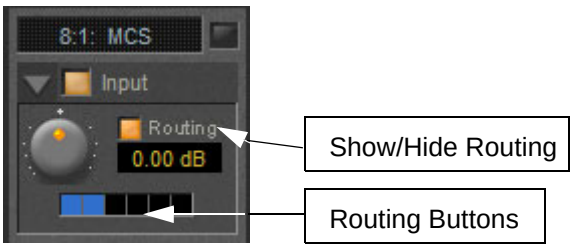
To remove a preset from the main list, right-click on the Mixing Console, select **Memory > Presets > Remove > (preset you wish to remove)**. The **Remove Preset** dialog box appears with **OK** and **Cancel** options.

Saving / Loading Mixer Presets

Mixer Presets can also be stored in Windows folders. Right-click on the Mixing Console, select **Memory > Save**. A Windows Explorer window opens enabling the current Mixer Preset to be named and saved to any Windows folder. Similarly, selecting **Memory > Load** enables a Mixer Preset to be loaded from any Windows folder.

Strip and Bus Tools

In a multi-channel strip the clicking the show/hide **Routing** button displays the channel routing buttons. There are as many routing buttons as there are channels in the strip. (Up to 24) Where there are more than 8 channels, up to three rows of 8 routing buttons will be present. Strip and Bus Tools affect all channels whose routing buttons are lit blue. In Mono and Stereo strips the routing buttons are on by default. In MCS strips only channels 1 & 2 have their routing buttons on by default.



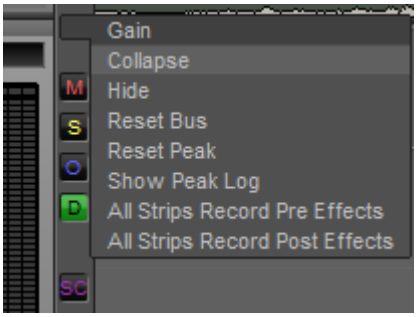
If more than one instance of Strip or Bus Tools is used in the strip the routing buttons allow, for example, different settings to be applied to Front L-R and Rear L-R etc.

> **Note:** The maximum number of channels a single instance of Strip & Bus Tools can operate on is 8. If you need to affect more channels a second instance will be required.

Peak Logger

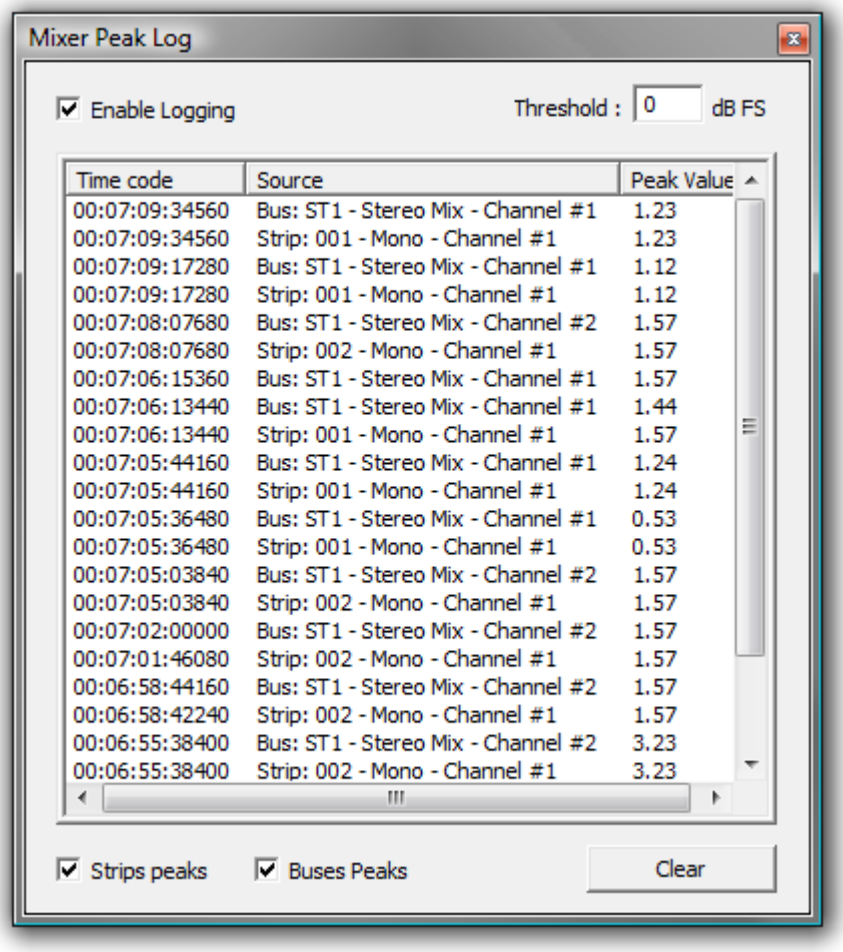
The Pyramix Mixer is equipped with a Peak Logger. This has obvious applications in Mastering.

Click on the Gain Pop-up to access the Gain options:



Mixer Peak Log Window

Click on **Show Peak Log** to open the **Mixer Peak Log** Window:



Mixer Peak Log Window

Enable Logging

Tick the box to enable Peak Logging

Threshold

Type a value here to determine the level above which peaks will be logged. Hit **Enter** on the keyboard to validate the change.

Strips Peaks

Tick the box to record Strips Peaks

Buses Peaks

Tick the box to record Bus Peaks

Note: Both Strip and Bus Peaks can be recorded simultaneously.

Clear

Clicking on the **Clear** button erases all the recorded values since the last time it was pressed. (Or since Logging was enabled.)

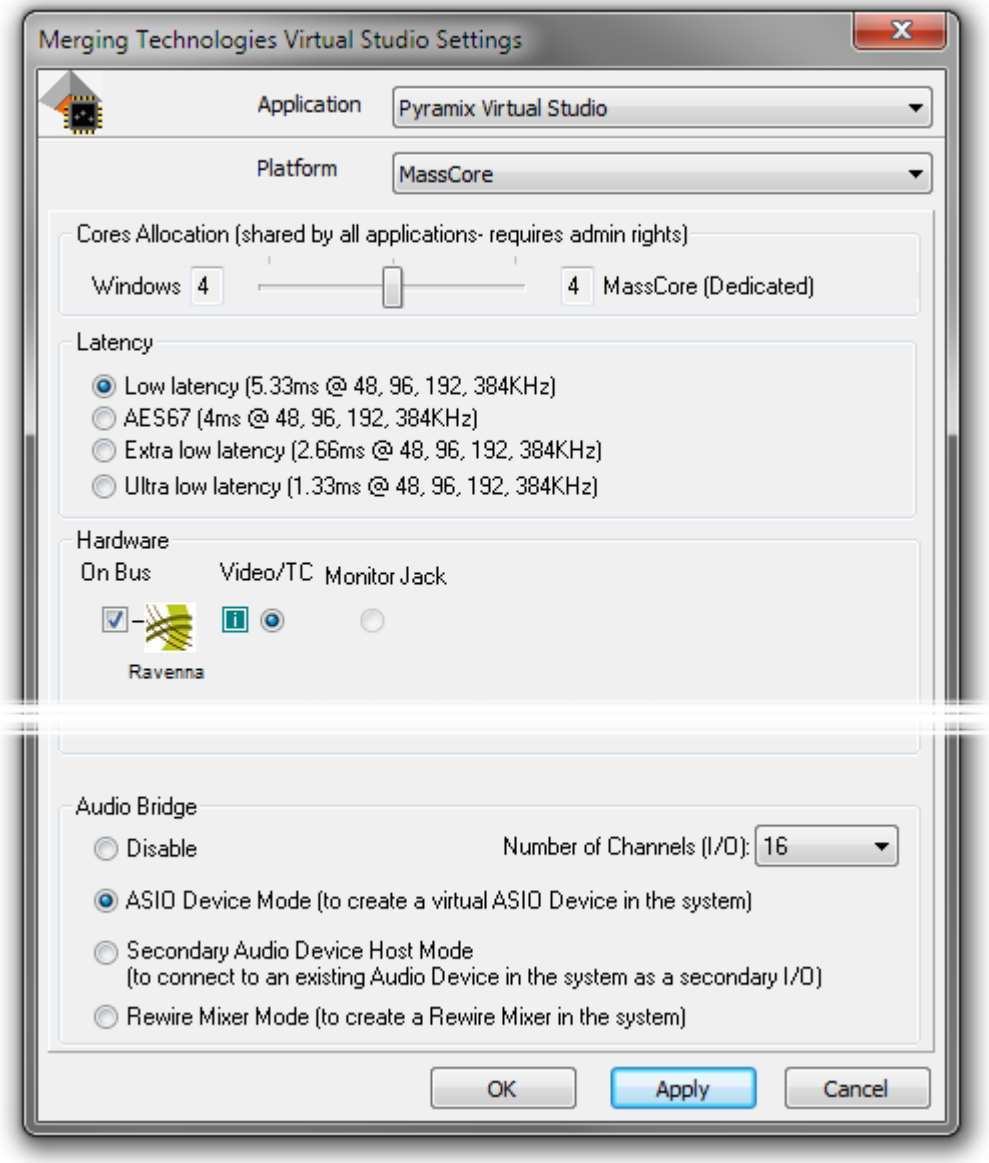
Audio Bridge

Overview

- The **Audio Bridge** enables Pyramix to connect to a non Merging Technologies Audio Device in the system. This can be an internal Sound Card or an external ASIO device.
- This is used typically for monitoring the signals coming from a primary MassCore or ASIO based Horus unit, deployed as a stage box, locally on a secondary Audio Device.
- Since this Secondary Audio Device mode is bi-directional it also provides talkback support for the Pyramix operator to talk to an operator near the Horus deployed remotely.
- Recordings should only be made using signals from the primary unit. The secondary unit should NOT be used as a record source since it employs a sample rate converter to maintain perfect sync with the main unit. This obviates the need for an external hardware sync connection.
- The Audio Bridge also enables an ASIO or Rewire enabled application's output to be merged into the MassCore engine and I/O and to send audio to an ASIO or Rewire application.
- The **Audio Bridge** provides 8 to 96 I/O channels (depending on the ASIO or Rewire application or Secondary Audio Device's capabilities.)

The appropriate **Audio Bridge** option must first be enabled in the VS3 Control Panel (to a maximum of 96 channels with the extended Native Version) Pyramix must first be closed (if open) before the VS3 Control Panel is launched.

ASIO Device Mode



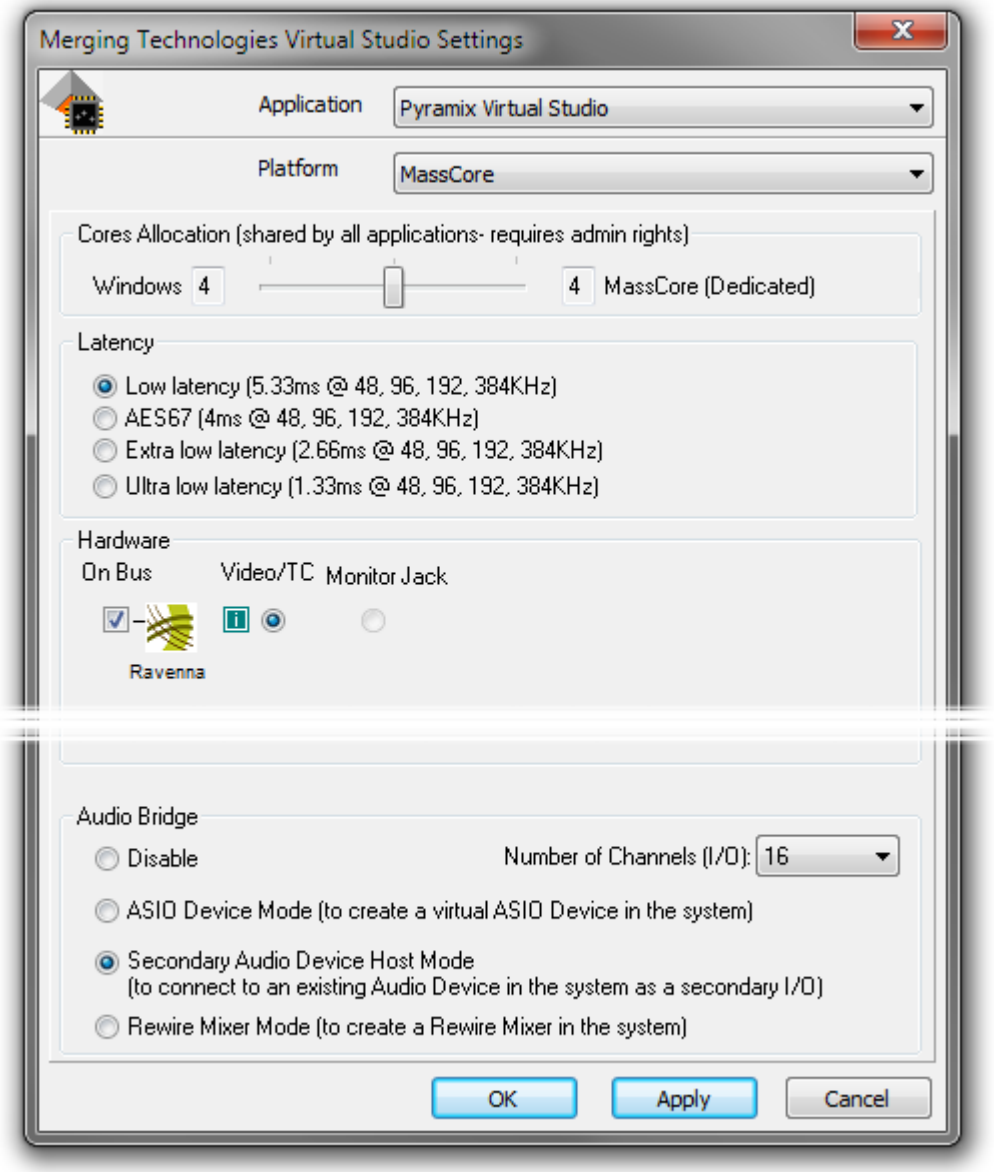
Audio Bridge ASIO - VS3 Control Panel

Once the Audio Bridge ASIO option is enabled in the VS3 Control Panel new sources and destinations will show up in the Input and Output drop-down lists in the Pyramix Mixer/Monitor etc. just like any other source and destination. E.g. **Audio Bridge 1,2,3 etc.**

Banks are prefixed by the driver name, for example:

- **Audio Bridge Bank 1**
- **ASIO4ALL Bank 1**

Secondary Audio Device Host Mode



Audio Bridge Secondary Audio Device Host Mode - VS3 Control Panel

The Secondary Audio Device is either the built-in sound card or an external ASIO-type device. It is used as a Secondary Audio Device for Pyramix, in addition to the standard primary MassCore device.

Application

This is used typically as a solution for monitoring the signal coming from a primary MassCore or ASIO based Horus unit locally. Typically when the primary Horus unit deployed remotely as a stage box through RAVENNA.

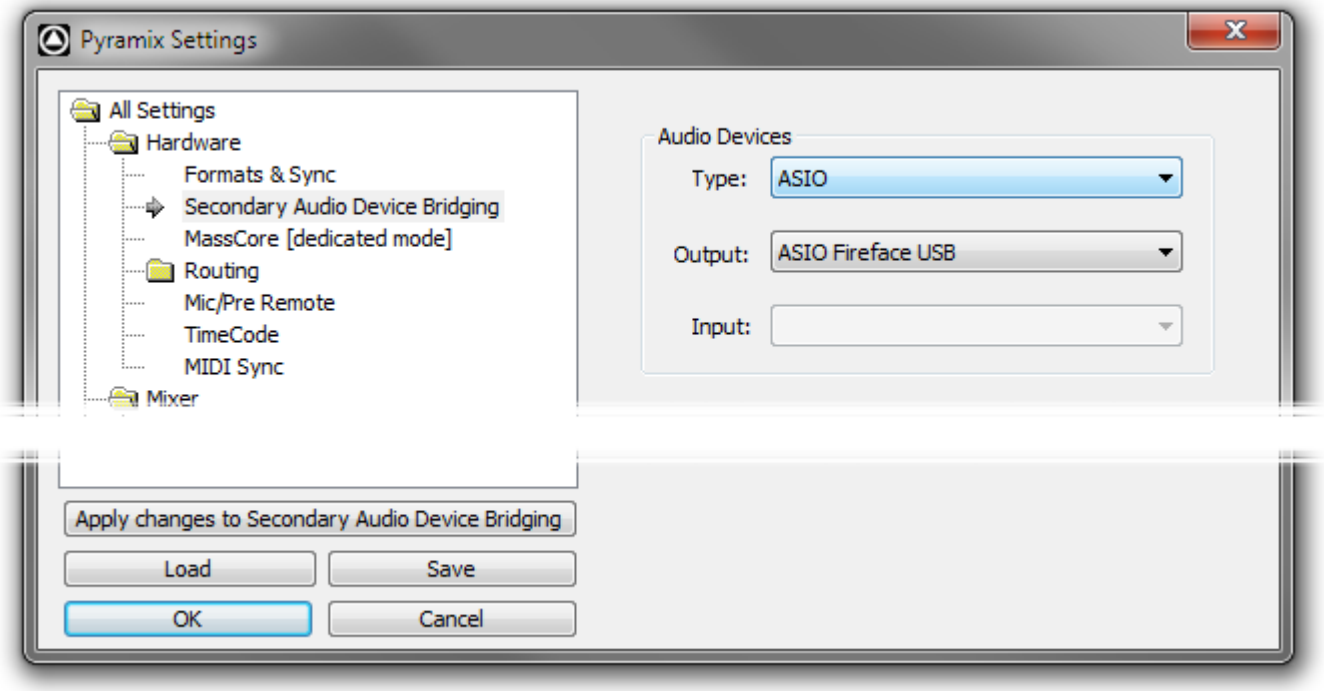
Since this Secondary Audio Device Hosting Mode is bi-directional it also provides talkback support for communication with a person located near the remote primary unit.

> **Note:** The Secondary Audio Device should **NOT** be used to record from since it uses an always on SRC (Sample Rate Converter) to maintain perfect sync with the main unit without any external hardware based sync being required. Recording should only be performed from signal coming from the primary unit. The secondary unit should only be used for monitoring and talkback.

Configuration

1. Launch the VS3 Control Panel and enable the Secondary Audio Device Host Mode (bottom)
2. Choose between 8 to 96 I/O channels (depending on the secondary Host capabilities).

3. Launch Pyramix and go to the: **Settings > All Settings > Hardware > Secondary Audio Device Bridging** page.



All Settings > Hardware > Secondary Audio Device Bridging

Audio Devices

Type: The drop-down list offers the choice of **Windows Audio**, **DirectSound** or **ASIO**.

Note: ASIO only supports Outputs.

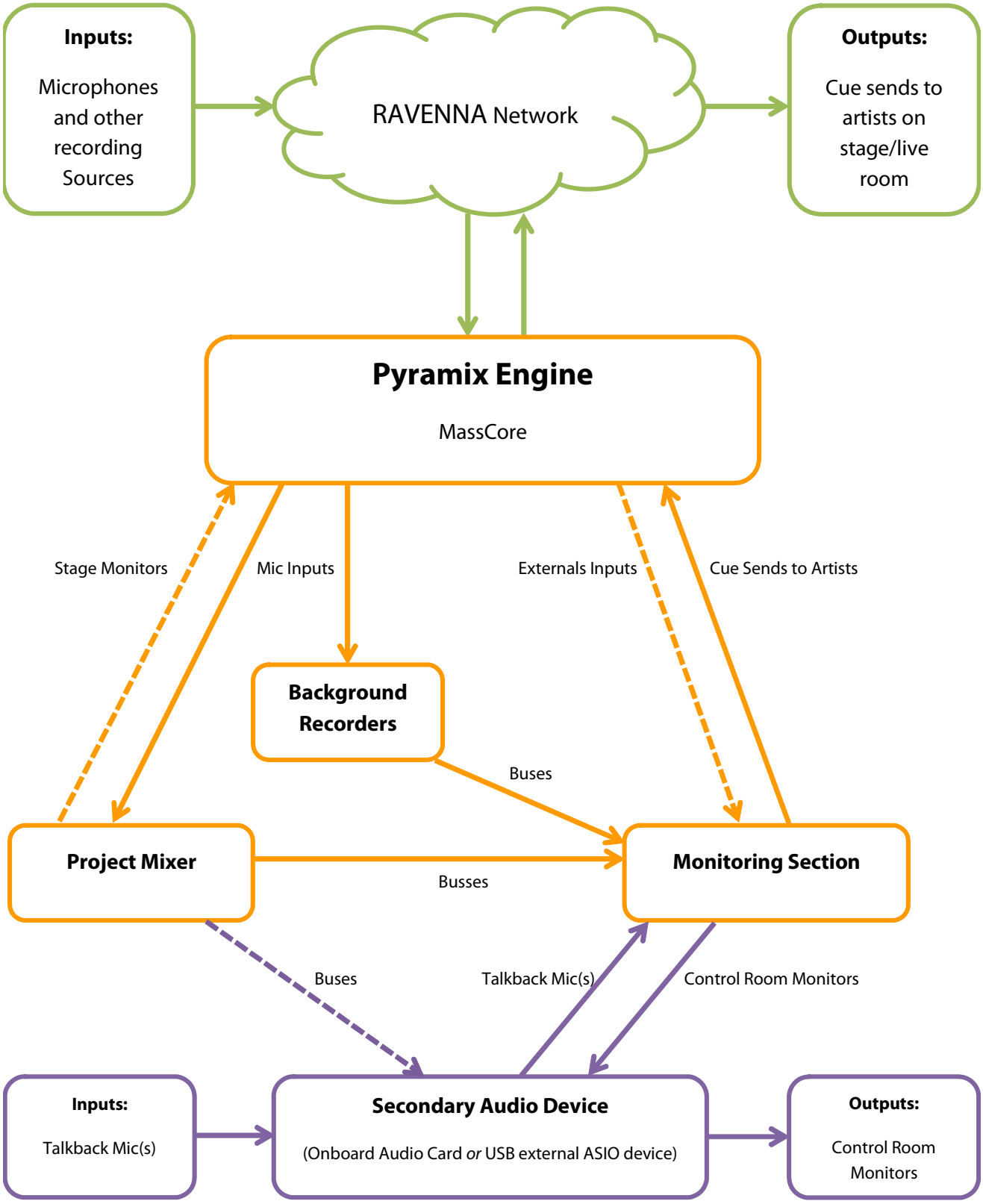
Output: The drop-down list offers the choice of all audio devices with drivers of the **Type** selected.

Input: The drop-down list offers the choice of all audio devices with drivers of the **Type** selected. (**Windows Audio** or **DirectSound** only.

4. Select one device from the **Audio Devices** list and click on **OK** to use it as a monitoring target/talkback source.
5. Open the **Monitoring Panel** and go to the **Configure** tab. The Talkback Monitor tab can be configured for talkback purposes.
6. Patch the **Mixer** or the **Monitor** accordingly.

Note: The **Audio Bridge** I/O entries will be labeled as **AB1** to **ABn**.

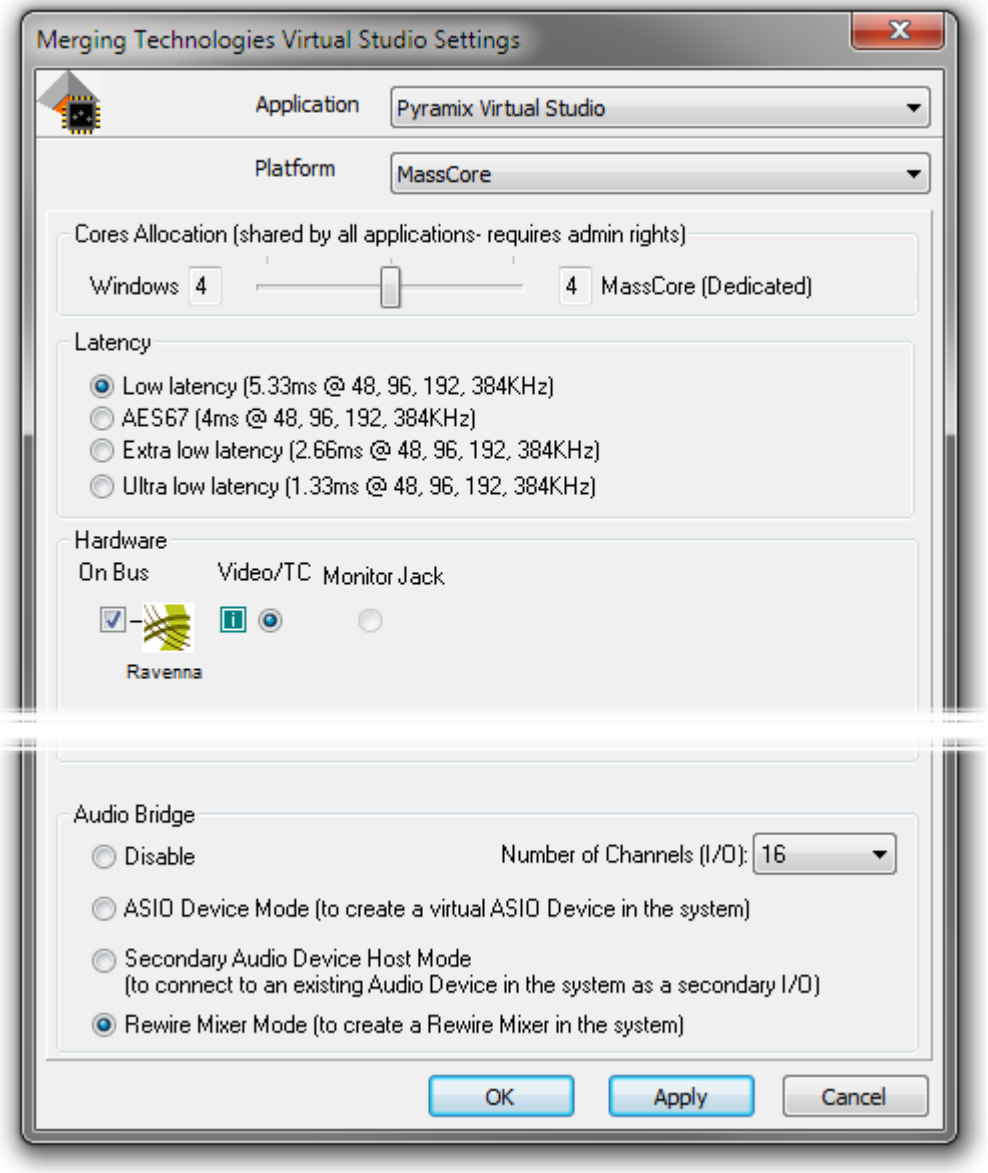
Secondary Audio Devices in Practice



Secondary Audio Device Bridging schematic

Rewire

Propellorhead “ReWire Mixer Application” support.



Audio Bridge Rewire - VS3 Control Panel

Once the Audio Bridge ReWire option is enabled in the VS3 Control Panel new sources and destinations will show up in the Input and Output drop-down lists just like any other source and destination. E.g. **Rewire 1,2,3 etc.**

Banks are prefixed by the driver name, for example:

- **Rewire Bank 1**

Mixer Sharing

Overview

Mixer Sharing enables a single mixer belonging to a project to be used by other projects, which results in rapid switching between Projects. This facilitates copy and paste operations without requiring a mixer re-build each time you switch between Projects. It is also extremely useful when importing AAF, OMF, EDLs etc. and a rapid means of comparing or reviewing.

Activating Mixer Sharing

Project > Share Mixer Console toggles the feature on and off for the mixer in the current Project. Alternatively, click on the **Share Mix** button in the **Cursor** toolbar to the right of the Edit Mode display.

Shared Mixer - active

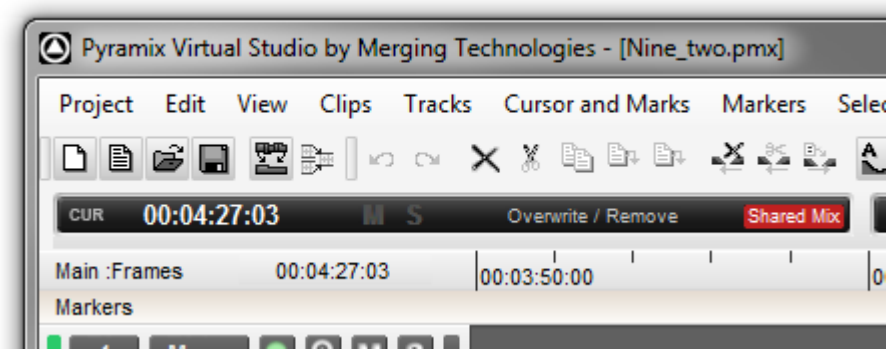
Selecting **Create a new Project that shares the current Project Mixer** in the **Interchange - Import** dialog will force Mixer Sharing to active when the import takes place using the mixer from the Project where the import was initiated.

When Mixer Sharing is active the Cursor Toolbar Icon turns to Green, meaning that we're in Shared Mixer Mode and that this is the master Project sharing its Mixing Console.

Mixer Sharing in Action

When switching to an open Project, loading a pre-existing Project or creating a new Project, its own Mixing Console will be hidden and the Shared Mixing Console is used instead.

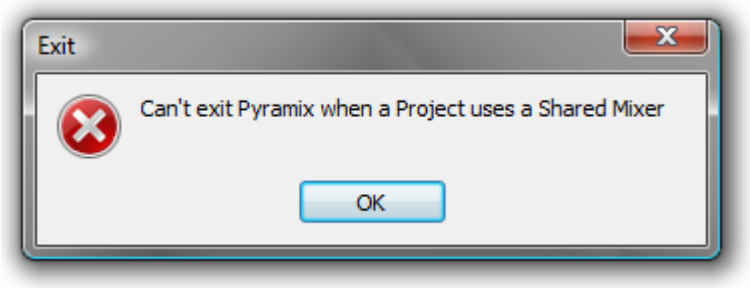
Switching is quasi instantaneous. To reflect this state the Toolbar Icon turns Red, meaning that we're in Shared Mixer Mode but that the currently active Project is a 'slave' and does NOT the own the Mixing Console.



Share Mixer icons - active Slave

Shared Mixing Console Mode can only be terminated when 'Master Project is active. Exit the mode by selecting **Project > Share Mixing Console** or by Clicking the green icon.

> **Note:** It is not possible to exit Pyramix while a Shared Mixer is active. If you attempt to do so, this warning appears:



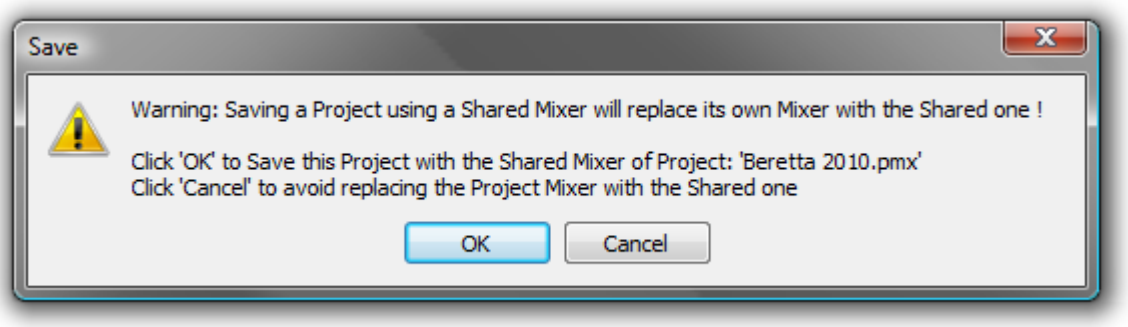
Simply click on **OK**, close (and save as required) any Projects using the Shared Mixer then exit Pyramix.

Slave Project Capabilities

When the active Project is **NOT** the owner of the Mixing Console the following apply:

- The Sampling Rate cannot be changed
- The Mixer cannot be configured (**Configure** button on the Mixer toolbar is disabled)
- All pages in **All Settings** relating to the Mixer and VS3 are hidden. (Hardware, Mixer, Sampling Rate etc...)
- All actions which use a non-real-time mixer are disabled. (Mix-down, Generate CD Image, Convert, Surround Encode)
- Recording is possible but changing the dubbing Mode is not.
- Automation is disabled in the Project(s) using the slave mixer.

- When the Project is saved the Mixer saved will be the shared one. If there is a pre-existing Mixer this dialog appears:



Shared Mixer - Save Warning

If you wish to replace the Mixer saved currently Click on **OK** to accept and close the dialog.
If you do not wish to replace the Mixer saved currently Click on **Cancel**

Note: If you have made editing changes in the Slave Project and wish to Save these without Saving the Shared Console to the Slave Project file do this:

1. Switch to the 'Master' Project
2. De-activate **Mixer Sharing**
3. Switch back to the 'Slave' Project
4. It's original Mixer will be present but minimized.
5. Maximize the Mixer

Note: None of the above apply to the Project sharing its Console (Active Green icon) Everything works as normal when in this Project.

Multiple Projects

It is perfectly possible to have several Projects open sharing a single mixer. This can be useful when compiling.

It is also possible to create a new Project from a 'Slave' Project. However, the mixer you specify or create will only be saved with the Project if you follow the procedure above. Otherwise, the Shared mixer will be saved with the Project.

If an existing Project is opened from a 'Slave' Project the Shared Mixer will be used. Again, if you don't want to lose the existing mixer when saving the pre-existing Project, follow the procedure above.

Rewire

Propeller Head "Rewire Mixer Application" is supported with Pyramix.

- ReWire supports Sampling Rates from, 1FS to 8FS.
- ReWire support must first be enabled in the VS3 Control Panel under the **Audio Bridge** section.
- The number of Rewire channels available corresponds with the value set in the VS3 Control Panel.
- The Rewire connectivity will appear in the Mixer input selection lists, as Live Inputs.
- Transport, Bars & Beats will be linked between the ReWire client and Pyramix.

Note: At present Rewire cannot be used in combination with ASIO Bridge. Only one mode at a time can be selected in the VS3 Control Panel. Concurrent support will follow shortly.

Legacy Mixer

WARNING! *Legacy Buses should be converted for compatibility.*

Converting Legacy Buses

Existing legacy Buses can be converted to the new General Mixing Buses. Right-click on the legacy Bus and select **Bus > Convert 'Bus XXX' to the General Mixing Bus model**.

A new General Mixing Bus will be created for legacy Surround Buses, Stereo Buses. Mono Buses are converted to General Aux Buses since General Mixing Buses do not have Gain Control.

A new General Aux Bus will be created for legacy Aux Buses and also for Mono Mix Buses.

A new General Aux Group will be created for legacy SubGroup Buses.

In each case a new Panning Bus is created and associated with the new General Mixing Bus and all automation related to the legacy Bus is transferred to the new Panning Bus.

Surround Buses:

For Multi-Stem Surround groups, multiple General Mixing Buses will be created, one per stem. This is the new paradigm for Multi-Stem. Each new Bus/Stem can be modified later with the Room Editor to reduce (or extend) the number of Channels independently for a more optimized use of Buses, Channels and I/Os.

The new Panning Control Bus **Panner Type** is set to **Surround Panner** for all Input Strips but can be changed later to **3D Panner** or **Pan/Balance** per Strip.

The new Panning Control Bus is set to **Dual Source Mode**, **Dual Panner** for each Stereo Input Strip.

The **Channel Router** option is selected for any GPS Input Strips and the grid set as per the legacy Bus. However it is recommended to switch to the Panning Bus mode in order to benefit from full re-panning.

Stereo Buses:

The Panning Control Bus **Panner Type** is set to **Pan/Balance** for all input strips, but can be changed later to **3D Panner** or **Pan/Balance** per Strip.

The legacy panning mode is converted to the Panning Bus modes **Balance**, **Single Pan**, **Dual Pan**.

Legacy Mixing/Monitoring/Aux Send and SubGroup Buses

These are the summing buses where mixer strip signals are routed to. Each bus type (Mix, Aux Send or SubGroup) has a **Repro** button in the Master section to allow this bus to output signal only when the system is playing back. No signal will be output in **Stop** or **Record** modes, for example to avoid audio feedback (howl round) in the Studio main speakers when Tracks auto switch to **Input** monitor when **Record**ing or **Stop**ped.

Mix Bus

A mix bus is the destination for the final product of your mix. The outputs of a mix bus are usually routed to a master machine to record the final mix. They can also be routed via **Internal Return Buses**. Apart from their other uses, these enable the final mix to be recorded in Pyramix. Main **Mix**ing, **Aux Send** and **SubGroup** Buses also appear in the **Monitor**.

Mix Buses are available in several formats:

Mono Mix

Provides a single mono output. Any input strip can be routed to it.

Multiple Mono Mix

Provides several mono outputs. Any input strip can be routed to any or all of them

Stereo Mix

Provides a single stereo output. Any input strip can be routed to it

Multiple Stereo Mix

Provides several stereo outputs and allows any input strip to be routed to any or all of them

Surround Mix - 5.1 format

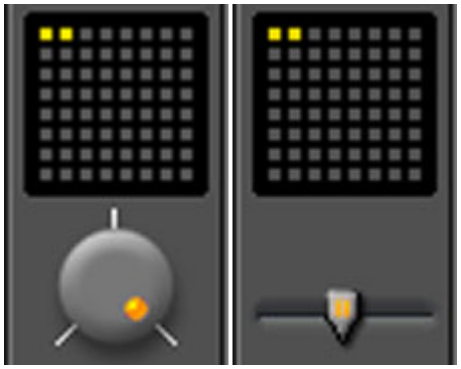
Multiple Surround Mix - provides several surround outputs and allows to route any mixer strip onto any of them.

> **Note:** Unlike mono and stereo multiple buses, input strips can only be routed to ONE 5.1 destination stem of a multiple surround bus. This reflects their normal use. E.g. a common set-up will have three surround bus stems for Dialogue, Effects and Music. Each Input strip is routed to the appropriate surround bus by clicking on the **Stem 'X'** button.
> All surround bus stems can be summed for monitoring in the **Monitor**.

Multiple Mix Buses (Stems)

Mono / Stereo

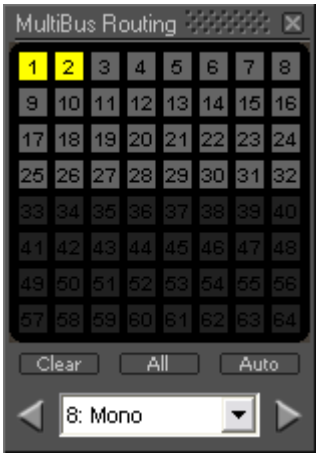
When a mono or stereo multiple mix bus is added to the mixer a routing matrix box appears in the input strips with a send level control (mono) or pan control (stereo).



Mono Mix bus matrix **Stereo Mix bus matrix**

The 8 by 8 matrix gives access to up to 64 output buses. Routing is shown by lit crosspoints.

Double-clicking the matrix in the strip opens the routing matrix window.

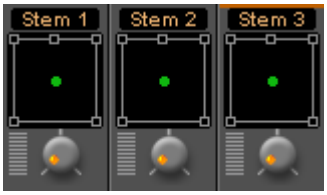


Mix bus routing matrix

Valid choices are shown in gray. Once the window is open, other input channels can be route by either selecting them from the drop-down list or using the < and > arrows to step across the mixer surface.

Surround

Up to 16 surround buses each with from six to nine channels may be added as a single **Multiple Surround Mix** output strip. The principle use of these is for stem mixing where, for example, dialog, background effects, spot effects, Foley and music are recorded as separate recordings but monitored as a complete mix. Each surround bus is identified by number. In this illustration, a **Multiple Surround Mix** strip has been added to the mixer with three surround buses.



Clicking on the label above the Surround Panner pops up a list of the available stems. Simultaneously selecting more than one on a strip is not possible.

The associated **Surround Mix** output strip routing is shown below:

Multiple Surround Mix Output Routing

The top (SR1) box shows what the meters are displaying. Clicking on it cycles through each Stem and **Lvl: All** which meters the sum of all the **Stem**s The bottom box shows and selects which Stem the XLR icons refer to. Routing to physical outputs or Internal Return Buses is accomplished in the same way as other buses. I.e. right-click the relevant XLR icon and select **Connect >** etc. from the menu.

Strip & Bus Channel Types

All Strips and Buses Channels have a custom type that can be manually set manually to:

- Left (L)
- Center (C)
- Right (R)
- Surround Left (Ls)
- Surround Right (Rs)
- LFE (Lfe)
- Left Center (Lc)
- Right Center (Rc)
- Surround Center (Cs)
- No particular type

Mono Strips are tagged by default to no particular type

Stereo Strips are tagged by default to **L-R**

MS strips are tagged by default to **C-W**

GPS Strip (General Purpose Strip):

GPS Strips can have from 1 to 8 channels

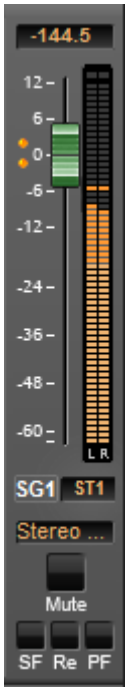
They can be used as Aux returns or for any kind of direct Input usage e.g. premixes or multi-channel recordings.(LCR, LCRS, etc…) By default a 2 channel GPS Strip is initialized to L-R and a 6 channel GPS Strip is initialized to LCRLsRsLfe 5.1. This can be changed/customized in the Configuration Page.

GPS Strips feeding any buses (Aux or Mix) are routed by default by Channel Type (like any other strip) but this routing can be manually changed by clicking on the Channel Routing grid (like any other strip).

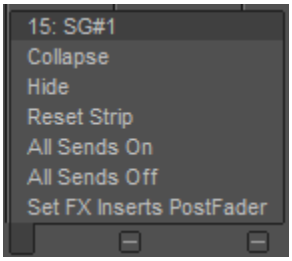
Aux Send Buses:

Aux Send buses provide a way to create 'auxiliary' mixes which are used to provide headphone or cue mixes for musicians etc.

SubGroup Buses



SubGroups are a special type of Aux bus which are routed to buses automatically, in exactly the same way as normal input strips, instead of having output connections. SubGroup buses offer a quick and efficient means of managing effects channels (e.g. for Reverb plug-ins or any VST/VS3 plug-in used as Send FX). When using SubGroups there is no longer any necessity to have additional corresponding return strips. In addition, this also enables the use of post-fader effects. Hover over the strip pop-up and select from the list:



SubGroups have **Mute**, **S**olo **S**afe and **PF**, Pre-Fader metering, buttons like input strips and **Repro** buttons and **I**n **P**lace options like Aux Send buses.

Note: Please be aware that a SubGroup Bus will auto-take Internal Bus connection resources, starting from the last one. E.g. IB384-IB385 for the first two SubGroup Channels added to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

Aux Send Bus Channels

Aux Send Buses are intended purely for folding back a mix to musicians etc. and can have from 1 to 8 channels. Channels have a custom type that can be set manually in the Configuration Page to:

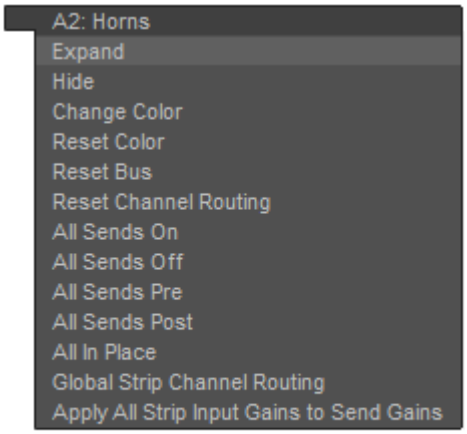
- Left (L)
- Center (C)
- Right (R)
- Surround Left (Ls)
- Surround Right (Rs)
- LFE (Lfe)
- Left Center (Lc)
- Right Center (Rc)
- Surround Center (Cs)

By Default a 2 channel **Aux Send Bus** is initialized to **L-R** and a 6 channel **Aux Send Bus** is initialized to 5.1. This can be changed/customized in the Configuration Page.

Note: When an Aux Send bus is added it is important to ensure that the Type for each channel of the Aux Send bus is set correctly.

Aux Send Bus Context Menu

As with other buses, Clicking on an Aux Send bus's small gray box on the right-hand edge of the mixer window Expands / Collapses the send display. When the cursor is above the box the Aux Send Bus pop-up context menu opens:



Aux Send bus pop-up context menu

Most of the entries are the same as other buses, but the last two entries are specific to Aux Send buses.

Global Strip Channel Routing

Opens the **Global Channel Routing** window for the Aux Send bus

Global Channel Routing window

This routing grid groups together the Channel Types of all the input Strips present in the current mixer, shown horizontally (L, R, C, ...). The vertical channels are the Channel Types of this Aux Send bus. When a node's value is edited, the static aux send gain of all strips having this channel type is updated with the new value for this Aux Send Bus. When some strips are already set to different values for a specific node "**---**" is displayed.

Clear Sets the entire grid to Mute

Unity Sets the entire grid to Mute

Note: Invoking either **Clear** or **Unity** will affect all Strips Aux Sends to this Aux Send Bus.

Apply All Strip Input Gains to Send Gain

The current input gain value of every strip in the mixer will be applied to all the Aux sends feeding this Aux Send Bus.

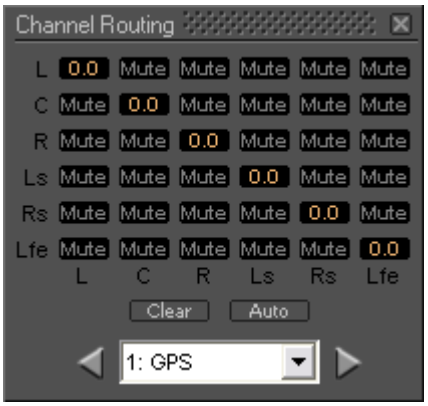
Aux Send Routing

When a Strip feeding an Aux Send Bus is of the same type as the Aux Send bus E.g. Stereo strip feeding stereo Aux Send bus 5.1, Strip feeding a 5.1 Bus the sending Strip's Channels are automatically routed to the corresponding Aux Send bus Channel Type. (Left to Left, Right to Right, etc…).

Where the sending Strip differs in Type to the Aux Send Bus E.g. a Stereo Strip feeding a 5.1 Aux Send Bus, the routing must be made manually. The same method is used if you wish to alter auto-routed values.

Static Channel Routing

Aux Send Channel Routing is set by clicking on the little grid icon adjacent to the knob on the Aux Bus send in the channel strip. This opens a **Channel Routing** window:



Channel Routing window

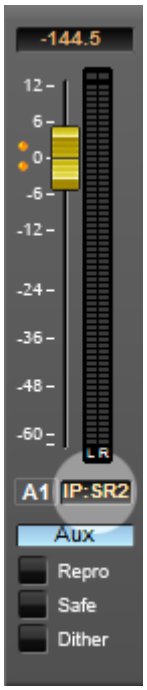
Shown here with a 5.1 channel feeding a 5.1 Aux Send Bus. Gain values can be entered for each node of the Strip/Bus crossing. Just click on any node and enter a dB value. Enter nothing (no character) or -144.5 to reset the node to Mute.

Clear	Clears all nodes to **Mute**
Auto	Sets a **1 : 1** flat routing as shown above

Aux Send Buses In-Place Panning

In-Place panning for each Aux Send bus is turned on with the **IP** button in Aux Send section(s) of each Input Strip. **In-Place** Aux Sends take the output(s) of the appropriate panner at the same level(s) the panner is feeding its output bus.

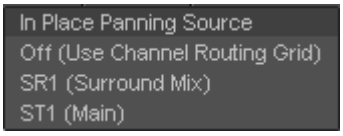
> **Note:** Only corresponding Bus **Types** are fed in this way. Thus if you feed a Mono Aux Send Bus typed **C**enter from a 5.1 panner and there is no signal on the centre channel no signal will be fed to the Aux Send Bus even if the signal on the left and right outputs is identical creating a 'phantom center'.



In-Place Panning Indicator/Selector

In-Place Panning Source

When an **IP** button is lit (yellow) on an Input Strip, the way in which the aux send channels are routed to an Aux Send bus is determined in the Aux return strip. For example, in a mixer configuration with an Aux Send bus, a Surround bus and a Stereo bus. Clicking on the highlighted box below the Aux master fader pops up a list of options:



In-Place Panning Source pop-up

These determine whether the Aux send will follow one of the output bus panners or the Static Channel Assignment set in the Input Strip. E.g. for Aux Send bus 1:

Off (Use Channel Routing Grid)	Aux pan follows Static Channel Routing assignment
SR1 (Surround Mix)	Aux pan follows Surround Mix bus panners
ST1 (Stereo Mix)	Aux pan follows Stereo Mix bus panners

To make all the Aux 1 sends follow the Mixer Strip Surround Panners, click on the box below the fader and select **SR1 (Surround Mix)**

> **Note:** When **IP:Off** is displayed in the Aux Send master strip I.e. no In-Place source is selected, then the **IP** buttons in the input strips will be grayed out. Similarly, when an In-Place source **IS**

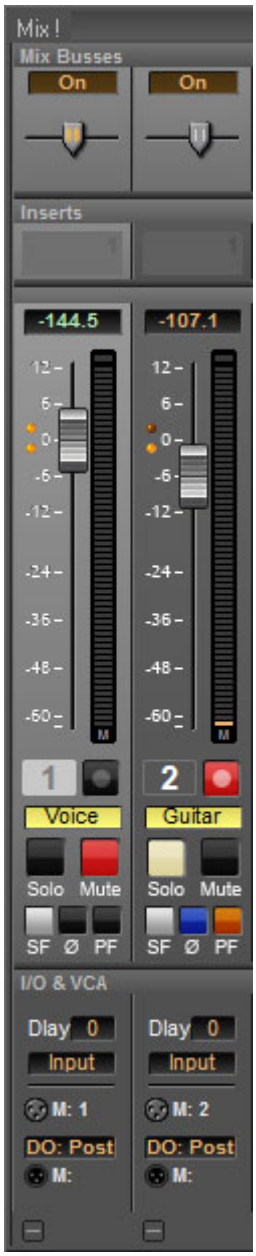
selected and the yellow **IP** button in the input strip is lit then the static routing grid is grayed out and unavailable as in this illustration.

Strip Aux sends and Channel Routing dialog

The three strips shown are **10**, **11**, and **12**. Since the **IP** button is selected (Yellow) on strips **10** and **11** the static routing grid is grayed out and thus unavailable. On strip **12** the **IP** button is deselected (dark) and the Static **Channel Routing** grid can be opened by clicking on the grid button next to the knob.

Note: The **IP** button defaults to **On** when the aux send is first turned on. If the send is subsequently turned Off (muted) then the current setting of the **IP** button is remembered when it is unmuted.

Basic Strip



Basic Strip

A basic mono channel strip contains:

On /Off toggle switch

Pan slider to Main output bus. In this case there is just a single stereo mix bus.

Inserts area. Expands to suit the number of plug-ins applied.

Numeric display of fader output level value, if cursor is over a fader knob shows fader gain. If cursor is over pan-slider, shows current pan position. May be clicked to enter a fader gain value directly.

Level Bargraph Rotary Controls and Faders

Rotary Controls, sliders and Faders may be adjusted by grabbing them with the mouse and dragging. Rotary controls and horizontal sliders are adjusted by dragging left or right and faders by dragging up or down. Double-clicking a Fader, slider or Rotary knob returns the value to the default. E.g. unity gain on a Channel Strip Fader. Holding down the **Ctrl** key increaes the resolution to 0.1dB Keyboard up and down arrows adjust gain by 0.1dB per press, with **Shift** 0.5dB per press and with **Ctrl + Shift** 1.0dB per press. Bargraph shows peak level.

Buttons

Buttons on the main mixer surface are black when inactive. When active they 'light up'.

Rec enable(d) Enables/disables recording for the associated track. Lights red when enabled. (Purple when source is after effects.)
Solo solos the strip, **Mute** mutes the strip **Ctrl + Solo** cancels all other Solos.
Sa**F**e prevents the strip being muted by solo operations elsewhere. **Ø** reverses the channel phase. **PF** changes the metering position to Pre-Fader.

Delay A delay value (in samples) can be set in this box.
Input Clicking on **Input** pops-up a box with the choice of the strip taking its input from a physical connection or any output bus.

Logical Input and Direct Output Assignment

Right-click on the XLR icons to pop-up a drop down list of valid assignments.

Note: Direct Outputs must first be enabled in the **Route** page. **Please see: Channel Direct Outputs on page 223**

Stereo Strips

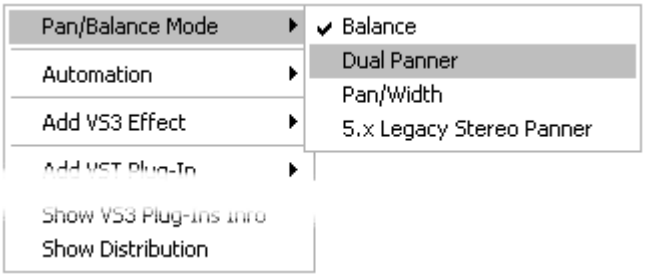
In a Stereo Strip feeding a stereo bus the single bargraph meter is replaced by a pair and the simple pan pot is replaced by a choice of **Balance** control, **Dual Panner**, **Pan/Width** or **5.x Legacy Stereo Panner** accessible from the right-click context menu. (See below)

Stereo Strips can reverse the **Phase** of both the Left and Right channels. The single button has four possible states:

Black:	No phase inversion
White:	**Left** channel inverted
Red:	**Right** channel inverted
Blue:	**Both channels** inverted

Stereo Panners

Pyramix offers a comprehensive choice of stereo panners which can be selected by right-clicking over the panner to open the context menu:



Stereo Panner context menu

- Mode 1: **Balance**

- Mode 2: **Dual Panner**

To adjust the pan (direction), left click and drag to right or left. To adjust the Width, **Ctrl + Left-Click** and drag - The distance between the cursors represents the Width value.

Note: The Width value can be negative (-100% to +100% range), and the 2 channels are then reversed. I.e. Right becomes Left and vice-versa.

Note: Since the Width range of values and Pan range of values are linked, adjusting the Pan can cause the Width parameter to be updated, but the initial Width value is restored linearly when moving the pan back to its former position, just like fader grouping on some mixer desks. To avoid this (i.e. validate the current Width value), **Ctrl + Left-Click** on the panner to reset the cached Width value.

- Mode 3: **Pan/Width**

Pan slider acts like a normal balance control. **Width** alters the stereo image width from mono to 100%. If the **SHIFT** key is held down while moving the Width slider the range is extended to 125%. I.e. Super wide. This can be helpful with overly narrow images but should be used with caution.

- Mode 4: **5.x Legacy Stereo Panner** Rotary

V5.x and V4.x legacy panner (for compatibility with older projects)

Default Position Indicators

Like other Pyramix mixer controls the panner knobs/pointers have an orange dot when at the default position.

Gearing

For finer adjustment hold down the **Shift** key whilst clicking and dragging.

Reset

To reset any of the panners to the default value simply double-click the knob/pointer.

Strip Meters

Characteristics

Meter ballistics and other parameters may be adjusted. **Please see Level Meter on page 761**

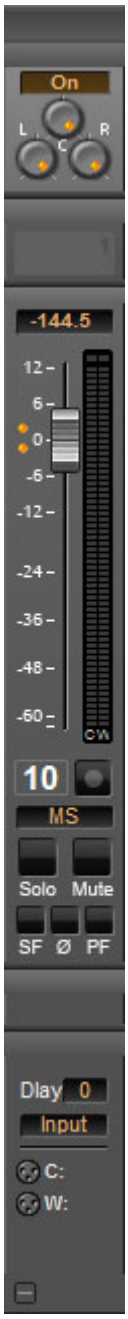
Peak Reset

To Reset Peak Hold and Overload for the entire mixer hold down **P** when the Mixer is activated.

To Reset the Peak Hold and Overload for a specific Strip or bus **Click** on the lit Overload LED.

To Reset the Peak hold and Overload of every Strip and Bus **Ctrl + Click** any Overload LED.

M&S Stereo Strips



What is M&S?

M&S stands for **Middle** and **Side**. **M&S** is a microphone technique which outputs **Sum and Difference** signals instead of **Left** and **Right** (also known as **LR**, **AB** or **XY**). These Sum and Difference signals are often known as **M&S** although this nomenclature is often a source of confusion...

Sum and Difference signals can be created from a conventional Left, Right source. For example, by using the Pyramix **MS Encoder** plug-in.**(Please see: MS Encoder on page 381)**.

Decoding M&S

A **Sum and Difference** or **M&S** decoder reconstitutes Left and Right by adding the **Difference (S)** signal to the **Sum (M)** signal to produce Left and adding the **phase-reversed Difference (S)** signal to the **Sum (M)** signal to produce Right. This is often represented as:

L = M + S and **R = M - S**

Benefit of M&S

In mixing as opposed to recording, the main practical benefit of manipulating a signal in the Sum and Difference domain is true control over the **width** of the image. Pyramix can handle these signals directly thanks to the provision of **M&S Stereo** strips.

M&S Strip controls

An **M&S** strip stereo bus send has three controls. The center knob determines the **Sum (M)** contribution to the Left and Right outputs. The **L** knob determines the in-phase **Difference (S)** contribution to the Left output and the **R** knob determines the out-of-phase **Difference (S)** contribution to the Right output. The **L**&**R** knobs are ganged by default. To move them independently click and drag with the **Ctrl** key held down.

The **Phase** of both the Sum and Difference channels can be reversed. The single **Ø** button has four possible states:

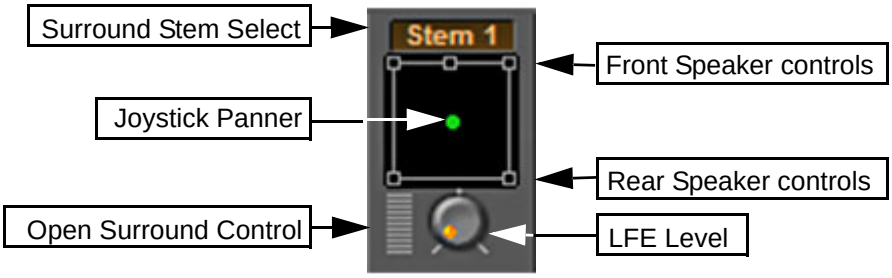
Black:	No phase inversion
White:	**Sum (M)** channel inverted
Red:	**Difference (S)** channel inverted
Blue:	**Both channels** inverted

Inverting either Sum or Difference results in the image being reversed left to right.

If the **Input meters** consistently show **S** higher than **M** then either the image is very wide and unlikely to be compatible for a mono listener or the **M** and **S** inputs have become reversed at some point. Regrettably, this is extremely common when dealing with location recordings in film and TV.

Legacy Mixer Surround Components

When a **Surround Bus** is added to the mixer an surround panner appears at the top on the **Input Strips**



Strip Surround controls

Speaker Controls

Double-clicking on any of the Speaker Controls toggles the mute on/off of the selected surround channel (also muting any audio routed to that surround channel output). When a channel control is muted, it is no longer displayed on the Mixer Input Strip.

Joystick Panner

Determines the position of the source within the surround sound space. To position it, simply left-click on the control and move it to the desired location. Double-clicking on this control will automatically center it.

LFE Level

Determines the level sent to the LFE (.1) output.

Surround Stem select

If a Multiple Surround Bus has been added to the mixer **Stem 'X'** appears at the top of the strip. Click on the box to select the stem you wish to route the strip to.

Stereo Input Strips.

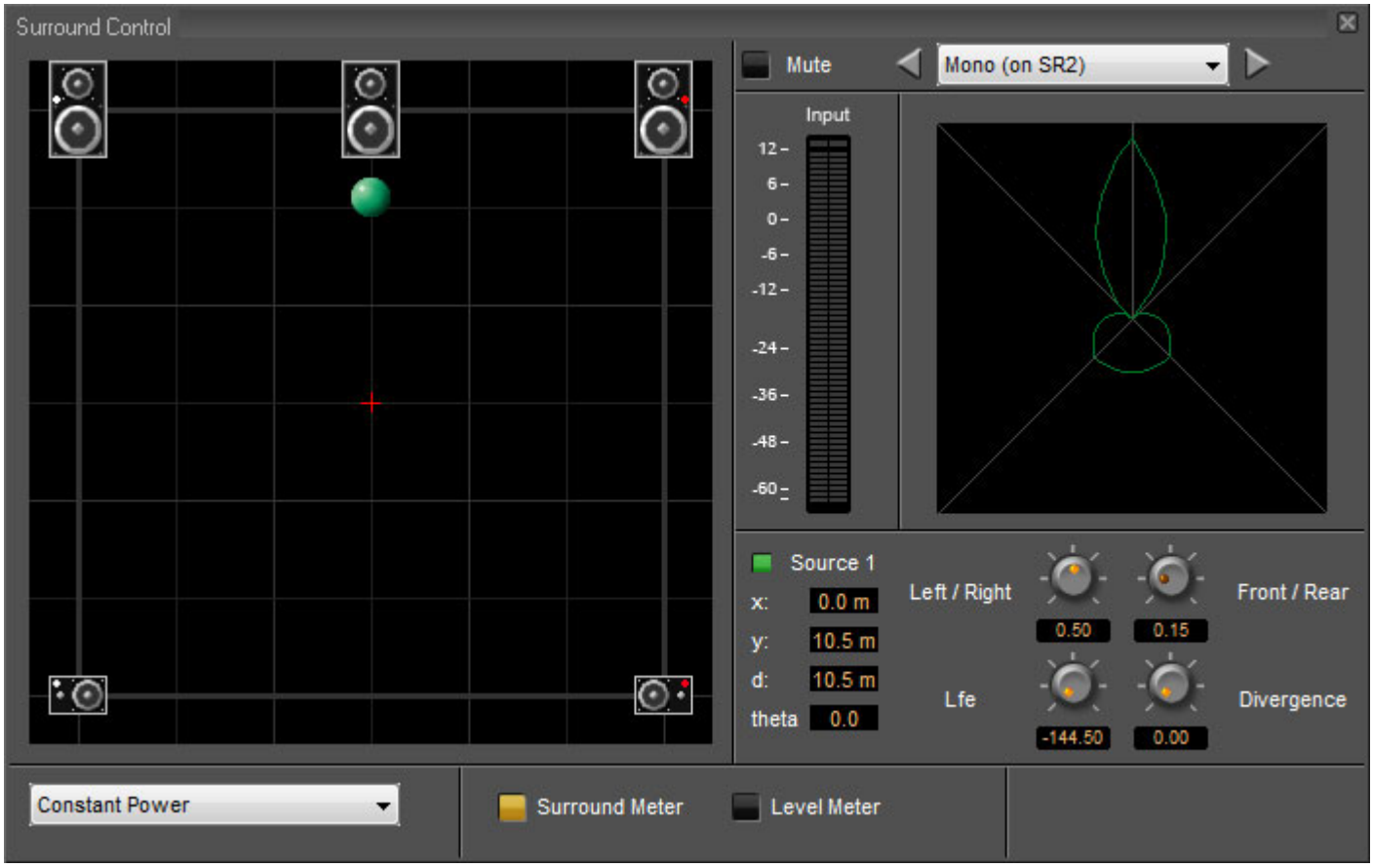
Stereo strip surround controls

The Surround Sound Panner Position control behaves slightly differently in a Stereo Input Strip. Notice there are now two independent position controls and two independent LFE sends. One for each input channel.

Open Surround Control

The **Surround Control** window offers far more information and a greater degree of control over all the surround panning parameters than could be shown on an individual Input strip. It can be opened and closed by **Ctrl + Clicking** on the appropriate area on the strip.

Legacy Surround Control window



Surround Control floating Win-

Options available will depend on whether the Mixer Channel is single source (mono) or 2 sources (stereo)

Position/Speaker Control

When a single source is used, the Position Control is displayed as a green dot on a grid with 5 speaker icons. Each speaker icon represents a Surround Speaker Position (L, C, R, SL, SR). The position of the Green Dot determines the position of the source within the surround sound space. To position it, simply left-click anywhere within the surround sound space. To position it, simply left-click on the control and move it to the desired location or use the knobs. Double-clicking on the Green Dot automatically centers it.

Surround Panning Algorithm

The drop down list gives a choice of panning algorithms.

Constant Gain

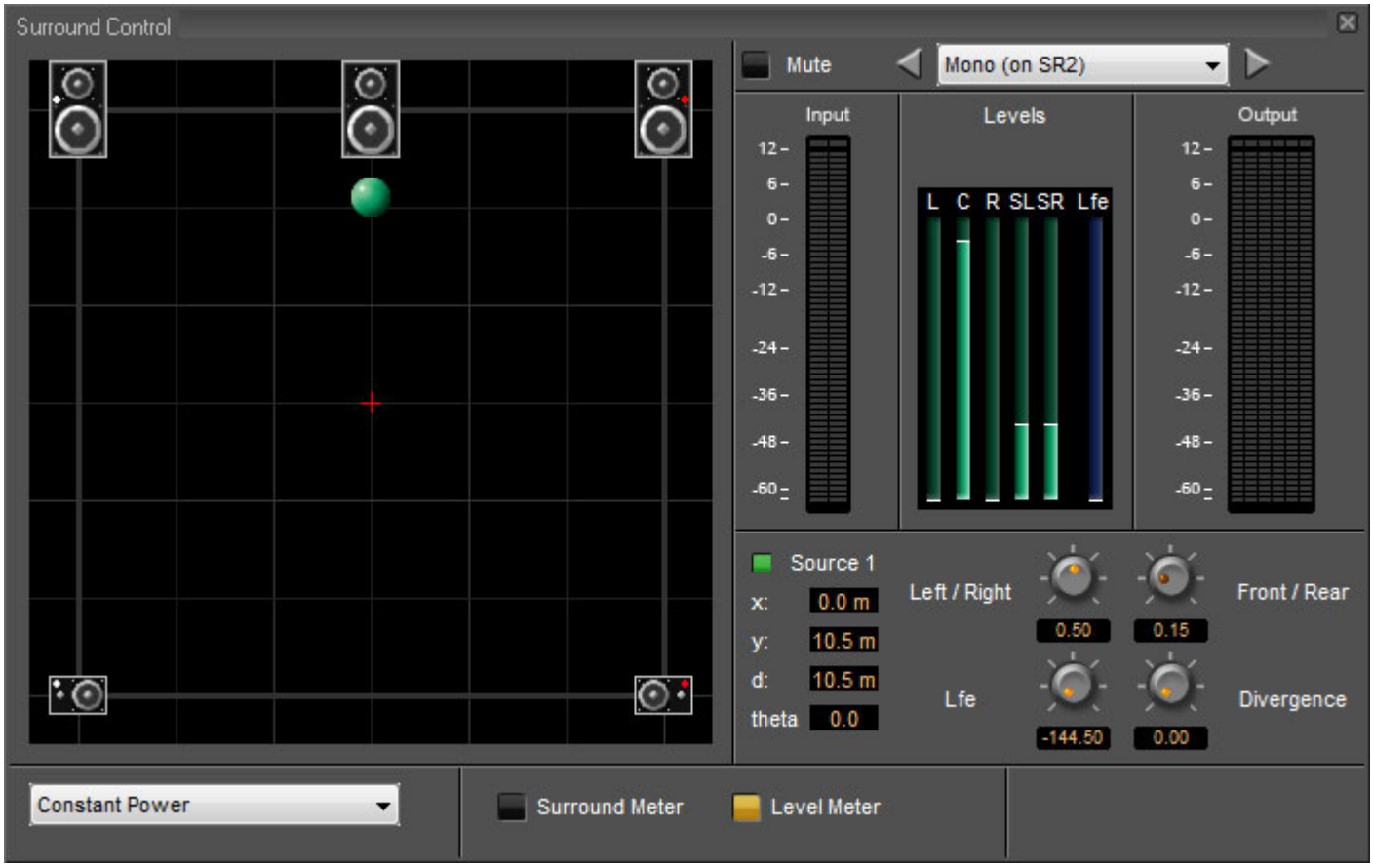
Allows the surround panning to preserve a constant gain sum on all speakers wherever the Position Control is placed.

Constant Power

Allows the surround panning to preserve a constant power sum on all speakers wherever the Position Control is placed.

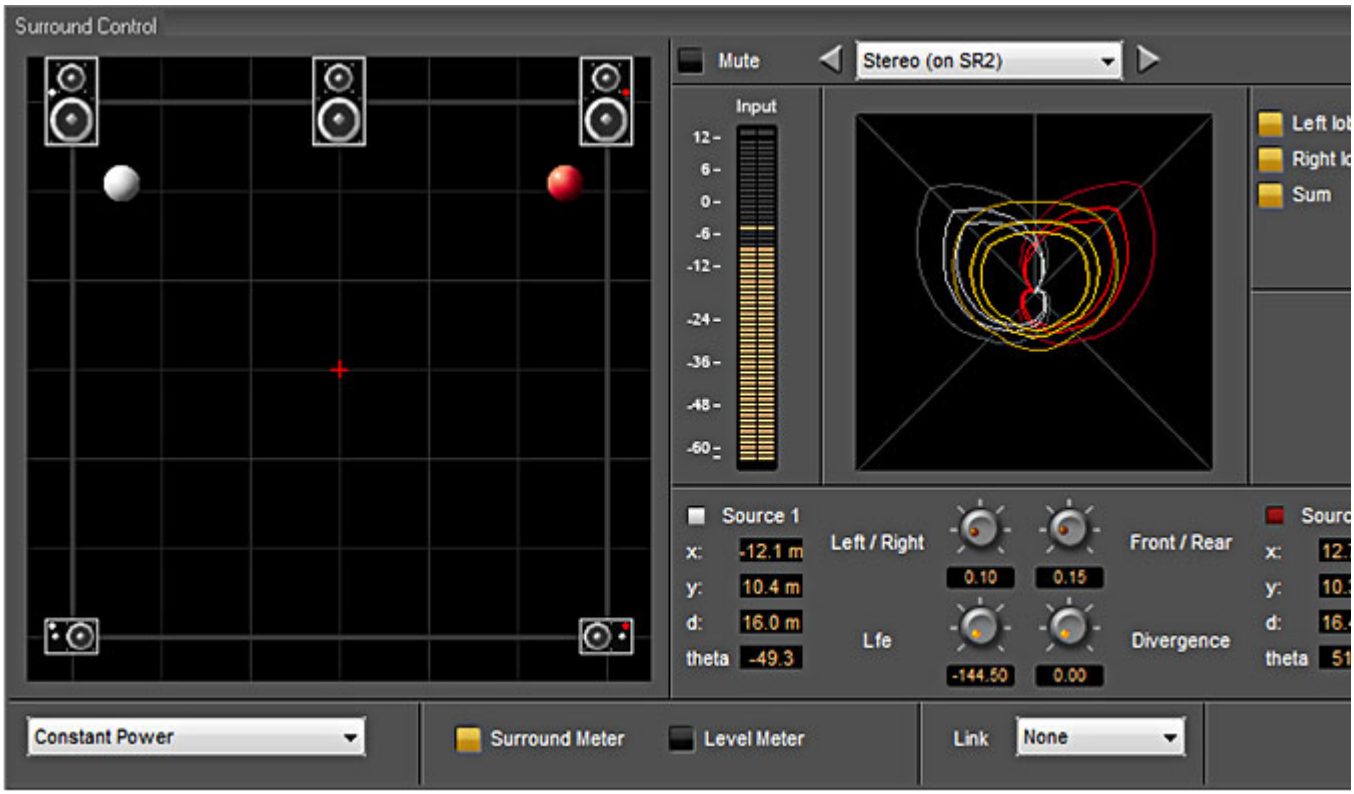
Level Meter

Toggles the main display between the **Surround Meter** and **Level Meter**. This shows the send **Levels** to each surround channel in the middle of the right-hand section and **Output** meters on the right:



Surround Control floating Win-

Stereo Surround Control



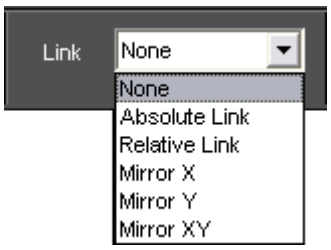
Surround Control floating Window

Surround Meter

The Display can show static Left, Right and Summed Lobes in white, red and yellow, respectively when the buttons are lit with the actual signal in bright red.

Link

Click and drag on the red and white balls is independent and the controls are switched between **Source 1** and **Source 2** by clicking on the buttons. If a **Link** option is chosen from the combo box click and drag and the controls will affect both sources depending on the chosen linking.



Surround Control Link combo box

Ambisonics

Pyramix 12 includes a complete hybrid, Channel Based/Ambisonic workflow, allowing for encoding, mixing, rotating and decoding Ambisonic signals directly in the mixing console.

Background

Ambisonics is a full sphere sound format. I.e. it can carry height information as well as two dimensional positioning. It was conceived in the late 1960's and developed in the 1970's by Peter Fellgett and Michael Gerzon based on Alan Blumlein's work on coincident stereo in the 1930's. The maths and psychoacoustics involved are hideously complicated and way beyond this User Manual.

Ambisonics can be considered as an extension of M&S (Middle and Side) techniques. A purist Ambisonics microphone array consists of three figure of 8 capsules covering left-right, front-back and up-down with an omni capsule. A tetrahedral array of sub-cardioid capsules can have their outputs manipulated to produce these signals. If the outputs of these mics are recorded directly, the recording is designated A- format. More commonly the mic outputs are encoded into B-format, which consists of a mono omni directional channel and three difference channels for left-right, back-front and up-down. The best examples of live Ambisonics recording are captured with a tetrahedral coincident microphone array. The Soundfield mic developed by Gerzon and Peter Craven is the classic example although now that the patents have expired others have become available.

After many years in the niche interest doldrums for all sorts of political and practical reasons Ambisonics is experiencing a resurgence thanks to Virtual Reality, Oculus Rift and Gear VR, games and support from You Tube, Microsoft and Facebook.

In B-format W is the omnidirectional reference, Y is left-right X is front-back and Z is up-down.

There are two B-format conventions in the standard, **AmbiX** and **FuMa**. (Furse-Malham) They differ in channel order:

AmbiX = W - Y - Z - X

FuMa = W - X - Y - Z

Classic Ambisonics using 4-channel (3-channel for 2D) B format is known as First order. Higher orders use more channels for better spatial location and result in a bigger sweet spot when reproduced on loudspeakers.

1st Order	**4 Channels**	
2nd Order	**9 Channels**	
3rd Order	**16 Channels**	(also known as **HOA** or “Higher Order Ambisonics”
4th Order	**25 Channels**	
5th Order	**36 Channels**	
6th Order	**49 Channels**	
7th Order	**64 Channels**	

Current Facebook, VR, games use 1st and 2nd order. HOA (for Higher Order Ambisonic) means 3rd order generally. Higher orders are more experimental or for specific projects where very precise localization is required.

It is important to realize that the number of channels has no direct relationship with the reproduction system. B-format can be decoded into anything from Mono to a very large numbers of speakers. More importantly it can be decoded into a binaural form suitable for reproduction on standard headphones.

VR Pack Key option:

Ambisonic Strips and Ambisonic Groups of 1st and 2nd orders are always decoded even if the VR Pack key is not present.

Ambisonic Strips and Ambisonic Groups of 3rd to 7th orders are decoded correctly if the VR Pack key is present

Ambisonic Strips and Ambisonic Groups of 3rd to 7th orders are decoded using a 2nd order decoder if the VR Pack key is **NOT** present.

Ambisonics in Pyramix

Ambisonics up to the 7th order is fully supported allowing for encoding, mixing, rotating and decoding Ambisonics signals directly in the mixing console.

Ambisonic Decoders supported up to 7th in v12, and the b<>com Decoders are integrated within the Pyramix mixer.

VR Pack Key option:

. Ambisonic Strips and Ambisonic Groups of 1st and 2nd order are always decoded even if the **VR Pack key** is not present.

. Ambisonic Strips and Ambisonic Groups of 3rd to 7th order are decoded properly if the **VR Pack key** is present.

. Ambisonic Strips and Ambisonic Groups of 3rd to 7th order are decoded using a 2nd order decoder if the **VR Pack key** is **NOT** present To summarize, a user will need the **VR Pack key** to encode and/or decode HOA, meaning 3rd to 7th order. 1st and 2nd orders are free of charge for both encoding and decoding.

> **Note:** HOA to Binaural is not available into Pyramix but users can run the B<>COM Binaural encoder licence, available in trial. Follow the instruction here for more information:
>
> https://confluence.merging.com/display/PUBLICDOC/Bcom+plugins

Channel Numbering and Normalization

Internal Ambisonic Channel numbering and normalization is **Ambix/SN3D**.

> **Note:** Use plug-in for **A** to **B** format and **Fuma** to **AmbiX** conversion.

Ambisonics Strips and Buses

The Mixer context menu for **Strips > Add > Multi Channel Strip** offers the **7 Ambisonic Orders** in the **Channel Mapping** list.

The Mixer context menu for **Bus > Add > General Mixing Bus** offers the **7 Ambisonic Orders** in the **Channel Mapping** list.

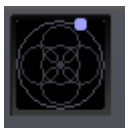
Channel Based Strips Send to Ambisonic Buses

If a Channel based Strip is routed to an Ambisonic Bus then the channel-based signal is encoded to Ambisonic and panned using the conventional Panner. **A-Pan** is displayed in the Bus Control component for the given Strip and Bus to indicate Ambisonic Panning.

Mixer - Ambisonic Send Bus Control

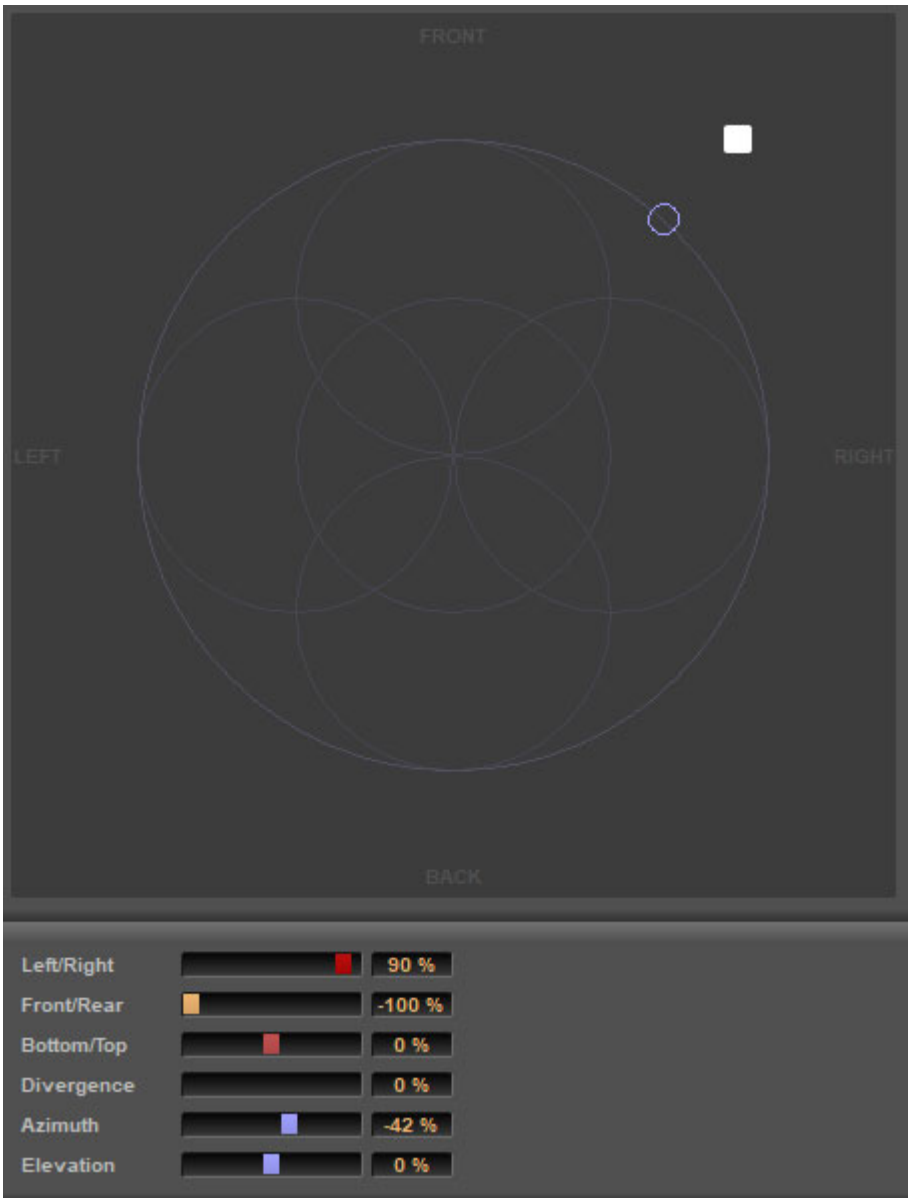
No Channel Routing is available in this case, only a Bus trim, however keeping all values to **0.0** is recommended.

In this case an Ambisonic logo is displayed in the in-Strip panning window.



Mixer - Ambisonic Strip panner

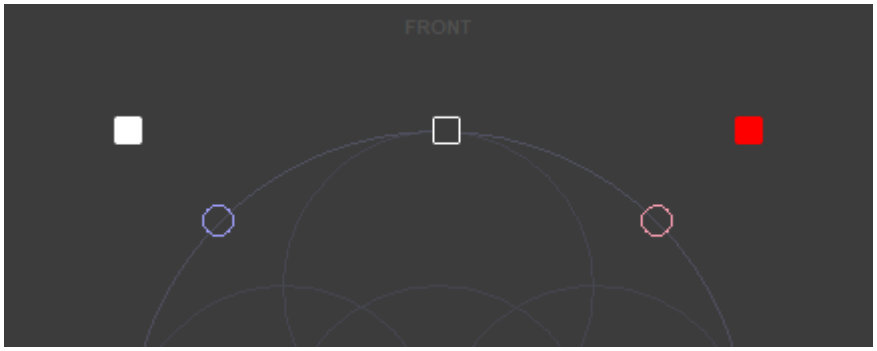
The Ambisonic logo is also displayed in the main Surround Panner Window where two additional sliders for **Azimuth** and **Elevation** are also displayed.:



Surround Panner - Ambisonic

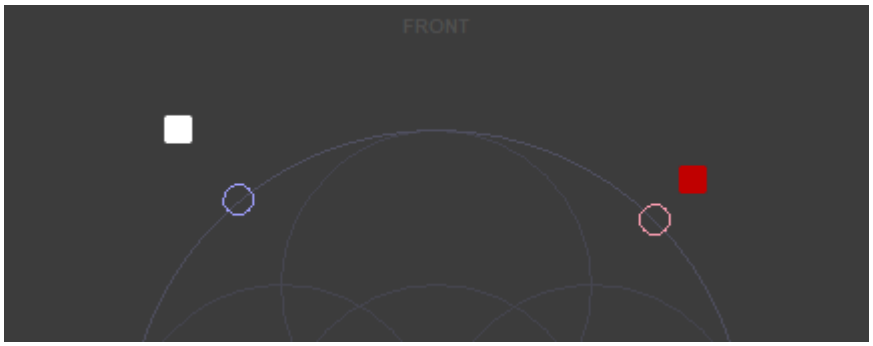
If a Stereo or Multichannel Strip is routed to an Ambisonic Bus then the channel-based signal is encoded channel per channel to Ambisonic and panned using the conventional Panner using the same options: (**Balance**, **Dual-Pan**, **Single-Pan** with **Source Size**, etc…). In this case two additional sliders for **Azimuth** and **Elevation** are also present in the Surround Panner window. **A-Pan** is displayed in the Bus Control component for the given Strip and Bus to indicate Ambisonic Panning. No Channel Routing is available in this case.

Balance



Surround Panner - Ambisonic - Balance

Dual-Pan



Surround Panner - Ambisonic - Dual-Pan

Single Pan

Surround Panner - Ambisonic - Single Pan

Ambisonic Strips Send to Ambisonic Buses

If an Ambisonic Strip is routed to an Ambisonic Bus, there are two options available in the send control, **Mixing Only (A-Mix)** and **Rotation + Mix (A-Rot)**. Sending a given Ambisonic order into another order is possible and is dealt with automatically.

Mixing Only

Mixing Only simply mixes incoming Ambisonic signal from the Strip and mixes it in the Bus. For advanced use the **Channel Routing** window gives gain control of the sent signal channel per channel. Keeping all values to **0.0** is recommended.

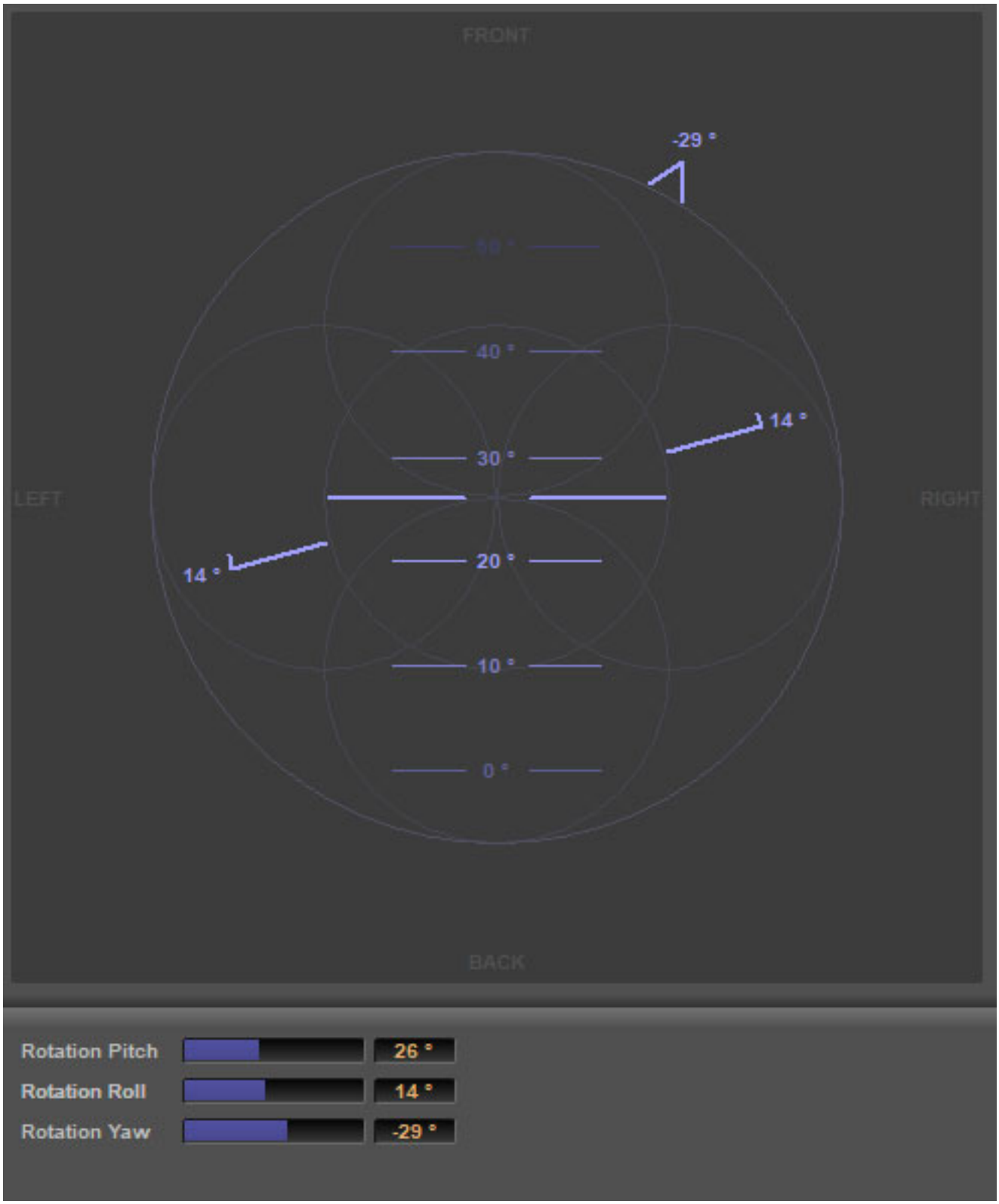
Mixer - Ambisonic Send Bus Control

Rotation + Mix

Enables the Ambisonic Strip scene to be rotated before mixing it into the Ambisonic Bus. No Channel Routing is available in this case, only a Bus Trim, however keeping all values to **0.0** is recommended.

Mixer - Ambisonic Send Bus Control

In this case a **Yaw/Pitch/Roll** rotations interface is displayed in the Surround Panner window :



Surround Panner - Ambisonic Pitch Roll Yaw

Ambisonic Strips Send to Channel based Buses

If an Ambisonic Strip is routed to a Channel based Bus, there are two options available in the send control, **Decoding Only (A-Dec)** and **Rotation + Decoding (A-R+D)**.

Decoding Only

Mixer - Ambisonic Send Bus Control

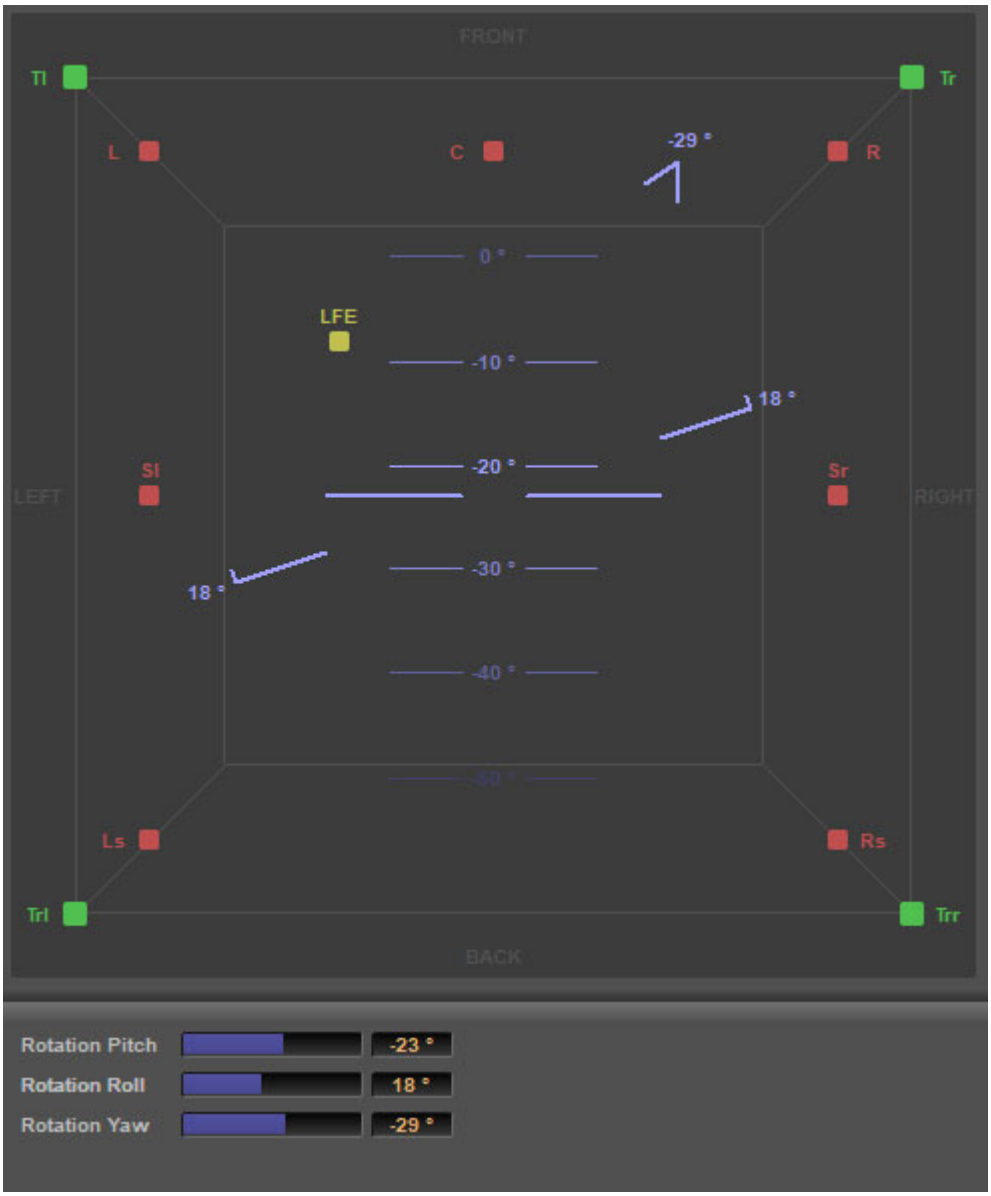
Decoding Only simply decodes the Ambisonic Strip signal to the specific Bus speaker arrangement.

Rotation + Decoding

Mixer - Ambisonic Send Bus Control

Rotation + Decoding enables the Ambisonic Strip (input scene) to be rotated before decoding it into the specific Bus speaker arrangement (output scene).

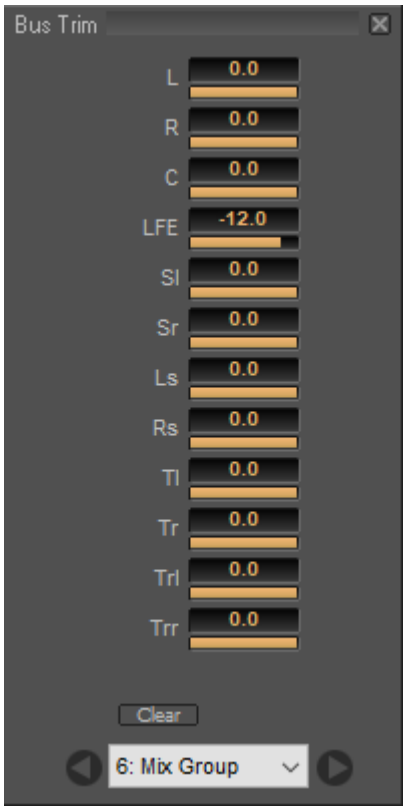
In this case a **Yaw/Pitch/Roll** rotations interface is displayed in the Surround Panner window in addition to the specific Channel based Bus speaker arrangement:



Surround Panner - Ambisonic Channels Pitch Roll Yaw

Bus Trim

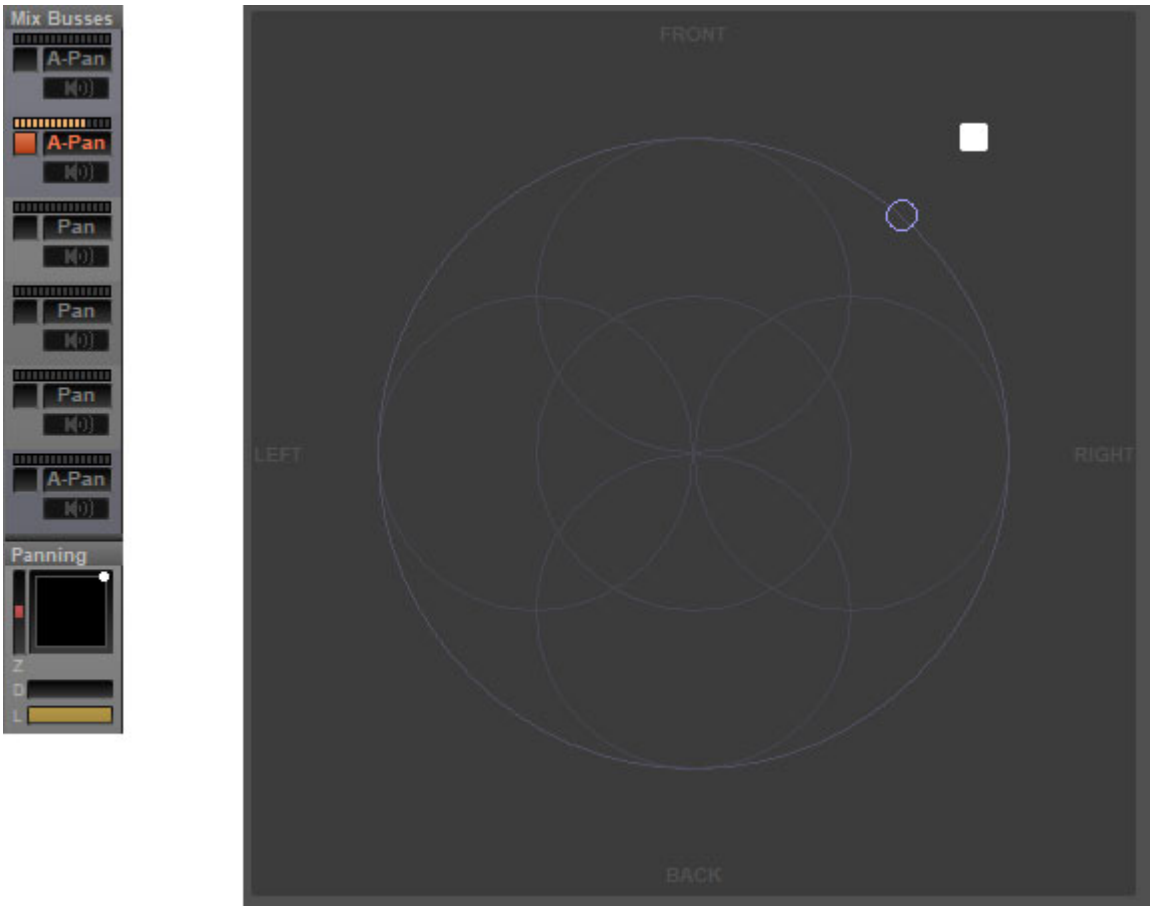
In both cases no Channel Routing is available, only Bus trim. If the specific Channel Bus speaker arrangement contains an LFE or LFE2 their content is simply the channel 0 (W or ACN0) of the incoming Strips, and an automatic trim of **-12dB** is applied. This is modifiable in the Bus Trim window if needed:



Mixer - Bus Send Trim window

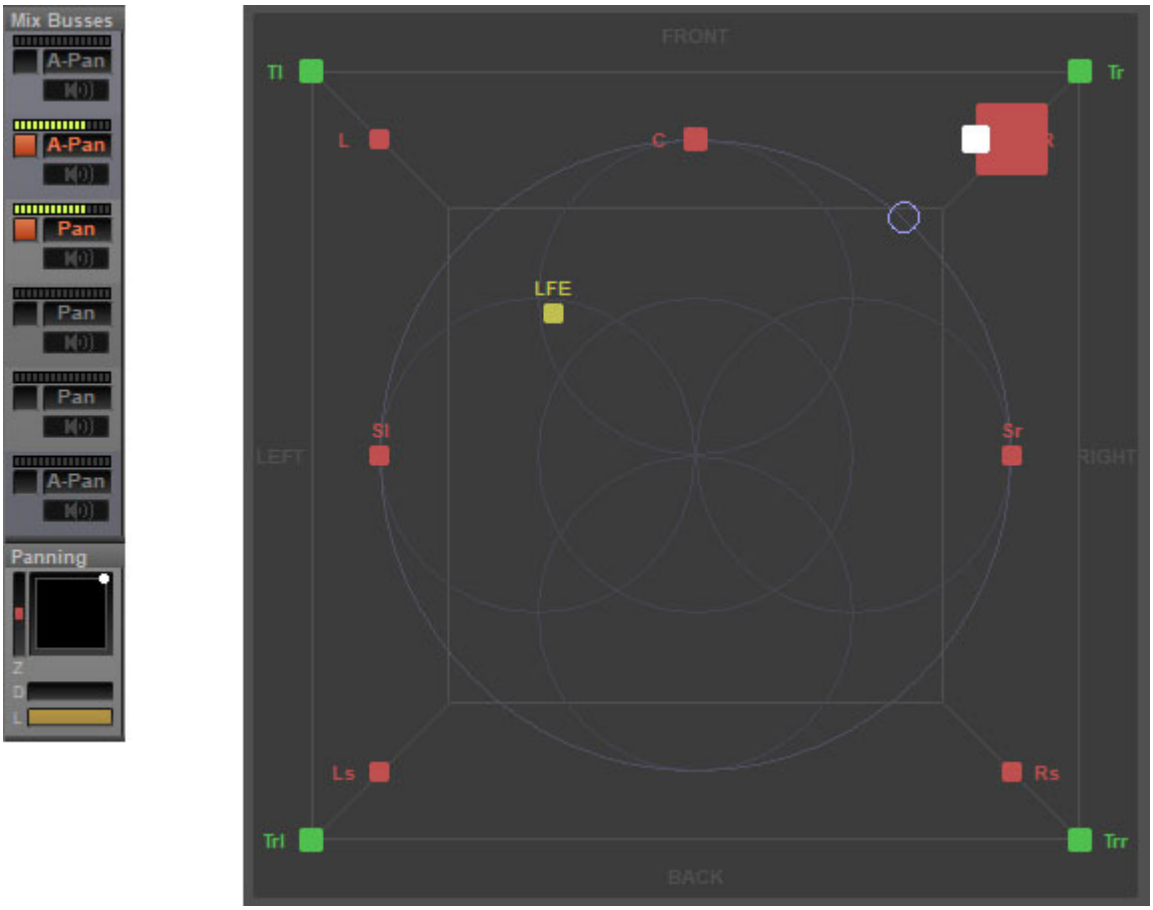
Ambisonic Surround Panner

The Surround Panning window (menu **View > Windows/Tools > Surround Panner** or **Ctrl + Click** on the **Panner Bus**) displays an Ambisonic logo as background if an Ambisonic Bus is enabled for the selected Strip.



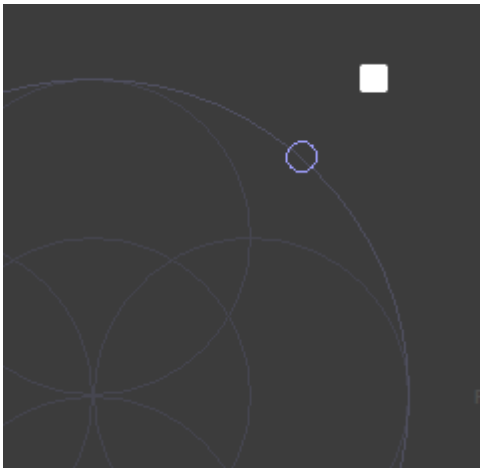
Ambisonic Panners

If both a Channel based Bus and an Ambisonic Bus are enabled for a given Strip, both the Ambisonic logo and the traditional Room Cube showing speakers are displayed.



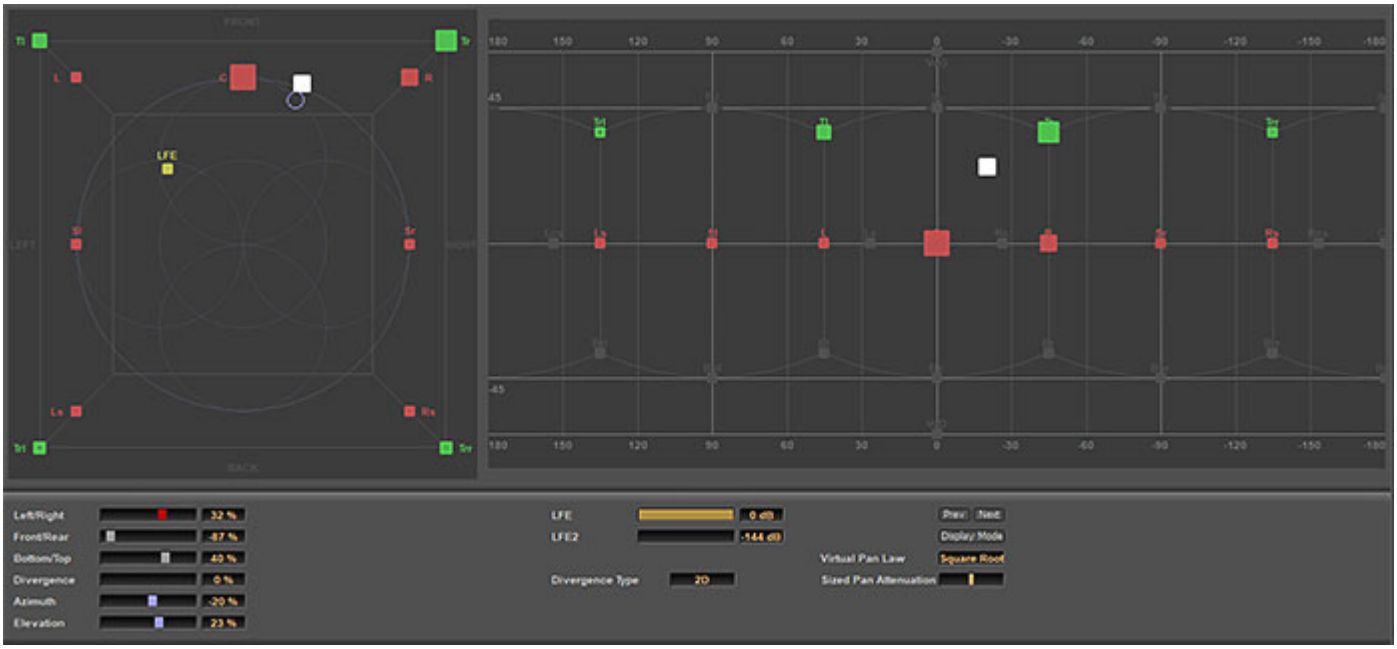
Ambisonic Panners - Channels

In the Surround Panner window when an Ambisonic Bus is displayed (showing the Ambisonic logo) a light Blue circle is displayed following the White square pan point. This is the Azimuth/Elevation equivalent of the X/Y/Z point, with a Radius of 1.0, being the intersection of a straight line between the pan point and the center of the sphere crossing the surface of the sphere. This is the Ambisonic Panned point.



Ambisonic Panner - Pan Point

The Surround Panner window offers a new Display Mode button which toggles between the conventional Top and Back views, a new Top and Cylindrical View and a new Cylindrical View only.



Surround Panner - Ambisonic Panners

When manipulating the Cylindrical View, Azimuth and Elevation are affected by the movements and the Radius is automatically maintained at 1.0, ensuring that both the conventional panned point and the Ambisonic panned point are located on the scene sphere surface.

If the **Ctrl** modifier is kept depressed while manipulating the Cylindrical View, the conventional panned point is constrained to stick to the edges of the X/Y/Z cube (instead of the sphere) and therefore always moves on a straight line between speakers. This allows the Cylindrical View to be used in an optimal way when panning Channel based signal.

Ambisonic Monitoring

b<>com Ambisonic decoders are included with Pyramix. If an Ambisonic bus is selected as the source in the Monitor suitable downmix (or upmix) values are entered automatically for the speaker sets.

Dolby Atmos®

Overview

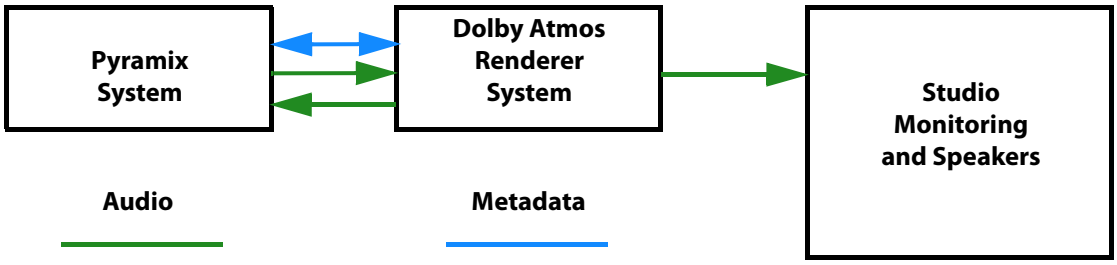
In order to create content in the Dolby Atmos format, creators must mix and monitor through a Dolby Renderer system which outputs rendered audio in real time to the studio speakers.

This means the ability for the creation tools to send both audio (over any protocol but usually via DANTE or MADI) and panning metadata (over a network connection) to one of the following Dolby Renderer systems:

- **Dolby Atmos Production Suite (DAPS)**
- **Dolby Atmos Mastering Suite (DAMS)**
- **Dolby Atmos Home Entertainment RMU (HT-RMU) available in various configurations**
- **Dolby Atmos Theatrical RMU**

Pyramix can now send audio and metadata to the **DAPS**, **DAMS** and **HT-RMU**.

Version 3.4 is the version software component recommended currently.



The theatrical RMU is not supported at this time.

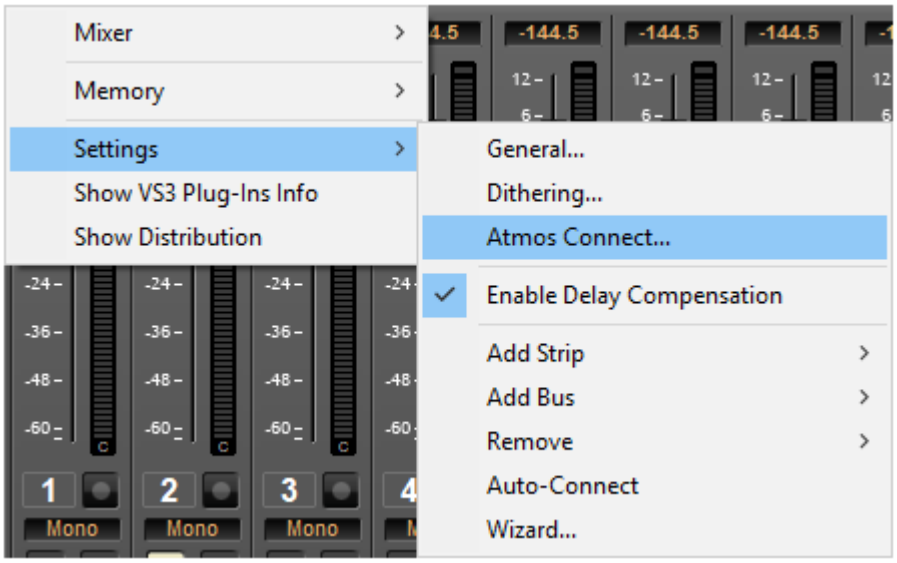
Configurations and Options

For Dolby Atmos configurations and options please contact your local Dolby distributor.

Dolby, Dolby Atmos and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation.

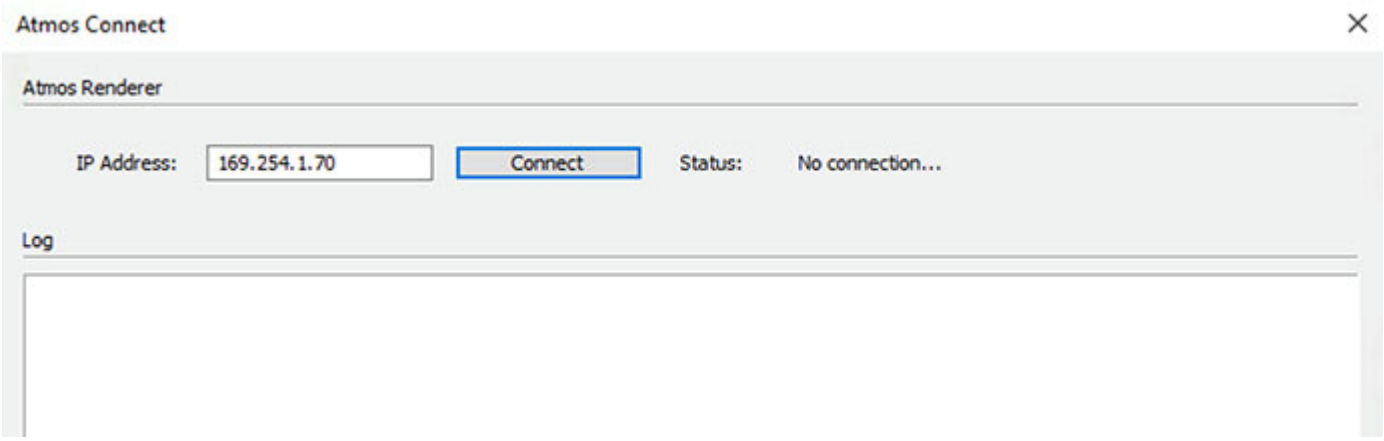
Connecting Dolby Atmos metadata from Pyramix to the Renderer

In order to establish a connection between Pyramix and the RMU for metadata connectivity, simply Right-click anywhere on the Pyramix Mixer and go to **Settings > Atmos Connect**:



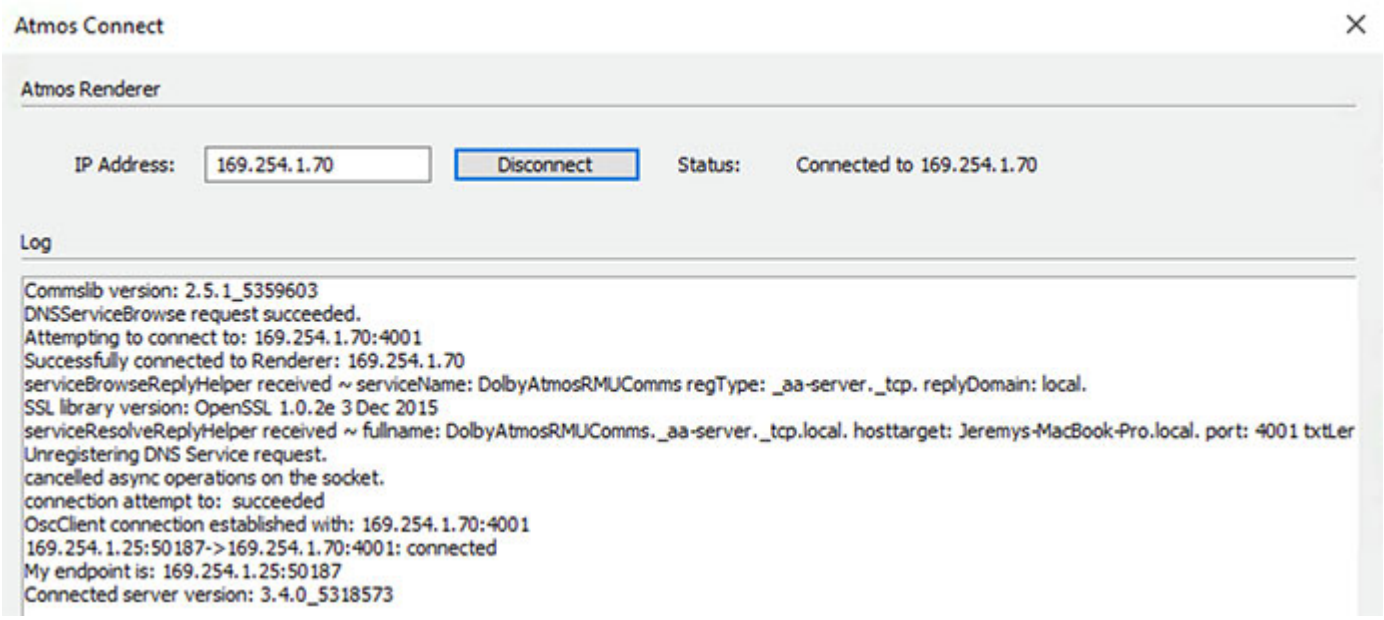
Settings > Atmos Connect

This will open the **Atmos Connect** window where it is necessary to enter the Renderer **IP Address**. :



Atmos Connect Window

When the IP Address has been entered Click on **Connect**. Once connected the **Atmos Connect** Window will look like this::

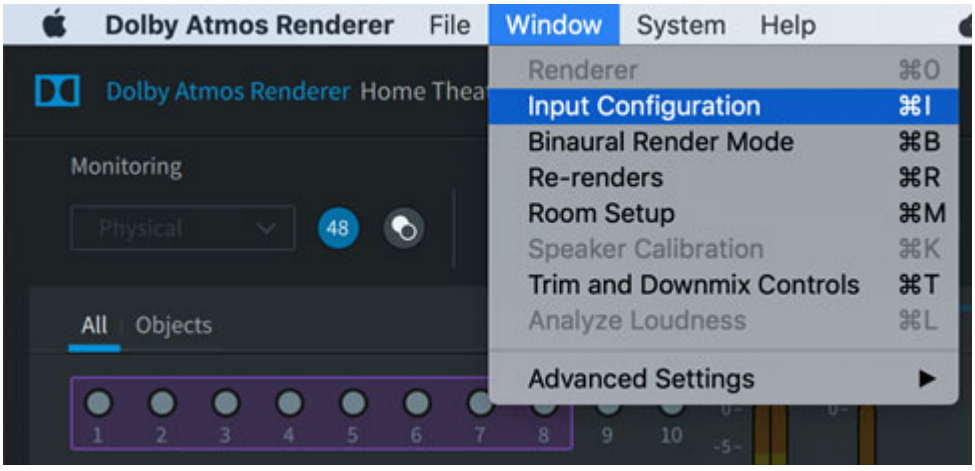


Atmos Connect Window Connected

Using Pyramix with a Dolby Atmos Renderer (DAPS/DAMS/HT-RMU)

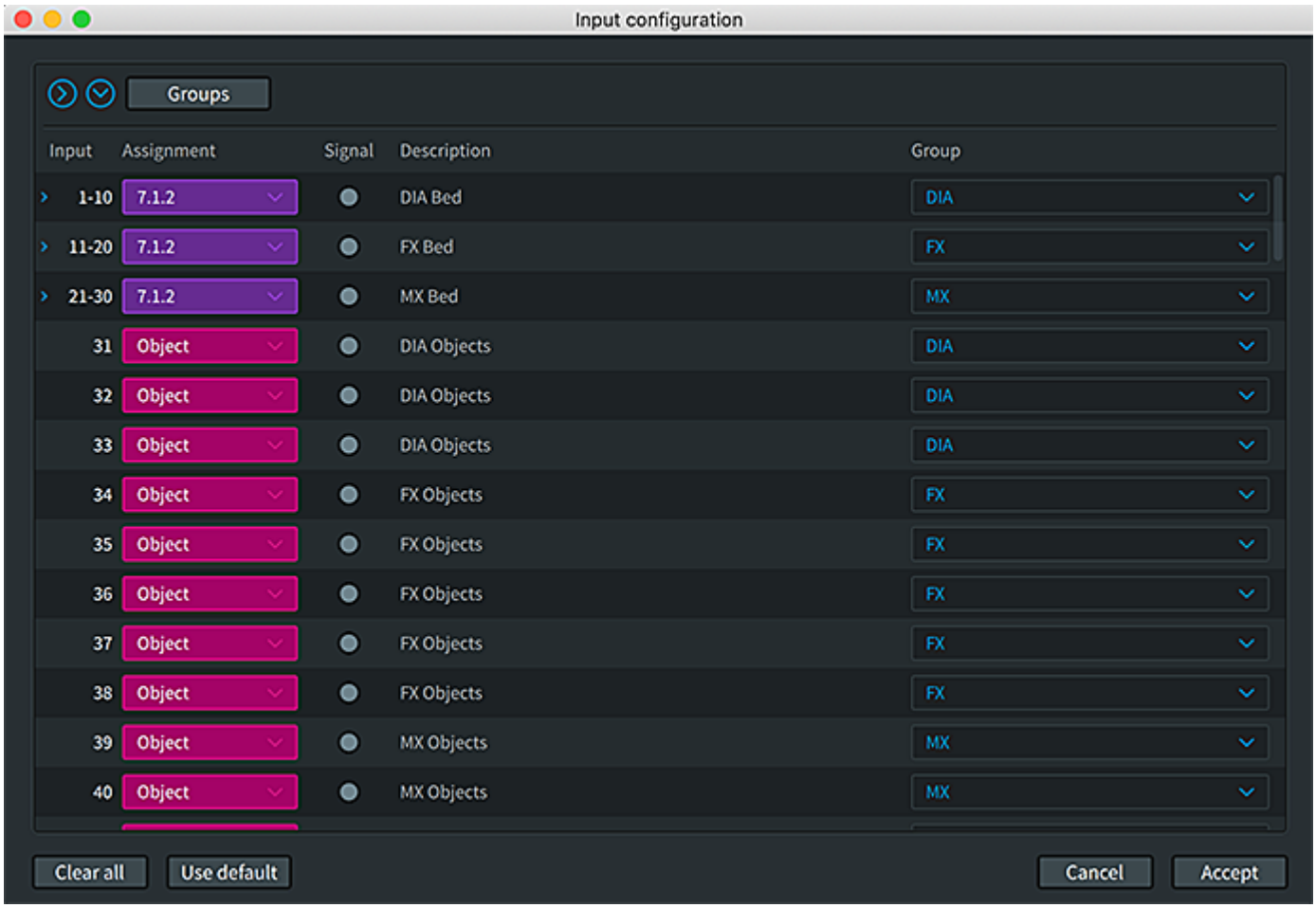
An typical Atmos project will comprise of a combination of beds (channel based buses such as Stereo, 5.1, 7.1.2, etc…) and Objects (mono sounds with associated panning metadata).

The content creator typically starts by setting the **Dolby Atmos Renderer** with the correct **Input Configuration**. Open the Renderer and select **Window > Input Configuration** :



Dolby Atmos Renderer

A film/tv post production input configuration could resemble the screenshot below where three Beds for Dialog, FX and Music have been created, along with a set of Objects for Dialog, FX and Music.



Dolby Atmos Renderer - Input configuration

This enables the creator to produce 5.1/Stereo/etc. **Re-renders** (or Mixdowns) of the three main groups (**DIA**/**FX**/**Music**) from the Dolby Renderer.

In a music workflow, the creator may be using just one Bed and a set of Objects.

Input Bed Size v Playback Systems

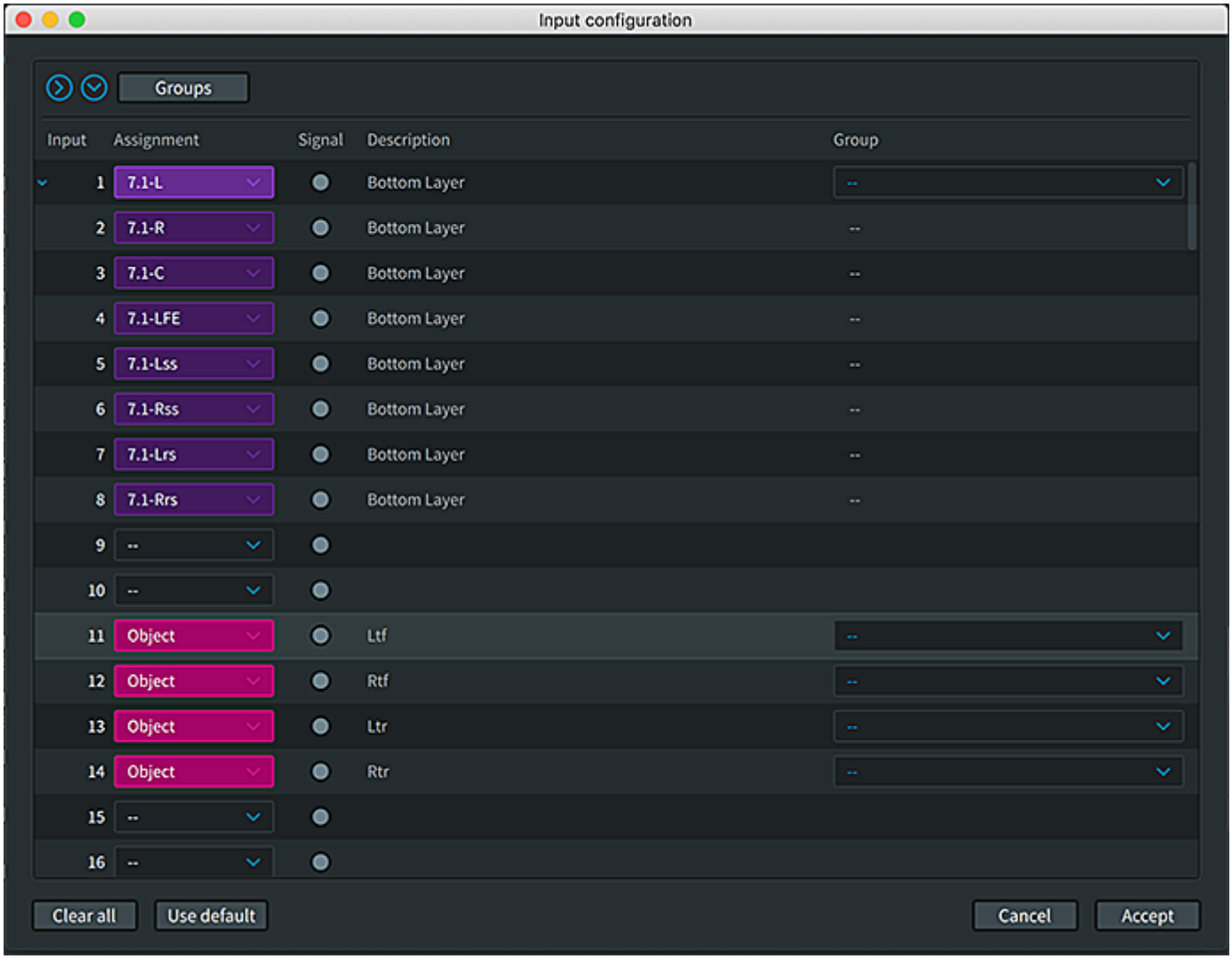
Dolby Atmos maximum input bed size is 7.1.2 while playback systems (apart from theatrical ones) can come in configurations of up to 9.1.6 and even 11.1.8.

This means that although the input configuration is limited to 7.1.2 for beds, they can be spread to any speaker layouts (up to 11.1.8) and objects can be rendered to any speaker layout.

For creators working in Pyramix with bus sizes higher than 7.1.2 natively and wishing to allow the consumer to enjoy their work in Dolby Atmos maintaining the original spacial resolution, it is possible to create Dolby Atmos objects to emulate the "missing" channels from the Dolby Atmos input bed.

For example a classical music recording engineer, used to working natively in 7.1.4 with a Pyramix 7.1.4 Output Bus, is now required to deliver an Atmos version of the soundtrack.

The maximum Dolby Atmos input bed being 7.1.2, one way of maintaining the 7.1.4 spatial resolution is to map the original Pyramix 7.1.4 bus into a Renderer 7.1 Input Bed and 4 Objects. The Atmos Renderer would have to be configured in this way:

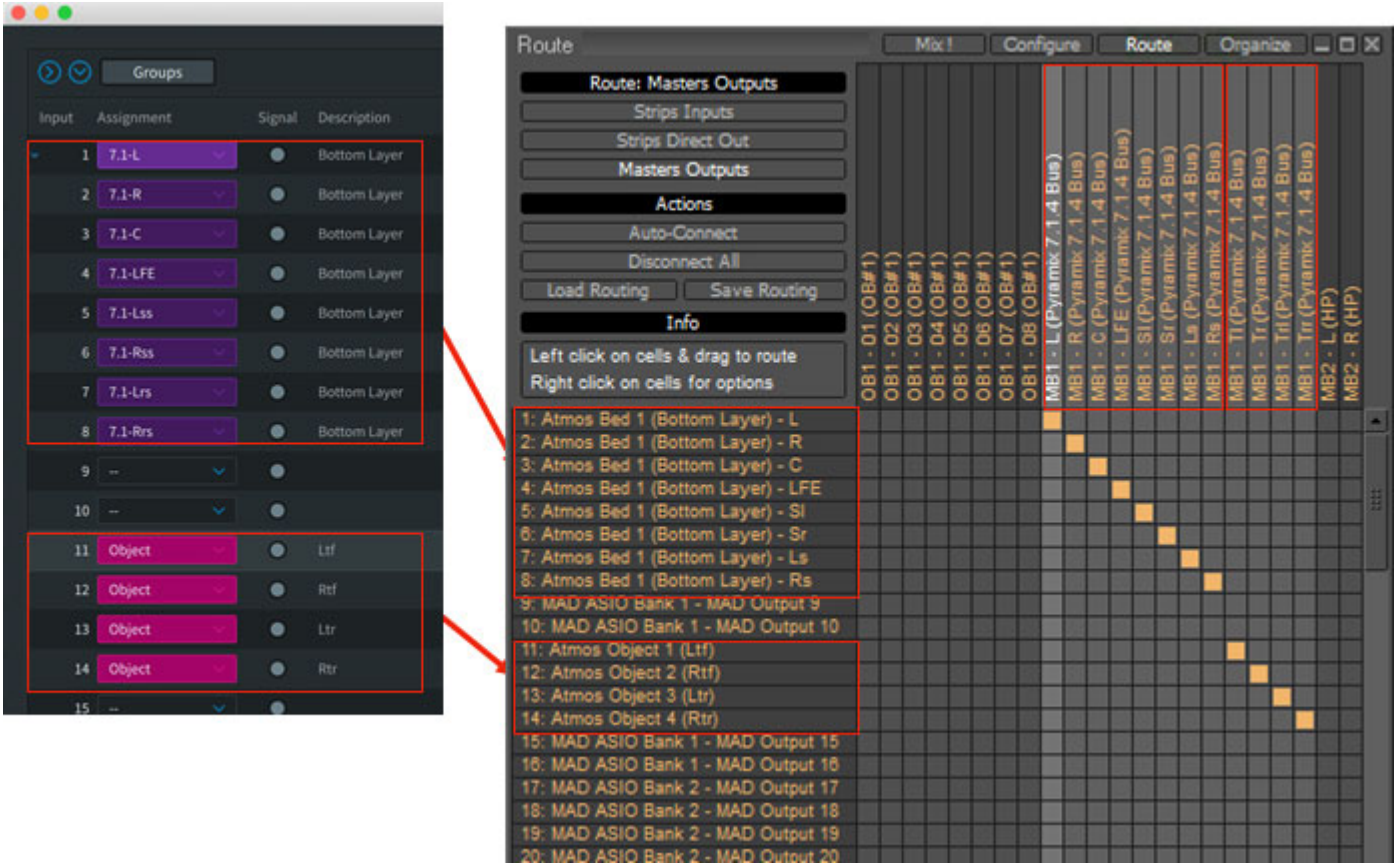


Dolby Atmos Renderer - Input configuration

Mapping

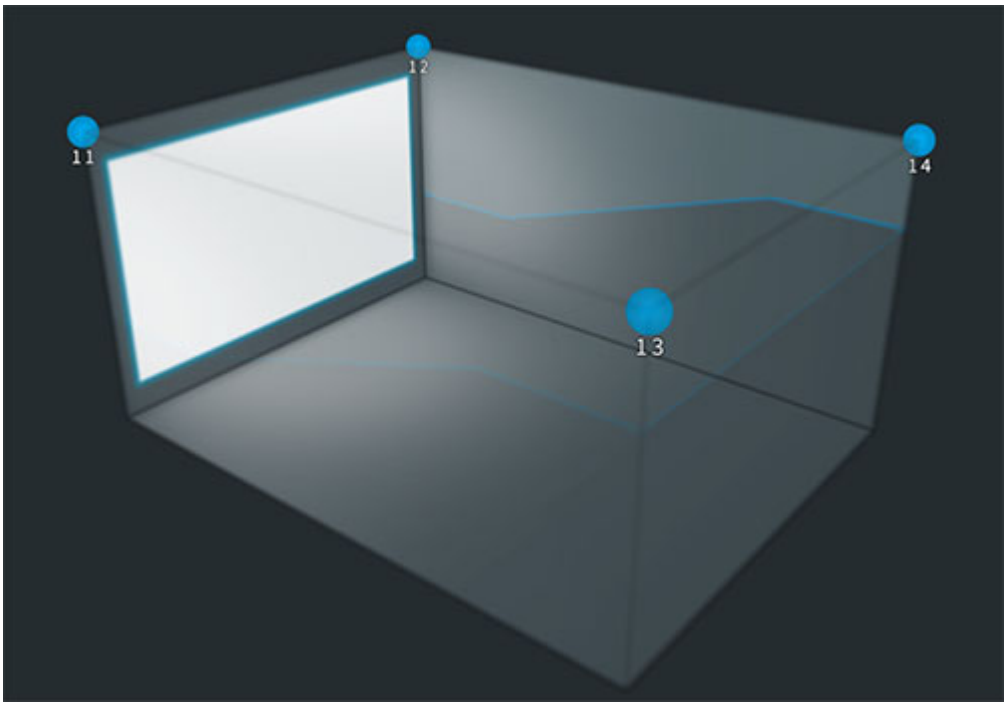
Once connected properly to the Dolby Renderer, Pyramix will automatically detect when a leg of a Channel based Pyramix Bus is connected to a Dolby Atmos Object and will send the correct metadata to position this Object statically in the correct location.

To facilitate this, Pyramix discovers the Dolby Renderer Input Configuration and brings its Channel Names into the Pyramix Mixer Channel Routing window:



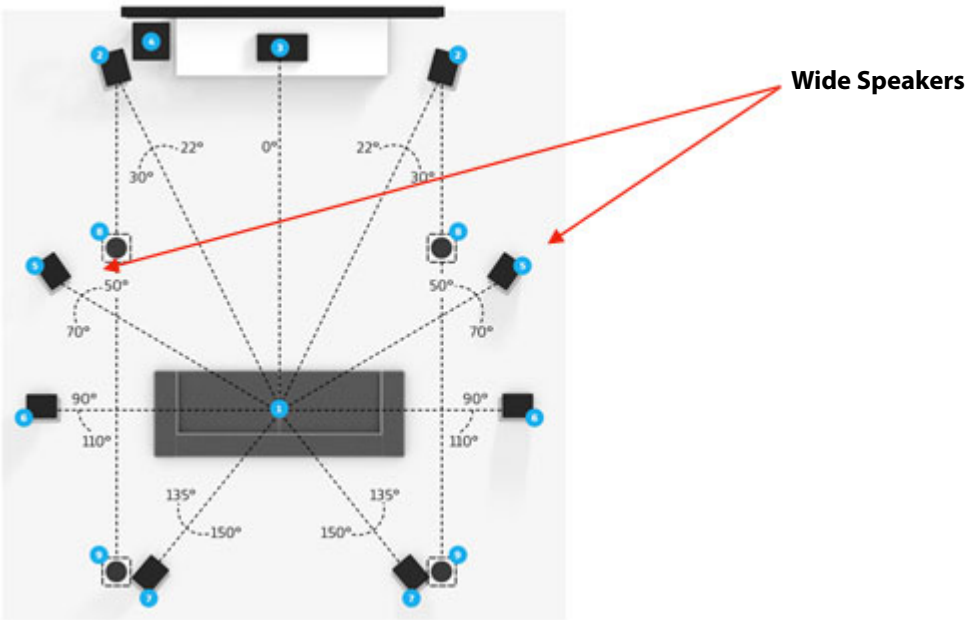
Dolby Atmos to Pyramix mapping

Once the Pyramix Tl (Top Left) channel, for example, is connected to a Dolby Renderer object input, Pyramix will send the correct metadata so that the object is statically positioned in the Dolby Ltf (Left Top Front) speaker position:



Object positions

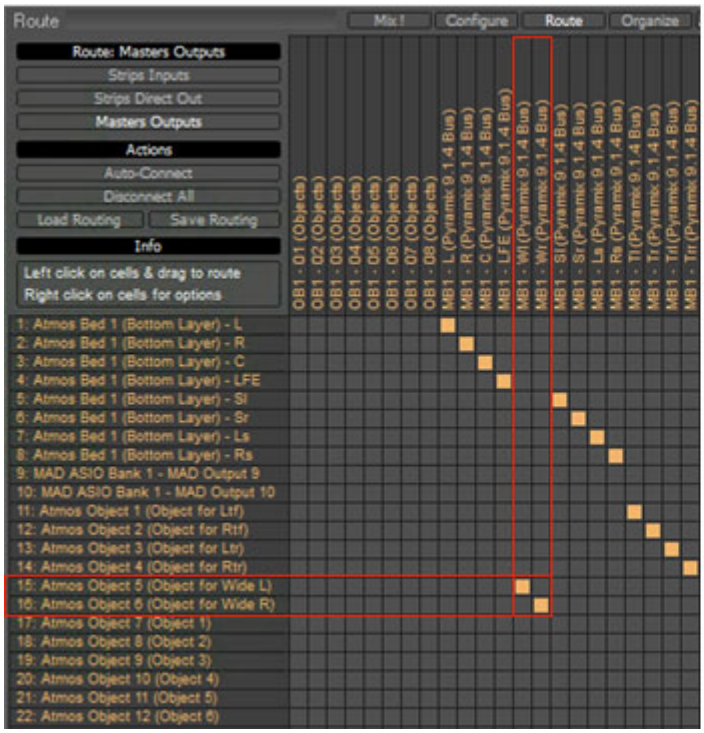
Another example could be the case of a Pyramix user mixing natively with **Wide Left** and **Wide Right**:

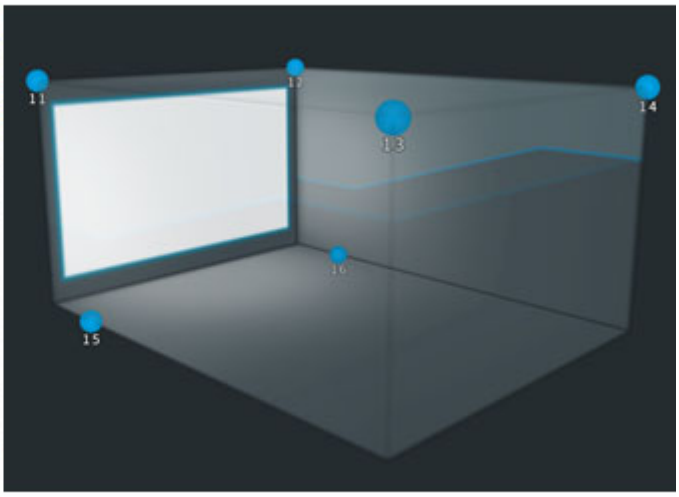


Wide Speakers

Those Channels are not available as part of an Input Bed into the Dolby Atmos Renderer (max Bed size: 7.1.2), however they can be found, for example, in a 9.1.4 speaker layout (see below).

Beds will never spread to those Speakers, only Objects may be rendered onto those Speakers. Therefore Pyramix, in a similar way to that described above, allows you to connect Pyramix **Wide L/R** to a pair of Dolby Atmos Renderer Object Input Channels. Pyramix will automatically send the appropriate metadata to position those Objects to the correct positions (in this case the Wide the appropriate metadata to position those objects to the right positions (in this case the Wide Speakers coordinates):

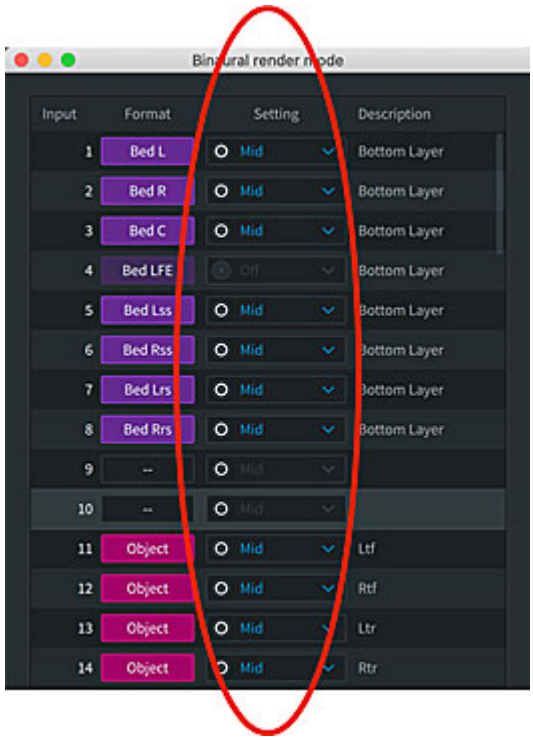




Wide LR mapping

Binaural

As part of the Dolby Renderer configuration process, the content creator needs to make sure the Binaural Render Mode settings are configured to the desired settings. In this example, we might want to make sure the "emulated ceiling channels" (Objects) have the same settings as the bottom layer (Bed), but this is left entirely to the creator's taste:



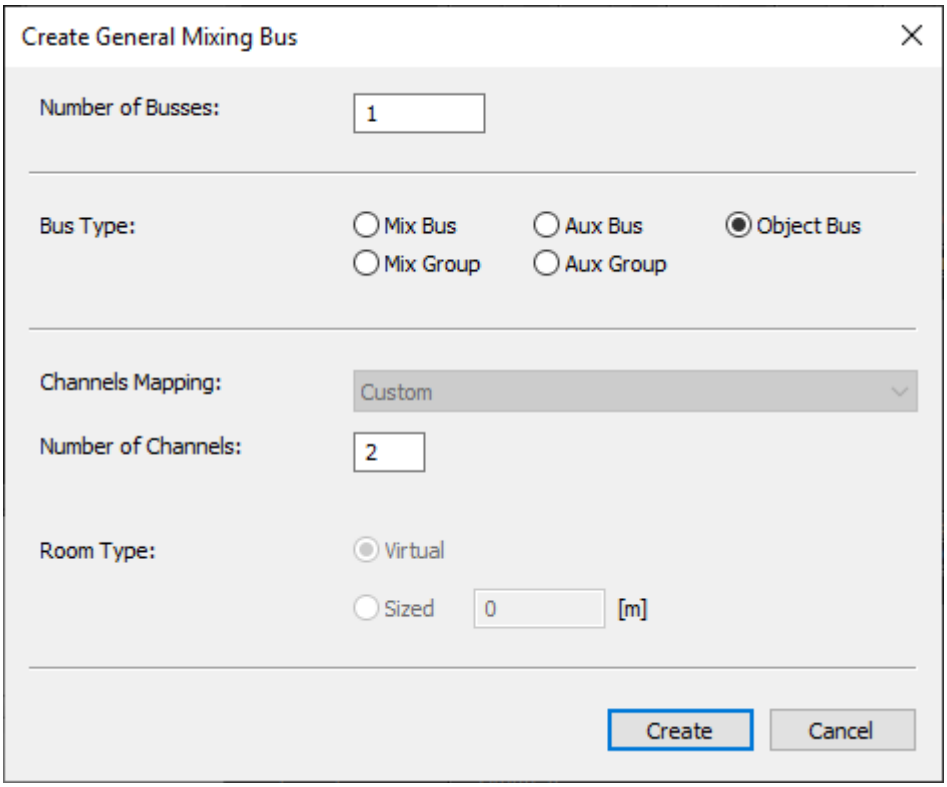
Binaural render mode settings

Sending Pyramix Objects to the Dolby Renderer

When working with **Object Buses** in Pyramix, the workflow is seamless whether or not a Dolby Renderer is used.

Objects can be sent to the Dolby Atmos Renderer by making an **Object Bus**.

In the Pyramix Mixer, click on **Configure**, then **Add Bus > General Mixing Bus** Click on **Object Bus** and choose the number of Channels required.

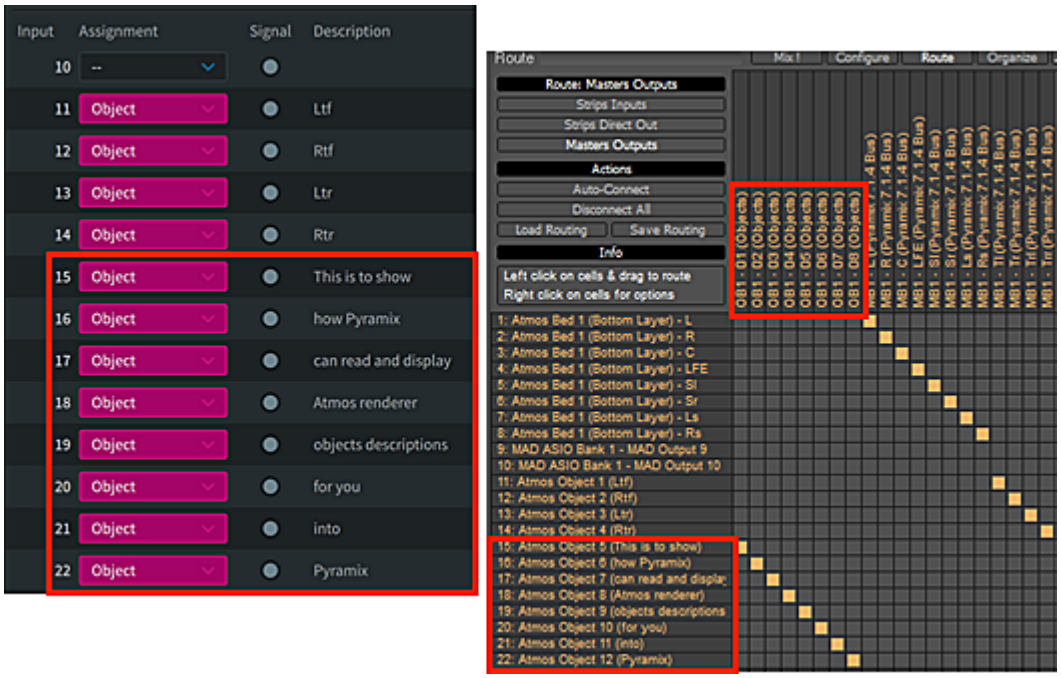


Create General Mixing Bus dialog

An Object bus in Pyramix can be of any size, but must be seen as a group of Mono objects. The user can create multiple Object Buses for example to group various elements of the soundtrack, (stems, etc…).

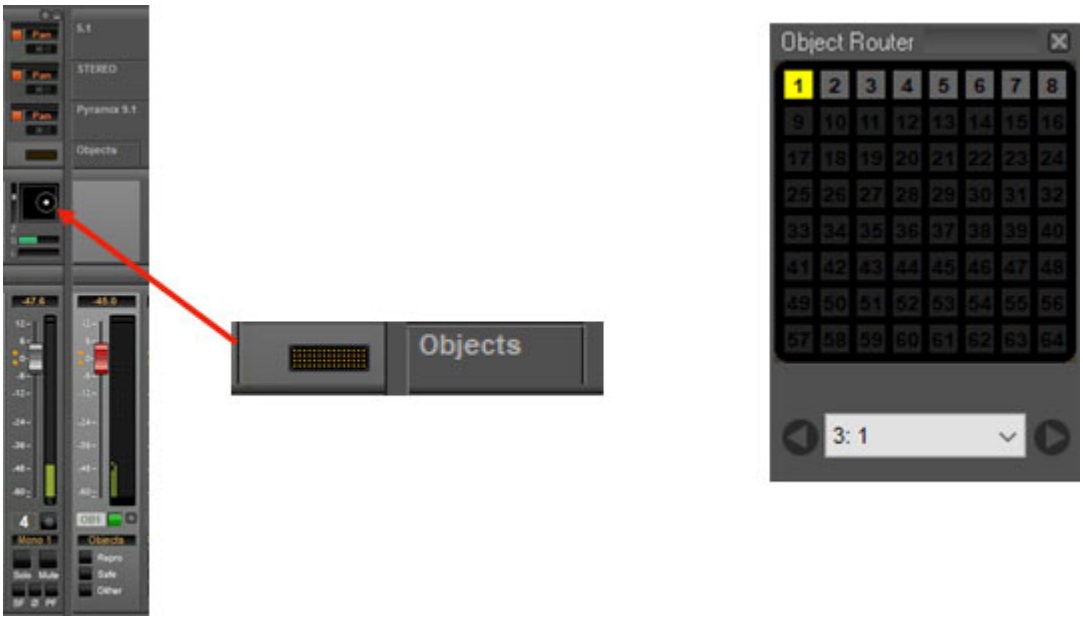
Object bus Mapping

The Object Buses simply need to be mapped to the correct Dolby Renderer Object Inputs. Pyramix will then send individual dynamic/static panning metadata (including divergence which is mapped to the Dolby Atmos Object "size") from the various Pyramix Strip Panners straight into the Dolby Renderer:



Object Bus mapping

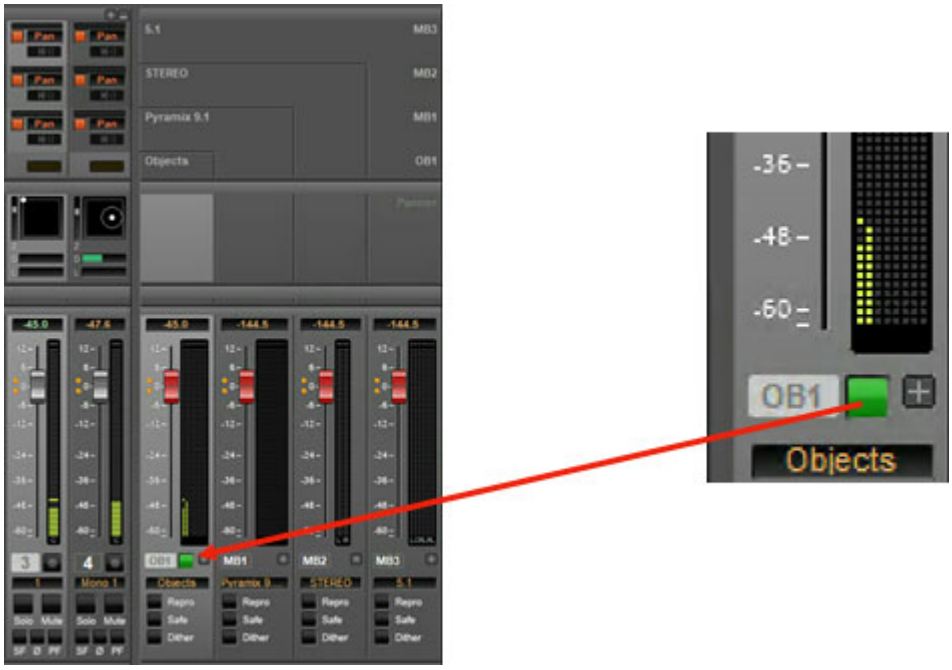
In order to route a Strip to an Object Bus, Click on the **Object Router** available on the Strip and choose a Channel of the Object bus::



Pyramix Mixer Object Router

Strip to Object Bus

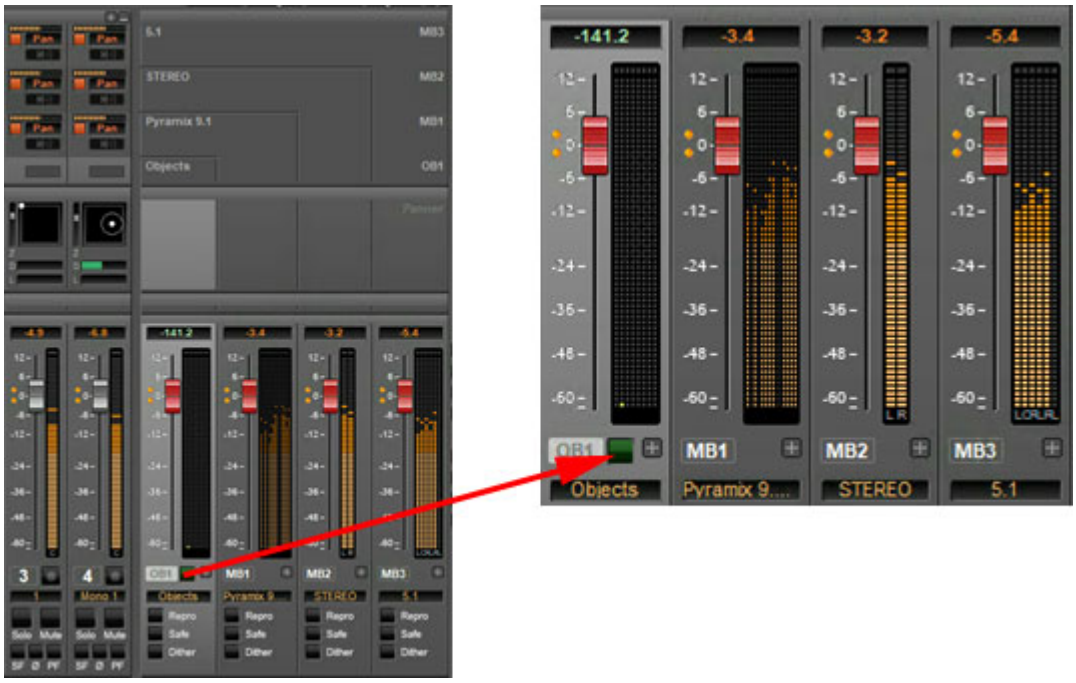
When a Strip is routed to an active Object Bus, audio goes exclusively into this Object Bus and doesn't go into any other Bus this strip is also mapped to. All panning is sent as metadata to the Dolby Atmos Renderer:



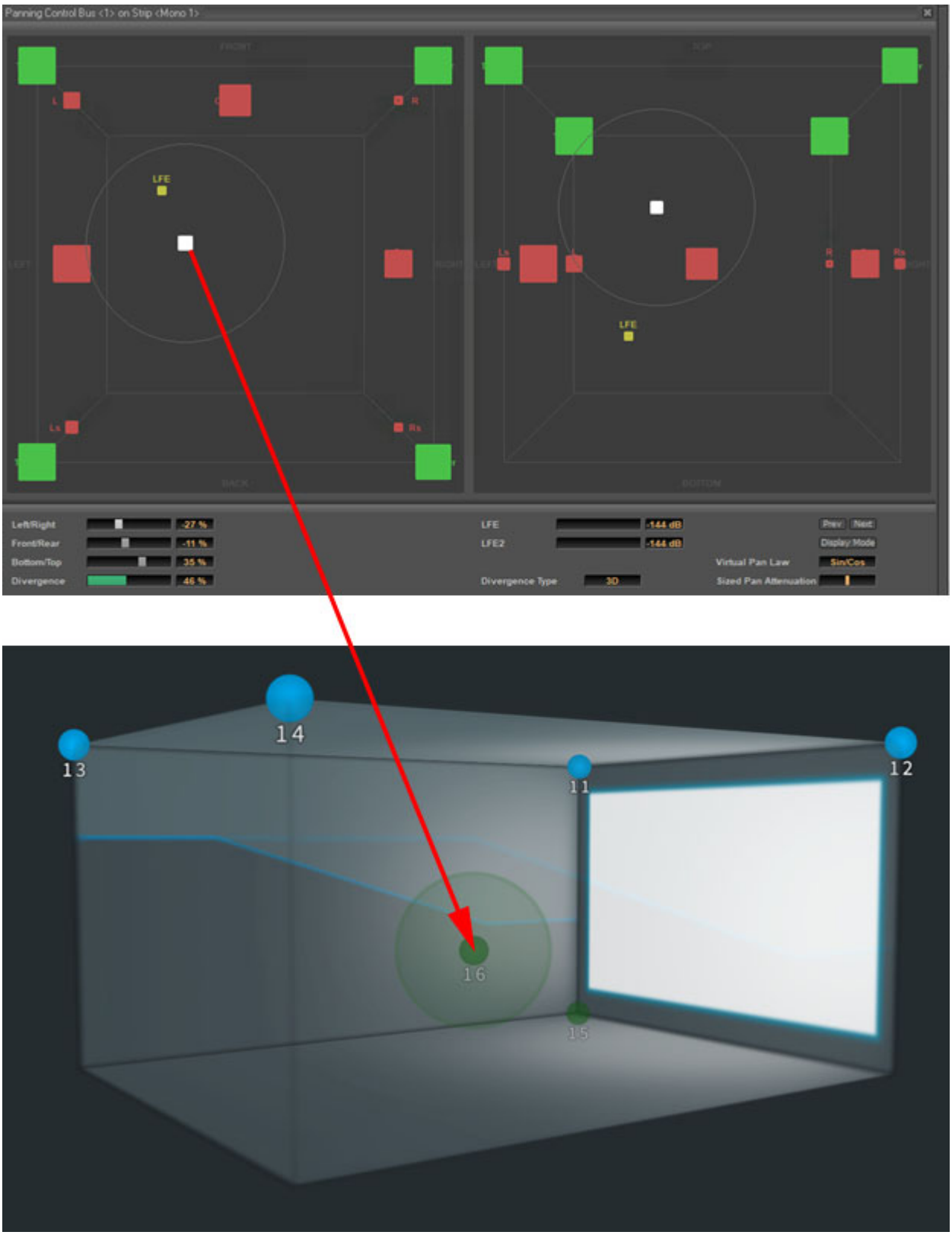
Pyramix Mixer Object Bus active

Strip to Normal Bus

Whenever an Object Bus is deactivated (green button), audio coming from any Strip feeding this Object Bus is sent instead to the other Mix Buses those Strips are routed to and metadata is no longer sent to the Dolby Atmos Renderer. (The panner then simply acts as a regular panner.):

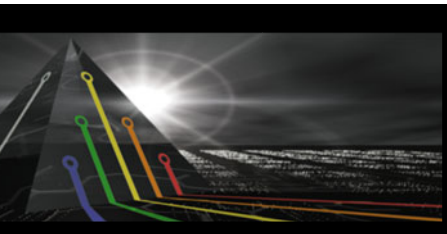


Pyramix Mixer Object Bus inactive



Panned Source

11 Monitor



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

Monitor ! Window

Scope

Pyramix has a dedicated **Monitor** section. This extremely powerful tool offers comprehensive monitoring facilities including summing and downmixing for all supported formats. External Machine Inputs, comprehensive Talkback, Foldback and External Metering are also supported depending on your system specification.

The **Monitor** presents monitor outputs of all buses present in the current Mixer as sources. It is also possible to configure external sources both for recorder returns and for talkback. Sources can be summed for monitoring without affecting the Mixer bus outputs. This is useful, for example, when you need to listen to a guide track while recording.

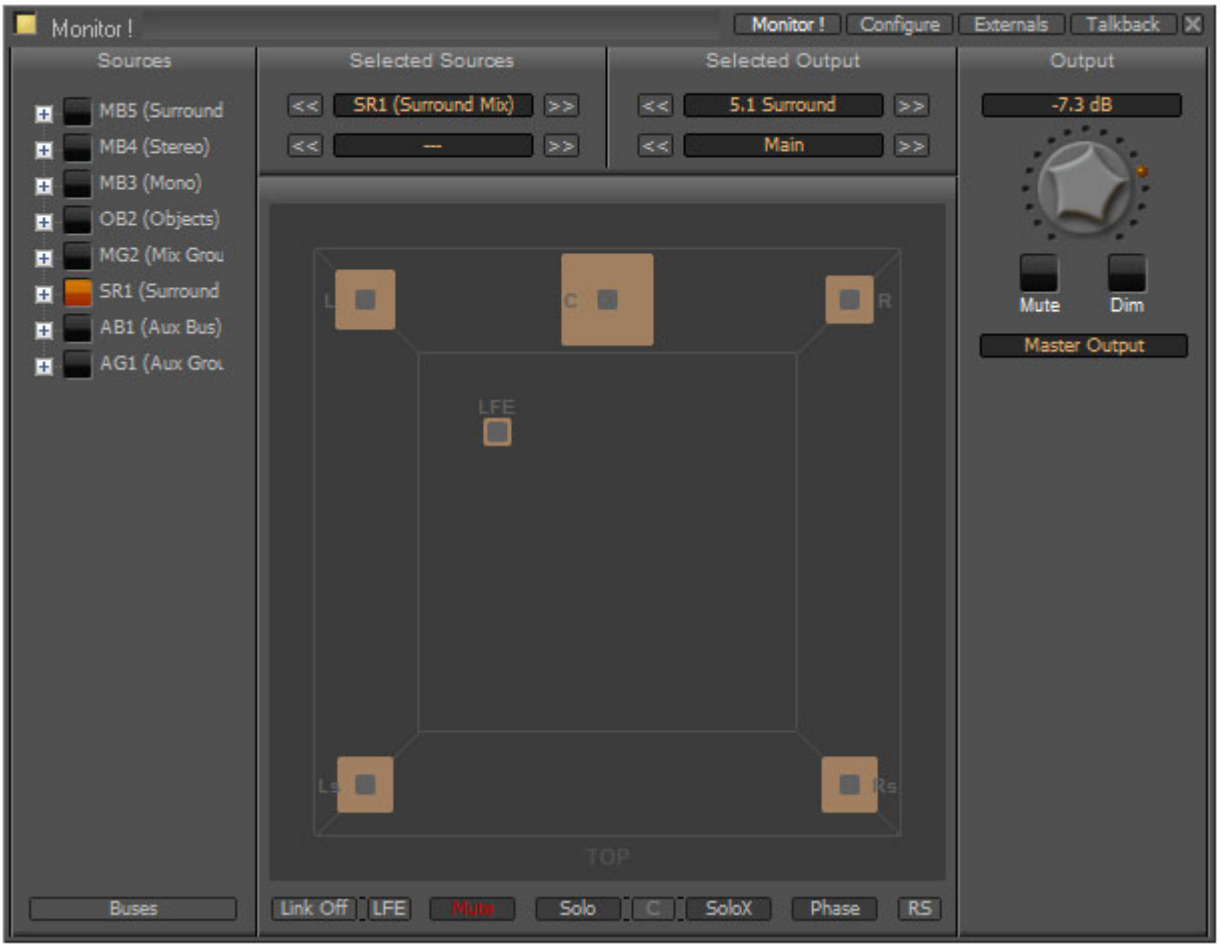
You do not have to use the **Monitor** and disabling it will save DSP power but, with complex Mixers and routing, the Monitor helps to keep things logical.

The monitor is also used to output the audio signal from the audition function of the Media Manager and Libraries as an unformatted input. (I.e. Routed to LRC in a Surround 5.1 Speaker Set and to LR in a Stereo one)

Monitor Hardware Control

Many functions of the Monitor can be mapped to a hardware controller or to the keyboard. To facilitate this, the commands are available in the **Monitor** menu. Please see the documentation for your hardware controller, **Remote Control on page 611** and **Customizing Keyboard Shortcuts on page 538**.

By default the **Monitor** window is shown. It can be opened with **View > Monitor** or toggled with the icon in the View Toolbar.



Monitor Main Monitor ! Window

The Monitor has four pages: a Main **Monitor !** page in normal operation, a **Configure** page for setting up and two further pages for configuring **Externals** (machines) and **Talkback**.

Monitor ! page

The **Monitor !** window is divided vertically into three sections.

Sources, left-hand section:

The button top-left of the title bar enables/disables the Monitor and lights yellow when enabled. This allows DSP power to be saved when comprehensive monitoring control is not required. Below the **Enable Monitoring** button is a tree view of all buses used in the mixer. Clicking on the **+** and **-** boxes shows and hides branches in the usual way. Click on any complete bus or any available stem or any bus/stem channel to select it for monitoring. Selection is exclusive unless the **Ctrl key** held is down. Then selection is cumulative and clicking adds or subtracts Sources according to their current state.

Buses / Externals button

> **Note:** At bottom left in the screenshot above the button labelled **Buses** indicates which sources are available for activation. Clicking on this button toggles through **Buses**, **Externals** and **Buses / Externals**.
>
> **Note:** Multiple selections are made by holding the **Ctrl** key and clicking.

Main, centre section:

Selected Sources

<< **SR1** **>>**: Select previous/next Pyramix source. Only sources visible in the **Sources** section are available. I.e. If the component channels of a bus or stem are collapsed this bus or stem is switched as a unit when the component channels are visible in the **Sources** section then clicking on the **<<** or **>>** buttons steps through each available channel in turn.

<< **--** **--** **>>**: Select previous/next External Source. Only External Sources visible in the **Sources** section are available.

> **Note:** Clicking on any of the **<<** or **>>** buttons cancels the selection made previously in the **Sources** section.

Selected Output

<< Surround 5.1 >>: Select **previous/next Speaker Set**.

<< **Main** **>>**: Select the **previous/next Downmix** defined in the Configure page.

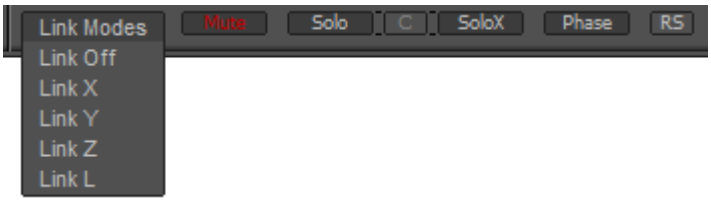
Main area

Speakers are only shown when connected in the **Configure** page.

Halo Meters

The speakers have "**halo**" meters as seen above. The bigger the colored area, the louder the speaker.

The buttons at the bottom determine the linking and function of the active Speaker buttons.



Monitor Buttons

Link Clicking on this button pops up a list of possible **Link Modes**.

- **Link Off** No Link is applied to parameters selected (Mute, Solo, Solo X, Phase...)
- **Link X** Links Left and Right (and everything along the X axis).
- **Link Y** Links the Front with the Back (and everything along the Y axis).

	Link Z	Links the associated speaker in all the height layers Tl +L + Bl etc.
	Link L	Links the associated speakers that are on the same Z layer.
LFE		Includes the LFE Speaker(s) in the Link Group.
Mute		Clicking on a speaker mutes it. Selections are cumulative.
Solo		Clicking on a speaker solos it. Selections are cumulative.
C		Works in conjunction with **Solo** and **SoloX**. Toggles between **I**n **P**lace **and C**enter. **C**enter routes the soloed channel(s) to the Center speaker or equally to the L/R speakers if no center speaker is present. **I**n **P**lace mode is the normal Solo, SoloX mode.
SoloX		**Solo** e**X**clusive on the clicked speaker. Selections toggle.
Phase		Toggles the phase of the selected speaker(s). Useful for quick image checks.
RS		Reset. Deselect all speakers.

Output, right-hand area

Monitor Level box Displays the current output level. Output level can be entered numerically in the box after clicking on it.

Volume Knob: sets all the output gains in a range from -144.5dB to +24dB. Double-click to set it to 0dB.

> **Note:** Maximum permissible volume can be set in the **Configure** page.

Mute: button mute the outputs.

Dim: button reduces the output level by an amount set in the **Configure** page. Default value is -20dB.

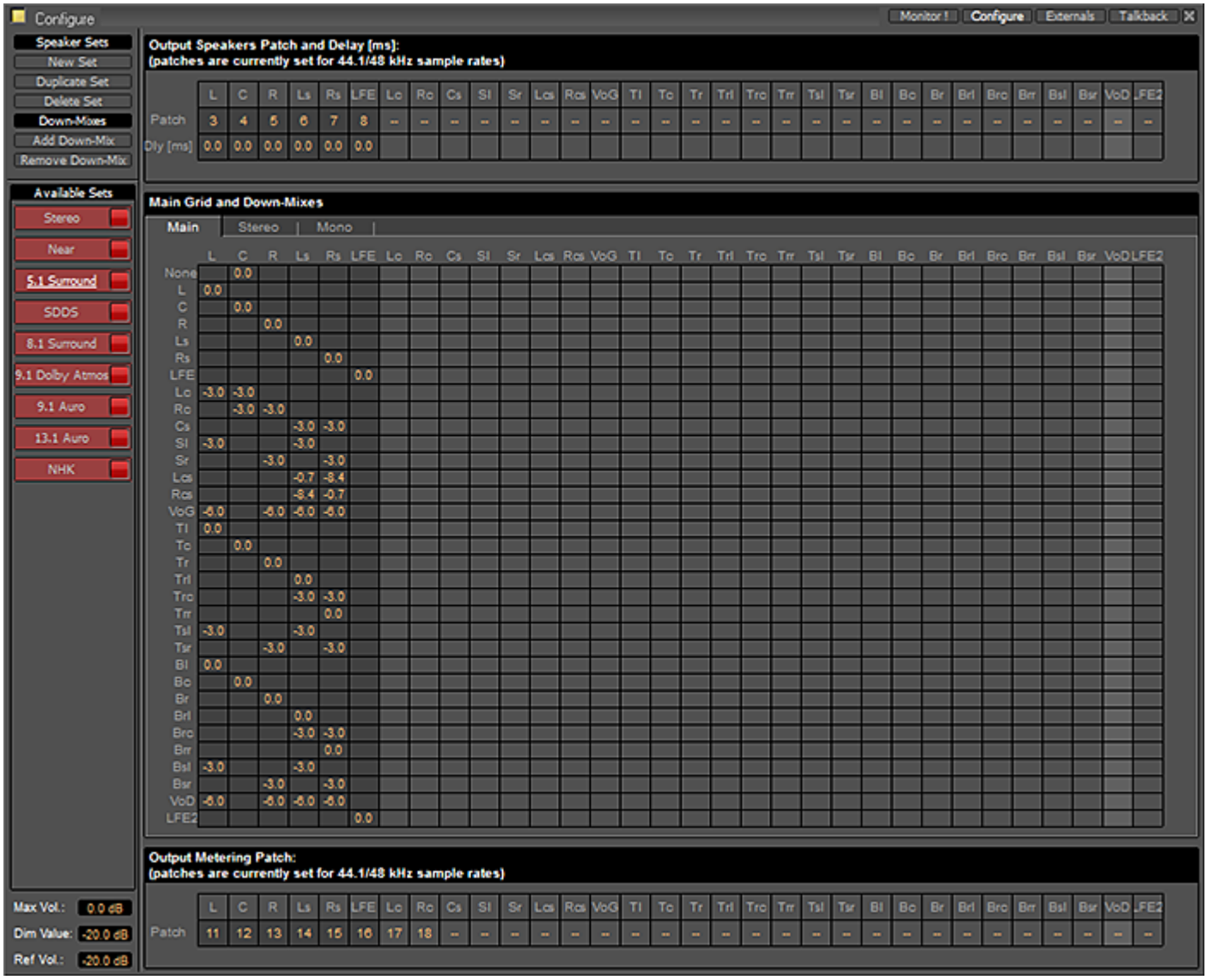
Speaker Sets

Speaker Sets are set-up in the **Configure** page.

A speaker set consists of:

A **Patch**: This connects signals to the physical outputs of the output device(s). The number of connection will depend on the number of speakers you want to connect. Since the number of available live outputs depends on the selected sampling rate, the patch will differ for 1Fs, 2 Fs, 4Fs and 8 Fs sampling rates.

A **Main grid**: this matrix defines the relation between the Mixer's buses output channel types and the monitor's output channel types (thus the monitor's physical outputs).



Monitor Configure Window

A set of **Downmixes** (max: 4) : A downmix is a an alternative grid which uses the same patch as the main grid. In this page you can patch the outputs of you monitor, add/remove downmixes, and defines the corresponding grids in dB (only the channel types which are patched).

Configure page

The **Configure** page enables multiple **Speaker Sets**, each with multiple down-mixes, to be created and edited. Nine factory Speaker Sets (On the left of the page, labelled on a red background at the top of the **Speaker Sets** list) are installed with Pyramix. Their Main channel to speaker Main Grid and Down-Mix assignments cannot be changed, but their output Patches from speakers in the Monitor to physical outputs can.

Speaker Types

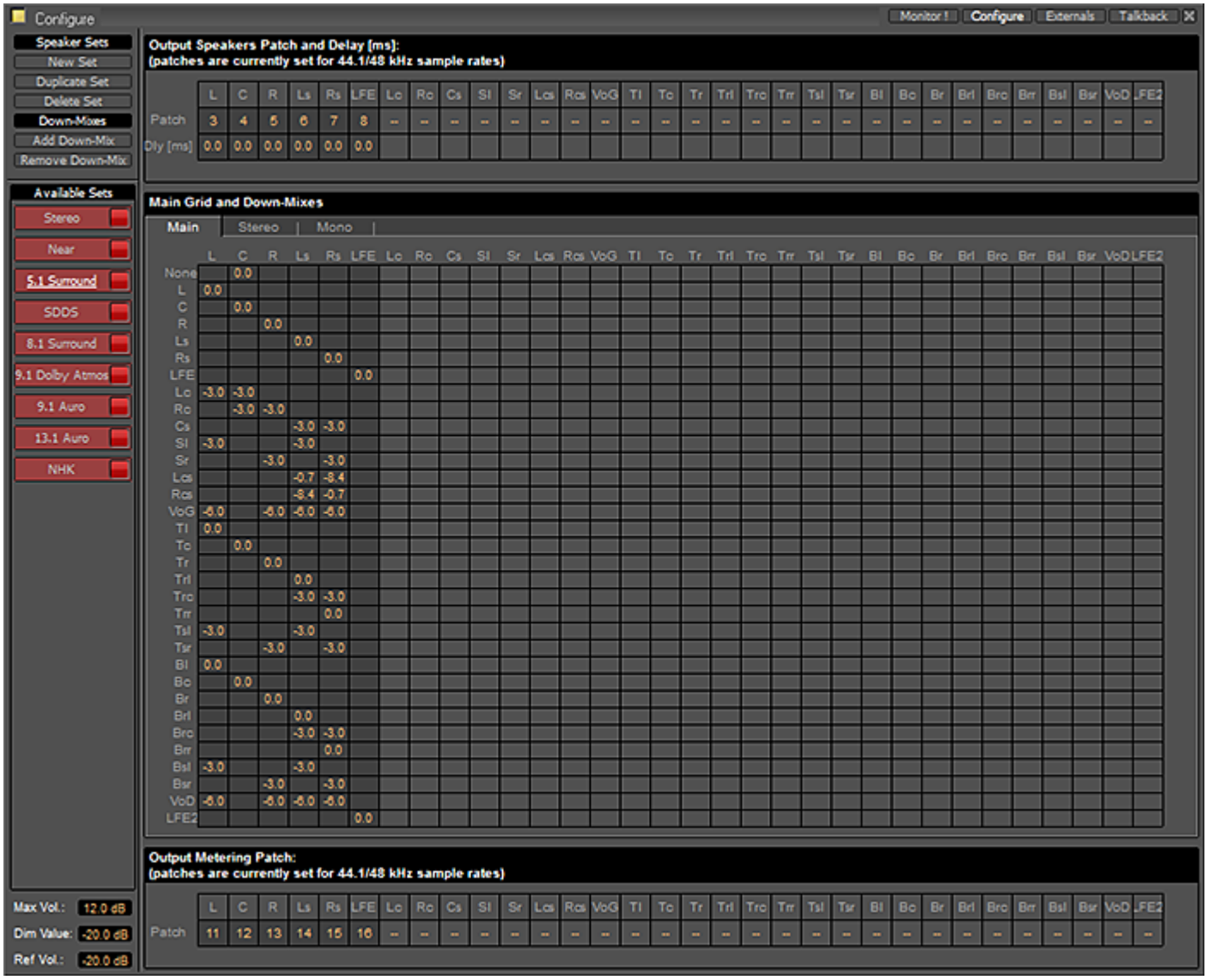
The following Channel/Speaker Types are available:

None	(Channel Type only. Used for Buses and Media with no Type assigned.)
L	**Left**
C	**Center**
R	**Right**
Ls	**Left Surround**
Rs	**Right Surround**
LFE	**Low Frequency Effects**
Lc	**Left Center**
Rc	**Right Center**
Cs	**Centre Surround**
Sl	**Side Left**
Sr	**Side Right**
Wl	**Wide Left**
Wr	**Wide Right**
VoG	**Voice of God**
Tl	**Top Left**
Tc	**Top Center**
Tr	**Top Right**
Trl	**Top Surround Left**
Trc	**Top Surround Center**
Trr	**Top Surround Right**
Tsl	**Top Side Left**
Tsr	**Top Side Right**
Bl	**Bottom Left**
Bc	**Bottom Centre**
Br	**Bottom Right**
Brl	**Bottom Surround Left**
Brc	**Bottom Surround Center**
Brr	**Bottom Surround Right**
Bsl	**Bottom Side Left**
Bsr	**Bottom Side Right**
VOD	**Voice of Devil**
LFE2	**Low Frequency Effects 2**

Factory Speaker Sets

None	11.0
Mono	9.1 / ITU-E (4+5+1)
Stereo	11.1
2.1	Dolby 5.0
Stereo Surround	Dolby 5.1
3.0 / LCR	Dolby 7.0
3.1 / LCR	Dolby 7.1
3.0 Surround	Dolby 9.1
3.1 Surround	Dolby Atmos 5.1.2
4.0 Quadro	Dolby Atmos 5.1.4
4.1 Quadro	Dolby Atmos 7.1.2
4.0 Surround	Dolby Atmos 7.1.4
4.1 Surround	Dolby Atmos 7.1.6
5.0 LCR	Dolby Atmos 9.1.2
5.1 LCR	Dolby Atmos 9.1.4
6.0 LCR	Dolby Atmos 9.1.6
6.1 LCR	10.2 TMH
6.0 LRC	12.2 TMH
6.1 LRC	Auro 8.0
7.0 LCR	Auro 9.1
7.1 LCR	Auro 10.1
7.0 / ITU-I (0+7+0)	Auro 7.4 / ITU-S (4+7+0)
7.1 / ITU-I (0+7+0)	Auro 11.1
7.0 SDDS	Auro 13.1
7.1 SDDS	KBS 10.2 / ITU - F (3+7+0)
7.0 / ITU-C (2+5+0)	KBS 22.2 / ITU - H (9+10+3)
7.1 / ITU-C (2+5+0)	Cube
8.0 LCR	Cube + Midlayer
8.1 LCR	Cube (Corners + Faces)
9.0 LCR	Cube (Corners + Faces + Edges)
9.1 LCR	30.2 La Totale
9.0 / ITU-D (4+5+0)	

They and each of their down-mixes can be enabled/disabled in order to determine which ones are visible in the main Monitor page.



Monitor Configure Window

The **Configure** page is divided into four main areas; **Speaker Sets** and **Down-Mixes**, **Available Sets**, **Output Speakers Patch and Delay[ms]**, **Main Grid and Down-Mixes** and **Output Metering Patch**.

Available Sets

To select an existing Speaker Set in order to view or alter its settings, click on its title in the **Available Sets** list. The label will become underlined and the Set's parameters will appear in the grid. If the Set has Down-Mixes already defined there will be one or more tabs next to the **Main** Tab in the **Main Grid and Down-Mixes** area.

Nine sets, **Stereo** and **Surround 5.1** are factory defined and cannot be altered. New Sets and Down-Mixes can be **Create**d, **Duplicate**d and **Delete**d using the Command buttons.

Max Vol:

To set the **Maximum Volume** attainable click on the value box to highlight it and type the desired value in the range 0.0dB to 36db then hit **Enter** or click elsewhere on the window to save the change.

Dim Value:

To change the **Dim Value** Level, click on the value box to highlight it and type the desired attenuation value then hit **Enter** or click elsewhere on the window to save the change.

Note: Only negative values are accepted. Positive values revert to 0dB. I.e. Type **-15** etc.

Ref Vol:

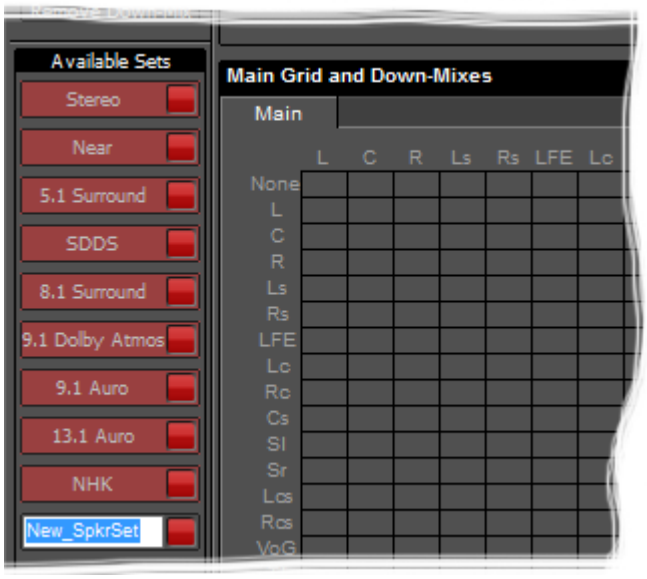
To set the **Reference Volume** level click on the value box to highlight it and type the desired value in the range -20dB to 0dB then hit **Enter** or click elsewhere on the window to save the change.

Commands

Speaker Sets

New Set

Clicking on **New Set** creates a new Speaker Set with a blank matrix Grid and adds a new entry to the **Available Sets** list with the label highlighted ready for text entry:



Monitor Configure New Speaker Set

Type a suitable name and click on a blank area or hit **ENTER** to accept the name.

Duplicate Set

Creates a new Speaker Set with a the same matrix Grid settings and Down-Mixes and settings as the set currently selected (underlined) and displayed in the grid. The new label is highlighted ready for text entry.

Delete Set

Deletes the currently selected (underlined) Speaker Set.

Down-Mixes

Add Down-Mix

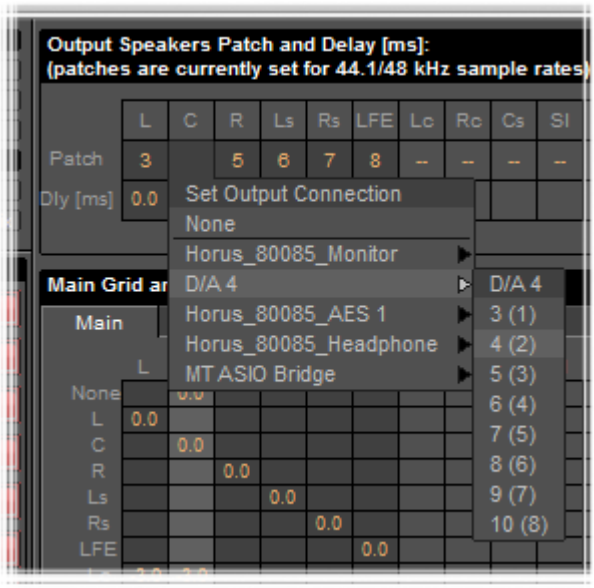
Creates a new Down-Mix associated with the currently selected Speaker Set with a new tab in the **Main Grid** and **Down-Mixes** section.

Remove Down-Mix

Deletes the current Down-Mix

Output Patch:

This is where the Monitor's Speaker Set outputs are patched to physical outputs.



Monitor Configure Output Patch

Clicking on a cell pops up the **Set Output Connection** menu with all available physical outputs grouped by their connectors. The sub-menus list the group and the individual channels. Select an individual channel to connect it or select the group, e.g. **D/A 4** to connect the whole group in ascending order from the cell clicked on.

> **Note:** Each Speaker Set has its own **Output Patch** associated with it. This is useful where different speakers are used for different formats. If there is only one set of speakers patch all Speaker Sets to the same physical outputs.

Double Assignment

When an output of the Mixer and an output of the Monitor are connected to the same physical output then these are summed and the Mixer displays the connection in orange as a warning.

Speaker Delays

Delay can be set per Speaker by clicking in the box below the Output Connection and typing in a value. Speaker delays are typically used to compensate for the physical positioning of the loudspeakers for example where the Left Centre and Right speakers are placed in a straight line, the Centre speaker will be nearer to the listening position and should be delayed accordingly.

Saving Speaker Sets

Mixer to Monitor connection status is saved in the project.

The Speaker Set settings are saved when you leave the page to go back to the **Monitor !** page; otherwise, modifications are not saved.

Media Manager and Library Monitoring

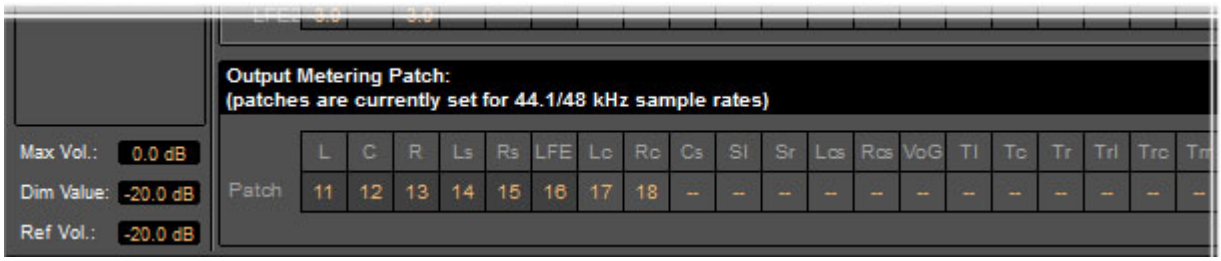
The Pyramix Monitor Panel is used to audition Cues in the Media Manager and Libraries.

Monitor Configure Media Manager

Note: The **None** channel type is used to monitor media which do not have a channel type set in metadata. In order to be able to audition such media in the **Media Manager** and **Libraries** the **L** and **R None** entries in the **Main Grid** matrix must be set to a value, e.g. **0.0**.If you plan to audition Surround material also set the **C** entry to a value e.g. **-3.0**.

External Metering

If you wish to use your favorite external hardware meters with Pyramix this can be achieved easily and conveniently.



Monitor Configure Output Metering Patch

Under the Main Grid of the **Monitor Configure** page an extra set of 32 patches is provided to configure external outputs specifically for metering.

Patches are made in exactly the same way as the Speaker **Output Patch**es. **Please see: Output Patch: on page 347**

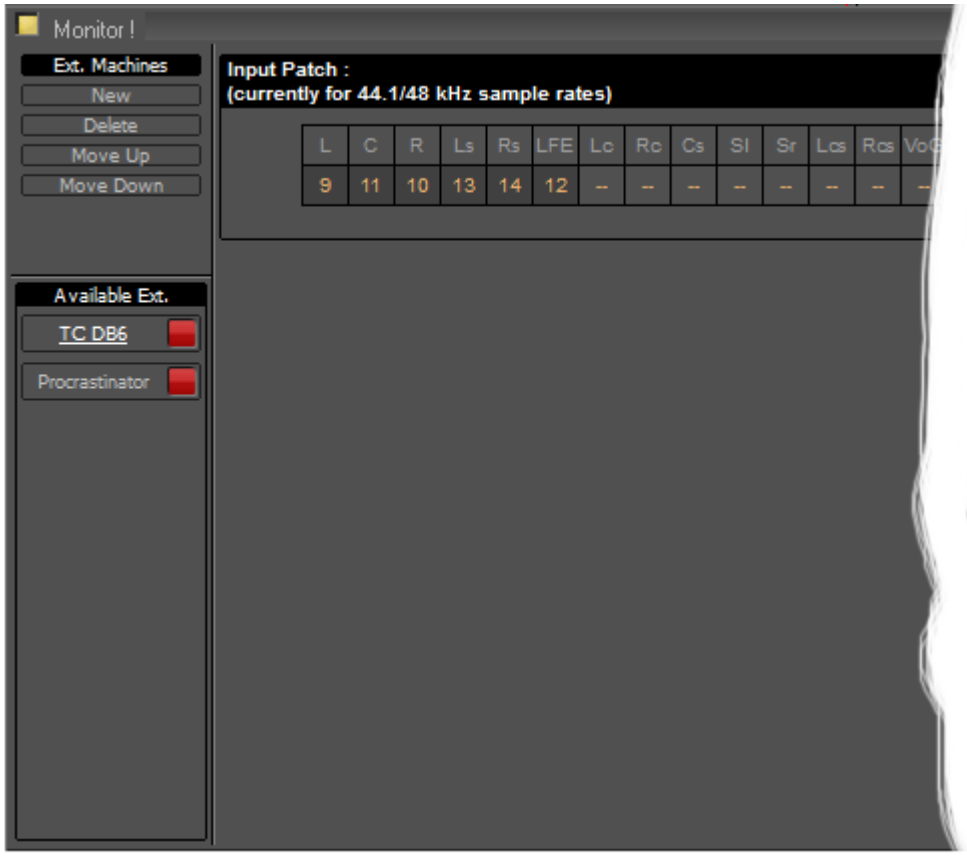
External Inputs

External devices may be added in the Monitor panel. This is useful for connecting monitoring returns from the Studio's fixed external audio devices such as recorders.

MassCore

Adding an External Machine

Up to 8 new externals can be added.



Monitor Externals page

Note: External machines will only be visible and available as monitor sources in the **Monitor !** page when the **Buses /Externals** button is set appropriately. **Please see: Buses / Externals button on page 340**

Each external has a dedicated input Patch. Patches are set up by clicking in the boxes below the speaker letters and choosing inputs from those available.

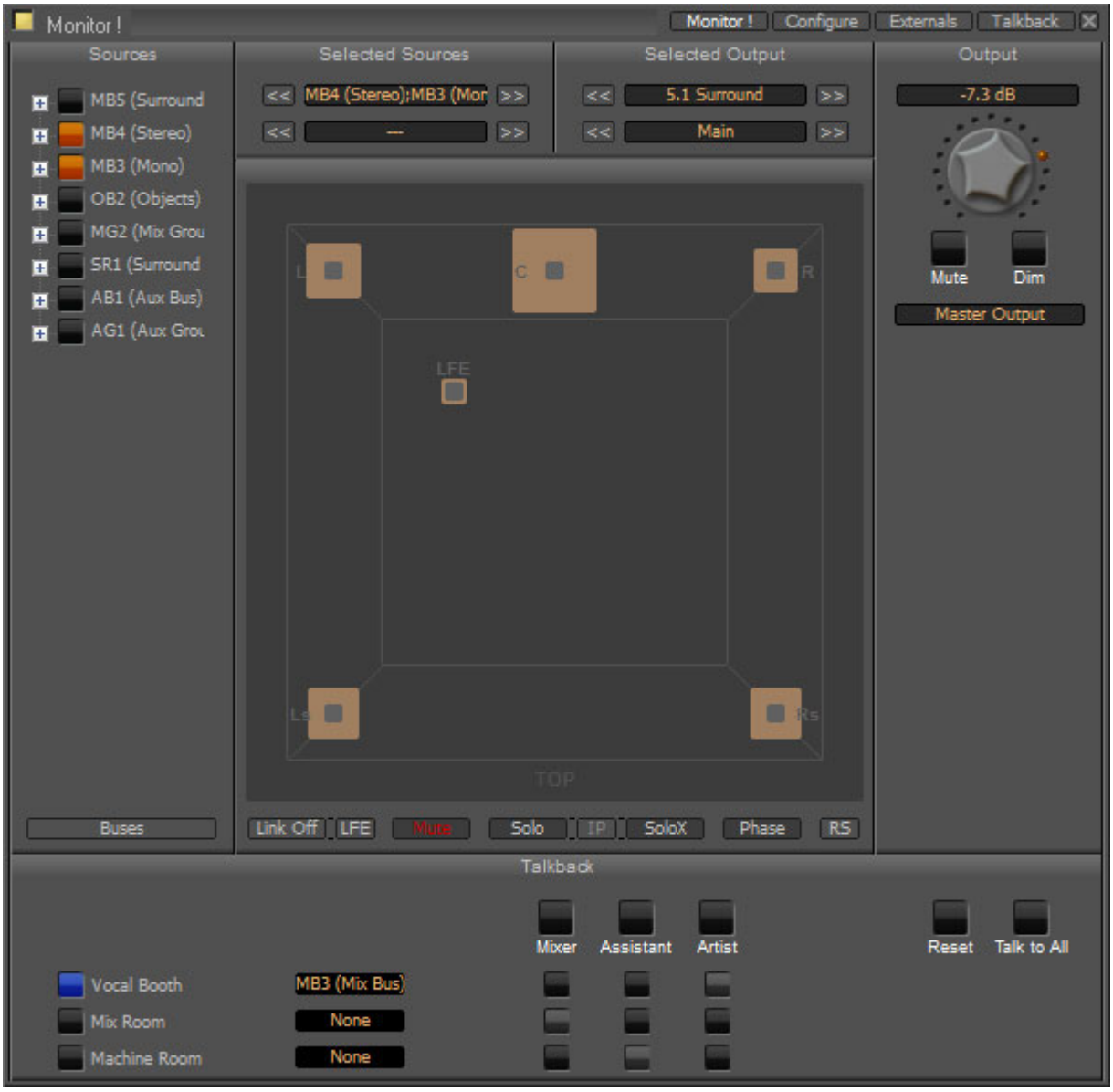
Talkback

Talkback facilities are provided in the **Monitor** section for studios without a separate talkback system.

These facilities are intended to be used with **GPI/O** external connections for physical talkback switches.

Please see: GPI / GPO Support on page 624 for information about setting up **GPI/Os**.

When **Talkback** is set up and active the **Talkback** section appears at the bottom of the main **Monitor !** page:

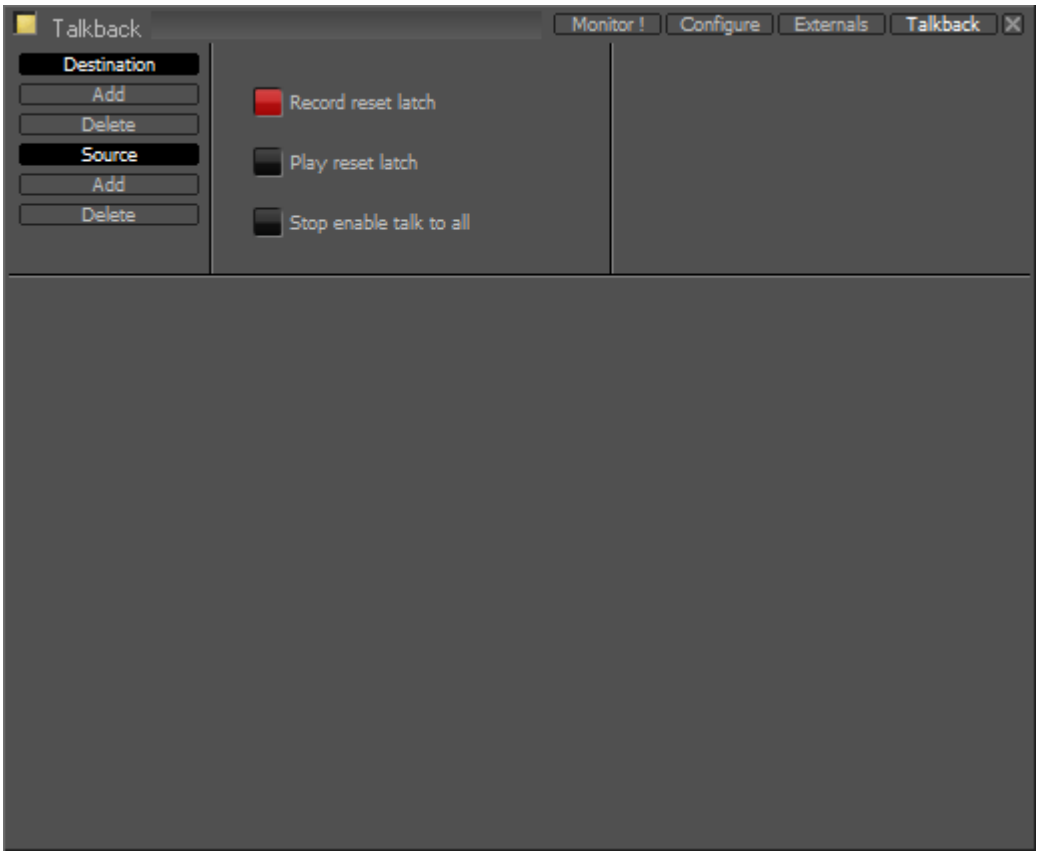


Monitor ! page with Talkback Section

Setting Up

Talkback Page

You can add up 8 Studios (Destinations) and 3 Talkbacks (Sources) in the **Talkback** page:



Monitor Talkback page

Destination

Add Adds a **Destination**

Delete Deletes the selected **Destination** or the remaining one when there is only one shown.

Source

Add Adds a **Source**

Delete Deletes the selected **Source** or the remaining one when there is only one shown.

Record reset latch

When lit red all active conversations are muted when the transport is in **Record**.

Play reset latch

When lit green all active conversations are muted when the transport is in **Play**

Stop enable talk to all

When lit yellow the **Talk To All** function is activated when the transport is in **Stop**.

Example

This is how you would set up talkback for a simple facility with a **Mix Room**, **Studio** and **Machine Room**.

- The **Mixer** will be able to speak to the **Vocal Booth** or the **Machine Room** independently.
- The **Assistant** will only be able to speak to the **Mix Room**.
- The **Vocal Booth** will only be able to speak to the **Mix Room**.

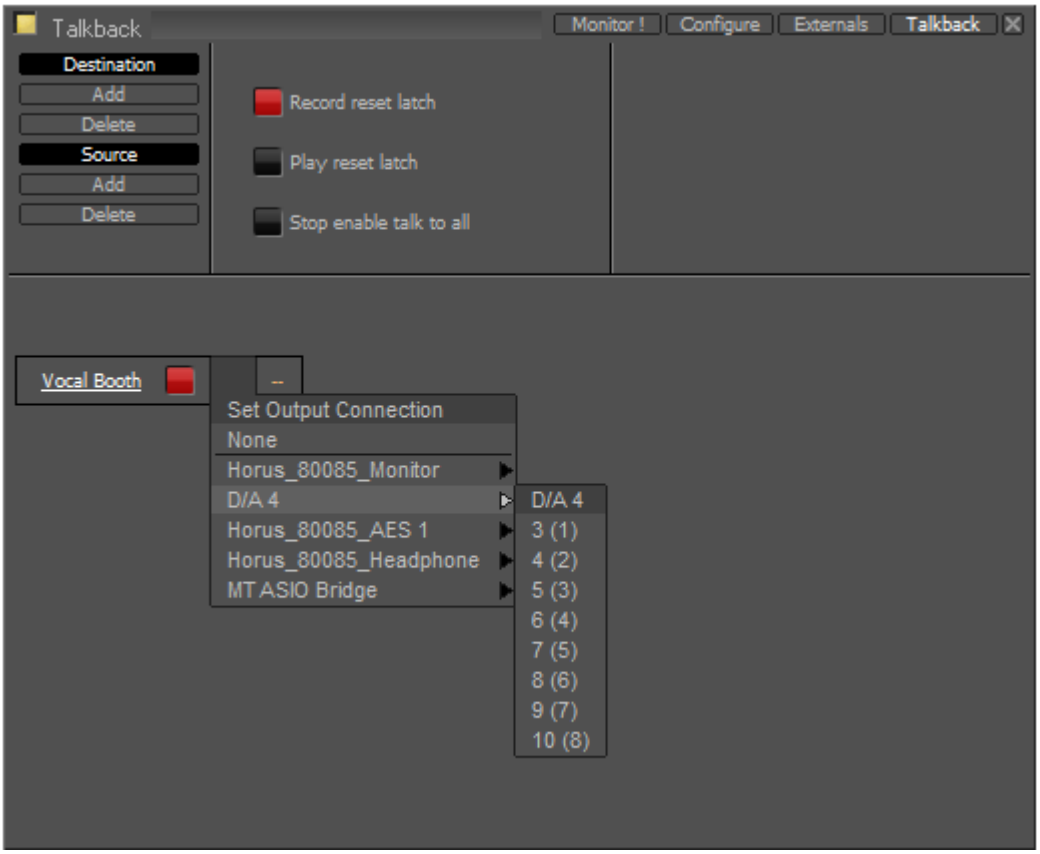
Note: If a separate 'Producer' Talkback unit is required this can be achieved with a simple parallel physical connection of buttons that both activate the **Mixer** to **Vocal Booth GPI**.

Setting Up

1. Click on **Studio Add**
   A **New Monitor Studio** box appears. Type a suitable name for the Studio, in this case, **Vocal Booth** and press the keyboard **Enter** key to confirm.
   The red button indicates that the destination is active.

   Note: The **Talkback** section will be shown at the bottom of the **Monitor !** page if any destinations are active in the **Talkback** page.

2. Notice the two boxes to the right of the name with orange dashes. Click on the left box to drop down the **Set Output Connection** menu:



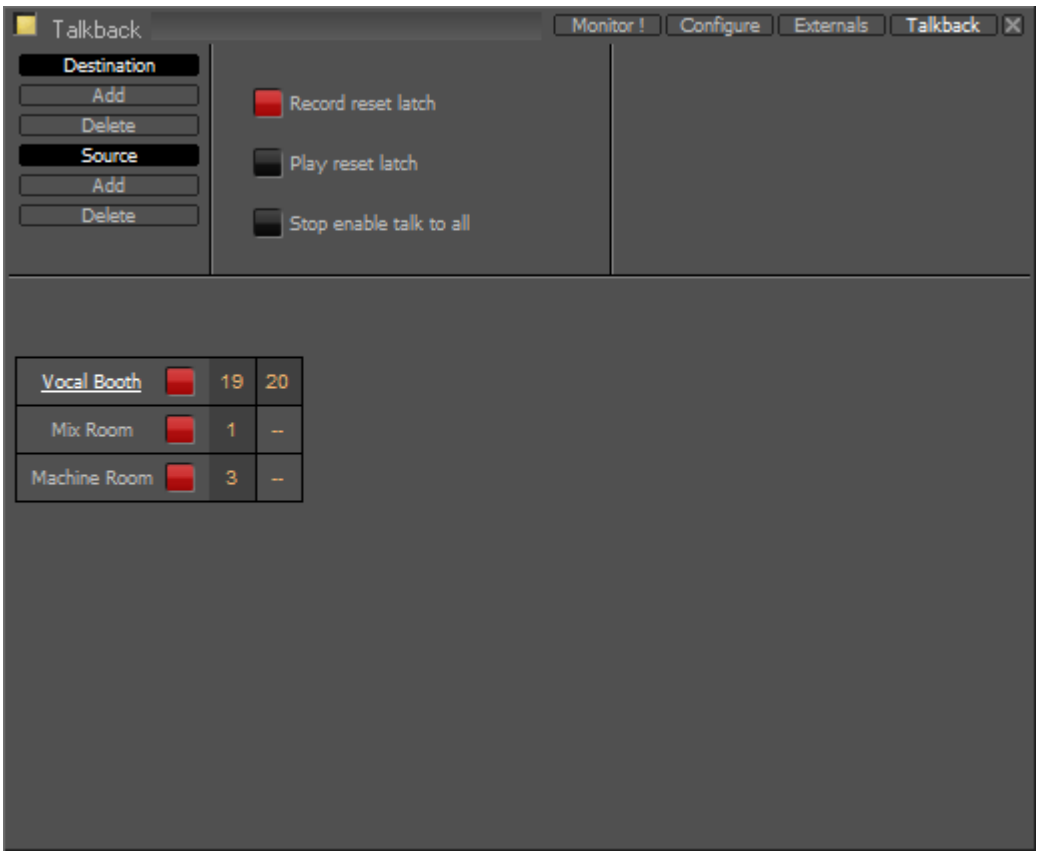
Monitor Talkback page Destination Output Connection

3. choose a suitable physical output to feed the Talkback amplifier/loudspeaker.

   Note: If you only have digital outputs then you will need a converter.

4. If you wish to have stereo talkback/foldback repeat steps 2&3 for the right-hand box. Here only the **Vocal Booth** is to be fed with Foldback so that is the only stereo destination.
5. Repeat steps 1 to 3 twice to add two more destinations.
6. Label these to suit, in this case, Mix Room and Machine Room.

You should now have something like this on screen:

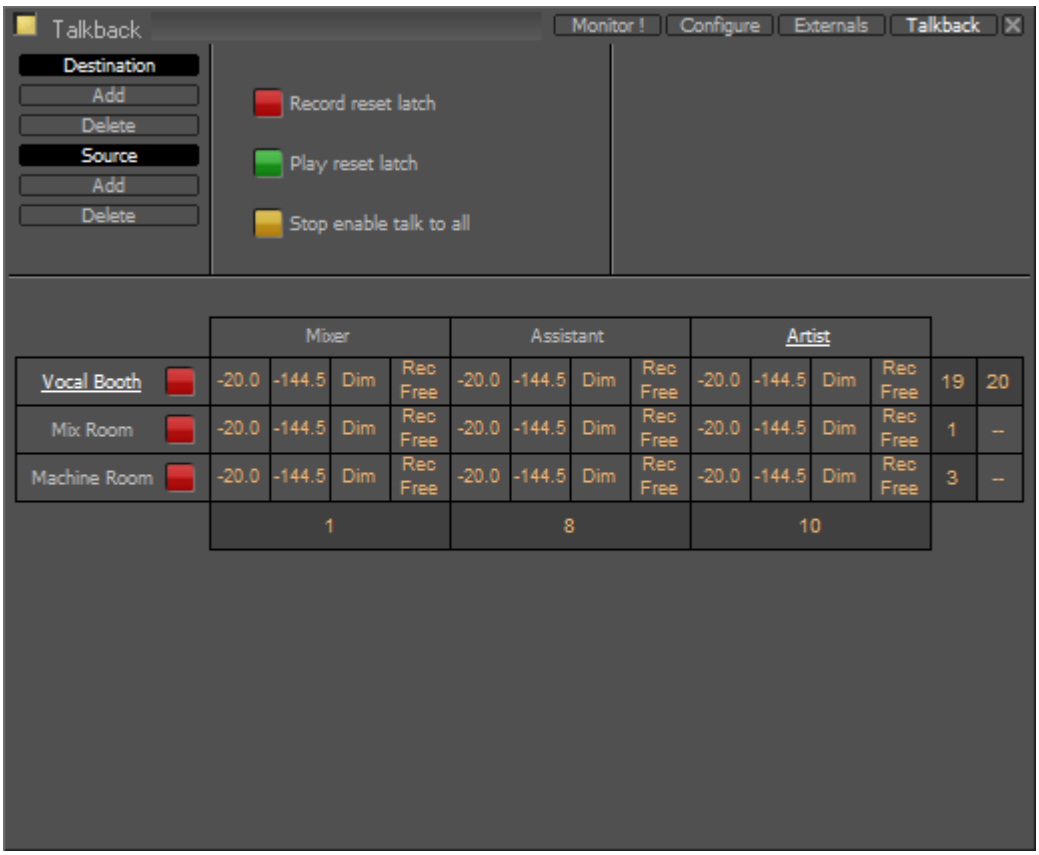


Monitor Talkback page with destinations

Note: Only the Vocal Booth has been set up as a stereo destination. If you want separate speaker and headphone feeds to the studio just add another destination and label it appropriately. E.g **Vocal Booth HP** for maximum control.

7. Now set up the sources by clicking on **Source Add**
8. A column appears with **New Talker** highlighted in a box. Type a suitable name for the source. In this case **Mixer**.

9. Add two more sources and label them **Assistant** and **Artist**



Monitor Talkback page with Sources and Destinations

10. Click on the boxes with the orange dashes at the bottom of each source column to open the **Set Input Connection** menu and choose a suitable input connection for each of the talkback microphones.

Note: If you only have line level analogue inputs you will need external mic pres and if you only have digital inputs then you will need converters as well.

11. Now the levels, **Dim** and **Mute** switching must be set.

- The boxes in the first column of each **Source** set the attenuation that will be applied to the **Destination** output when Talkback is activated from each source.
- The second column sets the send level per **Destination**. You can type **mute** or a numeric value in the box.

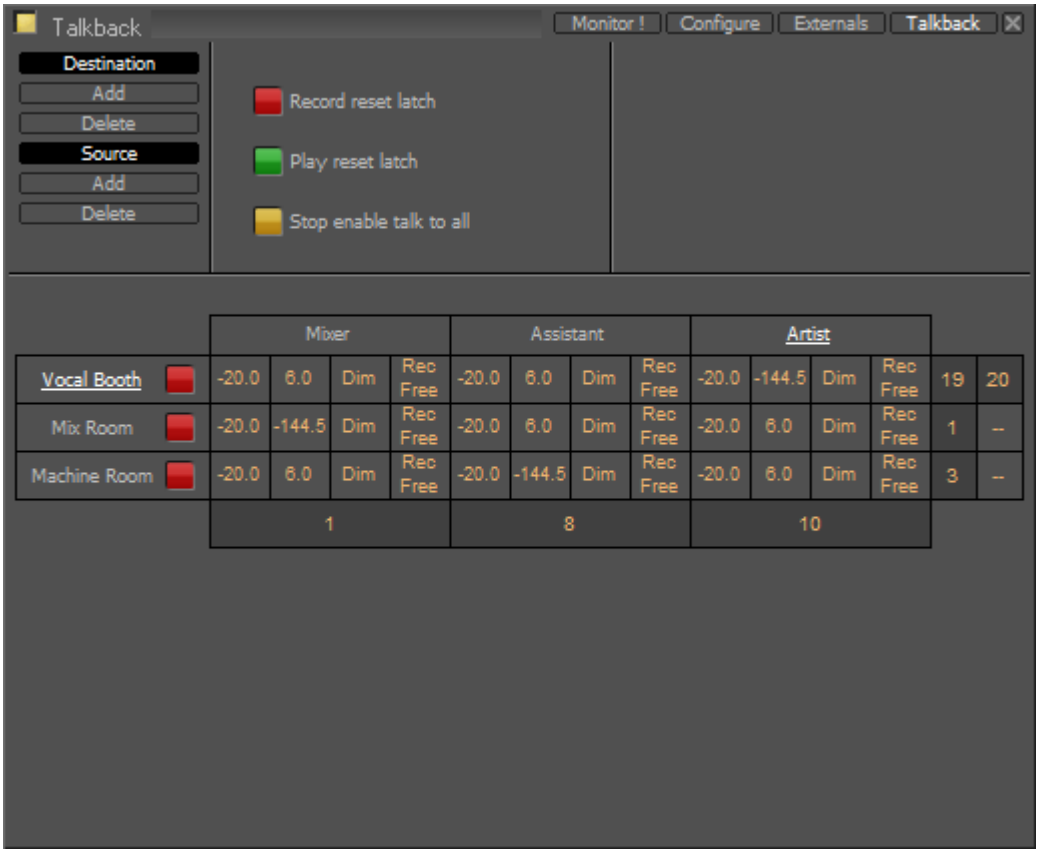
Note: If **mute** or **-144.5** is entered this **Destination** will be grayed out and unavailable in the **Talkback** section of the **Monitor** page. For example, it is illogical for the **Mixer Source** to talk to the **Mix Room Destination** and so on.

- The third column offers the choice of **Dim** or **None**. Selecting **Dim** means that when this crosspoint (**Source** to **Destination**) is activated by pressing the relevant **Talk** button, the **Main Monitor Output** will be dimmed.

Note: This is essential when, for example, the **Mix Room** talks to the **Vocal Booth** with the programme mic channel open to avoid howl-round and possible damage to loudspeakers and hearing.

- The fourth and final column offers a choice between **Rec Free** and **Rec Loc**.
  Rec Free means that talkback on this crosspoint can be initiated when the Transport is in Record and the **Record Reset Latch** is set.
  Rec Loc disables the crosspoint when the Transport is in Record and the **Record Reset Latch** is set.

So, bearing in mind who is going to be allowed to talk to whom and given that it is illogical to use talkback to talk to yourself, the levels should now look approximately like this:



Monitor Talkback page with Sources and Destinations and levels set

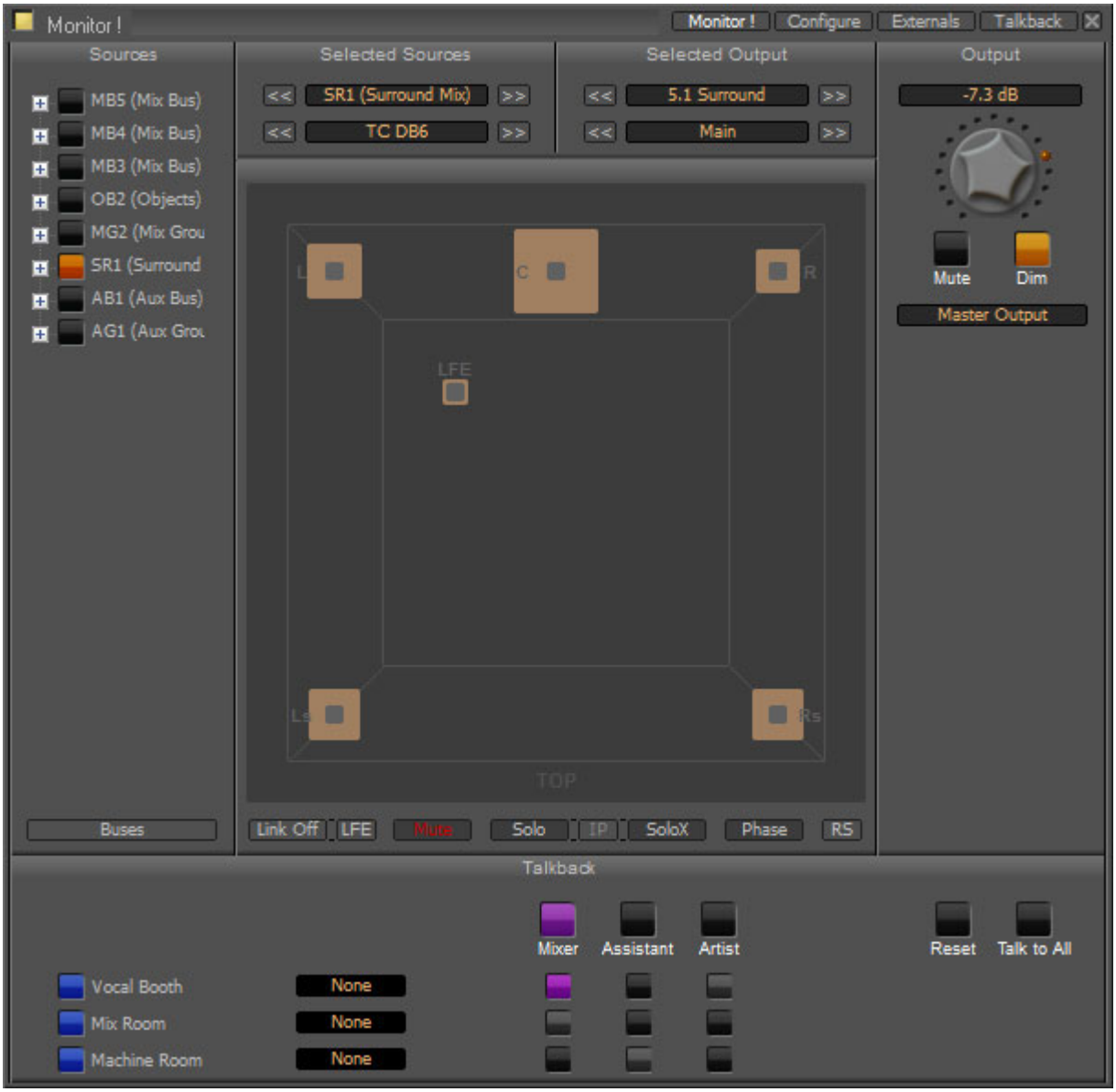
Returning to the **Monitor !** page you will see this in the **Talkback** section:

Monitor ! page Talkback Section

(If the buttons on the left are lit blue ignore them for now) The big buttons with the labels **Mixer**, **Assistant** and **Artist** are **Talk to All** destinations (In this case only relevant to **Mixer**)

Operation

The smaller buttons vertically below the bigger, labelled Source buttons initiate talkback from the horizontal sources to the vertical destinations. These are the buttons you are most likely to want to map to **GPIs**. For example in the following screenshot the **Mixer** is talking to the **Vocal Booth**:



Monitor Talkback page : Mixer talking to Vocal Booth

Note: Notice that, due to the settings made earlier, **Mixer** talking to **Vocal Booth** also **Dim**s the Main Monitor **Output**.

Talkback Button Operation

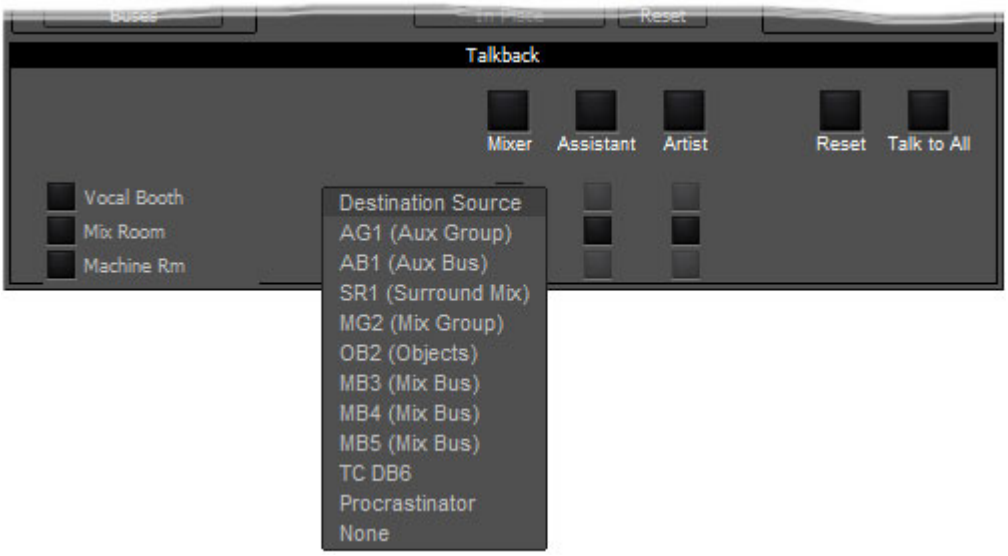
All the Talkback buttons are dual mode. A press of less than one second latches the Talkback open. A second press cancels. A press of more than one second initiates Talkback on press and cancels when the button is released.

Reset cancels all latched talkbacks.

Talk to All initiates open Talkback between all enabled **Sources** and **Destinations**

Foldback

Continuing the foregoing **Talkback** example it is also possible to add foldback to the Talkback outputs. To add Foldback to the **Vocal Booth** Talkback outputs click on the black box to the right of the **Vocal Booth** label to drop-down a list of available Foldback sources:

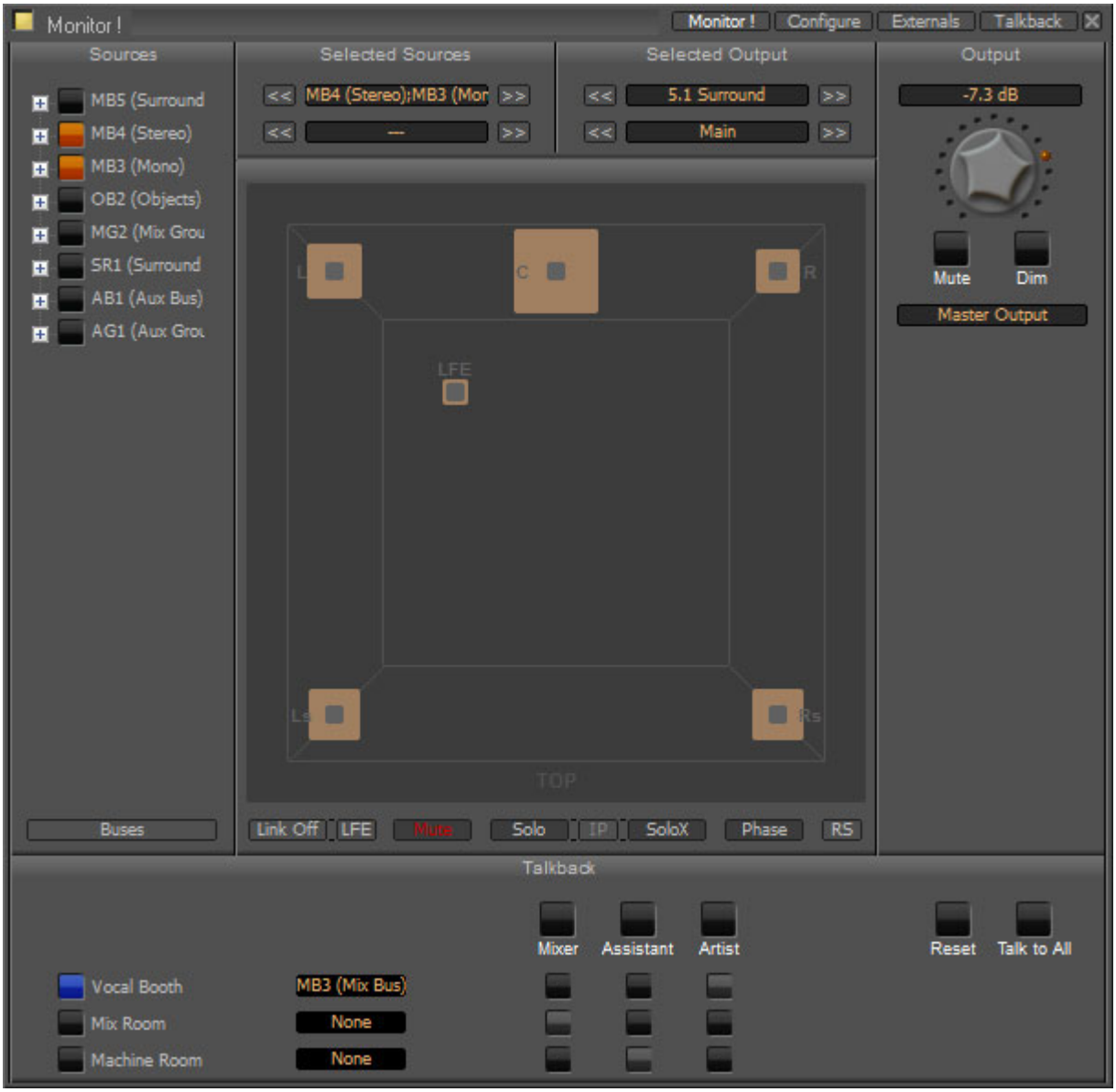


Monitor Talkback page : Select Foldback Source

Select the required **Foldback Studio Monitor Source**.

Note: You can add a bus in the mixer specifically to produce a mix for **Foldback**.

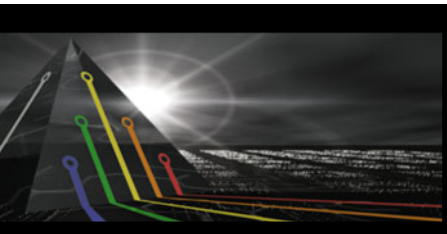
The buttons on the left of the **Vocal Booth** label etc. toggles the foldback on and off per destination:



Monitor Talkback page : Foldback to Vocal Booth Active

Here, the **Vocal Booth** is fed with **MB3 (Mix Bus)** output. The vocals are recorded clean on **MB1 (Mono Mix)** and, as can be seen above, the **Mixer Room** monitors are being fed with the sum of these buses.

12 Meter Bridge



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Meter Bridge

Scope

Pyramix has a dedicated **Meter Bridge** window.

The **Meter Bridge** can present a meter display for every Input strip and Bus present in the current Mixer and external Machine configured in the **Monitor : Externals** page.

The **Meter Bridge** also indicates the currently selected mixer strip with a yellow outline, any strips in Record Ready condition with a red outline, whether any strips are **Muted** or **Soloed** and optionally shows Ramses Groups and Fader **Automation** mode per strip.

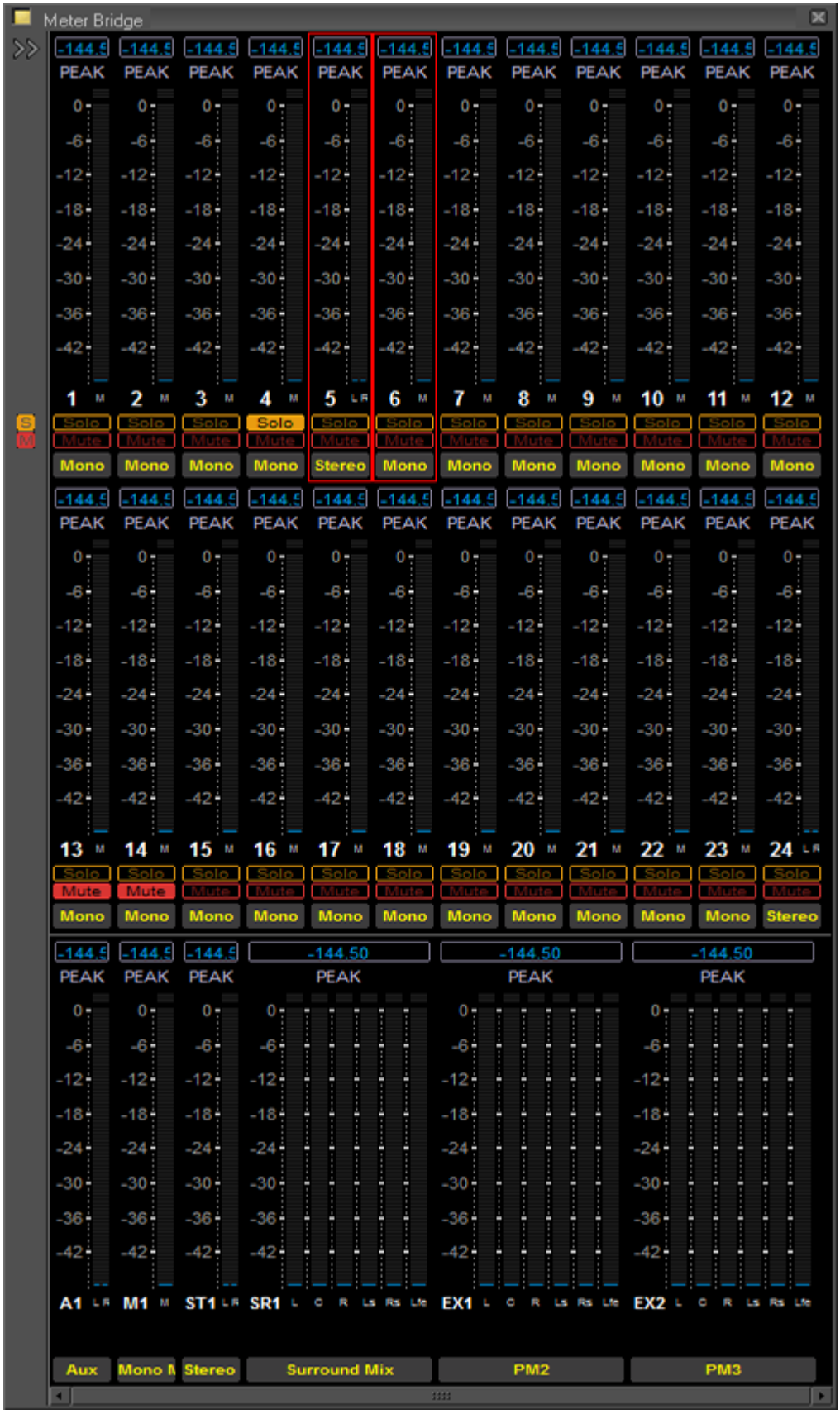
Meter ballistics and alignment are adjustable either manually or via presets.

You do not have to use the **Meter Bridge** but it offers flexible metering in one place. With complex Mixers and routing, the Meter Bridge can help to keep things logical.

Note: The **Meter Bridge** is displayed “Always On Top” of other windows.

Meter Bridge Window

By default the **Meter Bridge** window is hidden. It can be opened with **View > Meter Bridge** or the icon in the View Toolbar.



Meter Bridge Window - Triple Row Mode

Resize

The **Meter Bridge Window** can be resized by clicking and dragging the edges. (Mouse cursor changes to double arrow) Vertical resizing is limited to sensible display options. Scroll bars will appear when there is more information to display than the window can accomodate.There is a separate auto-hide scroll bar for the Input Strips so you can keep all the Buses and Externals visible together with a contiguous section of the Input Strips of a very large mixer. (This will appear when the mouse cursor is over the right-hand edge of the top two rows.)

Auto Size

Double-clicking the caption bar positions and resizes the meter window automatically to a third of the available screen height for a single row display, half screen height for a two row display and the full screen height for the three row display mode.

Global Mute and Solo Indicators

If any mixer strip is Muted or Soloed the global indicators in the left margin illuminate.

Note: Active Track Mutes and Solos are not shown in the Meter Bridge.

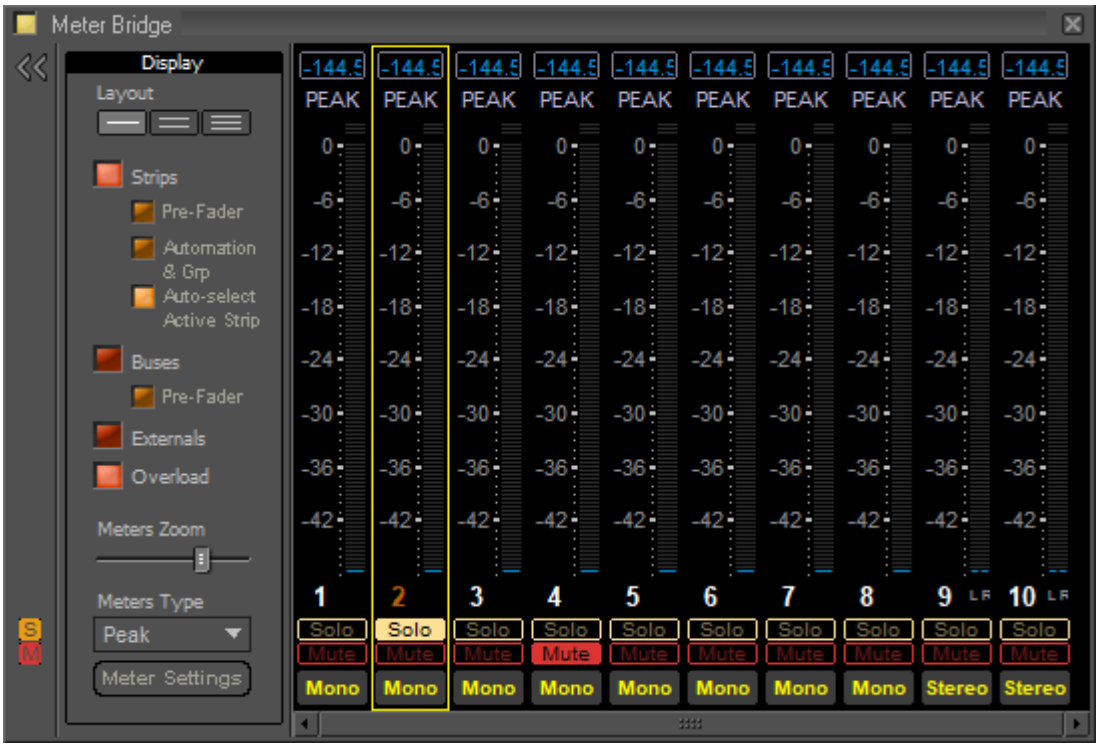
Selected Strip and Record Ready Status

When **Auto-select Active Strip** is switched on in the configuration section the currently selected strip is shown with a yellow outline.

Any strips currently in Record Ready mode are shown outlined in red.

Configuring the Meter Bridge

When first opened the **Mixer Bridge** appears as above. clicking on the double arrow **>>** below the Yellow Activate button opens the **Display** panel (a subsequent click on the **<<** arrows closes):



Meter Bridge Configuration : Display Section

Global Solo and Mute Indicators

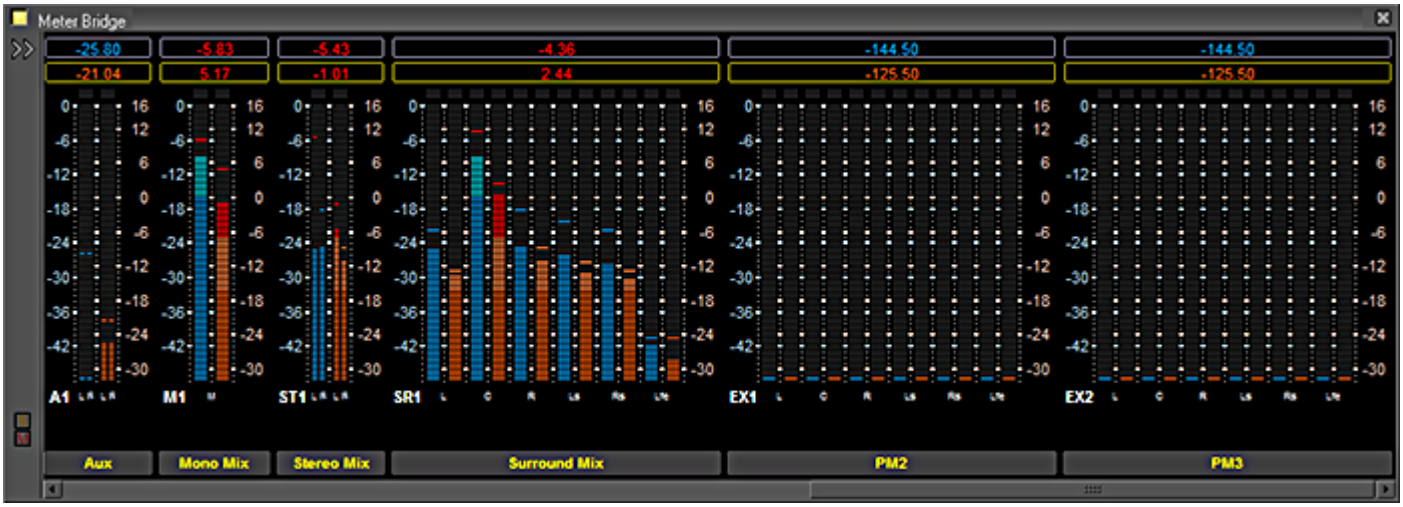
Two indicators in the left border show when a Solo or Mute is active.

Layout

The three buttons determine whether the meters are displayed as a single, double or triple row (default).

Single Row

Single row is useful if you only wish to display buses and or **Externals** (returns).



Meter Bridge - Single Row Mode

Strips

The red button shows/hides the Input Strip Meters (default is Show)

> **Note:** Show/Hide for Input Strips is only available in 'single row' display mode. Useful in applications where the Bus and External Machines are of more interest than the Inputs.

Pre-Fader

When lit, the Input Meters source is taken pre-fader. (default is post-fader)

Automation

When lit, four Fader Automation Mode indicators are shown in each Input Strip. (default is hidden)

Auto-select Active Strip

When lit, the active strip is highlighted in yellow

Buses

The red button shows/hides the Bus Strip Meters.

Externals

The red button shows/hides the External Machines Meters.

> **Note: Externals**, External machine Returns, are set up in the **Monitor : Externals** page.
> **Please see: External Inputs on page 349**

Overload

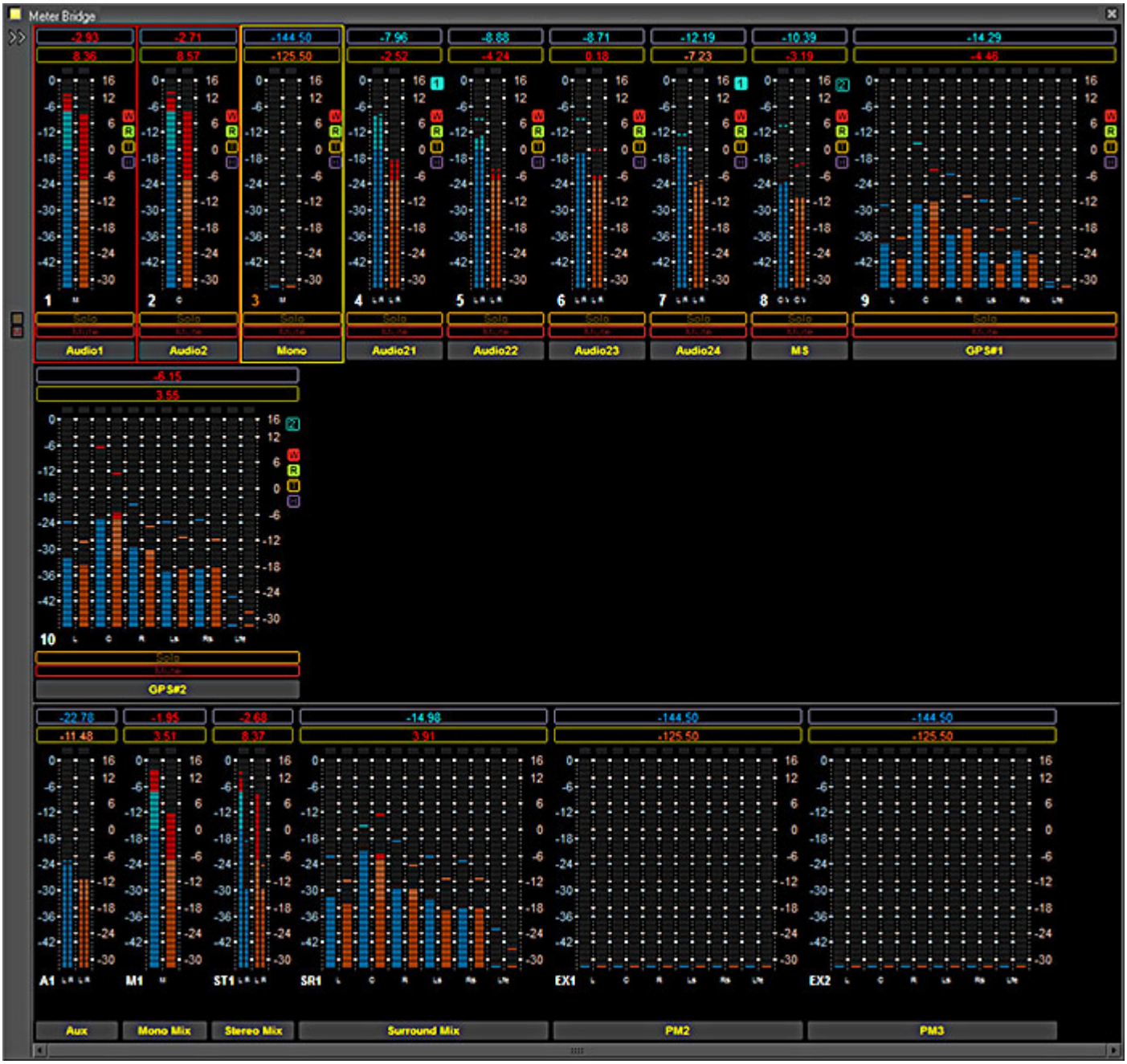
When lit red indicators show and latch at the top of each meter strip when an overload is encountered. Toggling the **Overload** button cancels or keyboard **p**.

Meters Zoom

The slider adjusts the meter scaling. Range is from 0dB to -144.5dB maximum to 0dB to -10dB minimum. Double-clicking on the slider 'knob' resets to default scaling.

Meters Type

The drop-down offers a choice between displaying **Peak** (default), **RMS** or **Peak + RMS** as seen here along with the **Automation Indicators**:



Meter Bridge - Triple Row Mode

Meter Settings

Clicking on the **Meter Settings** button opens the **MeterBridge Settings** window. This is divided into two tabs **Timing** and **Align.**ment.

MeterBridge Settings - Timing and Align. Tabs

Presets

A number of presets are provided in each tab. To apply a preset click on the desired preset in the list. A * will appear in the top left-hand corner of the selected preset. Click on the **Apply** button to apply the preset and close the window. Alternatively click on **Cancel** to retain the existing settings and close the window.

Timing Tab

The **Timing** tab offers a number of **Presets** on the left of the window and individual parameter control sliders on the right.

Peak Integration = 20 ms	**1ms** to **100 ms**
RMS Integration = 60 ms	**20 ms** to **300 ms**
Peak Release = 16 dB/s	**1 dB** to **50 dB**
RMS Release = 6 dB/s	**1 dB** to **50 dB**
Max Level Hold Time = 2.0 s	**0.1 s** to **10 s**

Align. Tab

RMS Ref = -18dBFs	**-32 dBFs** to **0 dBFs**
Peak Color A Alignment = -18 dB	**-48 dB** to **-10 dB**
Peak Color B Alignment = -9 dB	**-17 dB** to **-48 dB**
RMS Color A Alignment = 0 dB	**-48 dB** to **8 dB**
RMS Color B Alignment = 9 dB	**1 dB** to **48 dB**

Note: The **Peak Integration** setting determines the range of settings available to the **RMS Integration** slider. This is because the RMS integration time is a simple multiple of the peak integration time. Hence, a 1ms integration time for peak offers the best resolution for RMS integration. The **A** and **B** color change alignment sliders' ranges are interactive. The **A** setting determines the level at which the first color change occurs and the **B** setting determines the level at which the second color change occurs.

Automation Fader Mode and Group Indicators

Ramses Group

Member of Group

Member of selected Strip's Group

This indicator shows that the associated strip is a member of a Ramses MSC control Group. When in inverse video (filled in) it also indicates that the associated strip is a member of the currently selected strip's Group.

> **Note:** These Ramses MSC Control Groups are currently completely independent of the Pyramix grouping arrangements.

Automation Fader Mode

Write

Read

Trim

Hold

In the default, **Auto-Write**, mode only the **Write** and **Read** indicators are lit together.

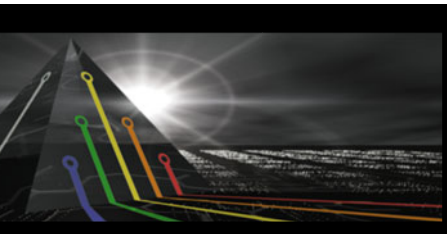
As soon as a fader is touched with the transport in play the **Read** indicator extinguishes leaving only the red **Write** indicator lit.

If an Automation **Trim** mode is selected the yellow **Trim** indicator will also be lit.

Similarly, if a **Hold** mode is selected the purple **Hold** indicator will be lit.

Thus, in the **Meter Bridge** screenshot above, the automation is in **Auto-Write** plus **Trim & Hold** modes.

13 Effects and Plug-Ins



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Effects and Plug-ins

This chapter describes individual effects and their components as they are applied in the Pyramix Mixer. There is also a section on the **FX rendering** Tab Window.

For rendered effects **please see : Effects Rack on page 483, ReNOVAtor on page 412 and Prosoniq MPEX 4 on page 486**

Adding and Managing Effects

Please see: Effect Management on page 252 and **Native VS3 Effects and VST Plug-Ins on page 241**

Note: If a Plug-in is unregistered then **(unregistered)** will be appended to the name in the list. For more detailed information about registration status open the **VS3 Plug-ins Information** window.

VS3 Plug-In Support

VS3 Plug-ins are Pyramix native. A wide selection is available both from Merging Technologies and from third-party authors. VS3 Plug-ins operate over a maximum of 8 channels per iteration. If you wish to affect more than 8 channels, e.g. in a multichannel bus with n channels then it is necessary to use more than one iteration of the plug-in and route each accordingly.

VS3 Plug-ins Maximum Sampling Rate

Most VS3 Plug-ins work in DXD Projects without conversion. The following table shows which plug-ins work directly and which convert:

VS3 Plug-ins Maximum Sampling Rate

VS3 Plug-ins	Max Sampling Rate
10 Band EQ	96kHz
Algorithmix Plug-ins	DXD/384kHz
Angudion I & II	DXD/384kHz
Aphro	DXD/384kHz
Bus Tools & Strip Tools	DXD/384kHz
Cedar VS3 Renderer*	DXD/384kHz
DC Meter	DXD/384kHz
Delay	DXD/384kHz
Dynamics	DXD/384kHz
EqX	DXD/384kHz
Flanger	DXD/384kHz
Flux Plug-ins	DXD/384kHz
Generator	DXD/384kHz
Modulometer	DXD/384kHz
MS Encoder	DXD/384kHz
Parametric Equalizer	DXD/384kHz
Phase-Oscillo	DXD/384kHz
Surround Meter	DXD/384kHz
Tone	48kHz
VB Plug-ins	See table below
VU Meter	DXD/384kHz
Wordlength Meter	DXD/384kHz

High Track count above 4FS can cause performance issues.

VB Plugins

VB plugins have a standalone installer. To install, download and run the VB Plugins - VS3 installer AFTER installing Pyramix.

https://confluence.merging.com/display/PUBLICDOC/VB+Plugins+%28VS3%29+standalone+installer

Note: The VB Plugins are NOT removed when Pyramix is uninstalled. To remove them use the Windows Control Panel.

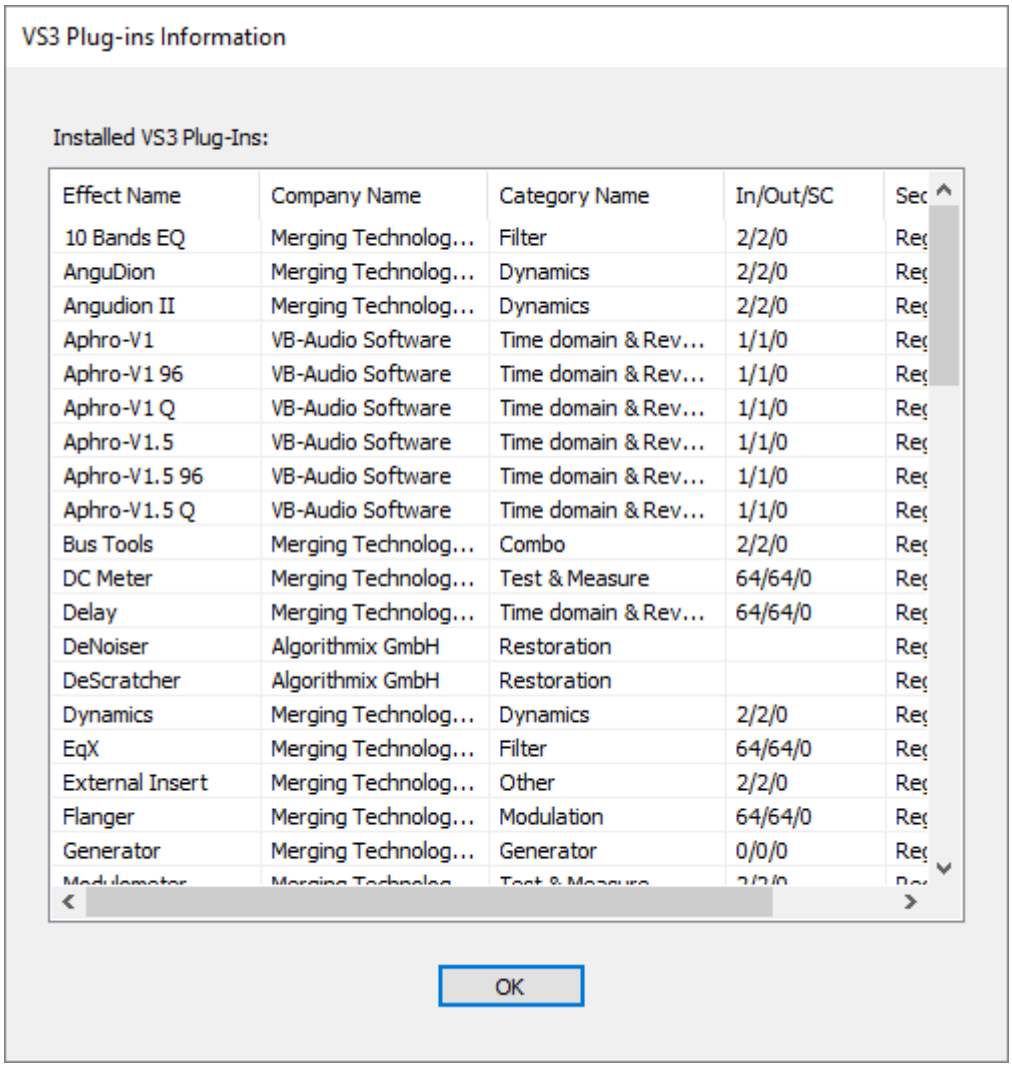
VB VS3 Plug-ins Maximum Sampling Rates

VB - VS3 Plug-ins	Max Sampling Rate
VB EQ Notch/Pro (EQ-Pro Pack)	DXD/384kHz
VB Tone-4	96kHz
VB Tone Parametric/Shelf	DXD/384kHz
VB Tone Param/Shelf FS2	192kHz
VB Compressor (Blue/Red) (Compressors Pack)	DXD/384kHz
VB Strip Tools (1-2-3) (Striptool Series Pack)	DXD/384kHz
VB Frequency Analyzer (Measure Pack)	DXD/384kHz
VB VU Meter (Measure Pack)	DXD/384kHz
VB Multi Tap delay (Special Fx Pack)	DXD/384kHz
VB Chorus (Special Fx Pack)	DXD/384kHz
VB Stereoman (Stereo Management Pack)	DXD/384kHz
VB MonoSwitcher (Stereo Management Pack)	DXD/384kHz
VB C10 DXD/384 Khz (C10-Multiband Compressor pack)	DXD/384kHz
VB C10/D10 (C10-Multiband Compressor pack)	96kHz

Viewing Plug-in Information

VS3 Plug-Ins Information

The Mixer right-click context menu has an option to pop-up the **VS3 Plug-Ins Information Window**T

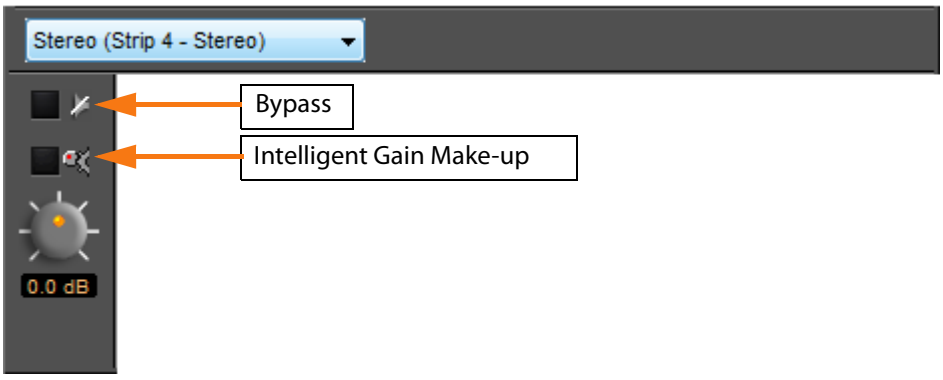


VS3 - Plug-Ins Information Window

This window shows all effects currently present on the machine. Fields show the **Effect Name**, the manufacturer/developer **Company Name**, the **Category Name** and **Security Status**. I.e. if the plug-in is currently authorized.

Common Components

Several of the following Pyramix Effects share common components.



Channel Combo Box

Shows which channel has the plug-in that the window is currently controlling. Clicking the arrow drops down a list of all channels that have this plug-in assigned to them. Click on a name to selected a channel from the list. The control values will change to reflect the current state of the plug-in on the selected channel. This feature enables all instances of a particular plug-in to be controlled from the same interface window without opening duplicate windows for each channel.

Bypass Switch

The On/Off (bypass) switch when lit red the effect is bypassed but remains "in circuit". Well behaved effects will maintain their internal parameters in this state so that they can be switched back in without artefacts.

Bypass all Effects

Clicking on a bypass button with **Shift** bypasses all effects in the strip.

Auto Gain Compensation

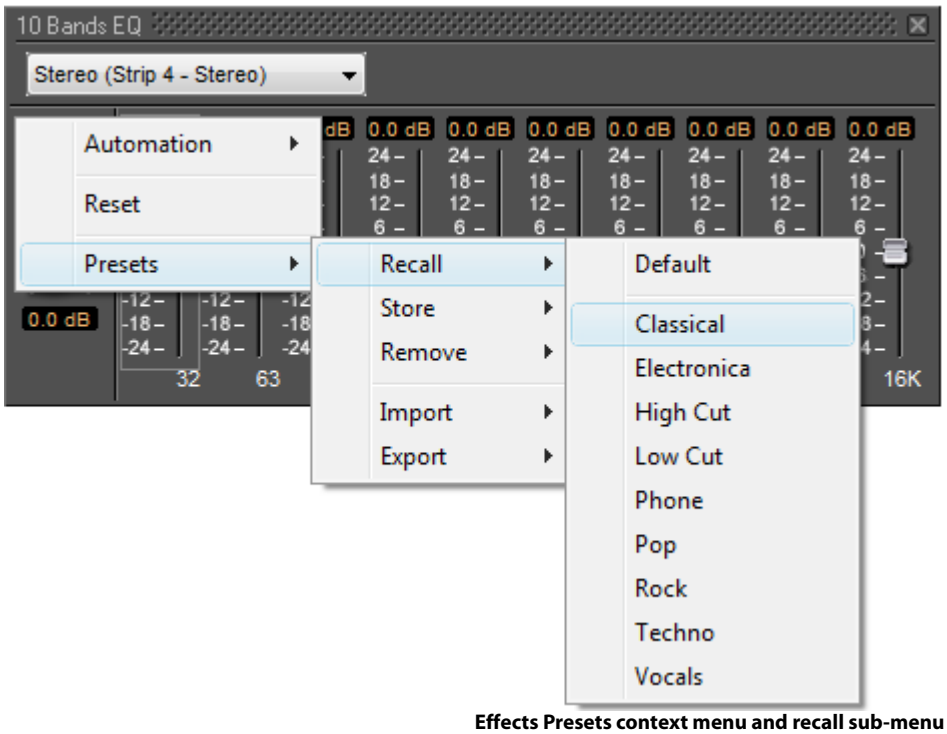
(Only where relevant) When this switch is lit **Auto Gain Compensation** is in circuit. The function is intended to keep the output level of the plug-in approximately equal to the input level. The computed value varies as the plug-in controls are adjusted and can be further adjusted using the knob.

Output Gain

Manually adjusts the gain applied at the output of the plug-in. The value is shown in dB.

Effects Presets

Right-clicking in the Plug-in window pops-up a contextual menu which enables the plug-in to be **Reset** to its default values. **Presets** can be **Recall**ed, **Store**d or **Remove**d and **Import**ed or **Export**ed to and from libraries.



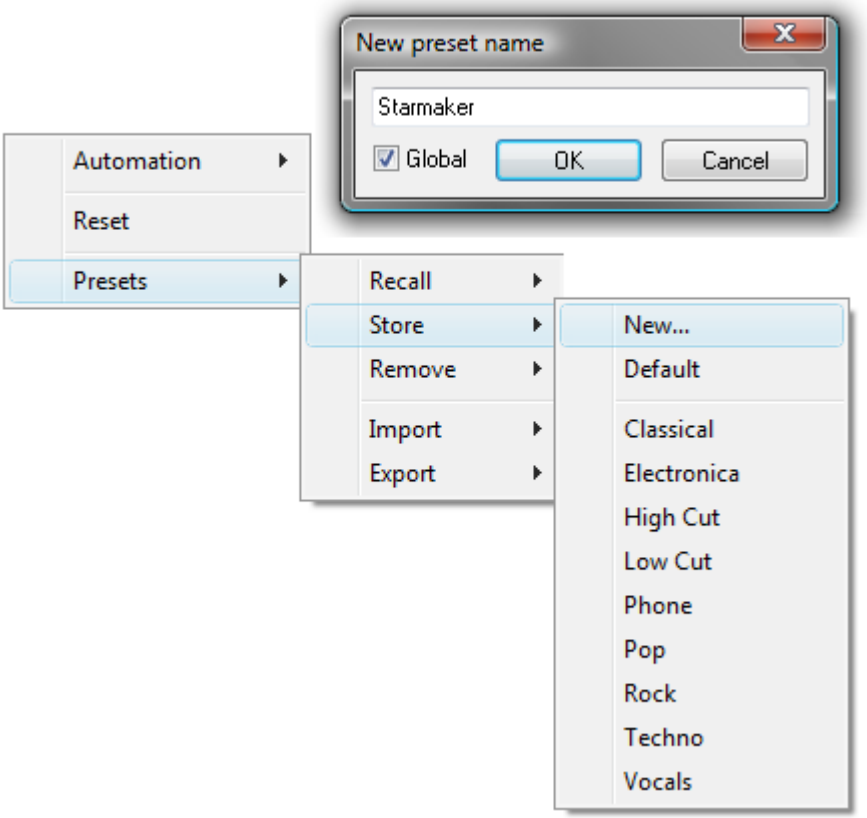
Effects Presets context menu and recall sub-menu

Choosing Presets

Click on the desired preset from the list. The plug-in's parameters will be set to the values stored in the preset.

Storing Presets

Creating a new preset stores a snapshot of the current values. **Store > New** opens the **New Preset Name** dialog box.



Effects Presets context

If the **Global** box is checked, the Preset will be available in all future Projects.

Default

Choosing **Presets > Store > Default** makes the current parameters the default. These can be from new values or a previously recalled Preset

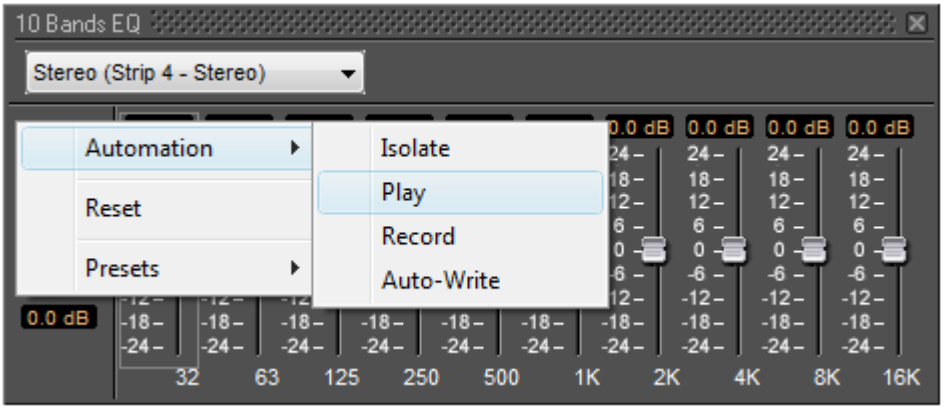
Modifying an Existing Plug-in Preset

To modify or update an existing preset, set the effect's parameters to the desired new settings. Right-click and select **Presets > Store** then choose the Preset name in the list to update or modify. A **Store preset** dialogue box will appear asking if you wish to replace the chosen Preset. Click **OK** to accept or **Cancel** to reject. The new settings will overwrite the previous preset parameter settings.

Deleting Presets

To delete the current preset, right click in the effects window. Then choose **Presets > Remove** then choose the preset you wish to remove.

Effects Automation



Right-clicking over the effect controls gives access to **Automation** mode selection for the plug-in. VS3 Plug-in automation works in the same way as the Mixer automation.

Please see Automation on page 428

Parametric EQ

Parametric EQ floating Window

The Parametric Equalizer is a four band fully parametric EQ with independent control of boost and cut, frequency, and bandwidth (Q factor) for each band. The common controls at the top of the window behaves as outlined earlier. The equalizer can be operated using the rotary controls at the bottom (shown or hidden by the knob and arrow icon on the left), by directly entering numerical parameters in the boxes below the knobs or by clicking and dragging on one of the four colored nodes. Left-clicking enables level and frequency to be adjusted, right-clicking then dragging left or right allows adjustment of Q.

All bands are full range. Boost and cut of up to 24dB is available. Q can be set anywhere from 0.2 (wide) to 20 (narrow).

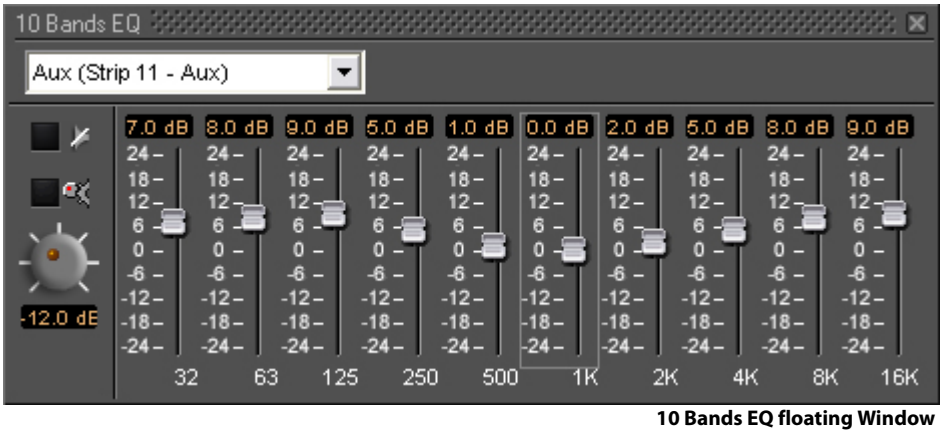
This button shows or hides the rotary controls.

Peaking / Shelving When lit, the lowest (red) band is switched to shelving response. In this mode the Q control for the band is unavailable.

Peaking Shelving When lit, is switched to shelving response. In this mode the Q control is for the band unavailable.

10 Bands EQ

This ten band graphic equalizer offers +/-24dB of boost or cut in any or all of ten bands, one band per octave, ranging from 32Hz to 16kHz. Double-clicking on a slider knob restores it to zero.

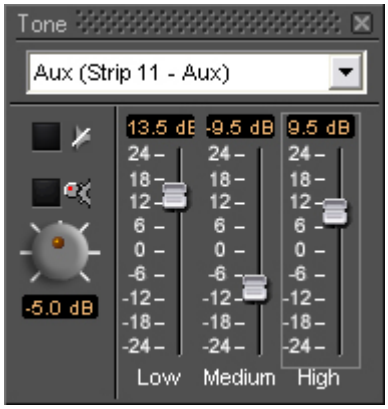


10 Bands EQ floating Window

Note: 10 Bands EQ is limited to a maximum of 2FS I.e. 96kHz.

Three Band Tone Control

A simple three band equalizer which offers a boost or cut of +/- 24dB in any or all of three bands.



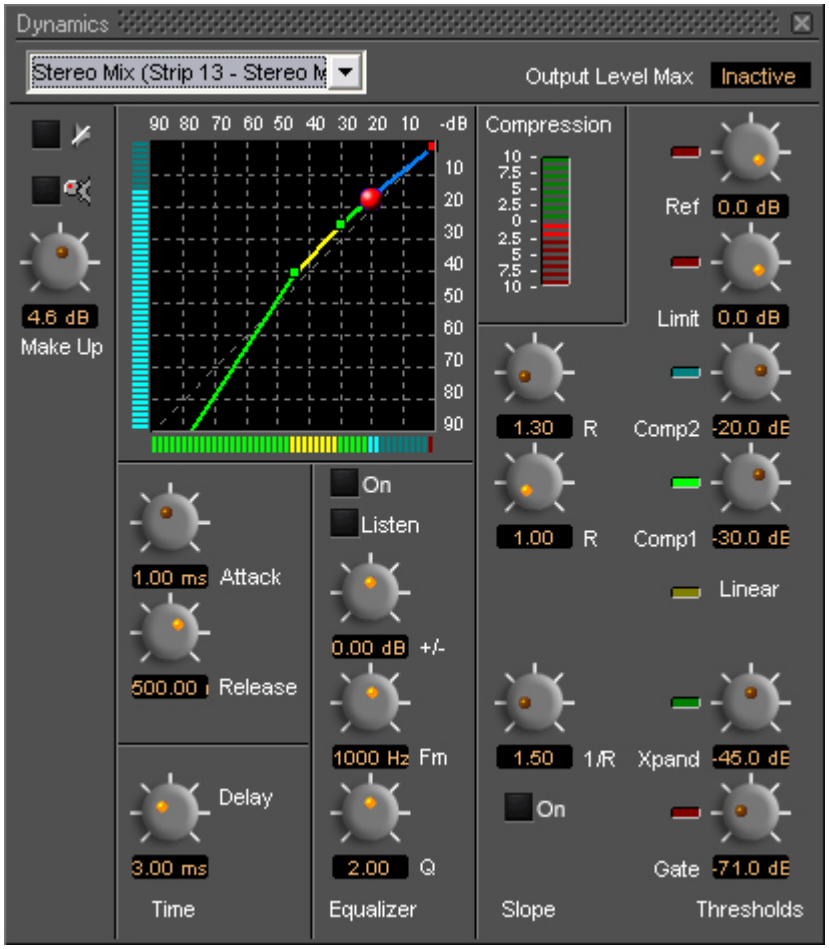
Tone Control floating Window

The Low LPF is a shelving EQ with a slope of 6dB/Octave and a turnover frequency of 100 Hz, the Medium BPF has a Q (bandwidth) of 0.8 with a center frequency of 2 kHz, and the High HPF is a shelving EQ with a slope of 6dB/Octave and a turnover frequency of 8 kHz.

Note: Three Band Tone Control is limited to a maximum of 1FS I.e. 48kHz.

Dynamics Processing

A comprehensive dynamics processing module. Functions available include one gate, one expander, two compressors, one limiter, and a de-esser. The operation of each of these effects is interrelated in this comprehensive dynamics processor, and the user interface shows the operative dynamic range where each process takes effect.



Dynamics floating Window

Output Level Max

This box shows Inactive when auto-gain compensation is on.

Thresholds

Threshold controls set the level above or below which the plug-in will affect the dynamics of the input signal. All the threshold settings are on the right of the window. From the bottom up, Gate, Expander, Compressor 1, Compressor 2, Limiter, and Input Reference Level.

Reference Level

Sets the input level reference. E.g, setting the reference level to -20 would mean an input level of -20dB is considered to be the equivalent of unity gain for purpose of calculating the input threshold levels for all dynamics processes except limiting. The reference level value is variable between 0dB (unity gain) to -30dB.

Limit

Sets the limit threshold (and ceiling).

Ratios / Slope

Limit and Gate have fixed ratios, tending to infinity. Ratio settings for the Expander and Compressors are to the left of their respective Threshold controls.

Compression Bar Graph Meter

The Compression bar graph indicator, above the ratio controls, shows the amount of overall gain reduction or increase applied to the input signal. No change is in the middle of the scale. Green 'leds' above the middle indicate gain increase, red 'leds' below indicate gain reduction. The display range of the indicator can be toggled between +/-10dB, +/- 20dB, and +/-40dB by clicking on it.

Time

The speed at which the dynamics processor responds when signals go above or below any of the threshold settings are in this section. Careful setting of these parameters make dynamics processing more subtle and less obtrusive.

Delay

Allows the main program signal to be delayed by 0.01ms to 10ms. Allows 'brick-wall' limiting since the processor has time to respond to fast transients.

Attack

Attack Time sets the response speed of the processor when a threshold level is reached within the range of .01 milliseconds to 600 milliseconds.

Release

Release Time sets the rate at which applied gain change returns to unity after the threshold is no longer exceeded. Range is 5 milliseconds to 5 seconds.

Equalizer

The equalizer is in the side-chain. I.e. it affects the key signal which triggers the effect of the dynamics processor, but does not alter the tonal balance of the main signal. This enables the response of the processor to be made more sensitive to certain frequencies than others. This is typically used to produce a de-essing effect, used to control excessive sibilance. E.g. boosting frequencies 3kHz to 8kHz range so that a compressor acts when the signal has components in this range thus reducing signal level and making the sibilance less obtrusive.

Q

Sets the bandwidth of the eq.

Frequency

Sets the equalizer center frequency in the range 20Hz to 20kHz. 24dB of **Boost/Cut** are available. The **Test** button toggles the output of the EQ between side and program chains. When **On,** the output of the EQ is heard. This can be useful when identifying sibilance etc. **On/Off** toggles the equalizer on and off in the side chain. When **Off**, the program material triggers the processor. When **On**, the signal is in effect, split. The portion sent via the equalizer is used to trigger or 'key' the operation of the dynamics processor on the normal program material.

X/Y Dynamics Response Display

This shows the threshold and ratio settings for the gate, expander, compressor 1, compressor 2, and limiter processes, and the Dynamics Processor's reference level. These are shown as a series of colored lines with control handles on a grid representing input level in dB below unity gain (0dB) on the horizontal axis, and output gain in dB below unity gain (0dB) on the vertical axis.

The legend for this display is as follows:

Process	Line Color	Handle Color	Line Slope Function	Handle Function
Gate	Red	***	Gate on/off	***
Expander	Green	Red	Expander Ratio	Gate Threshold, Expander Ratio
Linear	Yellow	Green	Linear response between Expander and Compress 1	Expander Threshold
Compressor 1	Green	Green	Compressor 1 Ratio	Compressor 1 Thresh-old
Compressor 2	Blue-Gray	Blue	Compressor 2 Ratio	Compressor 2 Thresh-old, Compressor 1 ratio
Limiter	Red	Red	Shows Limit	Limiter Threshold, Compressor 2 Ratio
Reference		Red	***	Limiter Threshold

Adjusting Dynamics Parameters

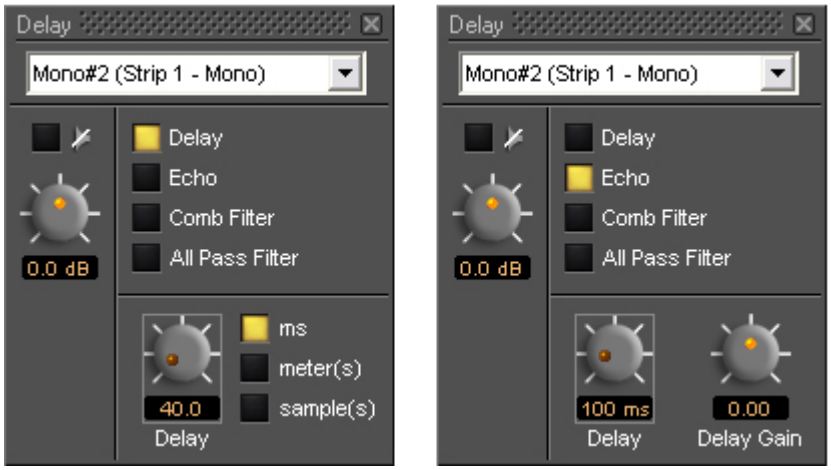
Parameters can be altered by clicking and dragging on the control knobs or by clicking and dragging the control handles in the graphic display. Handle controls are affected by other parameter settings. In some instances dragging a handle will change more than one parameter.

Dancing Star Real-time Response Indicator

A red "dancing star" inside the graphic display gives a useful indication of how the processor is affecting program material. It shows the output level in real-time when signal is present at the inputs.

Delay

The delay Plug-in provides four delay-based effects. 'Plain-vanilla' **Delay**, **Echo**, **Comb Filter** and **All Pass Filter**. The interface is slightly different when **Delay** is selected.



Delay floating Windows

uses a straight-through signal path at unity gain with no direct (un-delayed) signal present at the output. The length of delay can be set in milliseconds, meters or samples. The range of delay available is 0 to 800 ms. Delay time can be set with the knob, or by typing in the desired delay amount in the text box.

Echo

Echo adds a set amount of delay to the signal passing through it and then mixes this delayed signal with the direct audio source signal. The delayed signal is always at unity gain. The level of the direct signal relative to the delayed signal is set by the **Delay Gain** control as a factor between 0 (full attenuation of the direct signal), 1 (unity gain of the direct signal), and -1 (unity gain of the direct signal phase reversed).

Comb Filter

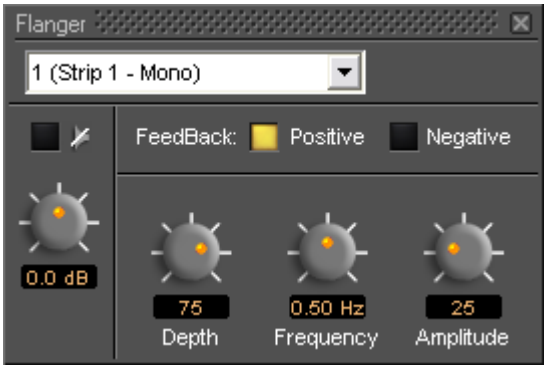
Delays the signal then feeds part of the delayed signal back to the input of the delay. **Comb Filter** has the same control parameters as **Echo**, but the audible effect is quite different because it uses a feed backward rather than a feed forward signal path. The name **Comb Filter** comes from the fact that signals with a wavelength which is an odd multiple of half the delay time are canceled by the process. This result gives a frequency response chart which looks like a comb, with some frequencies (depending on the delay time) missing, like the gaps between the teeth of a comb.

All Pass Filter

Combines the processes used in the **Echo** and **Comb Filter** effects. The result is a multiple echoed signal with a flat frequency response. The control parameters are again the same as in the Echo and Comb Filter effects. Delay Gain has a quite different effect. It doesn't affect the overall level of the output signal. It primarily affects the phase of the signals at different frequencies. If set to 1, it inverts the phase of the input signal and there will be no echo. With a gain of -1, the input signal there is no phase shift. A gain of 0 means that there is no direct signal component and the delayed signals are phase shifted by an amount dependent on their respective frequencies.

Flanger

The flanger produces the characteristic sound which was first produced by playing two copies of something, in sync but varying the speed of one copy by holding the flanges of the tape spool.



Flanger floating Window

Pyramix **Flanger** plug-in simulates this effect by time modulating the signal and feeding it back to the input either in phase (positive) or phase reversed (negative). Feedback type toggles between Positive and Negative. Depth of modulation can be varied between 0 and 100%, Frequency between 0.05Hz and 5Hz and the Amplitude of the modulation between 0 and 100%.

MS Encoder

As it says on the tin.

MS Encoder floating Window

Either input can be phase reversed, the input levels are adjustable and the both channels can be individually panned anywhere between hard left and hard right.

Encode Levels

With the controls hard Left and Right and Unity gain applied signals are encoded in this way:

M = A + B - 3dB

S = A - B - 3dB

AnguDion

Interesting! Three buttons labeled **Stooge**, **Angel**, and **Tricky**, one knob calibrated from 0 - 100

You work out what it does!

Angudion floating Window

AnguDion II

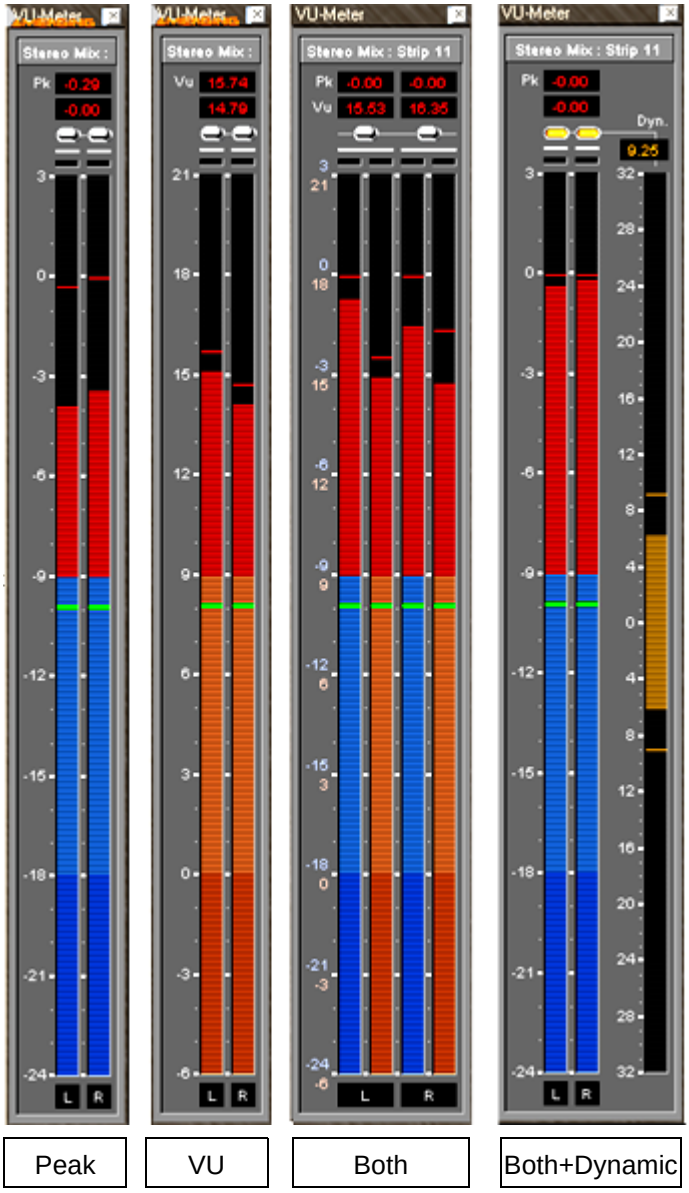
Even more interesting!

Angudion II floating Window

This time with **Wide** and **Sub** buttons and linkable **Input** and **Output** gain rotaries. **Velocity** and **Amount** rotaries flank a rotary switch with **Stooge**, **Angel** and **Tricky** options. The concentric **Wide** pot becomes active when **AnguDion II** is inserted in a stereo channel and the wide button is pressed. The **Sub** button can be selected when **AnguDion II** is inserted in a surround strip.

If you have had a play and still want to know more, please see the separate **Angudion** PDF file.

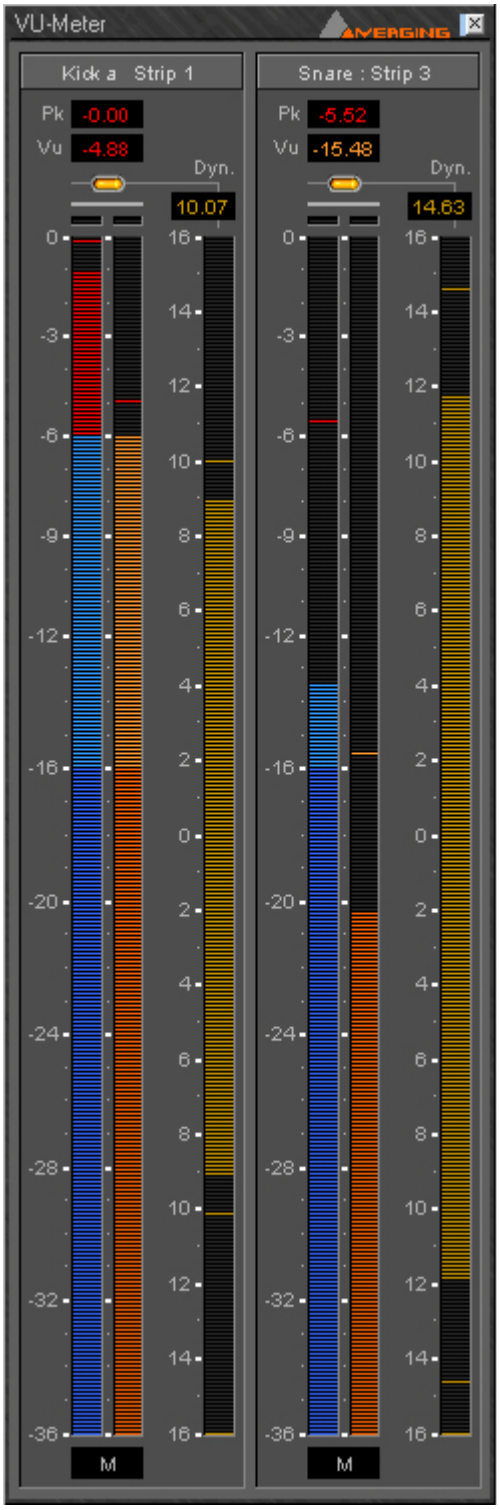
Mastering Peak/VU Meters



Meter floating Windows

A precise measuring instrument. The VU meter displays the audio level on every strip where it is activated in a common window. It can serve as a master level display replacing expensive external hardware metering units. Clicking on a VU meter plug-in opens the meter window. The plug-in offers three different level displays, each with the option of Dynamic range display.

Peak-Meter



Peak Meter floating Window

This measures the peak value of the audio signal. Peak metering is very useful to check the absolute digital level of the audio signal. The Peak meter bars are blue and it has a default release time of 16 dB/second.

VU-Meter

The VU (Volume Unit) meter displays an average amplitude level. The VU meter is displayed in orange/yellow color, has a default integration time of 60 ms and a release time of 10 dB/second.

Dynamic-Meter

This display measures the instantaneous dynamic range of the audio signal. Basically this is the difference between the Peak and the VU display. If a pure sine tone is measured, the dynamics would be zero. The Dynamics meter is displayed in yellow and has a default release time of 12 dB/second.

Activating the VU-Meter

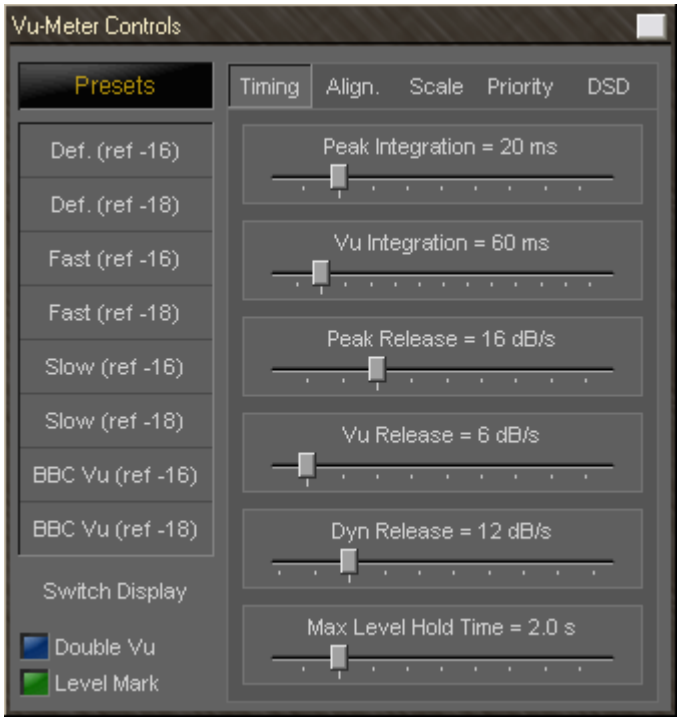
The VU-Meter can be added like any other plug-in on any strip by choosing **Add Effect > VU-Meter** from the context menu within the mixer strip. The only difference compared to other plug-ins is that when multiple instances of the VU-Meter are activated they are always displayed within a single window frame.

Display options

The Peak and the VU meter can be displayed individually with a middle mouse click anywhere within the window area of the VU meter. Each click with the middle mouse switches between the options Peak and VU, only Peak and only VU.

The Dynamics display can be activated by clicking on the switches at the top of the meter bargraphs. On multi-channel meters (stereo strips, surround mixes, etc.), the dynamics are summed together into one bargraph, allowing for example to display the dynamics of the L, R and C channels of a surround mix without the rear channels.

VU-Meter controls



Vu-Meter Controls Timing Tab

Most of the display parameters of the VU-meter can be adjusted individually. Click with the right mouse button anywhere on the VU-meter to display a dialog allowing to control most parameters of the VU-meter.

The left side of the control window contains global settings and several predefined presets, while the right side has four Tabs and a panel of controls specific to the selected tab.

Global Settings and Presets

Eight presets are defined which allow you to quickly select a set of parameters which fit best to your application.

Preset Name	Description
Def. (ref -16)	Default preset with a VU reference level of -16 dBFS
Def. (ref -18)	Default preset with a VU reference level of -18 dBFS
Fast (ref -16)	Preset with fast response times and a VU reference level of -16 dBFS
Fast (ref -18)	Preset with fast response times and a VU reference level of -18 dBFS
Slow (ref -16)	Preset with slow response times and a VU reference level of -16 dBFS
Slow (ref -18)	Preset with slow response times and a VU reference level of -18 dBFS
BBC VU (ref -16)	Preset with BBC standard settings (slower VU release time settings) and a VU reference level of -16 dBFS
BBC VU (ref -18)	Preset with BBC standard settings (slower VU release time settings) and a VU reference level of -18 dBFS

Switch Display

Clicking on this large button cycles through VU, PEAK and BOTH.

Double VU

When this button is lit, the peak meter switches to VU characteristics, thus enabling you to run 2 VU-meters with different settings at the same time.

Level Mark

When this button is lit, a mark at your desired "nominal" level (set in the **Scale** Tab), will be displayed as a gray bar. When the input signal exceeds the mark level, the bar will become light green.

Timing Tab Settings

These parameters are accessed by clicking onto the **Timing** Tab at the right side of the settings pane (see also picture above).

Peak integration

This parameter adjusts the integration time of the peak meter for rising levels measured in milliseconds.

VU integration

This is the integration time of the VU meter for rising levels measured in milliseconds.

Peak Release

This is the speed at which the peak meter falls, when the level is decreasing, expressed in dB's per second.

VU Release

This is the speed at which the VU meter falls, when the level is decreasing, expressed in dB's per second.

Dyn Release

This is the fall time of the dynamics display. It is expressed in dB's per second.

Max Level Hold Time

The highest segment reached will remain lit for a specified time after the level decreases, making it easy to see what the maximum level was. This parameter adjusts the length of time the segment remains illuminated.

Alignment Tab Settings

The alignment parameters affect the scale of the peak and VU meter. They are accessed by clicking the **Align** Tab.

Vu-Meter Controls Align Tab

VU Ref

This parameter sets the level of the 0 VU point in relation to 0 dBFS (0 dBFS is the value at which the maximum value of a sample word is reached. Anything above this level means that the signal is clipped).

If, for example, the VU Reference level is set to -16 dBFS, the VU meter would display 0 dB when the signal is at -16 dBFS.

Peak Color A/B alignment

The peak meter uses three colors depending on the magnitude of the displayed level. Below the **A** point, the color is blue. Between the **A** and **B** point, the color is a lighter blue, and above the **B** point, the color is red.

These two parameters adjust the level of the **A** and **B** points.

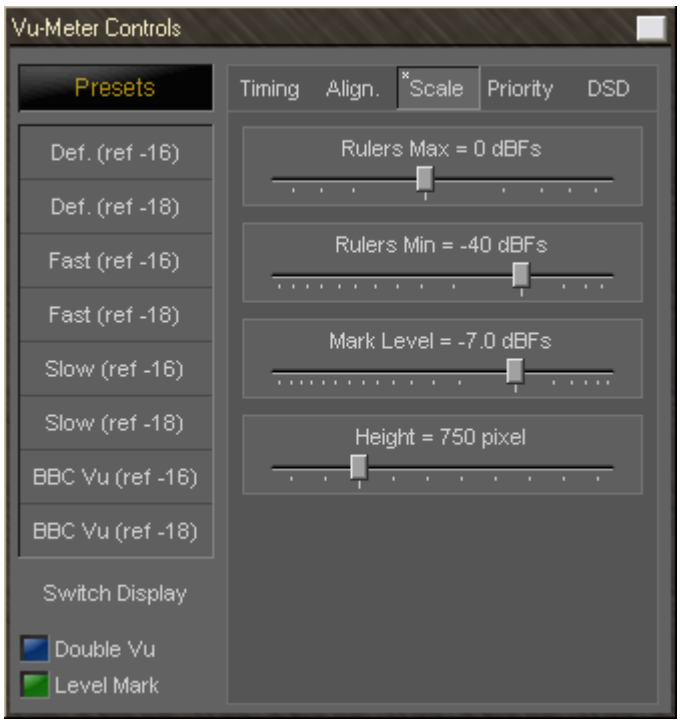
VU Color A/B alignment

The VU meter uses three colors depending on the magnitude of the displayed level. Below the **A** point, the color is dark orange. Between the **A** and **B** point, the color is a lighter orange, and above the **B** point, the color is red.

These two parameters adjust the level of the **A** and **B** points.

Scale Tab Settings

These alignment parameters affect the rulers of the peak and the VU meter and also the dB range of the display. They are accessed by clicking the **Scale** Tab.



Vu-Meter Controls Scale Tab

Rulers Max

This sets the maximum level of the range displayed by the peak meter. Usually you would set this to 0 dBFs, such that a digital full scale level would reach exactly the top of the scale. But since Pyramix uses Floating Point arithmetic, you might theoretically have signal levels above 0 dBFs, so it may be useful to be able to display them (of course, at the output of the mixer, such a signal has to be converted back to an integer number, and would cause digital clipping, so care should be taken with signals at these levels).

Rulers Min

This sets the minimum level of the range displayed by the peak meter, and thus influences the accuracy and the resolution of the peak and VU meter. Signals lower than the minimum are not visible on the meter.

Mark Level

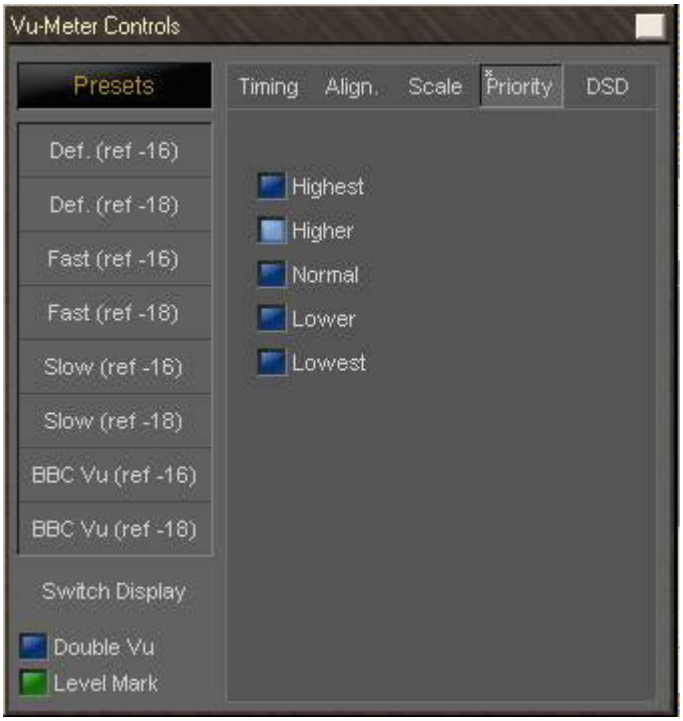
Sets the position of the **Level Mark**. This is normally set to your desired “nominal” level.

Height

This modifies the height (in pixels) of the VU meter plug-in window as it is displayed on the screen.

Priority Settings Tab

The priority settings are accessed by clicking the **Priority** Tab.

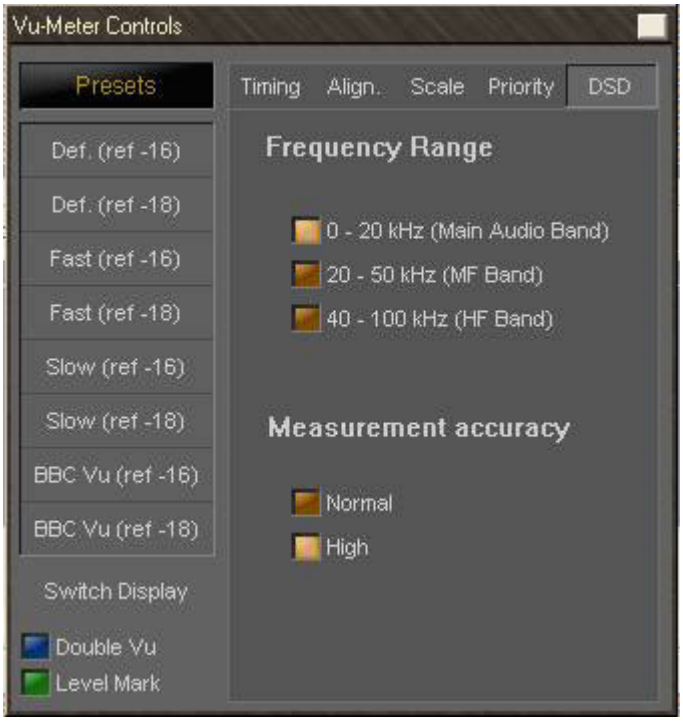


Vu-Meter Controls Priority Tab

The buttons select how much CPU time of the host PC can be consumed by the plug-in, and therefore influences the redraw speed and accuracy of the VU-meter. The higher the priority, the more CPU time is assigned to the plug-in and the better the meter performs.

DSD Settings Tab

For DSD sessions special meter settings are accessed via the **DSD** Tab.



Vu-Meter Controls DSD Tab

DSD Filtering options

In the specific case of a DSD session the VU meter offers three filtering options which allow you to make sure that your DSD signal is compatible to Annex D.4 of the SACD Scarlet Book concerning the high frequency dither noise content. These radio buttons let you choose one of three possible filters which will be applied to the DSD signal before it is measured by the level meter.

The **20k** option applies a 20 kHz low pass filter to the signal, thus only the audible audio content is measured.

The **20k-50k** option applies a band pass filter with a frequency range of 20 kHz to 40 kHz to the signal. According to Annex D.4 of the SACD Scarlet Book the signal level in this frequency range should not exceed -28 dB.

The **40k-100k** option applies a band pass filter with a frequency range of 50 kHz to 100kHz to the signal. According to Annex D.4 of the SACD Scarlet Book the signal level in this frequency range should not exceed -20 dB.

Measurement Accuracy

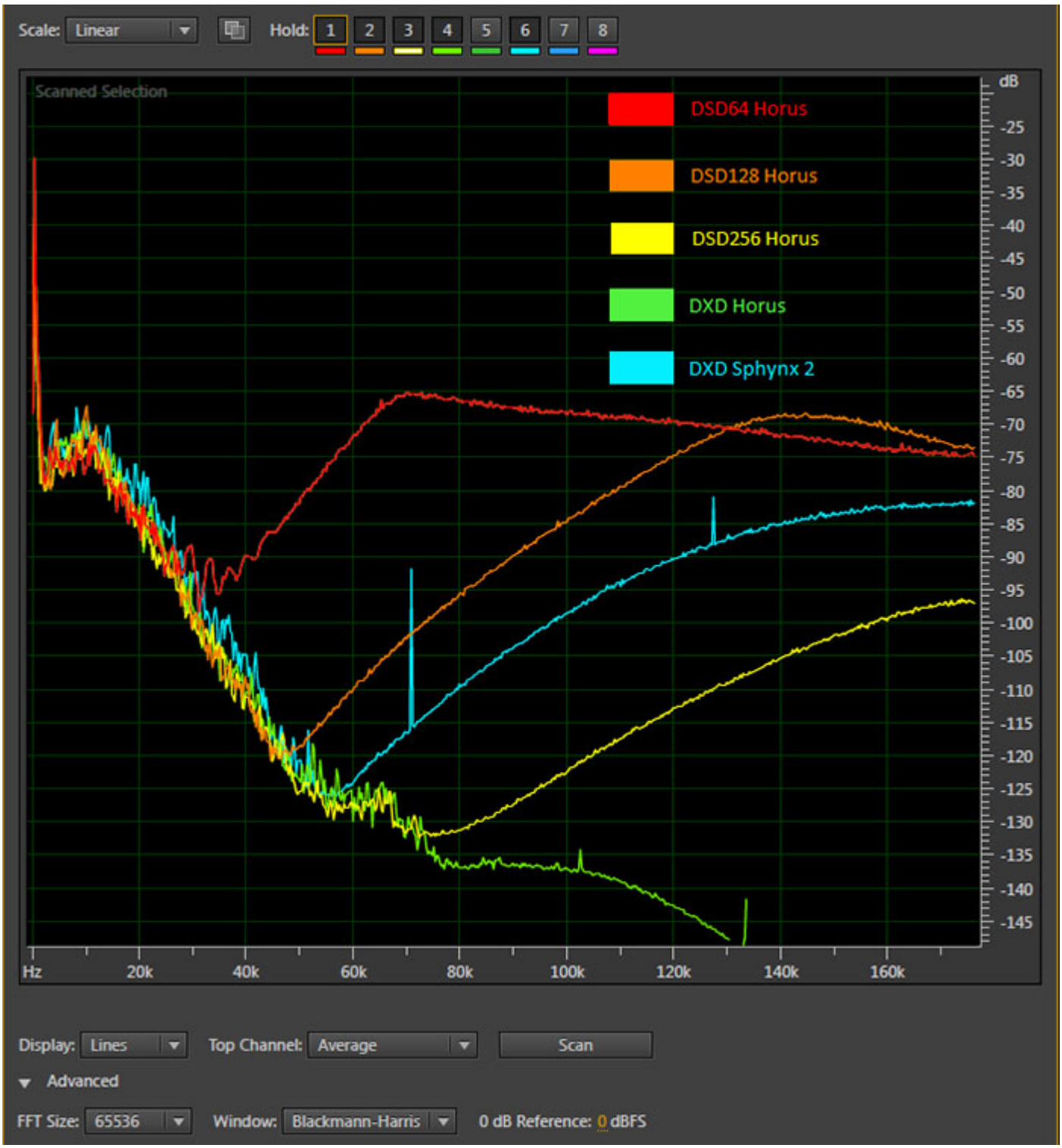
Where maximum accuracy is required select **High**. However, this setting does require extra processing.

> **Note:** In order to avoid such HF noise residuals whenever it is intended to release material in **PCM**, Merging Technologies usually recommends users to work in **DXD**, for preference. Please see the FFT plots on the next page.

For more information on how to cope with the High Frequency noise content of the DSD a good starting point is to read the Wikipedia entry on DSD at:

http://en.wikipedia.org/wiki/Direct_Stream_Digital

Refer in particular to the DSD Technique chapter.


Scale: Linear
Hold: 1 2 3 4 5 6 7 8
Scanned Selection
DSD64 Horus
DSD128 Horus
DSD256 Horus
DXD Horus
DXD Sphynx 2
dB
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90
-95
-100
-105
-110
-115
-120
-125
-130
-135
-140
-145
Hz
20k
40k
60k
80k
100k
120k
140k
160k
Display: Lines
Top Channel: Average
Scan
Advanced
FFT Size: 65536
Window: Blackmann-Harris
0 dB Reference: 0 dBFS

FFT Plots

Phase-Oscillo

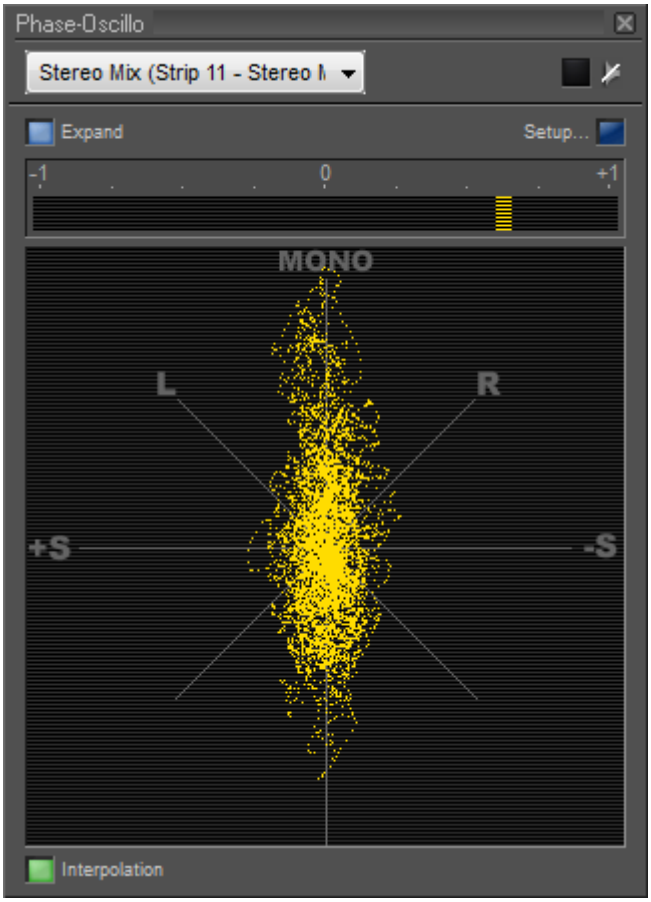
This plug-in combines a phase meter and a X/Y oscilloscope.

> **Note: Phase-Oscillo** cannot be used in a mono strip. Attempting to do so will result in an error message.

The phase meter displays the phase of a stereo signal within the range of **-1** to **+1**. a value of **+1** means that the left and right channel are completely in phase. A value of **-1** means that the left and right channel are completely out of phase causing complete cancellation when they would be summed into a mono signal. A good stereo mix should be somewhere in between **0** and **+1**.

The basic oscilloscope gives you some information about the stereophony and the phasing of a stereo signal. A signal which is completely mono appears as a vertical line. If only the right channel carries a signal, it is displayed as a straight line at a 45° angle from the bottom left to the top right. If only the left channel carries a signal, it is displayed as a straight line at a 45° angle from the bottom right to the top left. If the left and right channel are out of phase, this would result in a horizontal line.

A decent stereo mix would appear as a vertically shaped cloud as shown in the example below:



Phase-Oscillo floating Window

Phase-Oscillo Controls

Simple controls are available immediately with more comprehensive setup available in the expanded window when **Setup...** is clicked.

Bypass

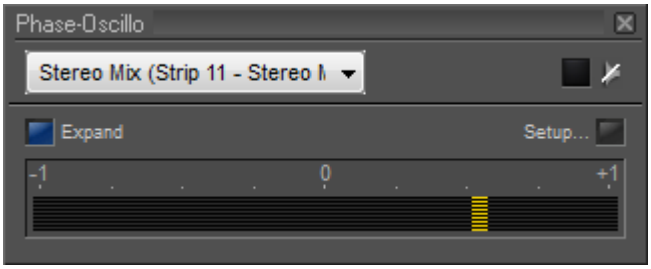
When lit red, the **Phase Oscillo** is bypassed.

Assignment

Where several instances of **Phase Oscillo** exist in the Mixer the drop-down list provides access to each instance.

Expand

Toggles the oscilloscope display on and off. When off, only the phase meter is displayed.



Phase-Oscillo Phase only

Interpolation

When this switch is on, the samples of the signals displayed on the oscilloscope are interconnected, resulting in increased readability in many circumstances.

Setup...

This button opens the set-up pane with further options

Working Priority

Choose one of these switches to select the amount of CPU time of the host PC which will be consumed by the plug-in. This influences the redraw speed and accuracy of the oscilloscope. The higher the priority, the more CPU time is assigned to the plug-in

Left and Right Channel selection

If the plug-in is inserted on a bus with more than two channels (e.g. a surround bus or a multiple stereo bus), these two selectors allow you to select the appropriate channels for the left and right input of the plug-in. On a surround bus, you might for example select the left front and right front channels to be displayed.

Display Mode

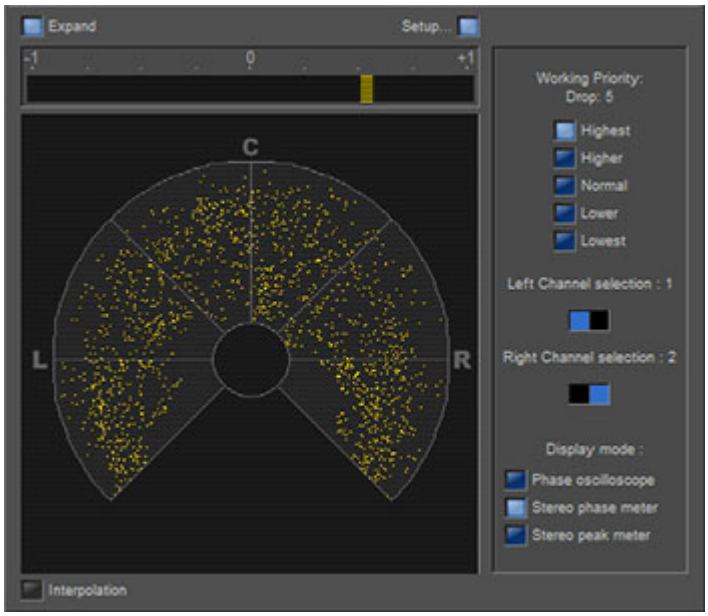
Three Display Modes are available for the Oscilloscope.

Interpolation adds two further variants for Phase Oscilloscope and Stereo peak meter.

- Phase oscilloscope

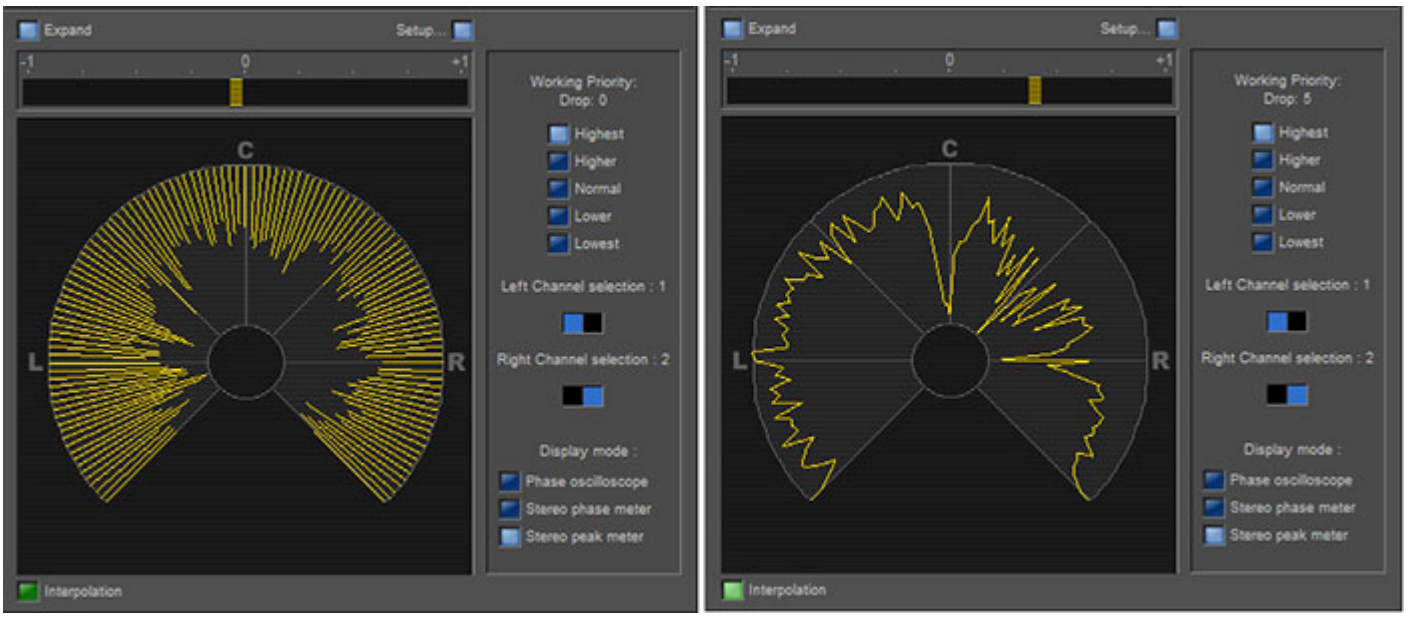
Phase oscilloscope without and with Interpolation

- Stereo phase meter



Stereo Phase Meter

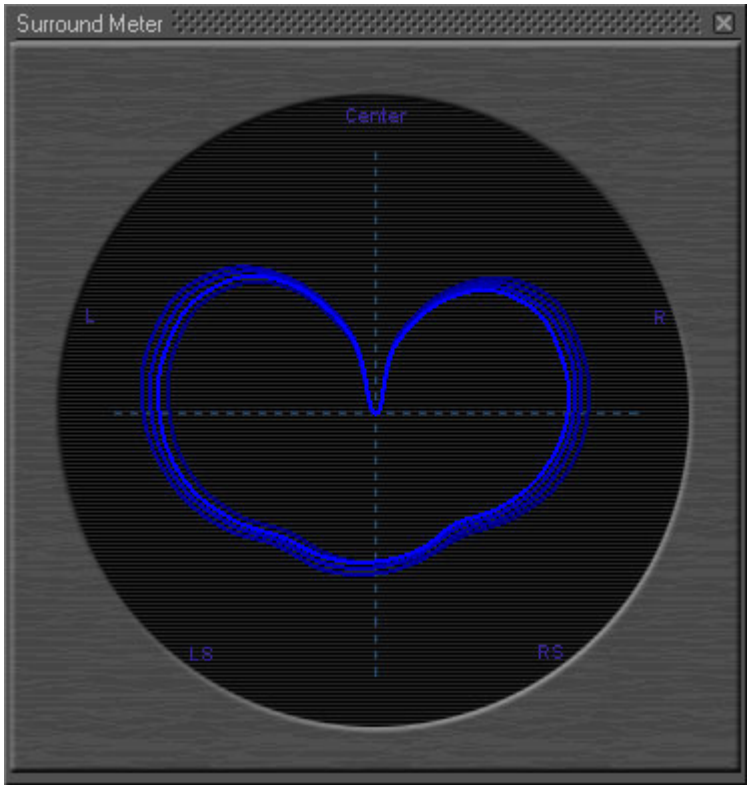
- Stereo peak meter



Stereo peak meter without and with Interpolation

Surround Meter

Gives a very useful indication of energy distribution in a surround sound field.

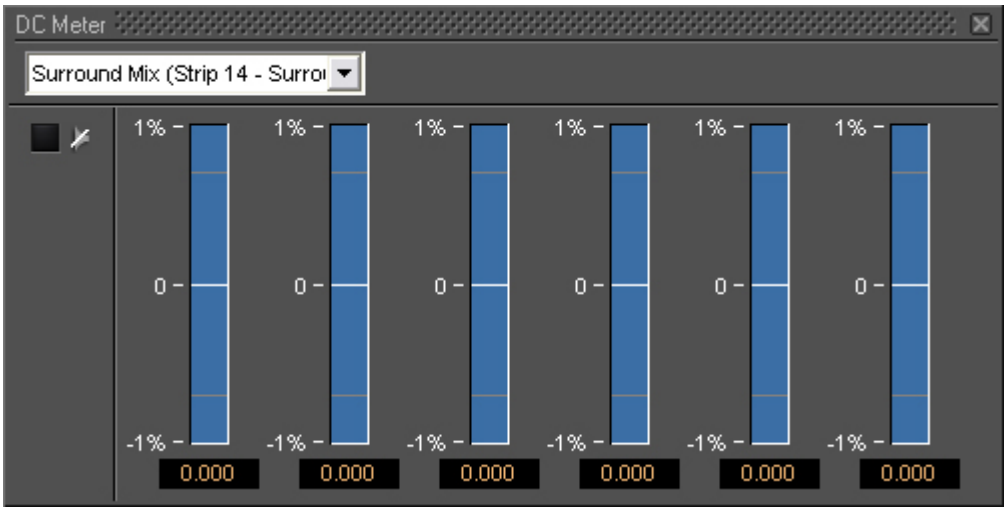


Surround Meter floating Window

The Surround Meter incorporates automatic gain ranging which maintains a meaningful display for a wide range of material. There are no settings to adjust!

DC Meter

Measures the DC content in the signal.



DC Meter floating Window

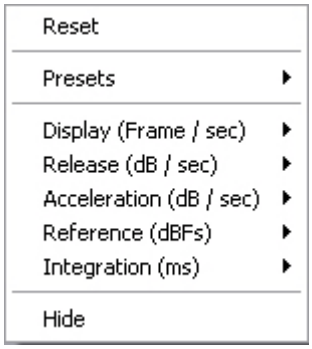
Modulometer

Modulometer floating Window

The **Modulometer** is a faithful reproduction of the classic meter fitted to Nagra portable Tape recorders.

Common operational practice to is set levels so the meter reads (average) - 8 when recording speech. This is partly due to the Modulometer's characteristics as a quasi peak meter (quasi because it has the ballistics of a mechanical meter) and it also reflects the caution required in location dialogue recording where a lost take can represent many thousands of dollars. Although not by any means desirable, a low level signal is better than one with distortion from peak clipping.

Right-clicking anywhere on the window pops up a context menu. This has several options which control the behavior of the **Modulometer**.



Modulometer menu

Reset

Restores the default settings

Presets

Offers the standard **Preset** options

Display (Frame / Sec)

Sets the display refresh rate

Release (dB / Sec)

Sets the **Release** time

Acceleration (dB / Sec)

Sets **Acceleration** rate

Reference (dBFS)

Sets the **Reference** level in DeciBels Full Scale

Integration (ms)

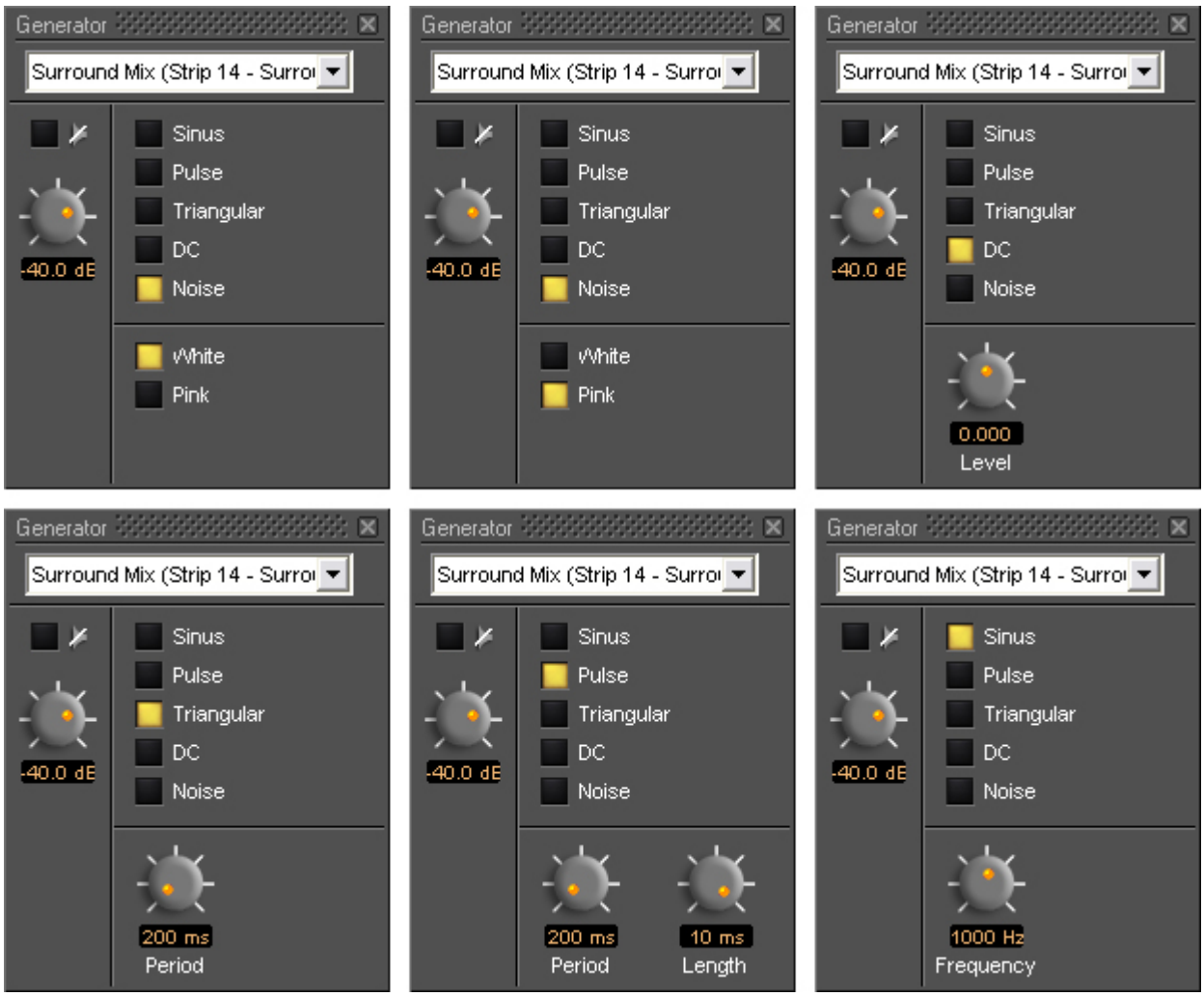
Sets the **Integration** time in milliseconds

Hide

Hides the **Modulometer**

Function Generator

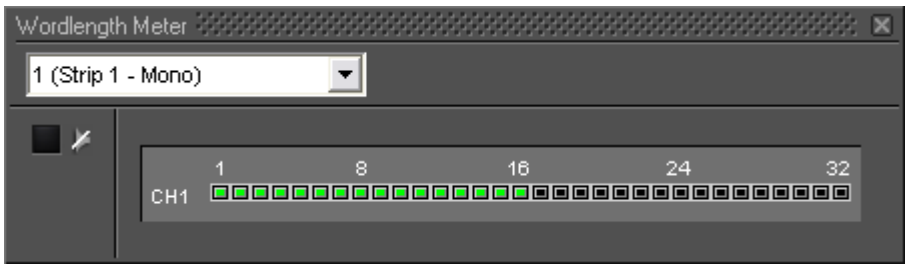
This oscillator can produce a Sine wave, a Pulse wave, a Triangular (Sawtooth) wave, DC and White or Pink Noise.



Function Generator floating Windows

Wordlength Meter

The **Wordlength Meter** (or Bit Meter) allows you to view the effective wordlength of a signal.



Wordlength Meter floating Window

Bear in mind that, once you apply any gain adjustment (e.g. a fader set anywhere other than 0dB) the signal will become 32 bit float data.

Effects and Plug-in Automation

All signal processing parameters in Pyramix VS3 Effects Plug-ins can be fully automated dynamically in the same manner as the Mixer controls. **Please see Dynamic Automation Transport Modes on page 432**.

> **Note:** For information about differences when automating VST Plug-ins **Please see: VST Plug-in Automation on page 422**

Effects Snapshots

Effect Settings can be easily stored and recalled by dragging them to/from libraries.

Creating Effects Snapshots

Hold **Alt** + **Shift**, then click and drag from the horizontal bar next to the **Channel** combo box in a **Plug-in** window to the library where you want to store the settings, then release. A new item, of the type **Mixer Snapshot**, is stored in the library. The snapshot is given the name of the plug-in by default. The new item is automatically highlighted so, if you wish to change the default name, simply type the new name and hit **Enter** to confirm. The name of the snapshot can be subsequently changed by clicking on the name in the library, then entering the new name.

> **Note:** In some plug-ins **Alt + Shift** click and drag will work on any of the horizontal section title bars and in others from anywhere on the plug-in window where the cursor changes to .

Using Effects Snapshots

Simply click and drag a snapshot from a user library to a plug-in of the same type as the original and release anywhere on the surface where the cursor changes to

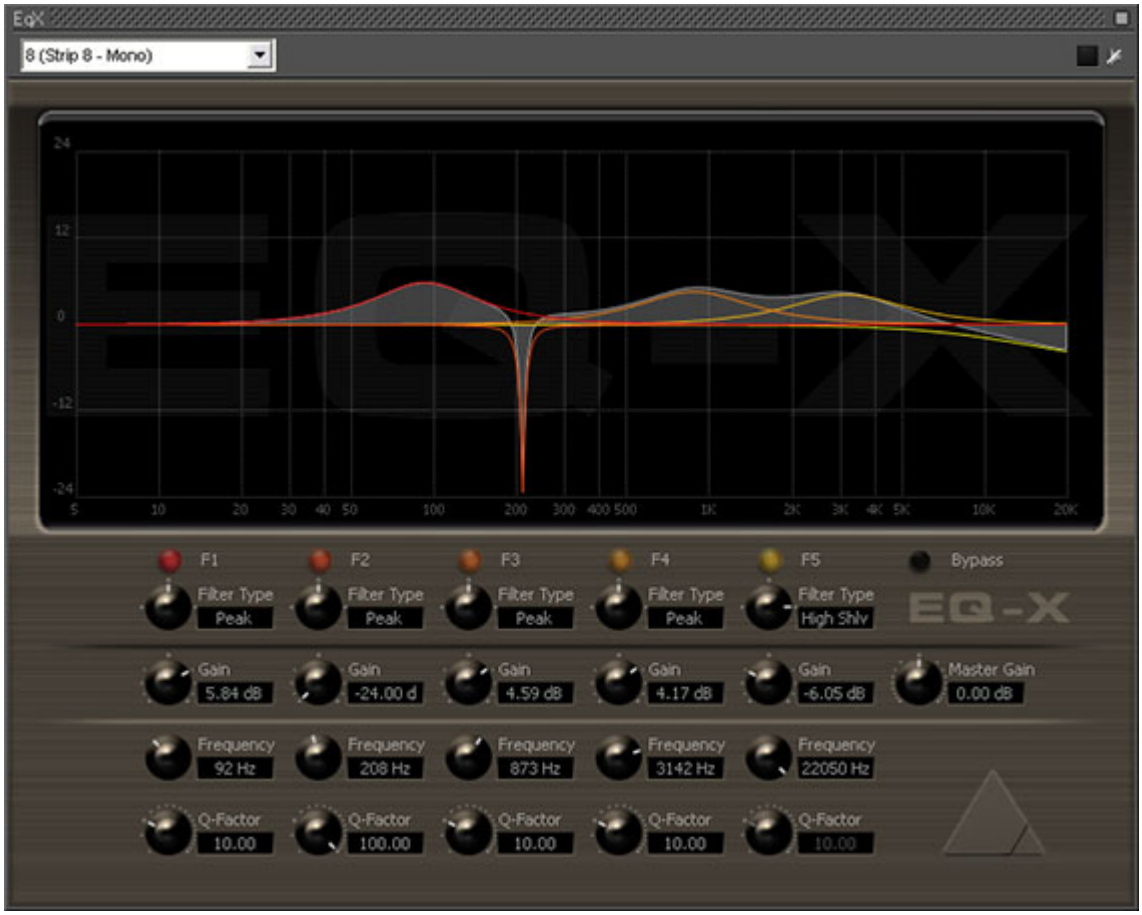
Anywhere the snapshot cannot be dropped, or if the snapshot plug-in type does not match the target plug-in, the cursor changes to

Optional Plug-ins

Optional Pyramix plug-ins. For operating instructions please see each plug-in's guide.

Merging Technologies

EQ-X



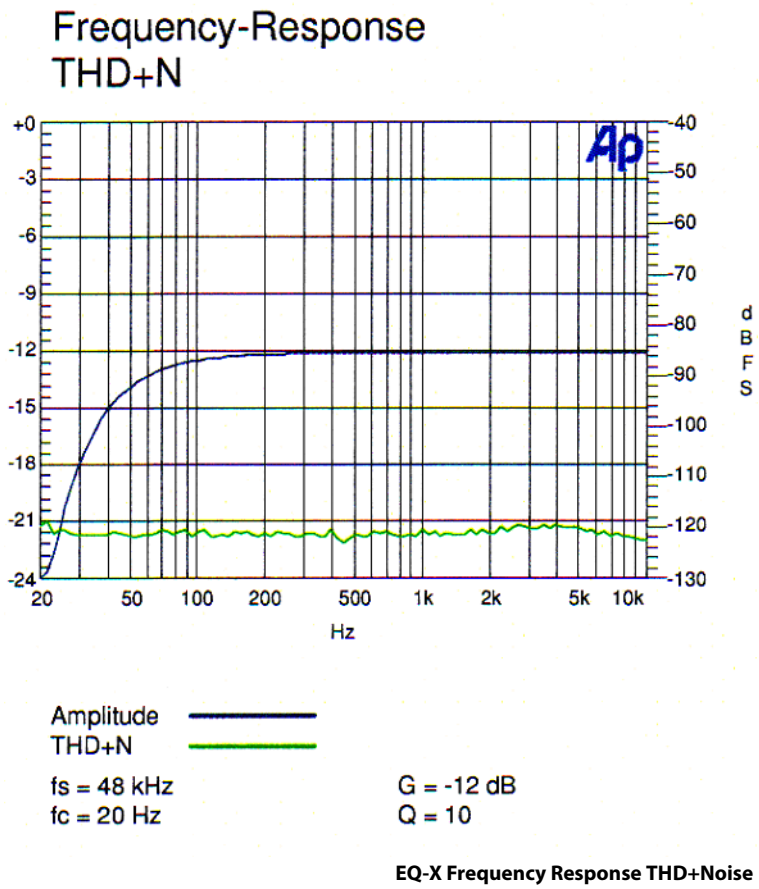
EQ-X floating Window

EQ-X builds on the existing and universally acclaimed quality of Pyramix EQ. It is backwards compatible. **EQ-X** offers Extreme definition filtering at sampling frequencies up to DXD with notch, low pass, hi-pass, peak and shelving filter types available.

The state space filter design of this Extreme Definition Equalizer has been specifically optimized to deal with the highest audio resolutions while still permitting very low noise & distortion, typically offering a THD+N of better than -110dB, throughout the entire audible (and even non-audible) range. Of course, this new digital filter's topography, while designed with high sample rate in mind, also offers the extra benefits and low noise to 1FS equalization. However, since there is no such thing as a free lunch, EQ-X does "eat" about double the processing DSP power of an equivalent "traditional" digital EQ instance in Pyramix.

EQ-X is a five band fully parametric EQ with independent control of Filter Type, Gain boost and cut, Frequency, and Q factor (bandwidth) for each band. The equalizer can be operated using the rotary controls, by directly entering numerical parameters in the boxes beside the knobs or by clicking and dragging on one of the five colored box nodes which appear when the mouse cursor is over the response graph. Left-clicking enables level and frequency to be adjusted, right-clicking then dragging left or right allows adjustment of Q.

All bands are full range. Boost and cut of up to 24dB is available. Q can be set anywhere from 1.0 (wide) to 100 (narrow). Master Gain enables the overall level to be adjusted to suit the applied eq.



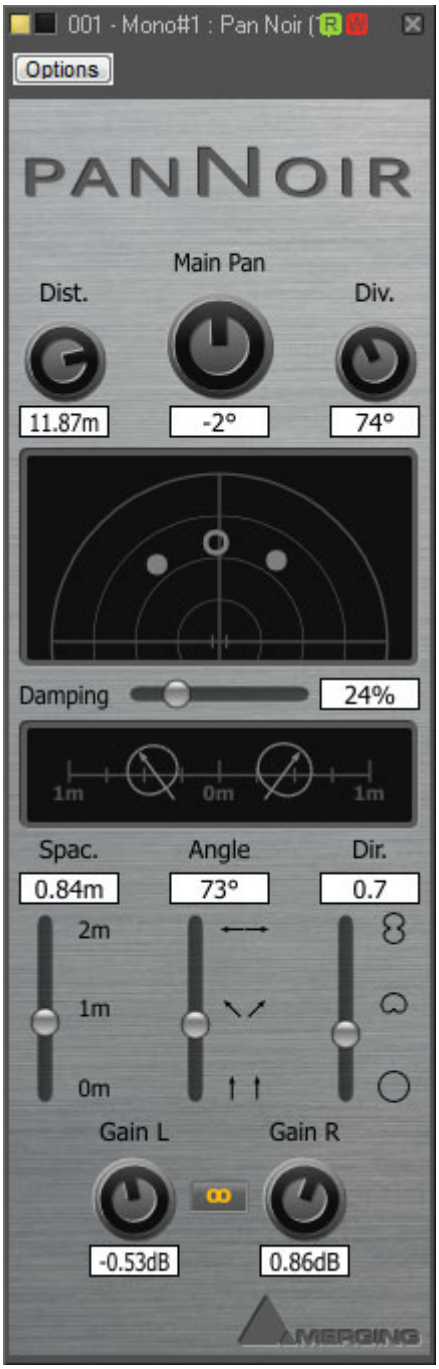
EQ-X Frequency Response THD+Noise

PanNoir Panner

Overview

This VST plug-in is essentially a panner employing phase and amplitude to achieve superior results in comparison with simple amplitude panning. When the position of the different sources,is entered as well as information about the main mic pair, The PanNoir Panner computes and applies the delays and gain appropriate to the distances from each source to each mic of the main mic pair. This enables extremely realistic left-right placement of spot mic sources in relation to the main mic pair.

Note: PanNoir will only work with Pyramix as the host.



Noir Advanced Panner floating Window

Installation

The PanNoir Panner is installed with Pyramix but can only be used if the relevant security key is present. Please contact your Merging Technologies Sales Partner to obtain the relevant security key.

> **Note:** Since the PanNoir Panner is a VST plug-in it is necessary to run the VST Scanner application (located in: **All Programs > Merging Technologies > VS3Runtime > VST Scanner**) to Re-Scan the folder in which the **PanNoir.dll** has been installed (in **C:\Program Files\Steinberg\VSTPlugins\Merging Technologies**). **Please see also: VST Plug-ins Scanner on page 417**

Mono vs. Stereo

The PanNoir Panner is a stereo-in/stereo-out VST plug-in. To pan a mono input to a stereo output it **MUST** be inserted into a stereo channel. To pan a mono input just use one of the input channels. Please read about the **Div.**, parameter and the notes after that. Please see: **Div.** on the next page.

User Interface

The upper section of the plug-in user interface is about the placement of sources, the lower section, deals with settings concerning the main mic pair.

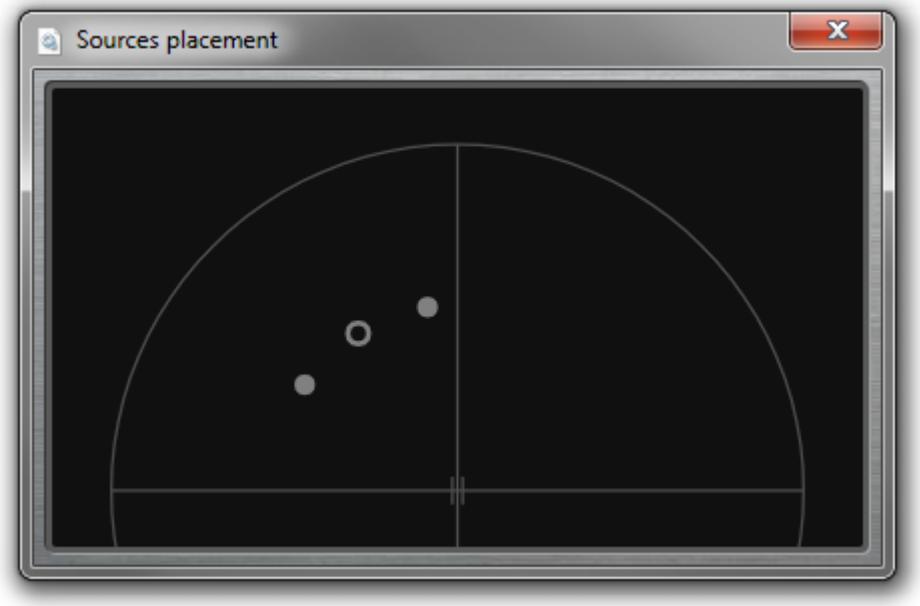
Sources placement (upper section of the GUI)

The parameters **Main Pan**, **Dist**, and **Div** set the positions of the two sources. Source number 1 is simply the left channel of the input signal, while source number 2 is the right channel. If the input is a mono signal, source number 2 can simply be ignored: it will only contain silence.

> **Note:** The left-most source is always source number one, and vice versa. This plug-in will never swap the inputs.

The easiest way to place the sources is by clicking and dragging the grey circles on the upper screen. Active regions will turn pale yellow when the cursor is over them and bright yellow when clicked and dragged. Keyboard shortcuts are described below.

> **Note:** For greater precision, double-clicking on the upper screen opens a copy of this screen in a separate window. This new window can be resized and hence permits very precise control to be achieved via simple mouse drags.



Noir Sources Placement pop-up Window

Alternatively, you can use the three upper knobs directly:

Main Pan Source Angle - The angle from the center of the main mic couple to the center of the sources. Value in degrees, from -90° to +90°. Negative values indicate a source on the left hand side, positive values indicate a source on the right hand side.

Note: To limit dragging to Pan Angle only hold down the **crtl** key to lock Distance while dragging the circles on the screen.

Dist. Source Distance - The distance from the center of the main mic pair to the sources. Value in meters, from 0.1m to 20m.

Note: To limit dragging to Distance only hold down the **Crtl + Shift** keys to lock Angle while dragging the circles on the screen.

Div. Source Divergence Angle - The angle between the two sources, as seen from the center of the main mic pair. Value in degrees, from 0° to 180°.

Note: To limit dragging to Divergence Angle only hold down the **Shift** key to lock Pan Angle and Distance while dragging the circles on the screen.

Note: A divergence of 0° means the sources are superimposed, so the two channels of the input signal will be summed, and then treated as a mono input. If you are indeed working with a mono input signal, this is exactly what is needed, and you should never need to change the **div**. If however the input signal is a stereo pair, you will probably prefer to uses a non-zero **div**.

Note: This allows sources to be placed behind the main mic pair. This represents a 180° phase shift in the audio signal (multiplication by -1) and is, in principle, not illegal. However, the simulation is very likely to sound less realistic, since the real-world microphones used for recording were probably neither designed nor placed to record what was behind them. Try it by all means, you may like the effect!

Damping

The value determines the degree of source attenuation with increasing distance from the main mic pair. If no attenuation is required the value is set to 0%.

Main Mic Pair Settings (lower section of the GUI)

The parameters **Spac**, **Angle**, and **Dir** set up the main mic pair. This setup should match the actual settings that were used for the recording. If these settings are not known, the default parameters are probably a good approximation. However, feel free to try other settings to see if they improve the result.

In a similar manner to **Sources** placement, the microphones on the lower screen can be clicked and dragged. Active regions will turn pale yellow when the cursor is over them and bright yellow when clicked and dragged. Keyboard shortcuts are described below.

Alternatively, you can use the three lower sliders directly:

Spac. Mic Pair Spacing - The distance between the two mics of the main mic pair. Value in meters, from 0 m (mics on top of each other) to 2 m (2m away from each other, so in other words, 1m away from the center point). Simply drag one mic from left to right on the screen to change this parameter.

Angle Mic Angle - The angle between the two mics of the main mic pair. Value in degrees, from 0° (facing forward, parallel to each other) to 180° (facing left and right, opposite each other). Hold down the **Shift** key and drag one mic on the screen, rotating it, to change this parameter.

Dir. Mic Directivity [0 , 2] - The directivity of the mics of the main mic couple. Value without units. 0 = omni, 1 = cardioid, 2 = fig. 8. Hold down the **ctrl** key and drag one mic vertically on screen to change this parameter.

Gain L and **Gain R** Click and drag the knobs to set the Left and Right Gains. Clicking on the button between the knobs links the Gain knobs. (Lit yellow.)

Additional Information

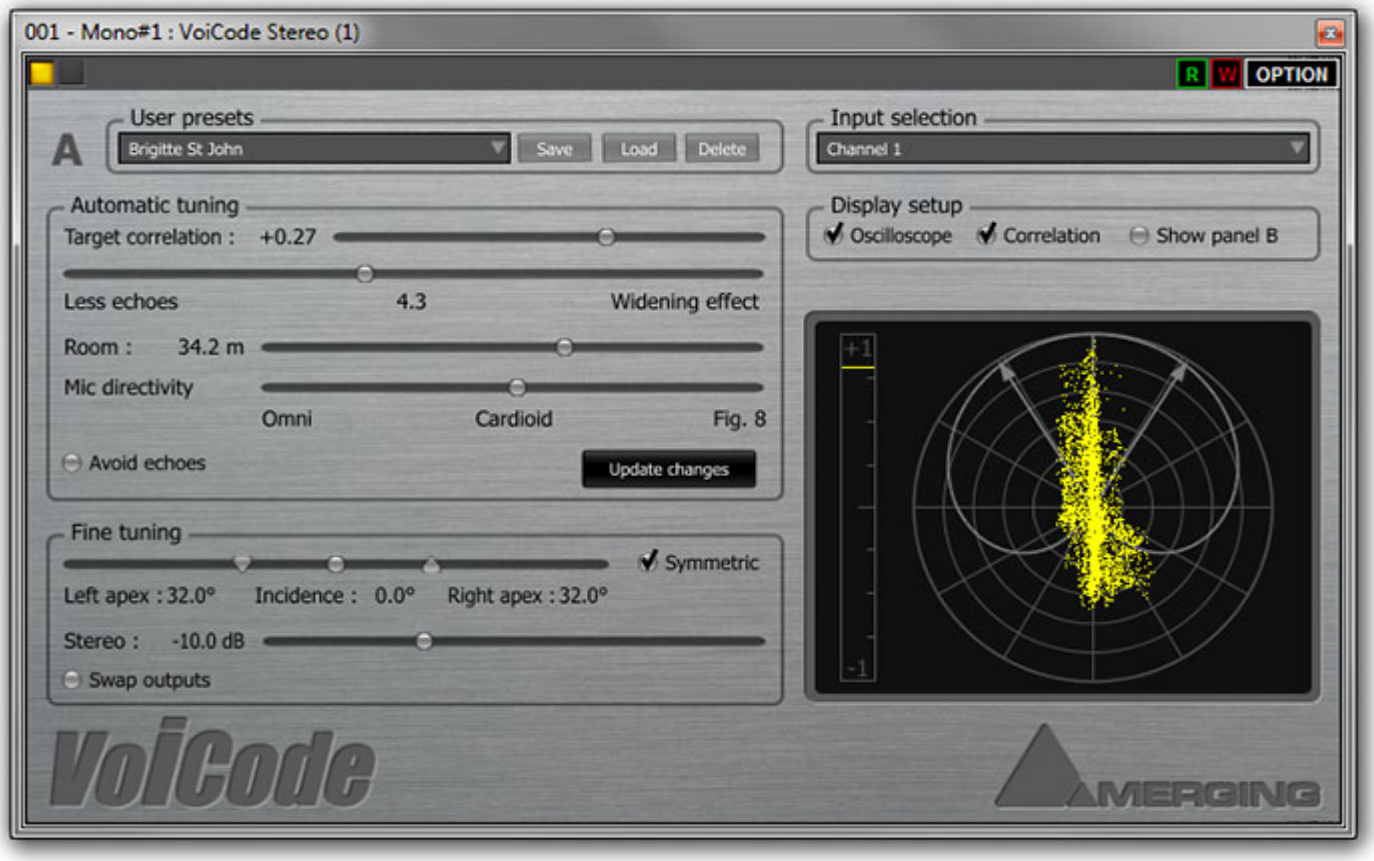
- Knobs and the horizontal slider are controlled by horizontal mouse click and drag. Vertical sliders are controlled by vertical mouse click and drag.
- When the mouse cursor is over a parameter name, the VST-parameter name pops up. This is the name that is needed when mapping the plug-in to an external device, such as a control surface.
- When clicking on the white text boxes of the parameters, a popup window lets you edit their values with the keyboard directly. Note that you don't need to type the unit in.

VoiCode

Overview

This VST plug-in produces highly convincing stereo from mono sources. It requires some experimentation to achieve the best possible results. When adjusted optimally, the effect is uncanny.

The system represents the interpolation of an MS stereo recording technique where the S-signal is being calculated from specific delays and amplitude corrections which depend on the chosen directivity, the angle of incidence, the left apex angle, the right apex angle, and room size. If the left and right VoiCode output signals are summed the original mono signal is restored.



VoiCode User Interface

Install

VoiCode is installed with Pyramix or Ovation but can only be used if the relevant **security key** is present. Please contact your Merging Technologies Sales Partner to obtain a security key.

> **Note:** Since VoiCode is a VST plug-in it is necessary to run the VST Scanner application (located in: **All Programs > Merging Technologies > VS3Runtime > VST Scanner**) to Re-Scan the folder in which the VoiCode_Stereo.dll has been installed (in C:\Program Files\Steinberg\VSTPlugins\Merging Technologies\) .

Please see: VST Plug-ins Scanner on page 417

Mono vs. Stereo

Voicode is a stereo-in/stereo-out VST plug-in. To produce a stereo output it **MUST** be inserted into a stereo channel.

User Interface

The user interface defaults to **Control Panel A** on the left of the window with a polar co-ordinate display, which doubles as an oscilloscope, the Display Setup section and Input selection on the right. When **Show Panel B** is

active a second control panel appears on the right. This enables two sets of settings/presets to be compared and a slider allows for fading between the two.

Top Row

On the left, the first button activates/de-activates and lights yellow when the plug-in is active. The second button toggles bypass and lights red when the plug-in is bypassed. On the right, the Green R and Red W buttons control the local dynamic automation mode. Green lit = Read, Red lit = Write, Green and Red lit = auto-write and both off = automation off. The global automation mode takes precedence. The **Option** button gives access to **Info...** about VoiCode. The other options are standard VST entries and irrelevant in the case of VoiCode.

Input Selection and Graphics/Meters section

Input Selection

This VST plug-in can use 2 inputs and obviously has 2 outputs. The plug-in is however intended to process a mono input. The drop-down list offers the options of using:

Channel 1

Channel 2

Sum Channels 1 & 2

Sum Channels 1 & 2 (-3dB) (Classic derivation for **M** of a Sum and Difference (M&S) recording)

Display Setup

VoiCode has the option of an **Oscilloscope** display, a **Correlation** (phase) meter and **Show Panel B**. **(**Double control panels.)

Oscilloscope — When ticked the **Oscilloscope** display is active, superimposed on the polar coordinate display.

Correlation — When ticked the vertical **Correlation** meter is shown to the left of the polar coordinate display.

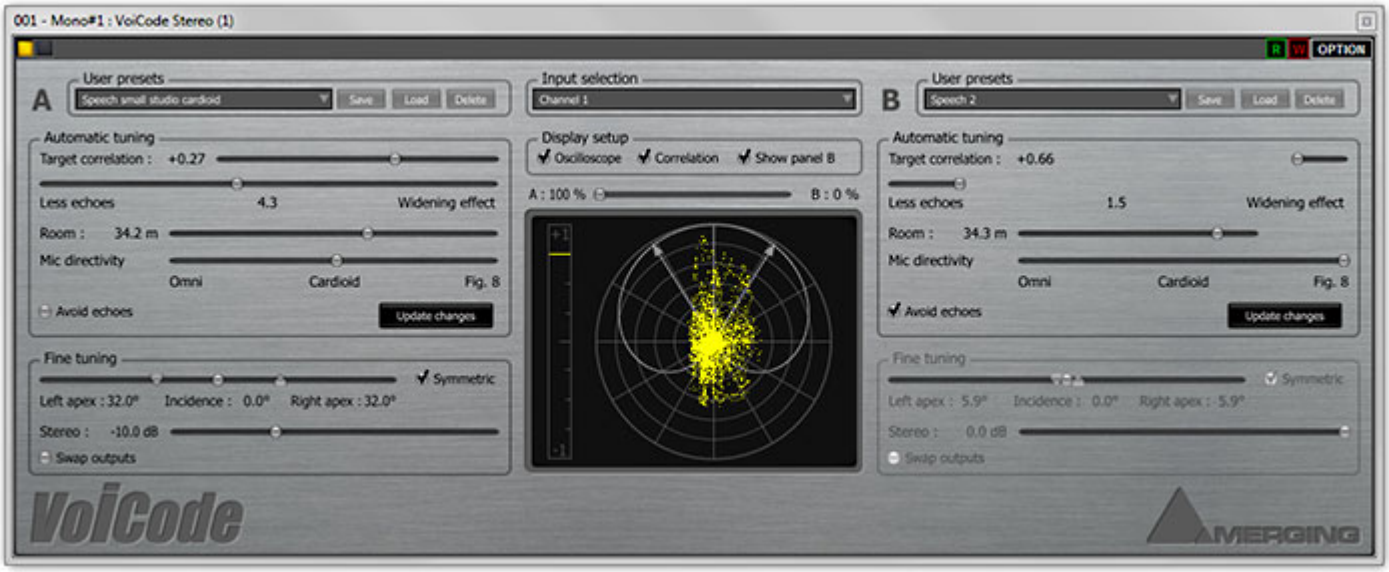
Show Panel B — When ticked all the controls in the **A** Control panel on left of the window are duplicated on the right of the window in the **B** Control panel and an **A - B** slider control appears below **Display setup**.

A B Slider — **Show Panel B** enables two different sets of parameters to be set up and viewed simultaneously. The slider is used to fade between parameter sets. Two sets of parameters can be compared and, if desired, blended in any proportion. I.e. with the slider hard left only the left-hand **A** panel parameters are used. Similarly, with the slider hard right only the parameters in the right-hand **B** panel are used. At any setting in between a proportion of left **A** and right **B** panel parameters is blended.

Note: If **Show panel B** is deselected when the slider is anywhere other than fully at A then the slider is returned to the A side.

Correlation Meter — The vertical bar is a Correlation (phase) meter looking at the VoiCode stereo output. When the 'needle' is at the top of the scale (**+1**) the left and right outputs are 100% correlated, i.e. double mono. At the other end of the scale (**-1**) the left and right outputs are decorrelated I.e. substantially out of phase. This is highly undesirable.

Polar Coordinate Display/Oscilloscope — The graphic shows a representation of the **Mic directivity** chosen and the **Left apex**, **Incidence** and **Right apex** angle settings. When **Oscilloscope** is active a goniometer is superimposed on the graphic.



VoiCode User Interface with both Control panels visible

Control Panels

A (or B)

Identifier for the two control panels.

User Presets

User presets can be saved, loaded and deleted. A drop down list and three buttons, **Save**, **Load** and **Delete** manage the presets.

New Preset... The drop-down list shows all existing presets with **New Preset...** at the bottom of the list. Click on an existing Preset to select it followed by the **Load** button to update the parameters.

To create a new preset click on **New Preset...** adjust parameters until you are happy with the results then click on **Save** to open the **Saving Preset** dialog :

VoiCode Saving preset dialog

Type a suitable name for your preset and click on the **Save** button to save it and close the dialog. Alternatively click on the **Cancel** button to close the dialog without saving the preset.

To delete an existing preset click on the preset to select it then click on the **Delete** button. A safety **Are you sure ?** dialog opens. Click on **Yes** to delete the selected preset and close the dialog or **No** to close the dialog without deleting. Deleted presets are sent to the Recycle bin and can be recovered from there if deleted inadvertently.

Adjusting VoiCode

The two sections detailed below control the output signal. Tune the plug-in from top to bottom in the first instance. I.e. adjust the **Automatic tuning** parameters first, then press the **Update Changes** button, then adjust the parameters in the **Fine tuning** section. It should not be necessary to make large adjustments in the **Fine tuning** section since the **Update Changes** function computes a good approximation of the values required.

Automatic Tuning

Target correlation : This control slider has no direct effect on the output signal. It only takes effect when **Update Changes** is clicked. When this happens, the parameters will be tuned so that the correlation of the stereo output signal will match the chosen **Target correlation** value selected by this control.

Less echoes - Widening effect This control slider has no direct effect on the output signal. It only takes effect when **Update Changes** is clicked. The range is from **0 - 10**. Choosing a large (wide) value informs the algorithm that the signal comes from a wide stereo scene (typically an orchestra) and that when searching for optimal parameters, it should favour the ones with a **widening effect**. The downside of choosing a very wide setting is that small delays may become apparent. Choosing a lower value, towards the **Less echoes** end of the scale, will minimize such artefacts. However, the widening effect will be diminished. As a general rule, the more spooky, jumpy and rhythmic the input signal, e.g. speech, the smaller the value required.

Room : The slider sets the area of the room the signal was recorded in. (Or your best estimate.) Between **10.0 m** and **50.0 m**.

If the room size is not known then choose a value of **34 -35 m** as a starting point.

Mic directivity The slider selects the pick-up pattern of the mic used to record the original signal. The adjustment is continuous from **Omni** through **Cardioid** to **Fig. 8**. The pattern is shown graphically in the **Oscilloscope** display.

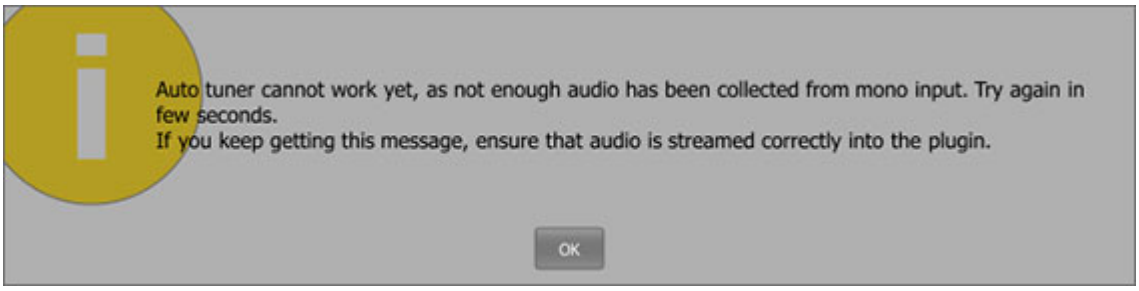
If the mic pick-up pattern is not known, use **Omni** as a starting point. If the mic was a shotgun use **Fig. 8**.

Avoid Echoes When ticked the **Less Echoes - Widening Effect** slider range is reduced to **0 - 1.5**, the **Target Correlation** slider range is reduced to **0.66 - 1** and the **Room :** slider range is reduced to **10.0m - 39.0m**.

Update Changes This is the most important component of the Automatic tuning-section. If any of the Automatic Tuning controls have been moved the button flashes red to remind you to click it in order to re-compute the parameters.
When clicked, the plug-in will attempt to tune the parameters in the **Fine tuning** section, to achieve optimal values. In order to do this successfully, the plug-in needs two pre-conditions :

- Sensible values for the parameters of the **Automatic tuning** section. (As described in detail above.)
- A 1 second long sample of the mono signal to be processed. When **Update Changes** is activated the plug-in uses the last 1 second of input sound to calculate the parameters. Therefore it makes no sense to click **Update Changes** when no audio (silence) is being played. Similarly, clicking **Update Changes** during a trumpet solo or when the whole string orchestra is playing may produce slightly different tuning, even if both passages are on the same recording, with the same automatic tuning-parameters.
- When **Update Changes** is clicked on very slow systems the plug-in may stop reacting for a short while. The computation can be interrupted by pressing the **Esc** key.

Note: If you attempt to invoke the **Update Changes** function when there is no audio passing through VoiCode a warning dialog appears :



VoiCode Auto tuner cannot work dialog

Fine tuning

Left apex, **Incidence** and **Right apex**

Incidence	The slider operates in the range **0** to **90** degrees within the boundaries of the **Left** and **Right Apex** sliders. (See below.) **Incidence** is the angle of incidence enclosed by the major (on) axis of the mic and the bearing line of the sound source. I.e. how far off-axis the source is. This value is usually zero since, in an ideal world the source will be on-axis. In some circumstances, e.g. a telephone conversation, the angle would be around 12 degrees. Or a piano recording with a boundary mic directly on the lid (value should be approximately the same as the angle of the lid…).
Left and **Right Apex**	The sliders operate in the range from **5** to **90** degrees. These values represent the fictitious left and right angles in relation to the direction the mic is pointing in. You might want to think of them as the major axis angles from the centre line of two mic capsules used for a classic co-incident pair recording.
Symmetric	When ticked, forces **Left** and **Right Apex** angles to keep the same values regardless of which is adjusted and locks the angle of **Incidence** to 0 degrees.
Stereo	The slider takes direct control of the generated stereo signal. I.e. it is a width control. Values close to 0dB will reduce correlation of the output and negative values will increase correlation to +1 at infinity. (I.e. mono.)
Swap Outputs	When ticked the Left and Right outputs are swapped. Since the VoiCode algorithm generates and artificial **S** (side) signal it is not possible to determine its sign which means that the plug-in chooses arbitrarily which signal is Left and which is Right. If the generated stereo image appears to be reversed then ticking (or unticking) **Swap outputs** will reverse the image.

Other Considerations

The **Room** size slider also affects the spatial parameters directly. Smaller values will make the signal "dry", and bigger values will make the signal "wet". The default choice is an ideal value between "dry" and "wet".

Narrow Apex angles correspond to a less spatial impression than wide Apex angles since the spatial impression is based on smaller delays.

By choosing the appropriate **Target Correlation** or by moving the **Stereo** slider the sound stage is opened or closed. These controls also have a major effect on annoying artefacts in the upper frequency range which can be eliminated by choosing a value towards the **Less echoes** end of the scale.

The effects of changing the **Mic directivity** setting (which may be unknown) can be heard immediately by the user. However, please remember to click on **Compute** after changing the **Mic directivity** setting in order to adapt the other parameters to suit.

> **Note:** A professional stereo signal should have a target correlation between 0.2 and 0.7. It should not be lowered to an average which is less than 0. If a *slight* stereo is introduced with legacy mono recordings or speech then, in order to avoid nasty pseudo stereophonic effects outside the sweet spot and to improve the overall sound quality, the target correlation of may of course exceed 0.7.

Flux

Note: The Flux VS3 plugins come as a separate installer. 64bit installers are available as downloads. First, download and install the **Flux Center 64bit**.

https://www.fluxhome.com/download

For further information about installing and using **Flux Center 64bit** please see here:

https://confluence.merging.com/display/PUBLICDOC/Flux+Download+Center

Once Flux Center is launched go into **Settings** and select the **VS3** option and the **Pyramix v10 installation pack**. You will then be able to install the Flux VS3 plugins of your choice.

Solera +

Solera floating Window

Solera + is the flag ship of the range of **Angel Class Dynamic Processors**. It is primarily designed for mastering and re-mastering applications. However, it can also be used as a regular dynamic processor for superior sonic quality and distortion free operation.

Developed for Merging Technologies by Flux, every Angel Class Dynamic Processor plug-in uses some exclusive algorithms that endows them with an incredibly clear and natural sound.

The **Pure** series uses the same technologies for specific dynamic processes.

Here are some of the key features that make our plug-in the best available for dynamic processing in the digital domain:

1. Analog like metering. RMS values are more useful than dBfs when setting up a dynamic processor.
2. The **Angel's Share** parameter takes account of the signal for intelligent relaxation of the compressor action.
3. The **Hysteresis** parameter allows compressing and de-compressing independently of the sound level and can be mixed with the standard compression scheme.
4. The **Auto Release** features an unique algorithm that avoids typical pumping effect.
5. A delay line can inserted in the signal path to produce a null attack time.
6. The **A/B** compare and **Morphing** section enables ultra-fast and precise operation.

The **Angel Class** Dynamic Processor family supports up to simultaneous 8 channels and DXD operations.

> ***Note:*** *Solera is a wine making technique: A Solera is method of fractional blending for wine, closely paralleling the making of Sherry or Madeira. A solera consists of several rows of stacked oak barrels with the oldest wine in the bottom row and the most recently made at the top. At bottling, about one-third of the wine in the bottom row is removed and wine from the row just above replaces it and soon, until reaching the top row, which is replenished with new wine. The concept behind a Solera is to make a wine that remains consistent from year to year.*
> ***Angel's Share*** *is a term used for Armagnac, Cognac, Whisky; that part of the spirit that evaporates during the process of aging.*

Full operating details can be found in the **Angel Class Processors User Guide**.

Syrah v3 Creative adaptive dynamics processor.

Syrah v3 is a new generation dynamics processor utilizing real time dynamic detection and level dependent processing, providing adaptive dynamic capabilities, which mean that Syrah is always trying to adapt to the music and to the beat of the material. Using parts of Flux' exquisite 'BitterSweet' technology, new adaptive-dynamics technology, and well-recognized level independent dynamics processing, Syrah will be well suited as a creative versatile processor for recording and mixing, as well as for delicate and demanding mastering tasks.

Pure Series

The **Pure Series** plug-ins are essentially the individual building blocks of **Solera** presented as individual plug-ins. The advanced release mode is only available in Solera.

Pure Compressor

Pure Compressor is the compressor section of the Solera

Pure Expander

Pure Compressor is the expander section of the Solera

Pure DCompressor

Pure Compressor is the de-compressor section of the Solera

Pure DExpander

Pure Compressor is the de-expander section of the Solera

Algorithmix

DeNoiser

DeScratcher

DeNoiser + DeScratcher, Restoration Suite

ReNOVAtor

Overview

The ReNOVAtor™ plug-in for the Pyramix rendering interface is an impressive weapon in the battle for cleaner recordings. Coughs, chair scrapes even mobile phone tones are all in its sights.

The ReNOVAtor™ Plug-In enables audio data in the frequency domain to be modified simply and quickly. These modifications include interpolation of selected areas over the time- and/or frequency line as well as gain modifications. The interpolation can also be restricted to certain gain ranges within the selected area, which is very useful if only a certain part of the data needs treatment (e.g. one specific harmonic etc.) which cannot otherwise be selected. The ReNOVAtor™ window is fully resizable for optimum compatibility with all screen resolutions.

Vincent Burel

The VB plug-ins are bundled in the Pyramix 64-bit installer and require valid keys to operate. In the absence of the relevant keys they operate in demo mode. (Plug-ins are bypassed every 30 seconds.)

Aphro V1 Reverb / Aphro V1.5 Reverb

Aphro-V1.0/Aphro V1.5 are real time Digital Effects Processors. Elements of a high quality effects processor series called Aphro-Vx, Aphro-V1 and V1.5 are specially created to simulate sonorous atmosphere and room effects, in a realistic way.The handling philosophy is made simple and practical thanks to a wide range of presets, which requires the user to select a preset matching the best desired effect, and then to use the different interfaces in order to adjust it, according to his requirements. Grouping parameters by theme, gave us the idea of creating a modular and ergonomic user interface.

VB Packs

- VB C10-Multiband Compressor (C10-D10 - Limiter / C10-DXD)
- VB Compressor (Red-Blue Compressor and Decompressor / MultiChannel Compressor)
- VB EQ-Pro Pack (EQPro - G3/G4 EQnotch - G3/G4
- VB Limiter (C-Limiter)
- VB Measure Pack (VU-Meter / Oscilloscope / Spectrum Analyzer)
- VB Special Fx (Chorus / MultiTap)
- VB Stereo Management (Stereoman / MonoSwitcher)
- VB Striptool V1* / V2 / V3)
- VB Tone-X Pack (Tone-Param / Tone-Shelf / Tone-4)

* VB Striptools V1 plug-in is free of charge for all users. (32-bit or 64-bit)

> **Note:** Having the VB plug-ins installed can result in a 10 second (approximately) delay when launching Pyramix. If you do not wish to install the VB plug-ins along with Pyramix 9.1 or higher then select **Custom** when launching the Pyramix installer and under the **VBAudio plugin** entry select: **This Feature will Not be Available**.

Cedar Audio Restoration Suite for Pyramix

Cedar's range of restoration tools need no introduction here. The following processes are available for Pyramix:

- Cedar dehiss for Pyramix
- Cedar declick for Pyramix
- Cedar manual declick for Pyramix
- Cedar decrackle for Pyramix

- Cedar dethump for Pyramix
- Cedar Retouch for Pyramix

For full details please contact your Merging sales partner.

Prosoniq

MPEX4 Timestretch and pitch change

Overview

The MPEX4 algorithm for Pyramix has been developed with the German based company Prosoniq, well known for their high quality digital audio algorithms.

MPEX stands for **M**inimum **P**erceived Loss Time Compression/**EX**pansion. Incorporating this technology into Pyramix Virtual Studio enables users to adjust timing and pitch of existing material with outstanding results and ease of use.

Algorithm

Time Scaling (also known as 'Time Stretching', 'Time Compression/Expansion' and 'Time Correction') is the process of changing the length of a sound or sounds without changing its pitch. When a sound is transposed by playing it back at a different speed, e.g. when slowing down the playback speed of a tape recorder, it will play back at a different tempo but also at a different pitch. While this may be fine when tuning drum loops to match the speed of a recording it will make pitched sounds - like vocals - sound totally out of tune. Therefore it is desirable to provide a process that enables the duration and pitch of a recording to be changed independently from each other.

Time Stretch and Pitch Change for Film Applications

There are three main categories of Cinema time stretching and pitch changing requirements:

1) Conversion of audio rushes from 24 to 25 or 25 to 24 when their associated video or film has to be sped up or slowed down. The main reasons are:

a. The shooting has been done with film AND video, so one part of the rushes or the other have to be sped up or slowed down.

b. The telecine process to bring the film rushes to video for editing didn't preserve the original speed, intentionally or by mistake.

c. The shooting has been done on video at 25fps (intentionally or by mistake) and has to go to film.

Pyramix provides various solutions to this problem:

Batch conversion

of a whole media folder. Just select all media to stretch/squeeze / pitch change and select the menu **Quick Convert > Prosoniq MPEX4** module. All media will be processed in one shot. Media will have to be re-synchronized in time with their video equivalent by using the reference "Clap".

In the case where all the media are already synchronized in time with their video equivalent (either manually or because they've been properly stamped while recording), then simply send all these media to their original TimeCode (time stamp) in a Pyramix project and select the menu item **Project > Stretch / Pitch**. All media will be properly stretched/squeezed and their position will be also correctly updated. The new original TimeCode (time stamp) can then be written back to the media by selecting the menu item **Clips > Operations > Update Media Original TC**, so these new media can now be used exactly as if they've been recorded and stamped at that new speed, allowing also auto-conformation or other TimeCode based processes. All information stored in the Clips referencing these media in the Timeline (like fades, sync points, gain curve, ...) are also stretched/squeezed properly. Optionally the media can be consolidated to convert only the required part

The two processes described above are necessary when a mix of different source material speed have to be "normalized". In the case where it is known from the beginning that the whole editing and mix will have to be stretched back to the other (original rushes) speed, Merging provides a very convenient solution in term of hard-disk space, conversion time and finally sound quality. The Virtual Transport Video Player allows playing the video editing at a different speed than the audio material allowing matching (for instance and in the majority of cases) a video running at 24 frames per second with an audio editing stamped at 25 frames per seconds. This avoids com-

pressing the audio so it matches the video being played too fast (25fps instead of 24) but preferably run the video at the correct speed (24fps) and therefore the audio also.

Surround Post-processing

Conversion of a final mix from 24 to 25 for DVD/Video distribution of a film or 25 to 24 for film distribution of a video shot and edited movie.

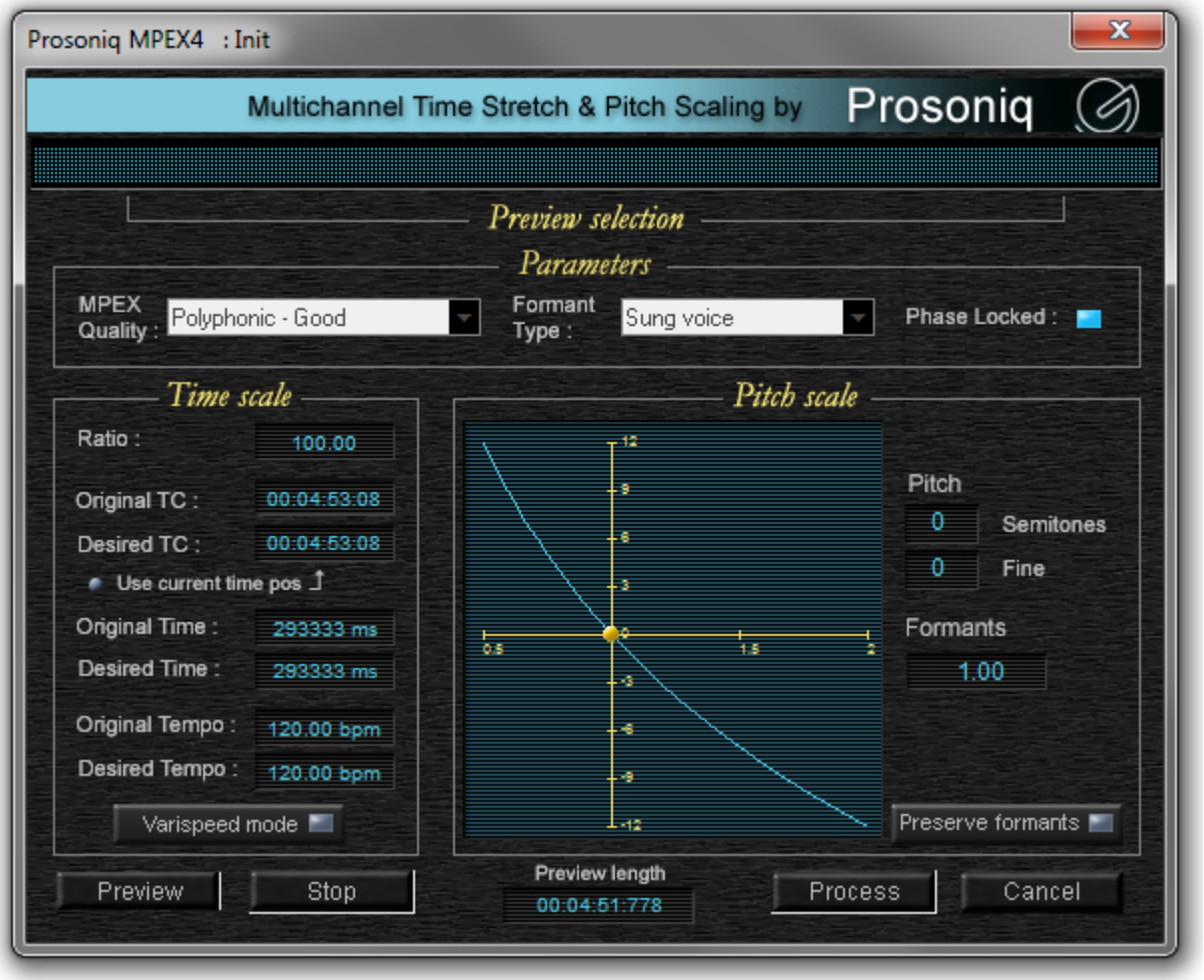
Pyramix allows stretching/squeezing a whole surround mix by selecting the menu **Project > Surround Post-processing** and choosing the **Prosoniq MPEX4** 24/25 Time Stretcher module. This function stretches/squeezes a whole 5.1 mix without inter-channels phase artifacts thanks to the new Prosoniq MPEX4 algorithm. This function allows processing multiple stem surround mixes stem by stem. Due to artefacts introduced by most time stretching algorithms available until now, the normal procedure was to separate the dialogue stem and the music/effects/ambiance stems, time-stretch them separately and remix them afterward. Although the Surround Post-processing function allows this methodology, this is no longer required due to the very high quality of the MPEX4 module. Therefore a complete mix can be stretched in one pass retaining maximum sound quality.

Time fit

Compression or expansion of a portion of audio to fit in a given time, generally dialogue, ADR, translation or Foley.

Pyramix provides three ways to stretch/squeeze a Region of audio:

- Just select the Region or Clip to process and place the cursor at the position where the nearest Region boundary should be extended to and select **Edit > Stretch**. A dialog will then allow the boundaries to be precisely adjusted with the help of TimeCode entries, or simply click OK or press the Enter key to confirm the operation.
- Select the Region or Clip you want to process and copy it (**Edit > Copy,** or **Ctrl C** etc.). Select the Region you want the copied Region to fit into then simply use the command **Edit > Fit Selection**.
- Select the Region or Clip to process, select the menu **Project > Render** and choose the **Prosoniq MPEX4** module.



Prosoniq MPEX4 dialog

A comprehensive interface then enables the time-stretch parameters to be precisely adjusted. In addition to time-stretching this interface also allows Pitch and Formant adjustments.

Quick Convert

The Prosoniq MPEX4 process can also be accessed by the Quick Convert function (Media Management Tab Window, Menu **Convert > Quick Convert > Prosoniq MPEX4**.

Zynaptiq

ZTX Pro

Optional high quality pitch-shift and time-stretch renderer from The Zynaptiq.

Note: Merging Technologies ZTX Pro key is required.

Accessing ZTX Pro

When a valid key is present ZTX Pro replaces Timezone as the Default Time-stretch tool in Editing.

It can also be defined under **Settings > Application > Editing > Time Stretch Tool**

TimeZone is no longer supported and no longer available.

Configuration

ZTX Pro is configured is in Pyramix Settings under **Settings > Application > Time Stretch > ZTX Pro Settings**.

Three quality modes are available: **Good**, **Better**, **Best**.

Time/Frequency localization setting

1. Selects full time localization. Good setting for single instruments and voice.
2. Time/frequency localization with emphasis on time localization. If setting **1.** produces echoes this give better results.
3. This sets the time/frequency localization halfway between time and frequency domains. It is the best setting for all general purpose signals and should be set as default for non-preview processing.
4. Higher frequency localization and less time localization. May be a better choice for classical music than the lower Time/Freq localization settings.
5. Highest frequency localization. This may not be an ideal choice if you're dealing with signals with very fast attack transients.

VST Support

VST Plug-ins

All well-behaved VST2 plug-ins can be used with Pyramix.

As of v11.1 VST3 plug-ins are supported in the mixer and in Effects Rendering but not currently in the Effect Rack.

32 bit or 64-bit OS

From Pyramix V10 onwards only 64-bit VST plug-ins are supported.

Under 32-bit OS only 32-bit VST plug-ins are supported. (Only if running Pyramix v9.1 and prior 32-bit versions.)

> **Note:** Please ensure you use 64 bit plug-ins on 64 bit OS systems and 32 bit VST plug-ins on 32 bit OS systems. It is possible to use a workaround to run 32 bit VST plug-ins on a 64 bit OS system by using the **jBridge** application. For further details please follow this link:
>
> http://jstuff.wordpress.com/jbridge

VST Plug-ins Scanner

In order to use VST Plug-ins, when launched, Pyramix must first scan the directories where the plug-ins are located. By default **\Program Files\VSTPlugins** and or **\Program Files\Steinberg\VSTPlugins** directories are scanned if they exist.

VST3 plug-ins are also, by default, scanned at Pyramix launch of and do not require a folder to be mounted in **All Settings > Mixer > VST-Plugins**.
VST3 plugins are specified to be added into the **c:\Program Files\Common Files\VST3** folder, this folder is scanned at Pyramix launch or on demand from Pyramix Settings.

VST3 plugins are known for their technological advancements and creative basis. Users can now benefit from: Improved performance, Resizable edit windows (when the plug-in supports them) and Multiple dynamic I/O's since VST3 plug-ins are not limited to a fixed number of inputs and outputs.

Further directories may be added to the scan list in Pyramix Settings. **Please see: VST Plug-Ins Settings on page 766**.

Also in **VST Plug-ins Settings** there are two options for how installed plug-ins will be ordered in the list menu: By Company Name and I/O Configuration or by I/O configuration.

> **Note:** The VST Plug-ins are initialized during Pyramix launch and this can take some considerable time. E.g. around four minutes for a Waves bundle. Please be patient if the Pyramix splash screen is displayed for a long time.

> **Note:** VST plug-ins are processed by the host CPU. Therefore, if you are intending to use VST plug-ins intensively, fast host processors are recommended.

Multi-channel VST Plug-ins

Multi-channel VST plug-ins are supported on MassCore Systems only.

> **Note:** The input scheme for multi-channel VST plug-ins is SMPTE L-R-C-Lfe-Ls-Rs. The output is routed correctly for the Pyramix bus layout Film L-C-R-Ls-Rs-Lfe.

Routing

On all Pyramix platforms VST plug-ins are automatically routed according the Strip or Bus Channel types e.g. C, LR etc. and the matching VST Speaker arrangement (typically, 5.1 Surround VST speaker arrangement uses the SMPTE L-R-C-Lfe-Ls-Rs mapping). If no VST Speaker arrangement can be found, the routing is straight.

For example, if for some strange reason you stamp a Stereo Aux as R-L, the left channel of a VST plug-in inserted into it will be fed by the 2nd channel of the Aux, and the Right channel by the 1st one; and at the VST insert output, the R-L routing is restored.

> **Note:** If the VST Core meter shows peaks we recommend increasing the **VST Plug-ins Latency** value. **Please see: VST on page 38**

On/Off and Bypass

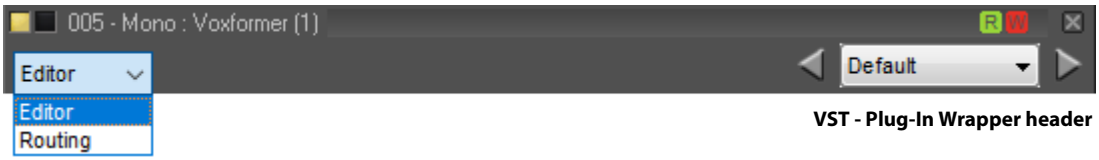
Like VS3 plug-ins VST plug-ins have yellow On/Off and red bypass buttons on the mixer providing standard bypass control.

VST - Plug-In On/Off and Bypass

The left-hand yellow button is lit when the effect is switched on. Switching an effect off removes it from the signal chain and this may well be audible.The right-hand red button indicates that the effect is bypassed when lit. Bypassing an effect retains the same delay as when the effect is active. Further, well behaved effects will continue to calculate internal parameters when bypassed making seamless switching possible.

> **Note:** Certain VST plug-ins such as UltraPitch do not have the standard VST internal "soft" bypass function. In this case, Bypass simply acts as an ON/OFF button. One effect of this is a change in Delay compensation scheme resulting in latency changes as the plug-in is switched ON or OFF. Changing the delay compensation on the fly during Playback or Record is not safe since it will cause a glitch or playback stall, and therefore Pyramix postpones the delay compensation recomputation until the transport switches back to stop. When you change the bypass status of such a plug-in on the fly the DelayComp status LED turns red and, on the next Stop, Delay compensation is recomputed and the status LED returns to green.
> Most VST plug-ins provide a private 'bypass', (inside the plug-in's own user interface), which enables clean, click-free and state-safe bypassing, without latency change (i.e. the plug-in maintains the same latency whether it is bypassed or not). Unfortunately, there is no simple and effective bypass solution for plug-ins that do not have an internal bypass.

VST Effect Wrapper Header



VST - Plug-In Wrapper header

On the VST user interface windows themselves, the On/Off and bypass buttons are on the left of the caption bar and function in the same way as the buttons on the mixer.

Caption Bar

The Caption bar text of these windows shows the ID of the related Strip or Bus and its name, before the plug-in name.

Automation

Automation mode is set using the **R** and **W** buttons. (Unlike VS3 plug-ins individual controls cannot have independent Automation modes).

Interface Switch

The drop-down underneath the On/Off and bypass buttons enables switching between the plug-in **Editor** interface and the **Routing** view.

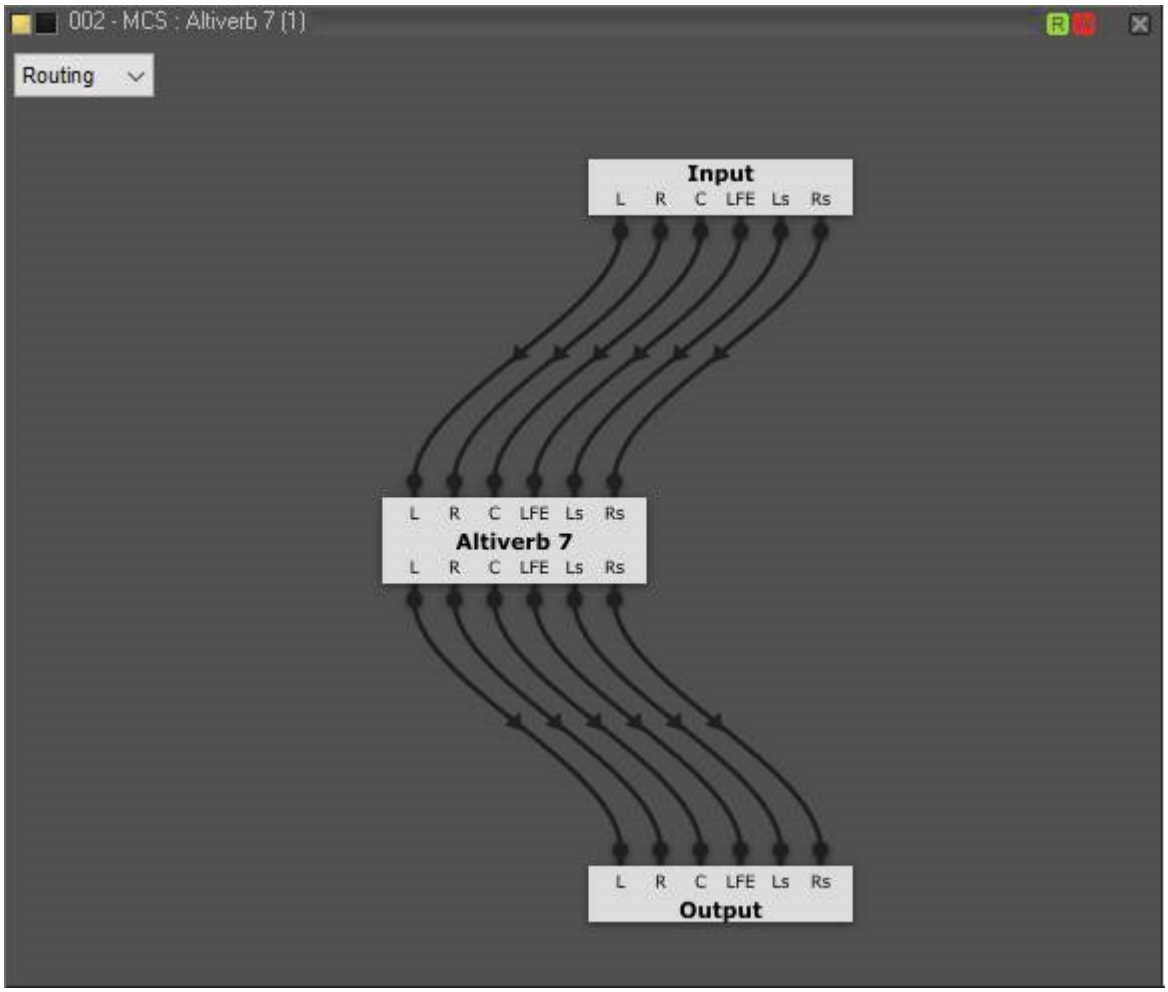
Programs

The Program List combo box and previous/next buttons below the automation buttons are only present if the plug-in has more than one program.

VST Routing

Enables the automatic channel routing to be changed, by simply selecting the connection arrow and moving it to another IO

The Input/Output sections' channel mapping, follows the channel order of the Strip/Bus.



VST - Plug-In Routing view

VST Plug-ins Without a User Interface

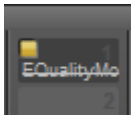
A generic UI has been added for VST and VST3 plug-ins which are provided without a user interface.

Ghost Plug-ins

As with VS3 plug-ins, the Ghost plug-in feature is implemented for VST plug-ins: essentially, this means that if you load a project containing a VST plug-in which is unavailable on your machine, this plug-in will appear in the mixer as a Ghost plug-in. This also applies to VST3 plug-ins when a Project is saved as a version lower than v11.1.

Saving the project will not trash a missing plug-in's state information.

When a plug-in is a Ghost its name appears crossed out in the mixer :



VST - Plug-In Ghost

Processing Delay Display

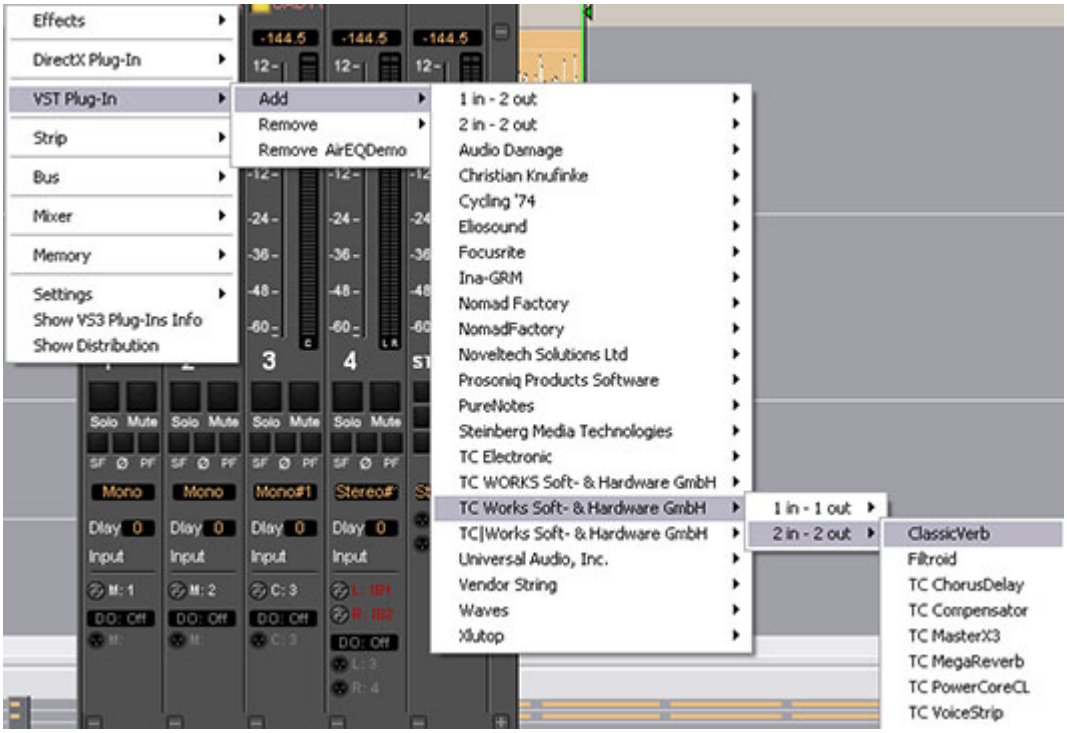
At any time, you can view a VST plug-in's processing delay in the VST plug-in name tooltip on the mixer (if non-zero, the processing delay will be appended in smp (samples) after the plug-in name):

VST - Plug-In Tooltip with delay value

VST Plug-ins Display Order

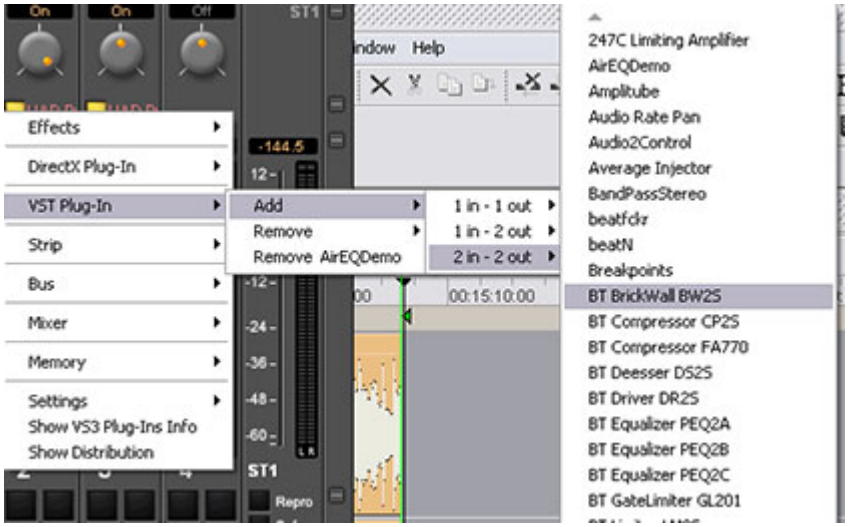
The list of VST Plug-ins that appears when adding a new instance of a plug-in can be ordered in two ways.

If **Company Name and I/O Configuration** is chosen the list will be ordered by Company Name and the plug-in's grouped according to their I/O configuration. I.e. **1 in - 1 out**, **1 in - 2 out**, **2 in - 2 out** and so on as shown here:



VST - Plug-Ins List by Manufacturer

Alternatively, choosing **I/O Configuration** groups the Plug-ins by I/O Configuration and within each group lists them alphabetically by name as shown here:



VST - Plug-Ins list by I/O configuration

The alternative displays are chosen in the **Settings > All Settings : Project > Mixer > VST Plug-ins Settings** page.

Please see also: VST Plug-Ins Settings on page 766

VST Plug-in Automation

VST plug-in automation works in much the same way as VS3 plug-in and Pyramix Mixer automation. However, there are a few differences:

Automation Mode

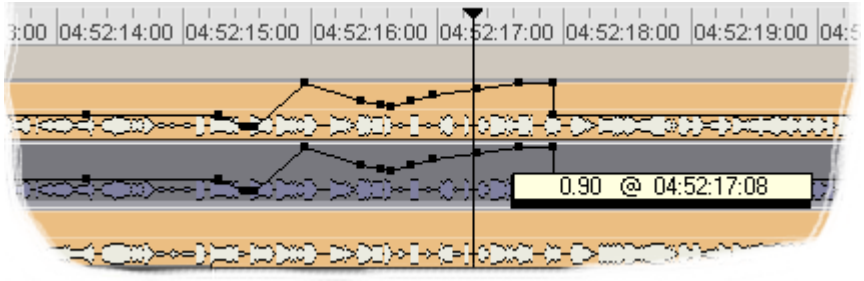
Read/Write, Auto-Write or Isolate status can only be set for an entire plug-in.

VST - Plug-In Automation Read Write buttons

Automation mode is set using the **R** and **W** buttons to be found at top right of a VST Effect window. (Unlike VS3 plug-ins individual controls cannot have independent Automation modes).

Automated Control Values

Control values are always expressed as zero to one. I.e. in the range 0.0 to 1.0 when editing automation points in the Timeline. The exception is when the VST plug-in reports a control as a toggle switch.



VST - Plug-In Automation node control value display

Direct X Plug-ins

in Pyramix V6.1 and later, DirectSound / DirectX plug-ins can only be used inside a suitable "VST Wrapper". There are several freely available, for example from Vincent Burel.

Important! Projects and templates created with previous versions of Pyramix may well contain **Direct X** plug-ins. If a Project or Template is loaded which contains Direct X plug-ins then these will be visible in the mixer but cannot be activated.
However, if such a Project is "Saved As" V5.1 then these plug-ins will be active if the Project is subsequently opened in a system running V5.1.

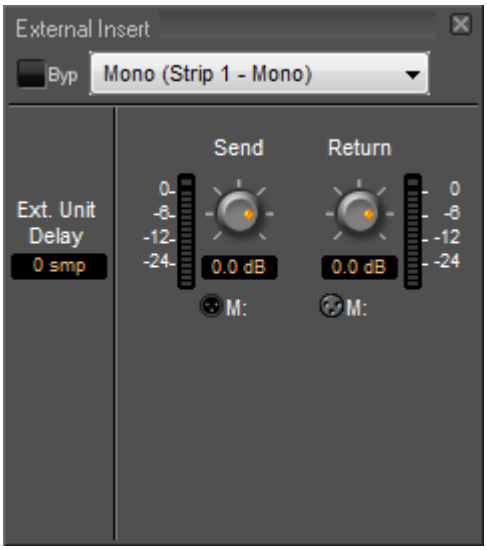
External Effects

Pyramix **General Purpose Mix Bus** Types, **Mix Bus** and **Aux Bus**, can be routed to any physical output. Thus, an **Aux** can be routed via a physical output to an external effect. The output of the external effect is simply brought back into Pyramix via one of the physical inputs. However, a delay will be introduced by the external processor and the converters. If the return needs to be time-aligned with other signals please see: **Mixer Delay Compensation on page 272**

External Insert

To add an External Insert simply right-click over the strip where the plug-in is to be added and choose: **VS3 Effects > Add > Other > External Insert**

Clicking on the **External Input** name in the strip opens the **External Insert** Control Window.



Mixer Strip External Insert Plug-in Control Window

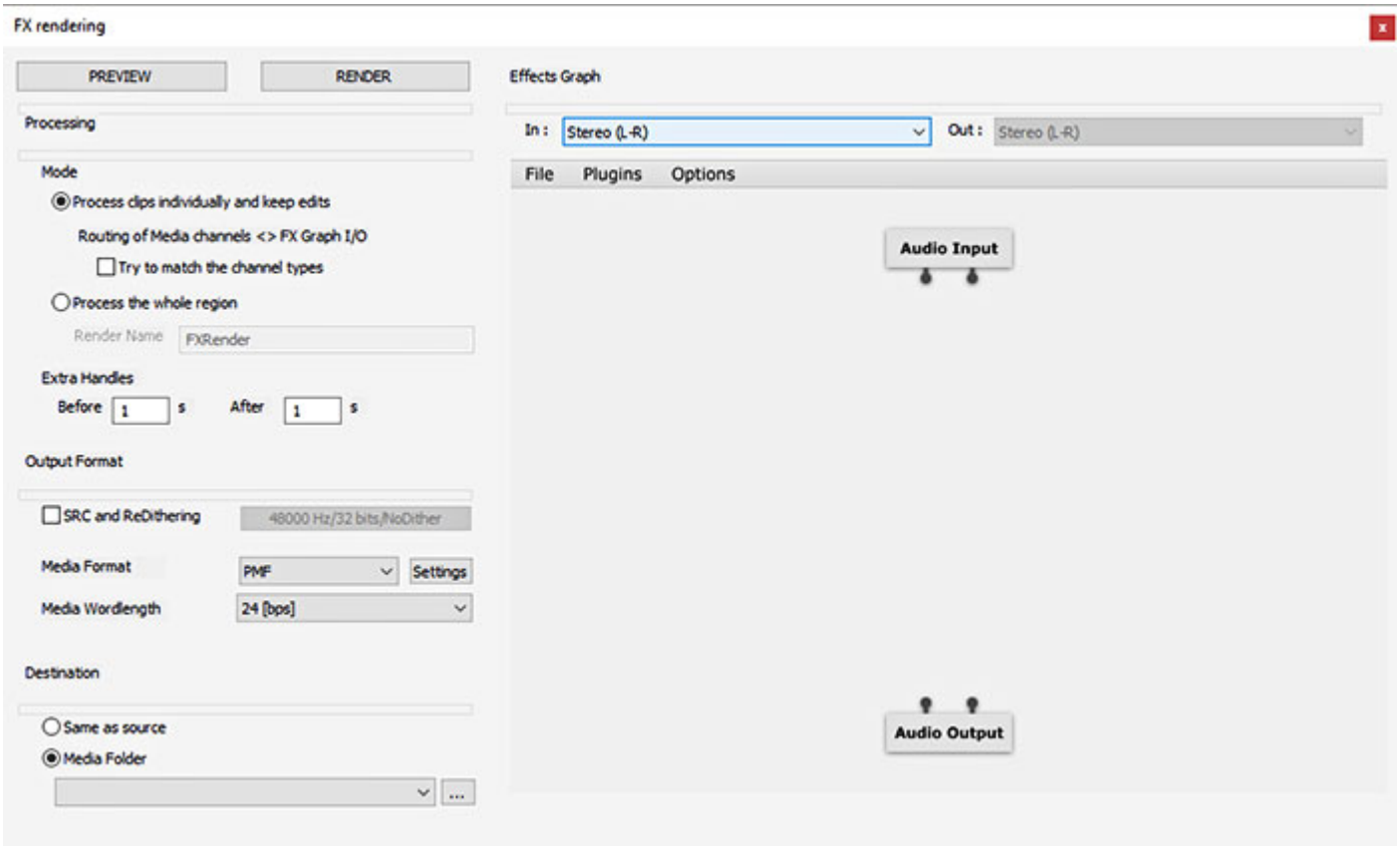
Send and **Return** Connections can be made by clicking on the XLR icons and levels set with the knobs. When you have determined the delay introduced by the I/O loop including the external effect the value in samples should be entered in the **Ext. Unit Delay** field.

FX rendering Tab Window

The **FX rendering** Tab Window offers a quick convenient way of rendering a **Clip** or **Region** with Plug-in processing applied. If the FX rendering Tab is not present in the lower part of the main Pyramix Window it can be opened with **View > Editor Tabs > FX Rendering**

A **Clip**, **Clips** or **Region** must be selected before an Effect or Effects can be **Previewed** or **Rendered**.

The FX rendering Window with nothing selected looks like this:



FX rendering Tab Window

The left-hand side, **Processing**, of the Window has the set-up options and the **PREVIEW** and **RENDER** buttons which initiate Preview or Render. The right-hand side, **Effects Graph**, is where Plug-ins are instantiated, FX render presets are saved and recalled and a graphic representation of the Input, Output and Effect or Effects.

Processing

Mode

Process clips individually and keep edits Each Clip selected will be processed individually in its edited form in the Timeline. The resultant file(s) will be named according to the original(s). Toggles with **Process the whole region**.

Routing of Media channels <> FX Graph I/O

Try to match the channel types When the box is checked FX Rendering will attempt to match the Input and Output channel types.

Process the whole region Processes the whole of a selected region. Toggles with **Process clips individually and keep edits**

Render Name Type a name for the resultant render file(s). (Default is **FXRender**) This option is grayed out when **Process clips individually and keep edits** is selected.

Extra Handles

Before Type in the box to add a Handle at the start of the rendered file.

After Type in the box to add a Handle at the start of the rendered file. (Useful for plugins which generate audio beyond the duration of the Clip or Region, e.g. reverb.

Default is **1S** before and after.

Output Format

SRC and ReDithering When the box is checked Sample Rate conversion and Redithering will be applied to the rendered file according to the settings chosen from the drop-down list.

Media Format Select the desired Output format from the drop-down list. Default is **PMF**.

Settings Opens a dialog box with settings options relevant to the format selected.

Media Wordlength Select the desired Output Wordlength from the drop-down list.

Destination

Same as source The rendered output file(s) will be placed in the same location as the original(s).

Media Folder The down arrow drops down a list of all Media Folders Mounted currently. The **...** button opens the **Choose a media folder to mount** dialog.

Effects Graph

In : The field shows the channel format of the **Audio Input** block. The down arrow drops down a list of available formats.

OUT : The field shows the channel format of the **Audio Output** block. The down arrow drops down a list of available formats.

Note: When **Process clips individually and keep edits** is selected the **OUT :** field is grayed out since the Output format is fixed as the same as the input format. When **Process the whole region** is selected the Output format can be different to the Input format. E.g. if you wish to process LR from a 5.1source region.

Menus:

File

Open... Opens the **Load a filter graph** browser with the path set to the **MERGING Libraries** folder. Select the desired **Filter graph** and click on **Open** to load it into the **FX rendering** Tab window and close the browser. Or click **Cancel** to close the browser witout loading a Filter graph.

Save Saves the Filter Graph under the current file name or opens the **Save a filter graph** browser if the Filter Graph has not been saved previously.

Save As... Opens the **Save a filter graph** browser

Plugins

Create plugin

Create plugin > VS3 Shows a list of all available **VS3** plugins.

Create plugin > VST Shows a list of all available **VST** plugins.

The selected plugin will appear as a block in the middle of the Effects Graph.

Delete all plugins Deletes all plugins present in the Effects Graph.

Options

Edit the list of available plugins... Opens the **Available Plugins** window. This has an **Options...** button which plugins to be added to or removed from the list.

Plugin menu type

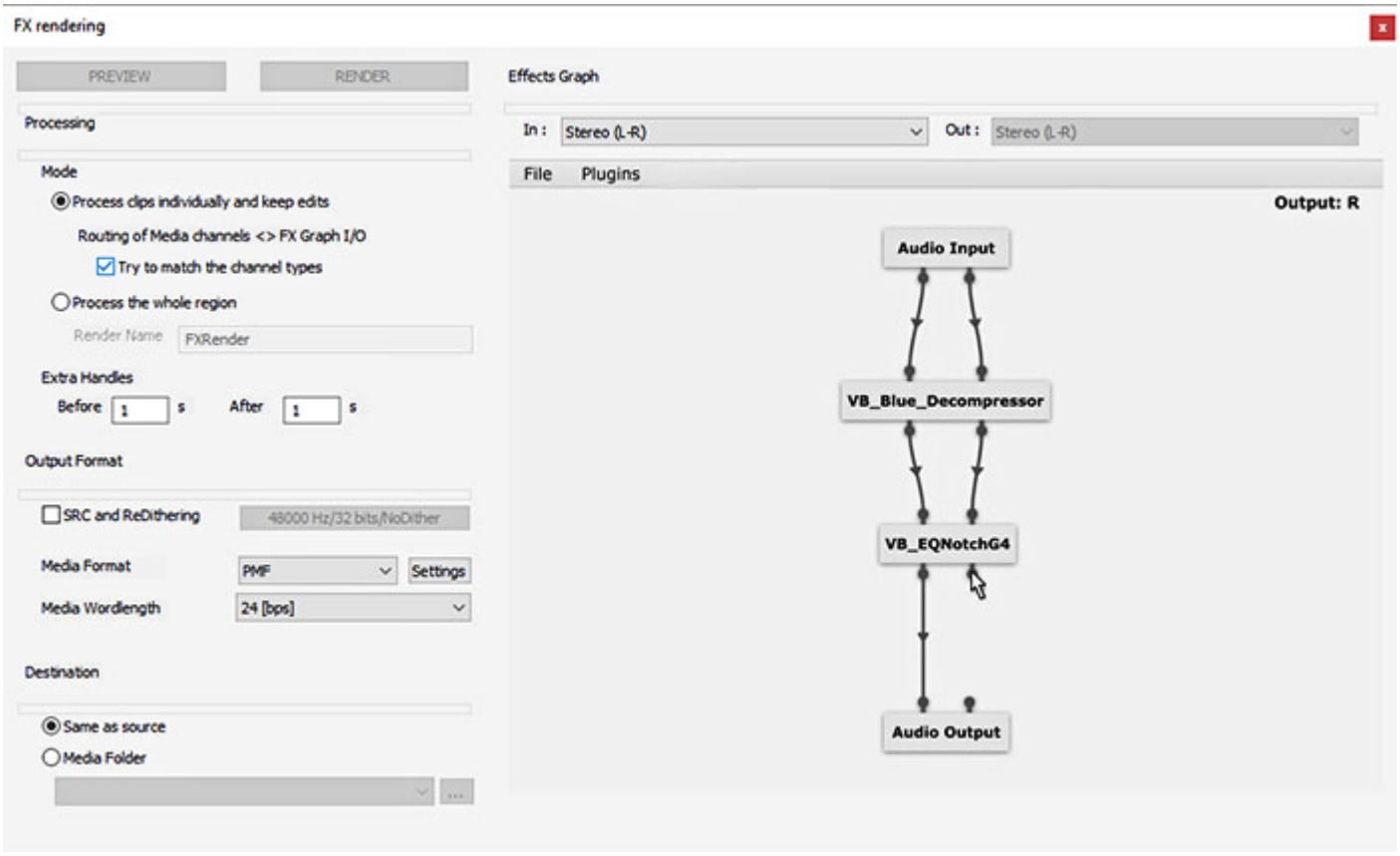
List plugins by category

List plugins by manufacturer

List plugins based on the directory structure

Filter Graph

The filter graph shows a graphic representation of the **Audio Input**, **Plugin(s) Audio Output** and the connections between them.



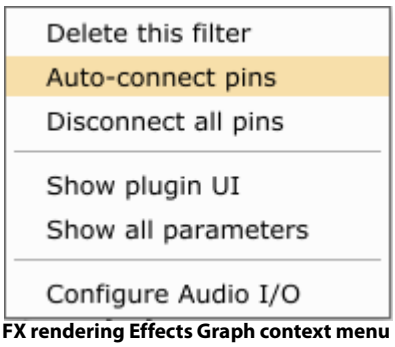
FX rendering Tab Window

Plugins may be added from the **Plugins** menu or from the right-click context menu when the mouse cursor is over a blank area.

Connections are made by clicking on an input or output pin node and dragging to another node. While the mouse cursor is over a pin node the type of connection is shown at top right.

Individual connections are removed by clicking on the small arrow in the middle of the 'cable'.

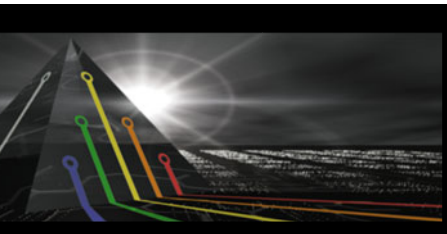
Right-clicking with the mouse cursor over a Plugin accesses a context menu:



FX rendering Effects Graph context menu

Delete this filter	Deletes the plugin under the mouse cursor.
Auto-connect pins	Auto-connection is based on the channel types. (If there is no match, a one to one connection will be applied.)
Disconnect all pins	Removes all connections to pin nodes on the plugin under the mouse cursor.
Show plugin UI	Opens the plugin UI in a separate window.
Show all parameters	Opens an editable list of all parameters available for the plugin.
Configure Audio I/O	Select a plugin and Right-Clicking enables the Input and Output Configuration to be selected.

14 Automation



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Scope

Pyramix Virtual Studio is equipped with an extremely powerful automation system, including both dynamic and snapshot automation of levels, pans, effects, etc. This chapter covers internal control of automation. If you are using a Ramses MSC or ISIS Controller, please see the relevant User Guides for further information.

Master Automation Transport Controls

Global Dynamic Automation Modes

Set using the **On/Off**, **Read** and **Write** buttons in the **Automation** toolbar (or the **Automation** menu items) these set the dynamic automation mode for the entire console. Individual controls will behave according to their own current mode.

The **Global Automation Controls** are in a dockable Tool Palette, by default located at the bottom right side of the main **Pyramix** window. There are **Off**, **Play**(Read) **Write** and **Preview** buttons plus two buttons with camera icons which deal with **Snapshot** automation: .

Master Automation Controls dockable toolbar

Off button can only be used to turn dynamic automation **Off**. When it is **Off**, no existing automation data is played back and no new data is recorded when controls are moved.

When dynamic automation is **on**, (**Play** or **Write** buttons lit), existing automation data is played back. New automation data can only be recorded when **Write** is lit and the controls to be automated are in an appropriate mode.

When the **Play** (read) button is pressed it 'lights' green.

Controls set to **Read**, or **Auto-Write,** Read existing automation data, otherwise they maintain their default values. Controls set to **Isolate** or **Record** maintain their current values and no new data is recorded.

When the **Write** button is pressed it 'lights' red. Controls set to **Write** write their current values. Controls set to **Touch** only record when they are moved. Controls set to **Read**, Read existing automation data (if any). Controls set to **Isolate** maintain their current values.

Snapshot Automation

When the **Preview** button is pressed it 'lights' yellow. In preview mode Automation Read is active until a control is moved. When the Transport is stopped the **Filter Automation Tracks to Snapshot Range** dialog appears. (If this has been selected in **All Settings > Application > Automation**.) Please see: **Preview Automation Mode on page 437**. Please see also: **Filter Automation Tracks to Snapshot Dialog on page 447**

The **Off** button cancels either **Read**, **Write** or **Preview** modes and switches dynamic automation off.

The **Snapshot** button opens the **Filter Automation Tracks to Snapshot** dialog. When **OK** is pressed inserts an automation event (key frame) is inserted which records the state of all

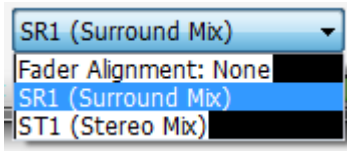
enabled controls at the current cursor position if their state has changed since the previous **Snapshot**.

The **Snapshot Range button** opens the **Filter Automation Tracks to Snapshot Range** dialog. When **OK** is pressed automation snapshot key frames of all enabled controls are inserted at the **Mark In** and **Mark Out** cursor positions. In effect, this sets all enabled controls to the current state throughout the range defined by the marks.

Please see also: **Filter Automation Tracks to Snapshot Dialog on page 447**

Designated Bus Selector for Fader Alignment

The box shows which bus the automation is aligned with when automatic delay compensation is active. The drop-down list shows all available buses plus the option of none.



Dynamic Automation Levels

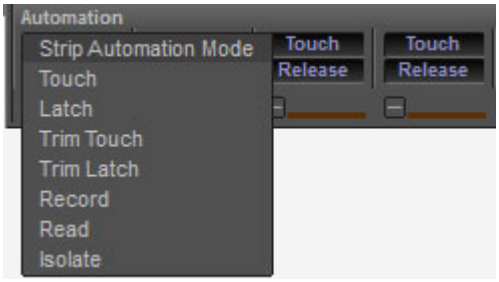
There are two “levels” of automation in the mixing console.

Level 1

The modes as defined per Strip in the section atthe bottom of the mixer:

Control strips Automation buttons

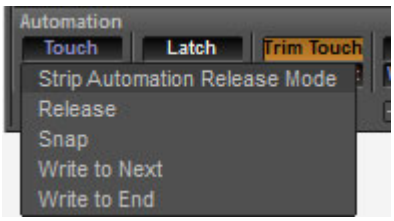
Clicking on the upper button pops-up the list of available Strip Automation Modes:



Control Strip Automation Mode pop-up

- Touch
- Latch
- Trim Touch
- Trim Latch
- Record
- Read
- Isolate

Clicking on the lower button pops-up the list of available Release Modes:



Control Strip Automation Release Mode pop-up

- Release
- Snap
- Write to Next
- Write to End

These modes are also available through the contextual right-click mouse button under

Strip > Automation and have the same effect as selections made with the buttons at the bottom of the strips.

These modes do not color the mixer strips, only the buttons on the bottom of strips

To set these modes for the entire mixer the **Automation** menu has entries for **Console Strips Mode - XXX** and **Console Strips Release Mode - XXX**.

Note: When a **Trim** mode is selected a delta symbol appears in the numeric display:

Trim Touch or Latch Mode Delta indicator

Level 2

Level 2 is the modes available via the right-click context menus under **Automation** (per component), **Bus > Automation** (for the whole bus), **Mixer > Automation** for the entire mixer The modes are:

- Follow Strip
- Record
- Read
- Isolate

These modes override the Strips level 1 mode.

When in **Follow Strip** Mode, the level 1 Strip mode for the whole strip applies to the component, when in **Record**, **Read** or **Isolate** the component ignores the Strips mode.

These modes color the background of the mixer components and override any strip or bus color.

Automation Modes

Behavior when a control is touched or released depends on the global settings in the **Automation** menu, strip settings or individual control settings.

Automation Menu - Touch and Release Modes

Console Strips Mode - Touch The automation starts writing a new pass when the control is touched and stops writing when the control is released. Behavior on release depends on the release mode.

Console Strips Mode - Latch The automation starts writing a new pass when the control is touched. The value when the control is released will continue to be written until the transport stops.

Console Strips Mode - Trim Touch The automation starts updating the current pass when the control is touched and stops updating when the control is released.

Console Strips Mode - Trim Latch The automation starts updating when the control is touched but continues when the control is released and stops only when the transport stops.

Console Strips Release Mode - Snap A straight jump is made from the current control value to the value written in the previous pass.

Console Strips Release Mode - Auto-Release An interpolation is created from the current value to the value written in the previous pass. I.e. a fade. The length of this is defined in **Automation Settings > Auto-Release Time**.

Console Strips Release Mode - Write to Next The same value is kept after the last written point until the next point is found in the previous pass.

Console Strips Release Mode - Write to End Writes the current value to the end, ignoring previously written points. (If any)

Release Auto-Writing Immediately releases all controls currently recording automation. This option is provided for controllers without touch sensitive faders etc.

Note: Ctrl + Alt + Esc releases **Auto-Write**

Trim Mode Notes

- Automation **Trim** modes shows a visual indicator when active (delta/small triangle in the numeric display).
- When in a **Trim** mode the fader will be set to **0dB** and the offset applied will be reflected on the Fader scale.
- An offset is applied to the absolute value, and the fader is fixed on the new value.
- **Automation Trim** can be applied to **linked** Strip Faders.
- **Warning:** When strips in **Trim** mode are linked to a **VCA Group**, they will not be controlled by the **VCA Master**. This is intentional.

Note: Without Automation enabled, the Trim behavior can still be used despite the fact that no values will be written, in such a case the Fader will remain at the last position it is moved to.

Dynamic Automation Transport Modes

Every control in the mixer can be set to one of four dynamic automation transport modes. The automation mode can be set for individual controls, for channel strips, for buses, for groups of controls or for the whole mixer. The current mode is shown by the background color.

Auto-Write Write Read Isolate

Dynamic Automation Transport Mode colors

Auto-Write
Default background color.

With the transport in **Play**, and the **Master Automation Controls** in **Read** or **Write** modes, the control(s) Read (play back) previously recorded automation data.

In **Write** mode When a control is moved new automation data is written until the control is released. Behavior when the control is released, or the transport stopped, is governed by the choices made in the **Automation** menu and in **Automation > Automation Settings**.

Write
Dull red background.

With the transport in Play, and the **Master Automation Controls** in **Write** mode, the current state of all controls in **Record** mode is recorded as automation data.

Read
Dull green background.

The control(s) follow the last automation data recorded for them or maintain their default position where no previously recorded automation data exists.

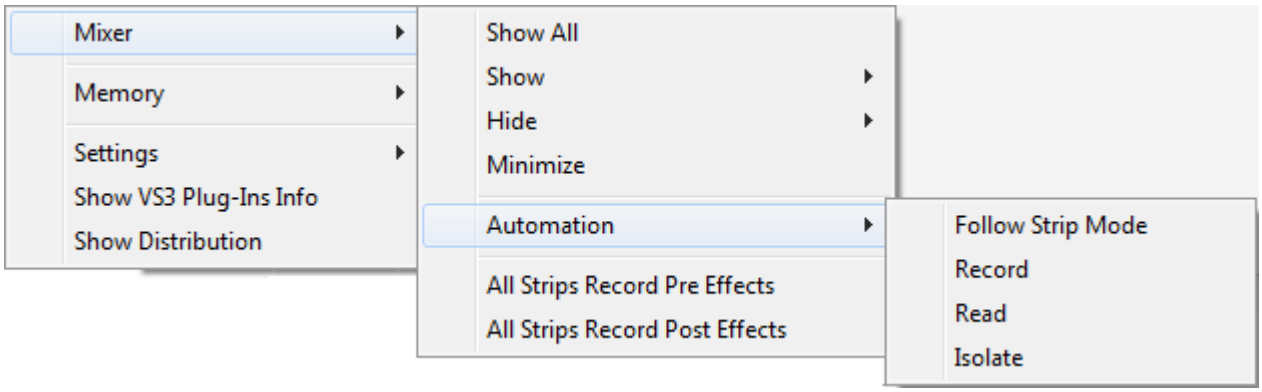
Isolate
Charcoal gray background.

The control(s) are isolated from any automation moves already recorded. Controls can be moved without affecting existing automation data.

Default Mode
The default mode is **Auto-Write**. When the Automation Transport mode is **Write** if a control is moved automation data is written automatically. Press a button and the same applies.

Selecting Automation Modes
Automation modes are set globally for the entire mixer, per strip or per component.

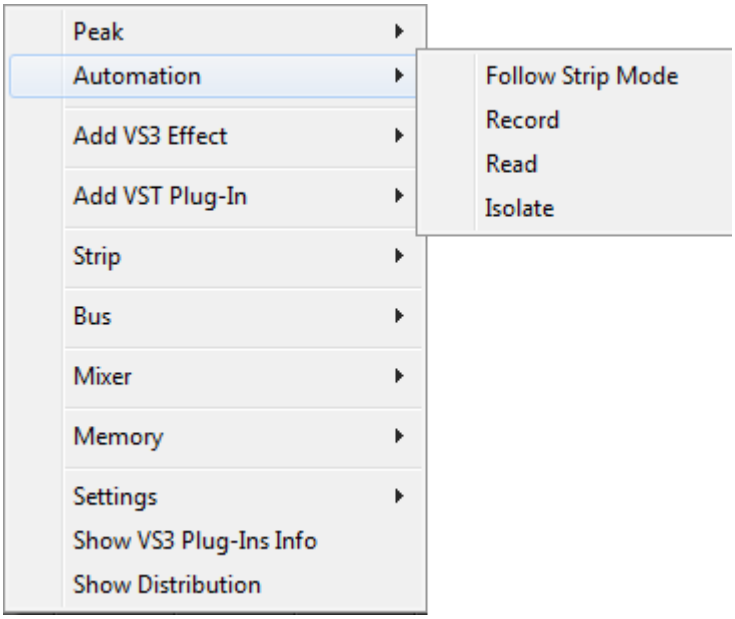
Entire Mixer
The entire mixer can be set to the same mode from the **Automation** menu or by right-clicking in a blank area of mixer panel (E.g. under the bus strips) and selecting the desired mode from the popup menu. **Mixer > Automation > xxxxx**



Mixer context menu Mixer Automation sub-menu

Block, Strip, Bus or Entire Mixer

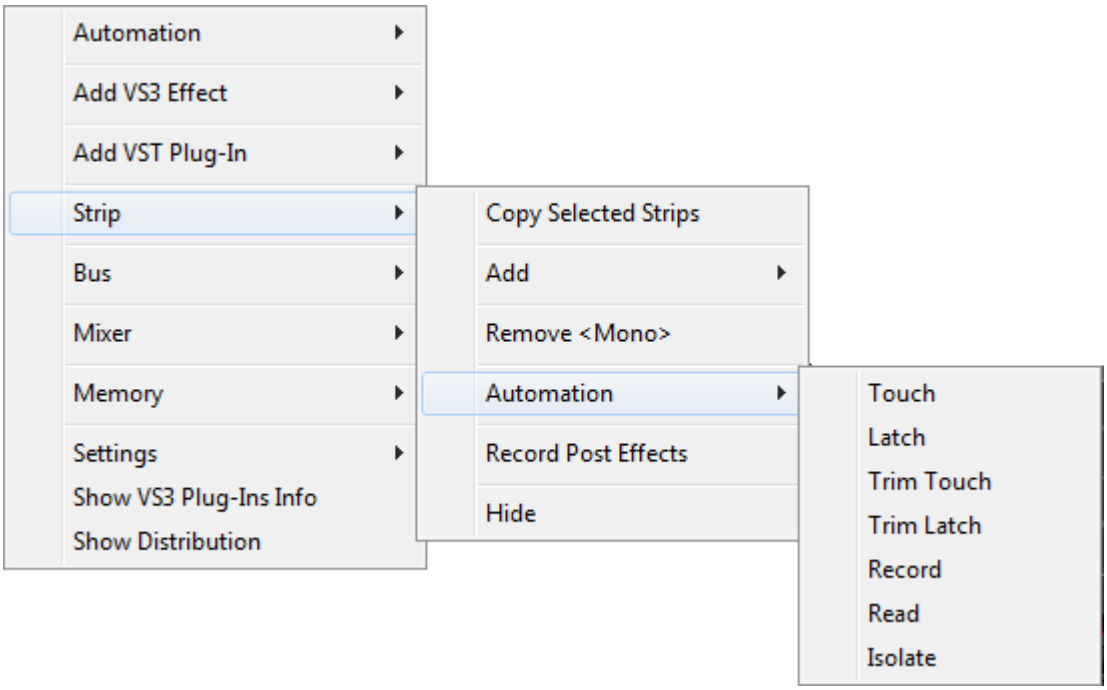
Right-clicking in a mixer channel strip function-block, e.g. as shown here in the fader area, pops up a contextual menu. Selecting **Automation** opens a sub-menu offering a choice of four automation modes:



Automation sub-menu

This contextual menu also enables the automation mode for the whole strip, one or more buses or the entire mixer to be set by choosing **Strip**, **Bus** or **Mixer**.

Selecting one of these opens a sub-menu. Selecting **Automation** opens a further sub-menu offering the choice of automation modes:

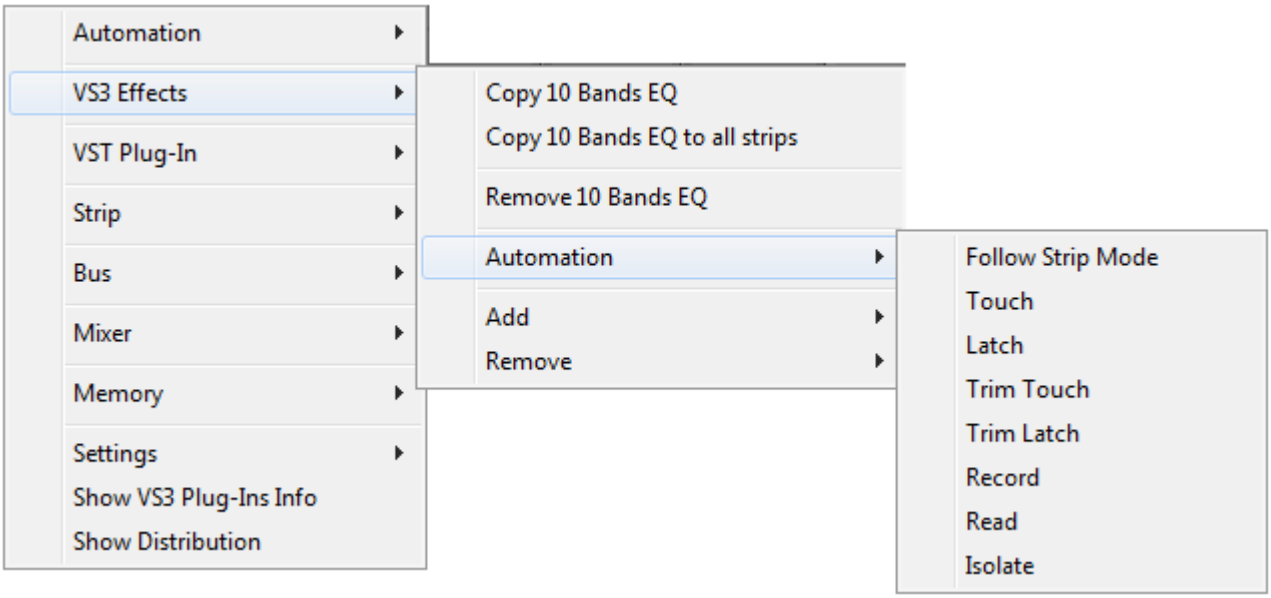


Strip > Automation sub-menu

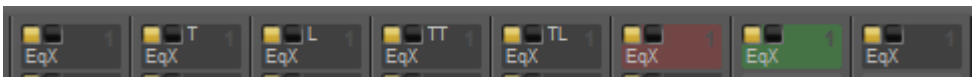
WARNING: We advise that users do not automate Buses or Aux Send **ON/OFF** as this could cause Delay Compensation issues. As an alternative simply automate Bus or Aux Send **Gain**.

VS3 Effects

Right-clicking over a VS3 Effect in a Strip, pops up a contextual menu. Selecting **VS3 > Automation** opens a sub-menu offering a choice of seven automation modes:



VS3 Effects > Automation sub-menu



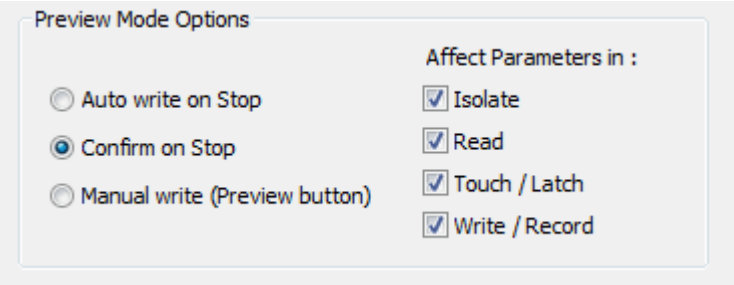
VS3 Effects Automation modes

Follow Strip mode	**No** mode identification letters shown in effect block. Effect Automation follows the mode set for the entire Strip
Touch	**T** shown in the effect block.The automation starts writing a new pass when the control is touched and stops writing when the control is released. Behavior on release depends on the release mode for the Strip.
Latch	**L** shown in the effect block. The automation starts writing a new pass when the control is touched. The value when the control is released will continue to be written until the transport stops.
Trim Touch	**TT** shown in the effect block. The automation starts updating the current pass when the control is touched and stops updating when the control is released.
Trim Latch	**TL** shown in the effect block.The automation starts updating when the control is touched but continues when the control is released and stops only when the transport stops.
Record	**Effect block** shaded red. With the transport in **Play**, and the Master Automation Controls in **Write** mode, the current state of all controls is recorded as automation data.
Read	**Effect block** shaded green.The control(s) follow the last automation data recorded for them or maintain their default position where no previously recorded automation data exists.
Isolate	**No** mode identification letters shown in effect block. The control(s) are isolated from any automation moves already recorded. Controls can be moved without affecting existing automation data.

Preview Automation Mode

This mode allows Automation moves and snapshots to be tried out. If the result is as desired it can be saved. Otherwise any changes made are discarded, preserving the pre-existing automation.

Preview Mode Options are set in the **Settings > All Settings > Application > Automation** page.



Preview Mode Options in the Automation Settings page

Preview Mode Options

Auto write on Stop — Applies the Automation on all parameters changed during the pass without confirmation.

Confirm on Stop — The **Filter Automation Tracks to Snapshot Range** dialog will open automatically when the Transport is stopped. (Equivalent of pressing the **Snapshot Range** button.)

Manual Write — The **Preview** button will blink when the Transport is stopped if any parameter changes have occurred but the **Filter Automation Tracks to Snapshot Range** action dialog will not open automatically . Clicking on the **Preview** button will opens the dialog.

The Automation states in which parameters will be affected by changes in Preview Mode are set by checking the desired boxes in:

Affect Parameters in :

Isolate

Read

Touch / Latch

Write / Record

When Automation Preview mode is active there are a number of different scenarios depending on the controls automation mode.

Isolate — No automation data will be Read or Written. (Same behavior as Play or Write modes.)

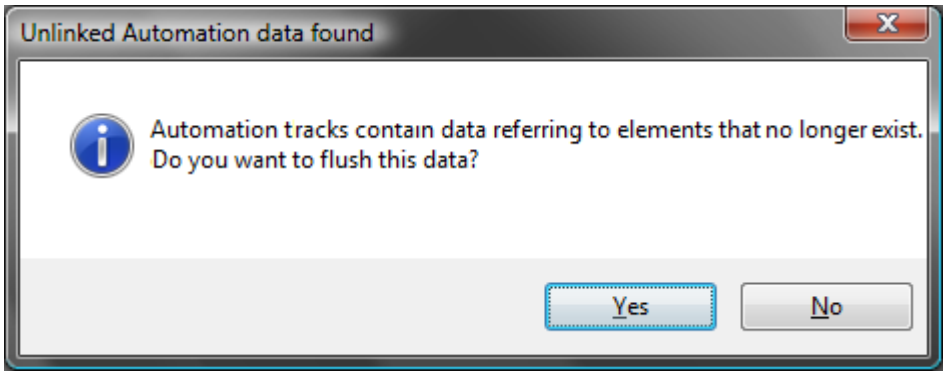
Read — Read the current automation data. (Same behavior as Play or Write modes.)

Write — When the automation **Snapshot Range** button is pressed the window shows every control in Write Mode which has been moved since the previous Snapshot. Until a control is adjusted it follows the pre-existing automation curve. The last value set is retained until the Snapshot Range window appears. This window opens automatically on Stop when **Preview mode: Popup Snapshot window on Stop** is active. In the Snapshot Range window the changes can be cancelled or accepted per control.

Auto-Write — Same behavior as **Write** mode.

Projects With Existing Automation

When opening a Project that has existing dynamic automation and where a mixer element is no longer present or when rebuilding a mixer where a previously automated element has been removed the following dialog appears:



Clicking on **Yes** removes the redundant data. Clicking on **No** retains it giving the opportunity to re-instate the missing element(s).

Display and Editing of Automation Data

The automation data recorded for any control on any strip can be viewed and edited on any Track in the Timeline.

Clicking the **Show/Hide Automation** button in the Track Header displays or hides automation curves.

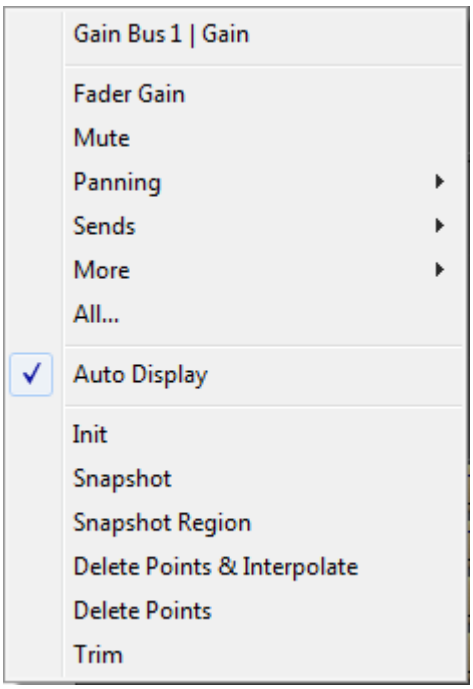
The Automation curve is colored depending on the parameter type displayed:

Automation Curve Colors

Fader	**Blue**
Pan/Balance/Surround	**Green**
Send & On/Off	**Cyan**
Mute	**Red**
Everything else	**Black**

Track Automation Menu

Right-clicking the **Show/Hide Automation** button pops up the automation menu for the Track. This menu is modal,i.e. the content varies according to the current mixer architecture and depending on pre-existing automation data.

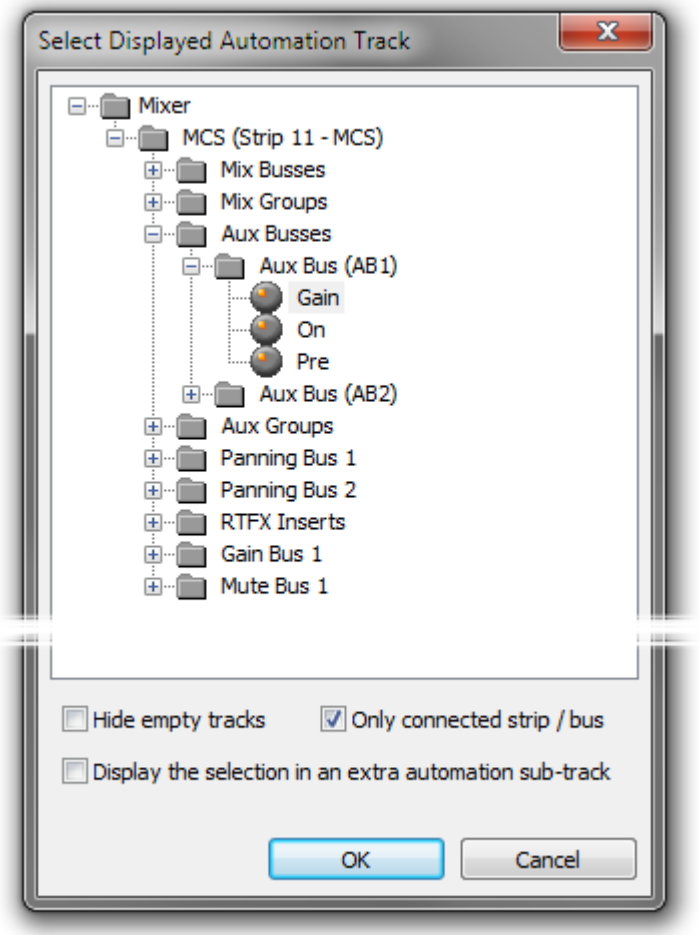


Track Automation Initial context menu

Gain Bus 1 | Gain	This line shows the current automation parameter selected for display as a curve.
Fader Gain	Sets the automation curve display to **Fader Gain**.
Mute	Sets the automation curve display to **Mute**.
Panning	Sets the automation curve display to the Pan or Balance parameter chosen from the sub-menu. The options available will depend on the type of Mixer Strip and the Buses present in the Mixer. Any of the following may be present: **Pan**, **Balance**, **Left/Right Pan {bus}** **Front Rear Pan {bus}**.
Sends	Sets the automation curve display to the Send chosen from the sub-menu.
More	Sets the automation curve display to any other automatable parameter in the current mixer which has automation data written, chosen from the sub-menu.

Note: All of the above choices will be overridden the next time a different control parameter is written, if **Auto Display** (see below) is turned **On**.

All... Opens the **Select Displayed Automation Track** dialog:



Select Displayed Automation Parameter

Every automatable parameter of every Strip and Bus is available. However, default is to have the **Only connected strip / bus** box ticked so only parameters from the Mixer Strip connected to the Track are shown.

Clicking on the plus sign next to a folder will show the all automatable parameters associated with it. Simply choose the parameter you wish to have displayed.

Hide Empty Tracks When ticked (default), Tracks with no automation data written are not shown in the tree.

Display the selection in an extra automation sub-track When ticked, a new Automation Sub-Track is created to contain the automation curve for the selected parameter when the **OK** button is clicked.

Only connected strip / bus When ticked (default) only the parameters from the current Strip or Bus are shown. When un-ticked every parameter in the Mixer is available.

OK Confirms selection and closes the dialog

Cancel Cancels the selection and closes the dialog.

Note: If you choose a Strip AND a specific parameter to display in this dialog then **Auto Display** should be turned OFF.

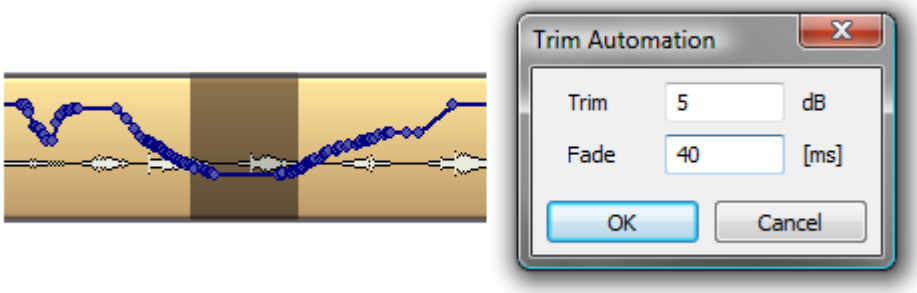
Auto Display When Auto Display is selected, the automation curve displayed will be from the last control on the Mixer Strip associated with the Track that has been adjusted or switched. (Defaults is **ON**)

Note: Auto Display should normally be **Off** when any control NOT on the Mixer Strip is displayed, or if you wish to lock the view to automation data from a specific control.

Init	Creates an initial "write" of automation parameters for mouse editing. The initial version is created with the current state of the mixing console control.
Snapshot	Creates a snapshot of the automation curve displayed currently.
Snapshot Region	Creates a snapshot of the automation curve in the current Region.
Delete Points & Interpolate	Deletes all automation points from the control curve in the current Region and interpolates between the last existing point before the selection and the first point after the selection.
Delete Points	Deletes all points from the automation curve in the current Region.
Trim	See below

Trim

When automation **Trim** is invoked a dialogue box opens which enables the automation points values in the range selected currently to be trimmed:



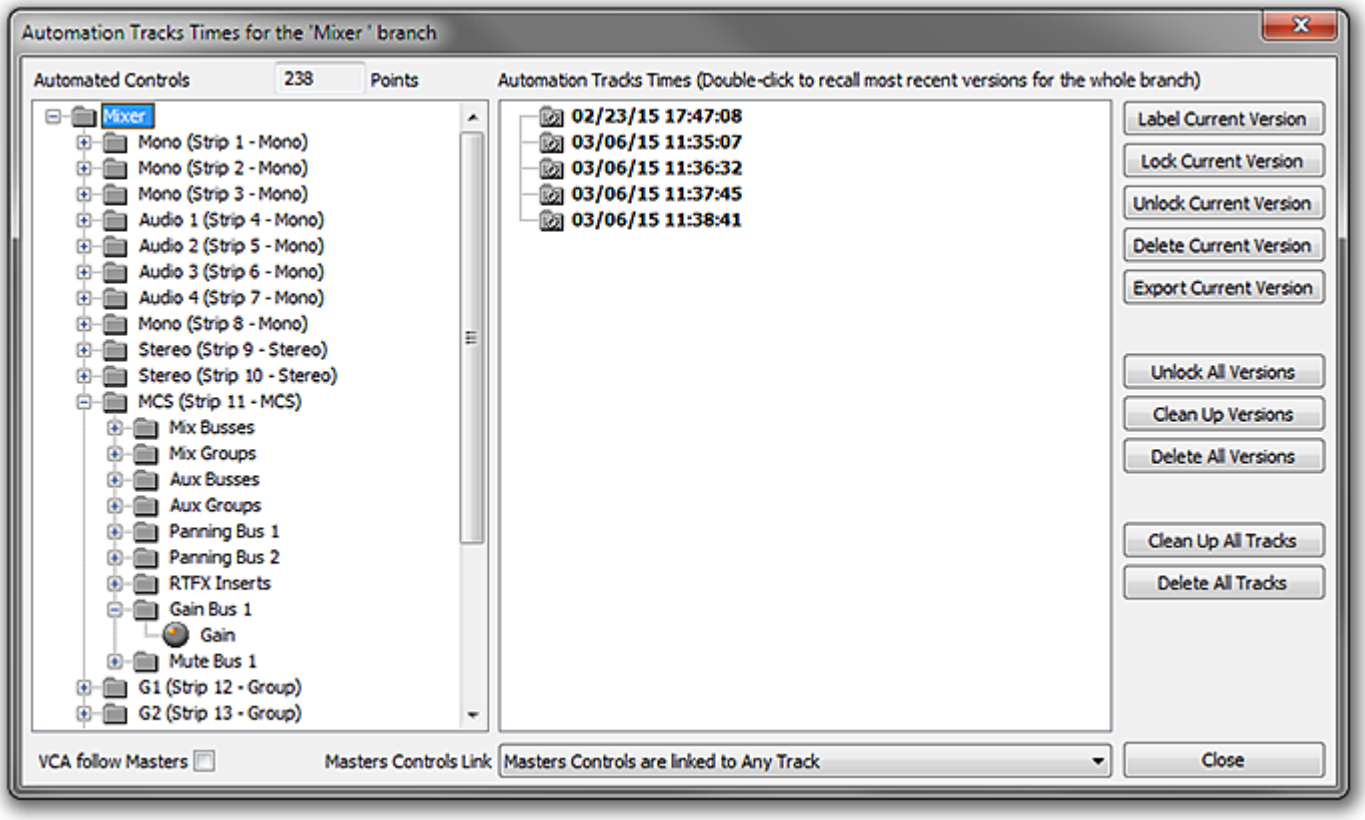
Track Trim Automation dialog

Values can be increase by simply typing the number of dB required or decreased by typing - (minus) before the number in the **Trim** box. The **Fade** box allows a value in ms to be entered. This defines the length of fade which is automatically applied at the beginning and end of the selected range from and to the original values.

Note: dB applies to level changes. If the automation curve is displaying frequency, values will be in Hz and so on.

Automation Tracks Versions

Automation > Automation Tracks opens the **Automation Tracks Times** window:



Automation Tracks Times Window

Automated Controls

The **Automated Controls** pane displays all the automatable controls in a tree structure. Double-clicking an entry in the tree brings the automation passes for the entry into the **Automation Tracks Versions** pane. This shows all the automation passes for the selected Control, Strip or the entire mixer. Double-clicking a version makes it current.

Label Current Version	creates a copy of the current version for the selected control or branch of controls, gives it a name that will be displayed in the version Tree and locks it/them. This makes it easy to recall a given and easily identifiable version of the automation for the whole mixing console. A warning dialogue is shown if the item selected is anything other than **Mixer**.
Lock Current Version	Locks the current version
Unlock Current Version	Unlocks the current version
Delete Current Version	Deletes the current version. Subsequent passes are re-numbered as necessary.
Export Current Version	Exports the current Track or Branch as an XML file.
Unlock All Versions	Unlocks all versions in the tree.
Clean Up Versions	Deletes all versions except the most recent.
Delete All Versions	Deletes all the automation passes for the selected control.
Clean Up All Tracks	Deletes all versions except the current one for all Tracks.
Delete All Tracks	Deletes all automation information for all Tracks.

Locked Versions

Locked versions will be preserved when:

- Clicking on the Clean Up Versions button
- Clicking on the Clean Up All Tracks button
- Saving with the "Keep only current and locked versions while saving" option in the Automation Settings
- The "Limit versions to the number of Undo/Redo" option is enabled in the Automation Settings

Locked versions will NOT be preserved when:

- Clicking on the Delete Current Version button
- Clicking on the Delete All Versions button
- Clicking on the Delete All Tracks button

VCA Follow Masters

When ticked (default) Moving Clips in the Timeline will result in both Masters and VCAs following the automation.

Masters Controls Link

The drop-down list enables you to select which Track(s) or Track Groups will, when edited, affect the position of automation applied to Master controls, buses etc.

Like **Markers** or **CD/SACD Markers**, all Masters controls can be either:

- Independent (No action on any Track will affect the Masters)
- Linked to Any Track (Any editing action requiring synchronization will affect the Masters controls)
- Linked to Any Track without a Group
- Link to Track Group A, B, C, etc…

Close

Closes the dialog.

View Several Parameters

To view more than one automation parameter in the Timeline for a Track, create **Automation Sub-tracks** for each parameter you wish to view. **Please see also Automation Sub-Tracks on page 107**

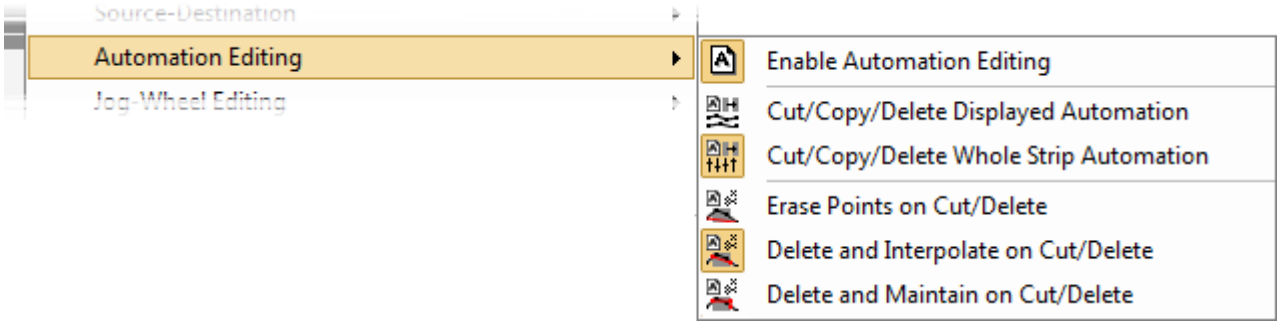
Undo/Redo

The menu item **Edit > Undo/Redo** also reacts to Automation actions providing a shortcut to the **Automation Tracks** Window.

Editing and Automation

Overview

Editing data exists independently of the Clips on Tracks. When Clips are edited in the timeline any automation data applying to Clips affected by the editing process is treated according to choices made in the **Edit > Automation Editing** sub-menu :



Automation Editing

Enable Automation Editing Enabled By Default**.** Enables Timeline Automation Editing

Cut/Copy/Delete Displayed Automation Will only affect Automation Curves visible in the Timeline when Editing.

Cut/Copy/Delete Whole Strip Automation Enabled By Default. Will affect ALL Automation, even the curves not visible currently in timeline Track(s) when editing.

Erase Points on Cut/Delete Erases all points contained within the selection. Does not add Automation points to the selection boundaries.

Delete and Interpolate on Cut/Delete Enabled By Default. Interpolates a curve from the start of the selection to end of the selection.

Delete and Maintain on Cut/Delete Does not interpolate the curve from start to end of the selection. Therefore maintains a flat curve on Cut or Delete.

Editing Automation and Envelope Data

Automation Curve Colors

Blue	**Fader**
Green	**Pan/Balance/Surround**
Cyan	**Send & On/Off**
Red	**Mute**
Black	**All others**

Actions and Modifiers Automation and Envelope

Left Click	Anywhere on the Automation line to make a new node
Ctrl + Click	On an existing node to adjust all nodes in the Region selected currently. New points are inserted automatically at the Region borders if necessary
Ctrl + Shift + Click	Anywhere on the Envelope line to draw nodes freehand
Shift + Click	Fine tune a node (**0.1 dB** steps for dB values)
V + Click	Constrains changes to a node to **Vertical**
H + Click	Constrains changes to a node to **Horizontal**
Click & hold + Alt	Create new node with same value as next point (if one exists) when the mouse is moved.
Click & hold + Ctrl	Create new node with the same value as previous point (if one exists) when the mouse is moved.
Ctrl + Alt + Click & hold	Deletes any existing node the mouse moves over.
Ctrl + Alt + Click	On an existing node to erase it

Automation Cursors

Note: Adjustment nodes on Automation Tracks are circular and nodes on Envelopes are square.

Left Click anywhere on the Automation or Envelope curve line to make a new node:

Left Click on an existing node to adjust it:

Ctrl + Click on an existing node to adjust all nodes in the Region selected currently. New nodes are inserted automatically at the Region borders if necessary:

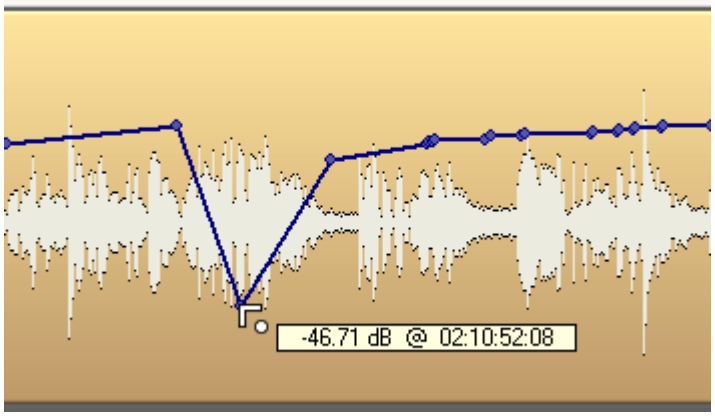
Ctrl + Shift + Click anywhere on the Automation or Envelope curve line to draw nodes freehand:

Ctrl + Alt + Click on an existing node to erase it

Ctrl + Alt + Click & hold Deletes any existing node the mouse moves over.:

Edit

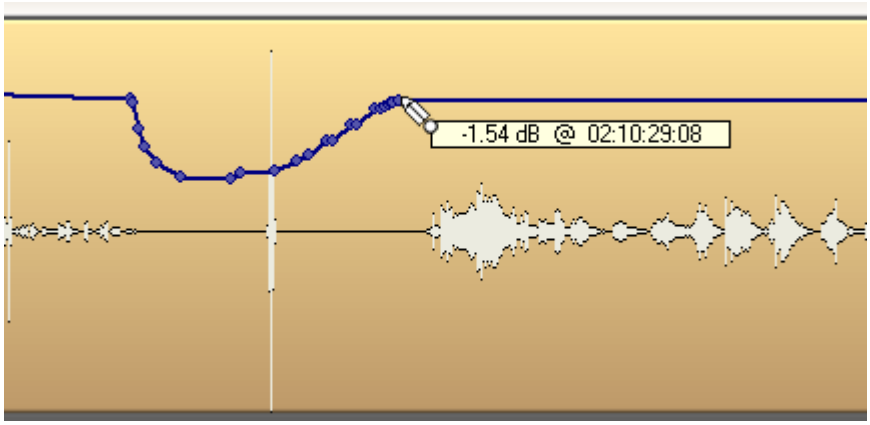
Automation data can be edited directly with the mouse. When the mouse is over the of automation curve, the cursor changes into an add node symbol. When the mouse is over a node of the automation curve, the value and timestamp of the point is displayed.



Dragging an automation node

The value can be adjusted by clicking on the node and dragging. If you click anywhere on the automation curve, a new node will be inserted.

If you hold the **Ctrl + Shift** keys while dragging on the automation curve, the mouse pointer will turn into a pencil. The curve can then be drawn freehand.



Drawing an automation curve

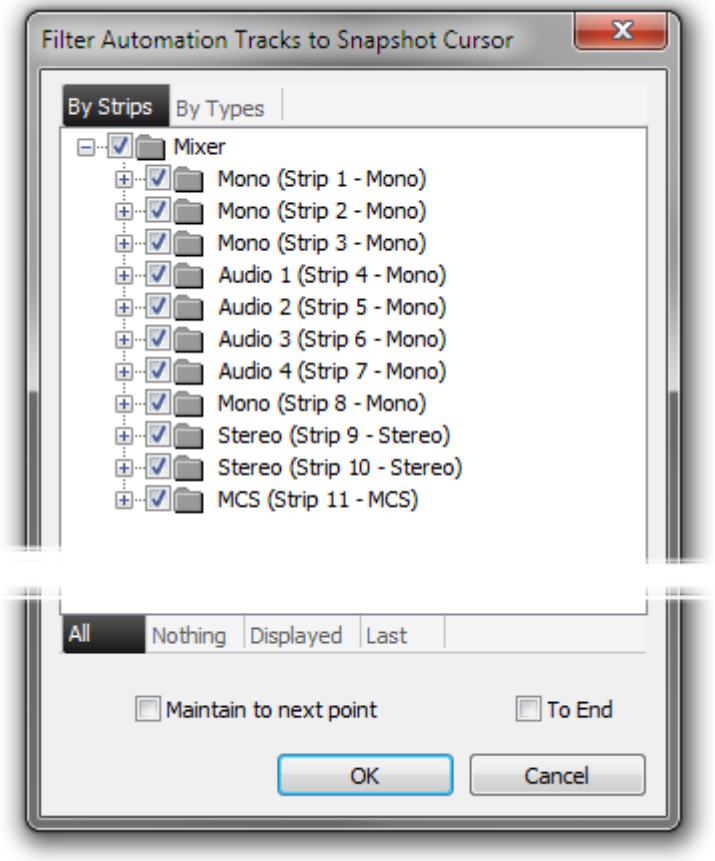
Automation Menu Editing options

Delete Selected Points	Deletes all automation points contained in the selected Region
Cut Selected Points	Cuts all automation points contained in the selected Region
Copy Selected Points	Copies all automation points contained in the selected Region
Paste Points to Cursor	Pastes all copied or cut automation points at the cursor on the selected Track
Paste Points to Original TC	Pastes all copied or cut automation points at the Original TimeCode on the selected Track

Note: Each of these options opens the **Filter Automation Tracks to Snapshot** dialog:

Filter Automation Tracks to Snapshot Dialog

This dialog shows all automation Tracks available and enables you to choose which Tracks will be modified by an **Cut**, **Copy**, **Delete** or **Snapshot** action. The Tracks shown are limited to the current Timeline selection (A selected Clip or Clips, or a Region) if one is present.



Filter Automation Tracks to Snapshot Cursor Dialog

The following actions will pop-up the dialog:

Automation > Automation Snapshot Cursor

Automation > Automation Snapshot Range

Automation > Delete Selected Points & Interpolate

Automation > Delete Selected Points

Automation > Cut Selected Points

Automation > Copy Selected Points

Stopping the Transport after a control has been moved when in Preview mode

Note: The **Dialog** title changes to reflect the action.

I.e. **Filter Automation Tracks to Snapshot - Cursor/Range/Delete/Cut/Copy**

Filter Automation Tracks to Snapshot Dialog Options

The top Tabs switch between displaying Controls by **Strips** or by **Types** of Control..

The bottom Tabs change the automatic selections :

All	Every Control in the Mixer is selected
Nothing	No Controls are selected
Displayed	Only the Controls displayed on Tracks / Automation Sub-tracks are selected
Last	The Control(s) selected previously are selected

Switches

Note: The following switches are only available when appropriate. E.g. **Automation Snapshop Cursor** etc. not Delete Selected Points

Maintain to next point	When ticked the parameter values at the cursor position will be maintained until the next automation point per parameter.
To End	When ticked the parameter values at the cursor position will be maintained until the end of time(line).

Note: If both **Maintain to next point** and **To End** are ticked, then **To End** takes precedence.

Automation Editing

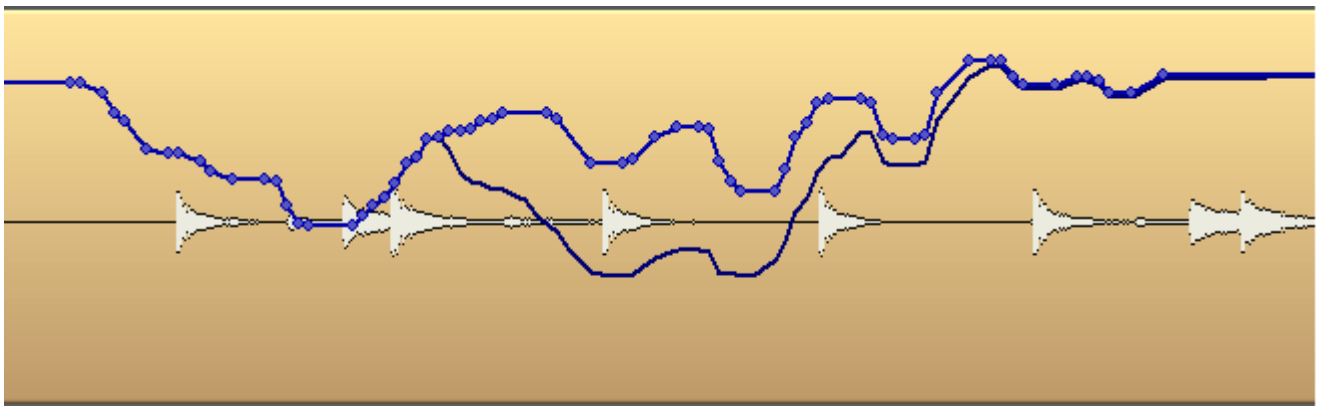
VCA Group Automation Editing

VCA Group Automation is displayed in the Timeline as an extra curve showing the summed effect of the original Strip Automation and the VCA Group automation (Gain or Mute only).

The VCA Group Automation can not be edited when it is displayed in a Strip Track part of that Group, but all editing of the Strip Automation will Link and calculate the summation in real time.

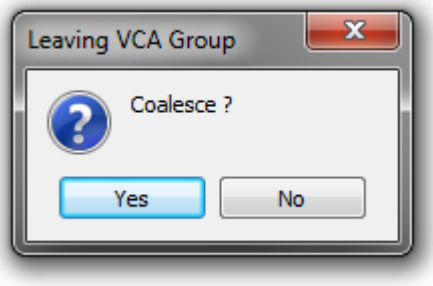
The VCA Group Automation can only be edited if displayed in its own Track Header. (Right-click on the **A** button in a Track Header and select the VCA Group you wish to edit the automation for from the list.)

VCA Coalesce



Conventional Strip and VCA Automation Curves

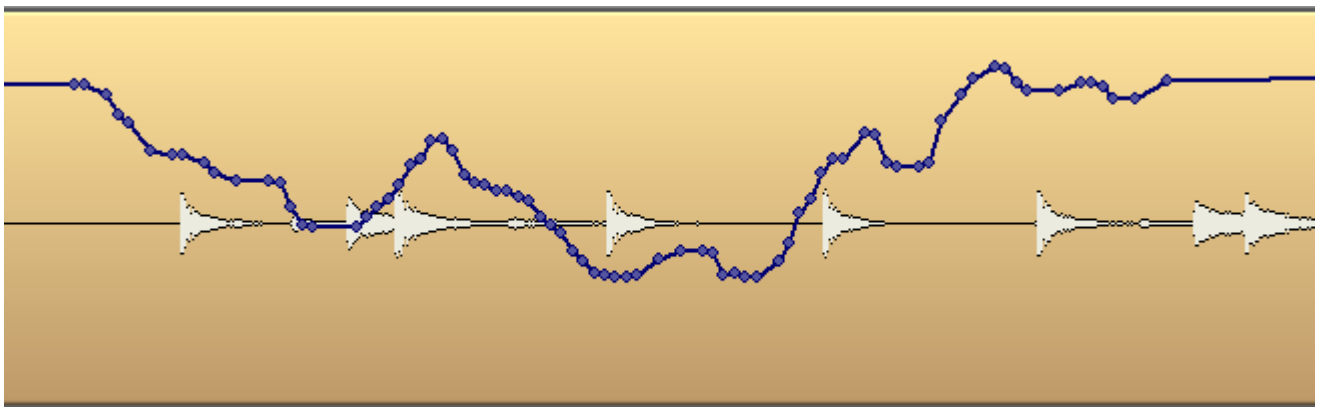
If a Strip is associated with one or more VCA Groups then, when you exit the group, the **Leaving VCA Group** box appears:



Leaving VCA Group message box

Two choices are available:

Yes (default) Merges the Strip Automation with the VCA Group Automation into a single sum curve.

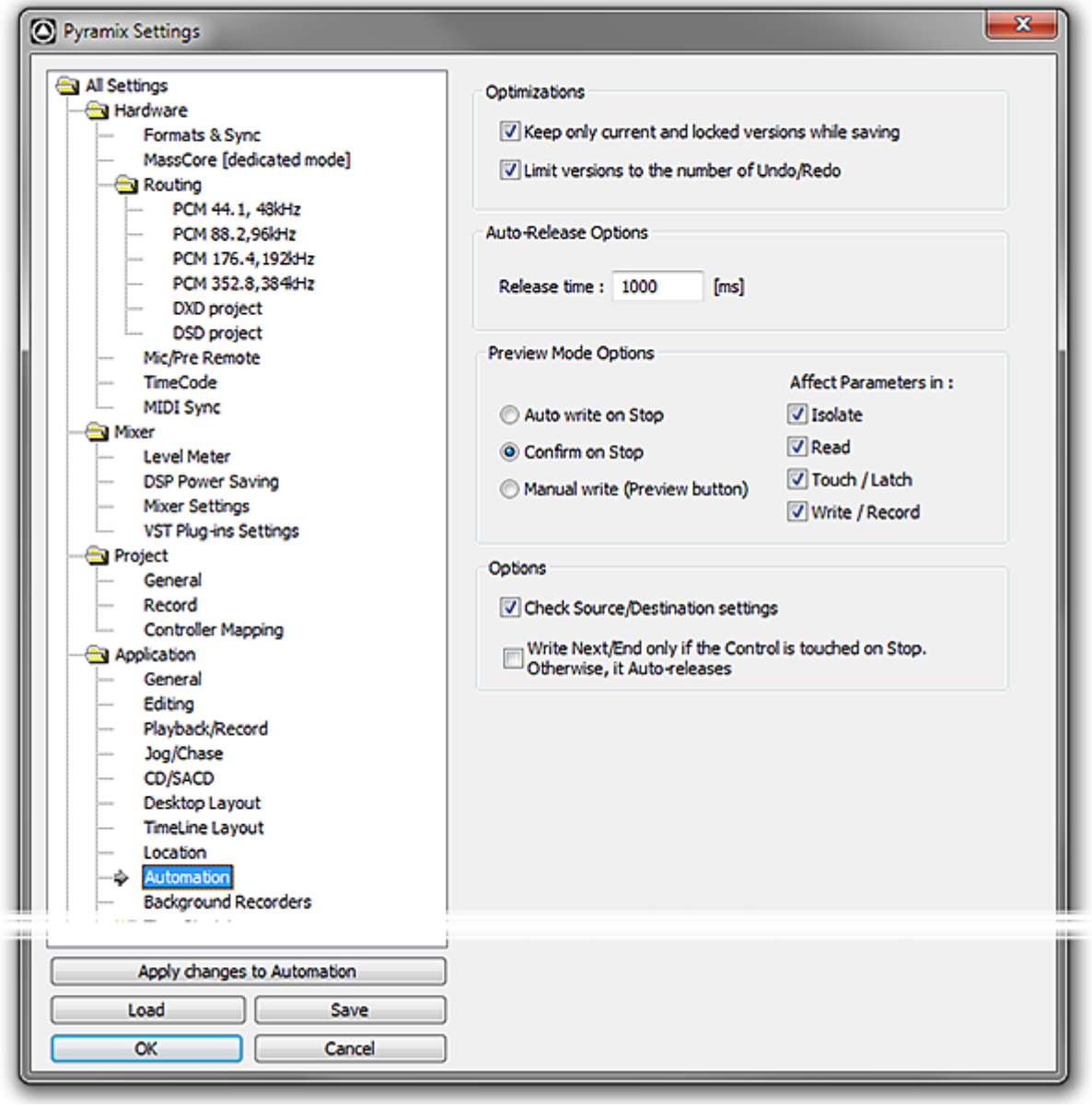


Strip and VCA Automation Coalesced

No Excludes the effect of the VCA Group Automation and leaves the Strip Automation curve as it was. The Coalesce option is the only one in the Mixer which supports Undo/Redo.

Automation Settings

Select **All Settings > Application > Automation**. (**Automation > Automation Settings** also takes you to the **Automation** page):



Automation Settings page

Optimizations

Offers a choice of options to enhance system performance when using automation.

Keep only current version while saving when checked, the system only saves the current version of all automation Tracks. This looses the saved automation versions history, but dramatically shortens the save time for projects with automation.

Limit versions to the number of Undo/Redo when checked the system only keeps a limited number of versions in memory (the same as the number of **Undo/Redo**s as defined in the **Settings > All Settings > General** Page). This reduces the number of automation versions kept in the history but enhances performance.

Auto-Release Options

If **Auto Release** is enabled any control will, when released or when the transport is stopped, return to its value or state in the previous automation pass or the default where no previous pass exists. This occurs either immediately

if the control only has two states (e.g. a button) or over a period of time if the control is a fader or knob. The time period is determined by the value entered in the **Release Time** box in ms.

Preview Mode Options

The selections here affect actions in Automation Preview Mode.

Auto write on Stop	Automation goes into **Auto write** mode when a Preview pass is stopped.
Confirm on Stop	A confirmation dialog pops-up when a Preview pass is stopped.
Manual write	Clicking on the **Preview** button writes the Preview pass.

Affect Parameters in :

Isolate	When checked, parameters are affected in **Isolate** mode.
Read	When checked, parameters are affected in **Read** mode.
Touch / Latch	When checked, parameters are affected in **Touch /Latch** mode.
Write / Record	When checked, parameters are affected in **Write / Record** mode.

Options

Check Source/Destination settings

When enabled (default) verifies the project when it is opened and ensures that the **Automation > Automation Tracks : Master Controls Link** setting is set to **Master Controls are linked to any Track**.

Preview mode: Popup Snapshot window on Stop

When enabled pops-up the **Filter Automation Tracks to Snapshot ...** dialog.

Automation in Editing and Libraries

You can use the Automation menu Cut/Copy/Paste functions to copy data (even between projects). Just select a Region and select **Automation > Copy Selected Points**, then choose which list(s) to copy, then go into another project (or the same) and select **Automation > Paste Points to Cursor** or **Paste Points to Original TC**.

If you enable the menu item **Edit > Enable Automation** then any editing operation on Clips also applies to all associated automation data (Cut/Copy/Paste, Auto-Ripple, etc…)

If you edit a Clip or Clips in the Timeline or drag a Clip or Clips to a library, all automation applied to the Clip(s) is also copied/pasted according to the mode set in the same sub-menu.

E.g. **Cut/Copy/Delete Displayed Automation**.

When active Edit operations will only include Automation Curves visible in the Timeline.

Cut/Copy/Delete Whole Strip Automation when active (Enabled By Default) **ALL** Automation, even the curves not visible currently in Timeline Track(s) will be affected when editing.

> **Note:** Only parameters of controls present in both the source and destination Mixer strips will be copied successfully.

Mixer and Plug-in Snapshots

Note: Mixer Snapshots as described here use the dynamic automation mechanism.

Mixer Snapshots

Snapshots of the entire state of the mixer surface may be easily and quickly saved and recalled.

Saving Mixer Snapshots

To save a Mixer snapshot hold down **Alt** and **Shift** then **Click** anywhere on the **Mixer** surface and drag to a user library. A new item of the type **Mixer Snapshot** will appear in the library. The snapshot is named **Mixer Snapshot** by default. To accept this name just hit **Enter**. Otherwise, type a suitable name then hit **Return**.

Recalling Mixer Snapshots

To recall a mixer snapshot simply click on it in the library, drag it over the mixer surface and release. All parameters will be reset to the values stored in the snapshot.

Note: A Mixer Snapshot includes all Plug-in Parameters.

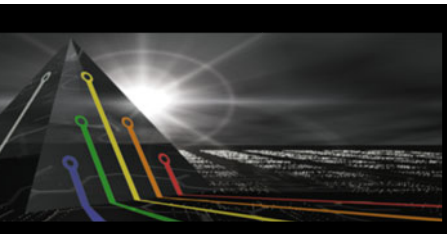
Effects Snapshots

Effect Settings can be easily stored and recalled by dragging them to/from libraries.

Creating Effects Snapshots

Hold **Alt** + **Shift**, then click and drag from a **Plug-in** window to the library where you want to store the settings, then release. A new item, of the type **Mixer Snapshot**, is stored in the library. The snapshot is given the name of the plug-in by default. The new item is automatically highlighted so, if you wish to change the default name, simply type the new name and hit **Enter** to confirm. The name of the snapshot can be subsequently changed by clicking on the name in the library, then entering the new name.

15 Strip and Bus Tools



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Strip and Bus Tools

Eq, Comp/Limiter/Expander

Strip and Bus Tools are a quick and efficient way of adding the Equalization and Dynamics (compression and expansion) functions commonly found on hardware consoles to channels and buses. Strip and Bus Tools are particularly economical with DSP processing power. Each processing block may be switched into circuit' individually. Blocks which are not 'in circuit' do not use DSP resources.

Difference between Strip Tools and Bus Tools

There is only one major difference between Strip and Bus Tools. Bus Tools have a sophisticated Limiter with **Look-ahead** and **Delay Compensation** where Strip Tools has a Compressor.

Both may be freely used in Strips or Buses if the need should arise for a limiter in an Input Strip or a Compressor in a Bus.

Modules

The Strip and Bus Tools plug-ins consist of several **Sections** or modules. Each **Section** has a title bar at the top containing an **On/Off** switch for the **s**ection and a control triangle which toggles between showing or hiding the section.

Display Options

Multiple instances of the Bus Tools plug-in are displayed in one large window. Right-click onto the window title bar of the plug-in to open a menu offering some general display options for the Strip Tools plug-ins:

Strip Tools - General Display Options

This menu allows you to either directly select the number of strips displayed in the plug-in window, or to increment/decrement this number by one. The maximum number will vary depending on how many Strip Tools are assigned.

Sections

From top to bottom, Strip Tools contains the following Sections:

Input Level

This section contains the input level control and shows the name of the mixer strip this instance of the plug-in is assigned to.

Dynamics

This section contains a compressor. It can be switched, as shown here, to act as a decompressor.

Expander

This is a downwards expander. It can also be switched to act as an upwards expander.

Equalizer

This is a five band fully parametric equalizer. Each band can be switched to high or low pass, shelving or peaking characteristics.

Output

This section controls the output level of the strip tool and also offers automatic gain make up for the compressor.

Common Features

Each Section or module of Strip and Bus Tools has a number of controls in common.

Title Bar

A text description of Section's function, e.g. **Input**, **Dynamic** etc. Also contains:

Show/Hide triangle

At top left of every Section a grey triangle toggles between showing or hiding the section. Clicking a triangle with **Shift** held down opens the Section (If hidden) and hides all other Sections. Clicking a Section with **Ctrl**. held down opens all Sections.

> **Note:** Sections remain active when hidden.

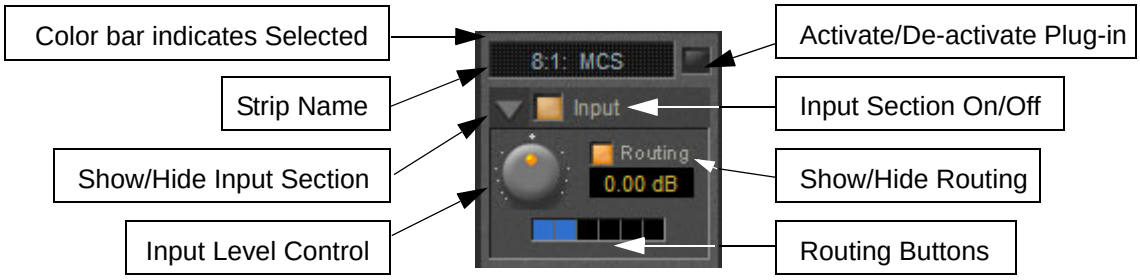
Section On/Off Button

Between the **Show/Hide** triangle and the Section **Title** is the **On/Off** button for the Section.

Knobs

The position indicator dot lights orange when the control is at the default value. A white star appears top-left of the scale of the last control 'touched'.

Input Section



Color Bar

Indicates strip is selected.

Strip Name

Displays the name of the strip the plug-in is assigned to. The name for the plug-in can be changed by double-clicking on the strip name, then typing in a name and hitting the **Return** key to confirm. If a plug-in name is changed in this way, subsequent changes to the parent mixer-strip name do not affect the plug-in strip name. To recover the name of the parent strip, simply remove the strip name.

The strip name is saved with presets and within Pyramix projects.

Activate/deactivate plug-in

This button switches the entire Strip plug-in on or off. Note that when the plug-in is switched off, it doesn't consume any DSP power.

Show/Hide input section

Input section on/off

Input level control

Adjusts the input level over a range of -48 dB to +48 dB.

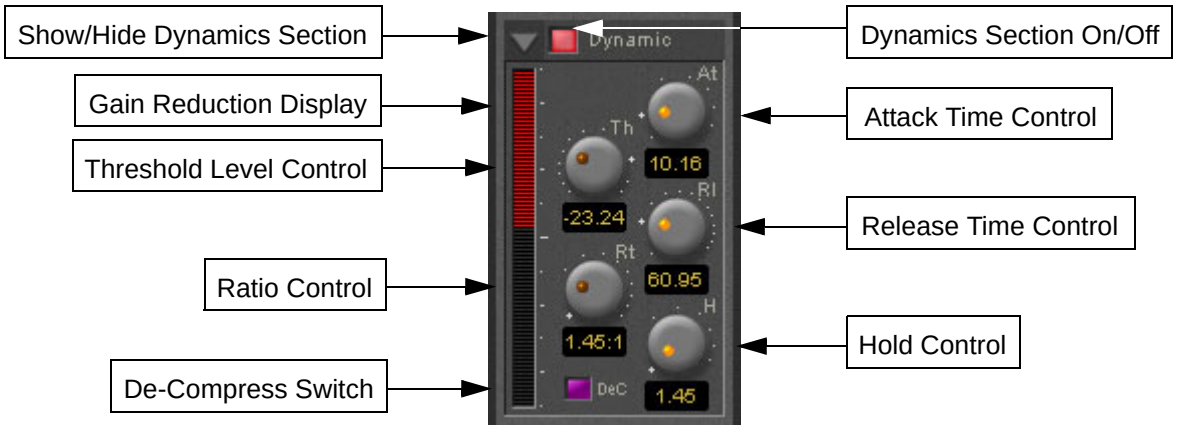
Show/hide Routing

By default Routing buttons are hidden. This button toggles between Showing and Hiding the Routing Buttons. Routing remains active when hidden.

Routing Buttons

Determine which audio streams running through the strip will be processed by the plug-in. The number of buttons depends on the number of steams controlled by the strip. This means one for a mono input channel or two for a stereo input channel and so on up to 8 for a 7.1 input channel. Streams which are not selected will be left untouched.

Dynamics Section



Show/Hide Dynamics section

Dynamics Section On/Off

Gain reduction display

The bar graph shows the gain reduction/increase generated by the **Dynamics Section** or by the **Expander**. The range of the display can be switched between +-10 or 20 dB by clicking on the bar graph. Scale markings in 1dB increments on the right-hand side of the bar graph make it easy to see if the range is 10 or 20 dB.

Colors are used to denote a gain reduction or increase generated by either the compressor or the expander:

- Gain reduction by the Compressor is displayed in **Red** from top to bottom.
- Gain increase by the De-Compressor is displayed in **Pink** from bottom to top.
- Gain reduction by the Expander (normal or inverse) is displayed in **Green** from bottom to top. With the compressor in inverse mode, the gain reduction of the expander is displayed in **Green** from top to bottom

Threshold Level Control

Sets the level at which the compressor begins to act. If the input signal level exceeds the **Threshold Level**, the gain is reduced (or increased in De-Compressor mode) in proportion to the setting of the ratio control.

Ratio Control

Determines the proportion of gain reduction (or increase) for signals above the threshold level. If, for example, the ratio is set to 2.00:1, in Compressor mode, if the input level rises by 2dBs above the threshold level, the output level will only rise by 1 dB.

Attack Time Control

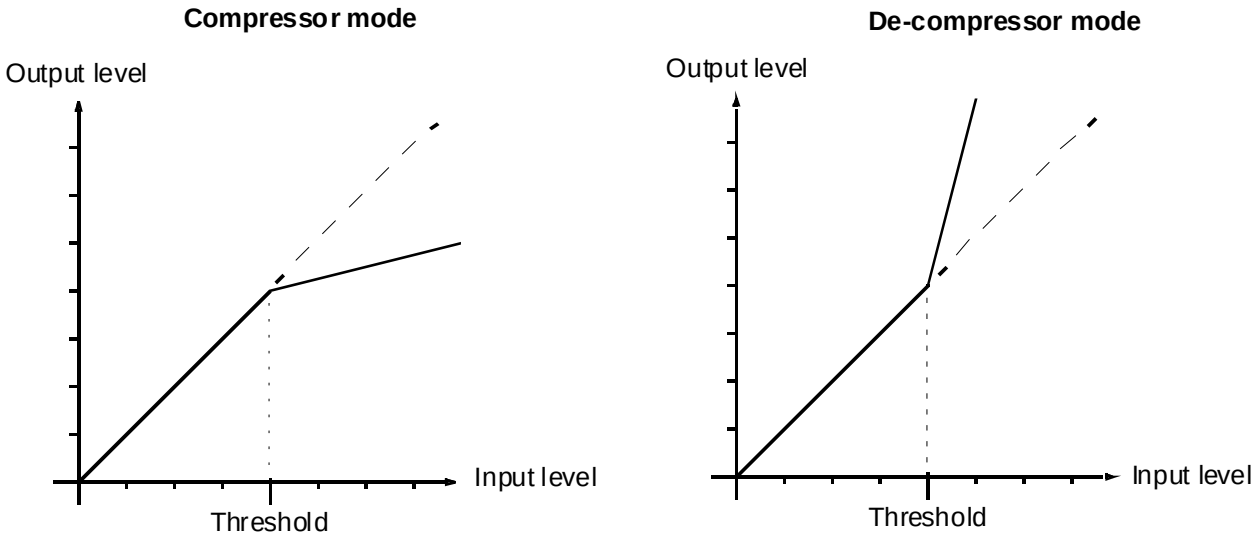
Controls the time the compressor takes to react when the input level exceeds the **Threshold Level**. The lower the attack time, the faster the reaction.

Release and Hold Time controls

These two parameters work together and control the amount of time the compressor takes to react when the input level is above the threshold level and starts fall. During the hold time the gain of the compressor remains constant. After the hold time the gain of the compressor is changed at the rate set by the release time. The lower the release time, the faster the reaction.

De-Compress Switch

Switches the compressor between the compress and the de-compress modes.



Compressor and De-Compressor action

In compressor mode, when the input level exceeds the threshold level, the gain is reduced according to the setting of the ratio control. In de-compressor mode, when the input level exceeds the threshold level, the gain is increased according to the setting of the ratio control.

Expander Section

Show/hide Expander section

Dynamics section on/off

Threshold Level Control

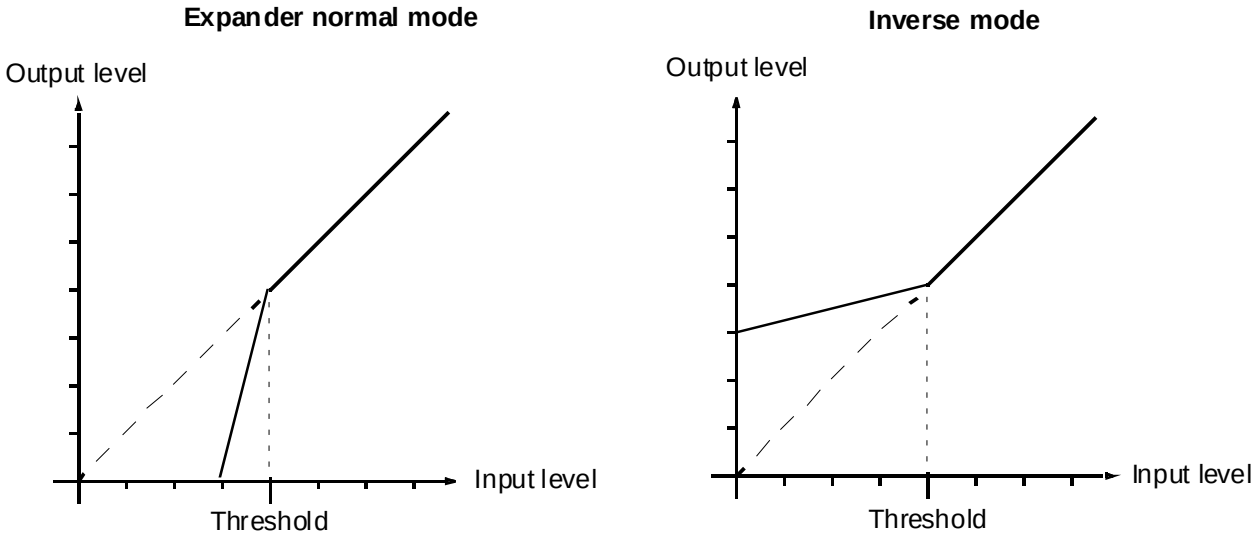
If the input signal level falls below the threshold level, the gain of the expander is reduced (or increased in inverse mode) according to the setting of the ratio control.

Ratio control

Determines the proportion of gain reduction (or increase) for signals below the threshold level. If, for example, the ratio is set to 2.00:1, in normal mode the output level will be decreased by 2 dB if the input level is decreased by 1 dB below the threshold level.

Inverse switch

Switches the between normal and inverse expander modes.



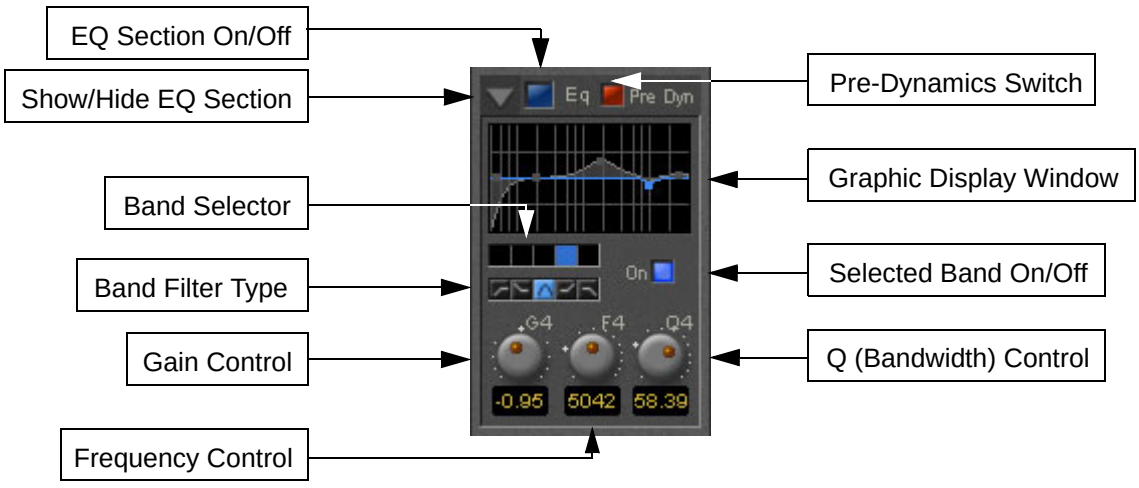
Expander normal and Inverse mode action

Attack/Release/Hold controls

The **Expander Section** uses the settings of the **Attack/Release/Hold** controls in the **Dynamics Section** to control it's timing.

Equalizer section

A fully parametric five band equalizer. Each band covers the entire frequency range from 20 Hz to 20 kHz (or higher, depending on the sampling rate of the project) and can be switched between peaking, high or low shelving and low-pass or high-pass characteristics. Each of the five bands can be switched off. De-activated bands do not consume DSP power.



Show/ Hide EQ Section

EQ section on/off

Pre Dynamics Switch

This switch offers the option to the switch the EQ before the dynamics section. By default the EQ is after the dynamics section.

Graphic Display Window

This small window displays the settings of the currently selected EQ band in blue color and the resulting curve of the whole EQ section in gray color. You can click and drag directly onto the handles (the small blue or gray points) of the EQ bands to change the settings within the graph window.

Double-click anywhere in the window to open a bigger version. Please see **The Big Graph Window on page 460**.

Band Selector

Click onto one of these five buttons to select the band to be manipulated by the Gain, Frequency and Q control underneath. A band gets also selected if it is manipulated in the small or big graph window.

Selected band characteristics

These five buttons determine the characteristics of the selected EQ band. The choices from left to right are High-Pass Filter, Low Shelving, Peak, High Shelving and Low-Pass Filter.

Selected Band On/Off

Switches the selected EQ band on or off. By default the five bands are switched off in order to economize DSP power, so don't forget to switch an EQ band on before you can hear what it is doing.

Gain Control

-24 dB to +24 dB, boost and cut.

Frequency Control

The frequency range for each band is 20 Hz to 20 kHz regardless of the project sampling rate .

Q (bandwidth) Control

The range for the Q parameter is 0.2 up to 100. A Q of 0.2 results in a very wide bandwidth, a Q of 100 will give an extremely narrow notch.

Output Section

Show/ Hide Output section

Output section on/off

Output Level control

Adjusts the output level over a range of -48 dB to +48 dB.

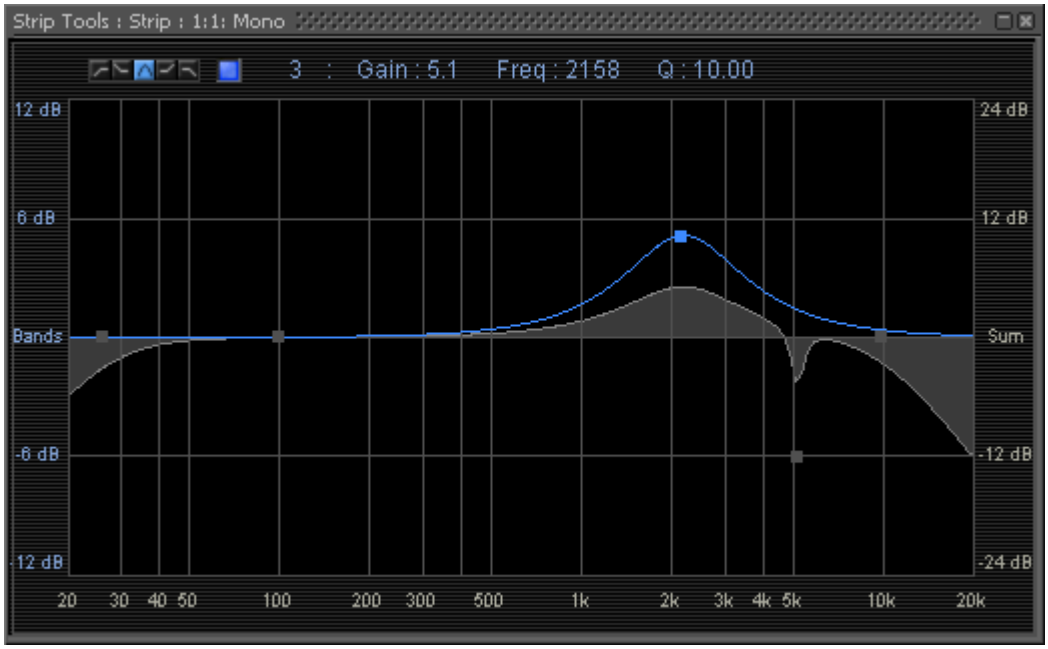
Automatic Gain Make Up switch

When lit, Output gain is automatically adapted according to the settings in the **Dynamics Section**. In this case the **Output Level Control** will be grayed out and inaccessible.

The Big Graph Window

The big graph window opens when you double-click the small graph window inside the **EQ Section**. The current settings of the selected EQ band are displayed as a blue line and the resulting overall EQ curve is displayed as a gray shaded area. Frequency and Gain parameters of each of the five bands can be altered by clicking on a band's handle and dragging with the mouse.

Handles of bands which are not selected are displayed as small gray squares. Grabbing and drag a handle selects the band.



Big Graph floating Window

The frequency response display uses two separate gain scales. The left hand, blue scale shows the scale used for individual bands. The right hand, gray scale shows the scale for the overall EQ curve. Both scales automatically adapt their range according to the settings of the curves they apply to. The range of the left and the right scale my be different. The ranges for the individual bands can be either +/- 6 dB, +/- 12 dB or +/- 24 dB, but the scale for the overall curve may go up to +/- 72 dB.

The upper area of the **Big Graph Window** provides an **On/Off** switch and buttons to select and indicate the characteristic (High-Pass, Low Shelf, Peak, High Shelf or Low-Pass) for the selected EQ band together with numeric displays of Gain, Frequency and Bandwidth.

Frequency and Bandwidth setting.

Shortcuts

- Double click on a handle to reset the gain of this band to unity.
- The **Tab** key switches between EQ bands.
- Clicking and dragging a handle with the right mouse button alters the Q (bandwidth) of this band.
- Hold the **Ctrl** key while dragging with the left mouse button to lock the gain parameter and only change the frequency.
- Hold the **Shift** key while dragging with the left mouse button to lock the frequency parameter and only change the gain.

Bus Tools

Bus Tools are very similar to **Strip Tools** but are specifically designed to be inserted into buses rather than channels. **Bus Tools** combine the most frequently used 'mastering' processing blocks you find on the output buses of a mixing console in a single plug-in, including an advanced limiter. Like Strip Tools multiple instances of the Bus Tools plug-in are displayed in one large window. The number of instances displayed is user selectable.

IMPORTANT! Pre-Anticipation (PA) and Delay Compensation (DC)

Delay compensation adds a delay determined by the Pre-Anticipation delay setting to all channels passing through a Bus Tools plug-in NOT selected for processing.

If two or more Bus Tools are inserted in a Bus with PA & DC switched on, the delay times of each Bus Tools will add together for all channels:

Sections

The **Input**, **EQ**, and **Output** sections are almost identical to the ones found in **Strip Tools**. Please see the relevant paragraphs in the **Strip Tools** section for a full description. Where there are differences, these will be dealt with here. **Shortcuts** and **Automation** functions are the same as **Strip Tools,** but the **Linking** feature is only available with the **Bus Tools**.

From top to bottom, the Bus Tools plug-in contains the following sections:

Input Level

This section contains the input level control and shows the name of the mixer strip this instance of the plug-in is assigned to.

Limiter

This section contains the limiter, which either acts as a standard limiter, but it can also work in conjunction with Limiter DRC section below.

Limiter DRC

This section adds a Dynamic Release Compensation (DRC) to the Limiter section. This enables very musical control of the release time of the limiter.

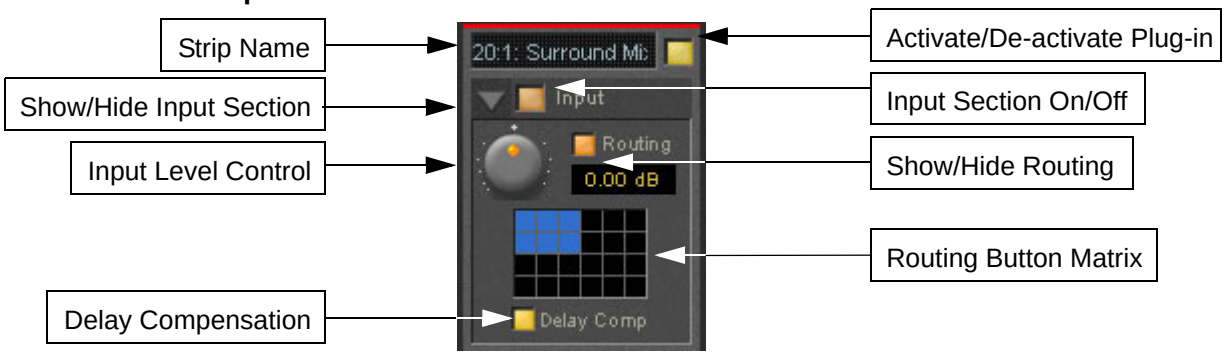
Equalizer

This is a five band fully parametric equalizer. Each band can be switched to high or low pass, shelving or peaking characteristics.

Output

This section controls the output level of the Bus Tool and also offers automatic gain make up for the Limiter.

Main and Input Level Section



Strip Name

Displays the name of the strip the plug-in is assigned to. The name for the plug-in can be changed by double-clicking on the strip name, then typing in a name and hitting the **Return** key to confirm. If a plug-in name is changed in this way, subsequent changes to the parent mixer-strip name do not affect the plug-in strip name. To recover the name of the parent strip, simply remove the strip name.

Activate/Deactivate Plug-in

This button switches the entire Strip plug-in on or off. Note that when the plug-in is switched off, it doesn't consume any DSP power.

Show/Hide input Section

Input Section On/Off

Input level control

Adjusts the input level over a range of -48 dB to +48 dB.

Show/hide Routing

By default Routing buttons are hidden. This button toggles between Showing and Hiding the Routing Buttons. Routing remains active when hidden.

Routing Button Matrix

The buttons determine which audio channels running through the Bus will be processed by the plug-in. The number of buttons shown depends on the number of channels controlled by the Bus. In the case of a multiple surround Bus this may be up to 64. A single instance of Bus Tools can process up to 8 channels selected from this matrix.

A 5.1 surround bus will have six buttons. The order of the channels selected by the buttons is (from left to right): Left, Center, Right, Left Surround, Right Surround, Subwoofer.

This enables, for example, the Left, Center and Right channels of a surround Bus to be independently processed from the surround channels by adding two Bus Tools plug-ins to the Bus and selecting L, C, R in the first and LS and RS in the second.

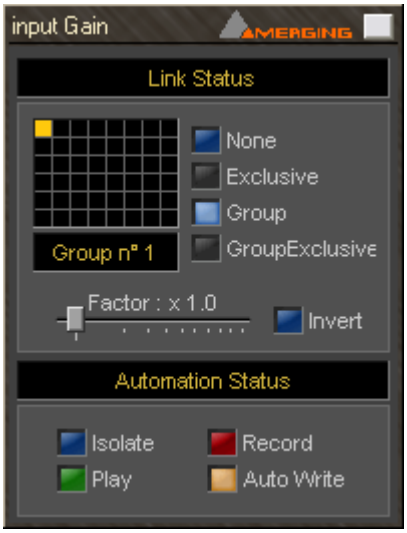
Using Bus Tools on multiple surround buses

Although a single instance of Bus Tools can process 8 channels it is simple to use multiple instances to process many more with linked parameters. E.g. with four surround Buses you could use 3 instances. Assign the L & R channels of each Bus to Bus Tools A, the Centers of each bus to Bus Tools B and the Surround Ls and Rs of each Bus to Bus Tools C. The 3 Bus Tools can then be linked as you wish by right-clicking and creating control groups in the yellow matrix. If Delay Compensation (see below) is activated all channels will remain time-aligned, even when using Pre-Anticipation.

Linking Bus -Tools controls

Any choice of Bus Tools controls can be linked together. When you move any of the controls which is a member of a link group, all the other members of the group also move. There are 48 link groups for linear/rotary controls and 48 link groups for switches.

To add a control to a link group, right-click on the knob or button to display its **Link Status** and **Automation Status** pop-up window. E.g. this is the pop-up for an input gain control.:



Strip Tools - Link and Automation Status

Group assignment mode buttons

These four buttons define the link mode of the control. Four choices are available:

None — The control is not a member of any group.

Group — The control is a member of the selected group. When you move (or switch) this control or any other control which is a member of this group, all the members of the group will move (or switch) along with it.

Exclusive — This mode is only available for switches. With this mode selected, when this switch is on, all the other members of the group will be switched off.

Group Exclusive — This is a mode which has a superior effect on all groups which are set to Group Exclusive. When any of the groups which are set to Group Exclusive is switched on, all the other groups set to Group Exclusive will be switched off.

Grouped controls are indicated by a yellow **L** in the corner of the control 'block'.

Strip Tools - Grouped Controls

Factor X Slider — Works only on continuous (rotary or linear) controls. It determines the gearing of this control in relation to other members of the group and vice versa. E.g, assume the input gain of strip tools #1 and the input gain of strip tools #2 are both assigned to group one. The scale factor of the gain of strip tools #2 is set to 2. Now when you change the gain of strip tools #1 by 1 dB, the gain of strip tools #2 will change by 2 dB's.

Invert — Also works only on continuous controls. It inverts the effect of the movement for this control caused by another group member or vice versa. E.g, assume the input gain of strip tools #1 and the input gain of strip tools #2 are both assigned to group one. The invert button of the gain of strip tools #2 is on. Now when you increase the gain of strip tools #1 by 1 dB, the gain of strip tools #2 will diminished by 1 dB.

Automation mode switches

Please see: **Dynamic Automation Transport Modes on page 432** for a description of the automation mode switches.

When a grouped control is clicked, all other members of the group have a yellow L at the bottom left-hand corner.

Offset

If controls are offset when grouping is turned on, they retain the offset as shown here.

Strip Tools - Grouped Knobs

The red bar at the top of the strip indicates it is selected. The grayed out knob is the one which was right-clicked.

Delay Compensation

Delay Compensation

When the DRC section is active, the plug-in introduces a small delay to the audio signal. Since some signals of a bus may not be selected for processing using the routing buttons, these signals would not be delayed, and there would be a time misalignment at the output of the bus. When Delay Compensation is on, the same delay is applied to all signals whether selected for processing or not. This results in correct time alignment for all the signals of a bus.

Limiter section

This is a straightforward 'brick-wall' limiter with simple Threshold and Release parameters. However, the DRC (Dynamic Release Compensation) feature described in the next section can be activated to allow very musical control of the release time.

A brickwall limiter is a limiter which guarantees that the output level will never exceed the threshold level. On a normal limiter, a high level signal with very fast attack might cause an output higher than the threshold level, with a brickwall limiter this will not happen.

Show/Hide Limiter section

Limiter section on/off

Gain reduction display

The bar graph shows the gain reduction generated by the **Limiter Section**. The range of the display can be switched between 6 or 12 dB by clicking on the bar graph. Scale markings in 1dB increments on the right-hand side of the bar graph make it easy to see if the range is 6 or 12 dB.

Threshold control

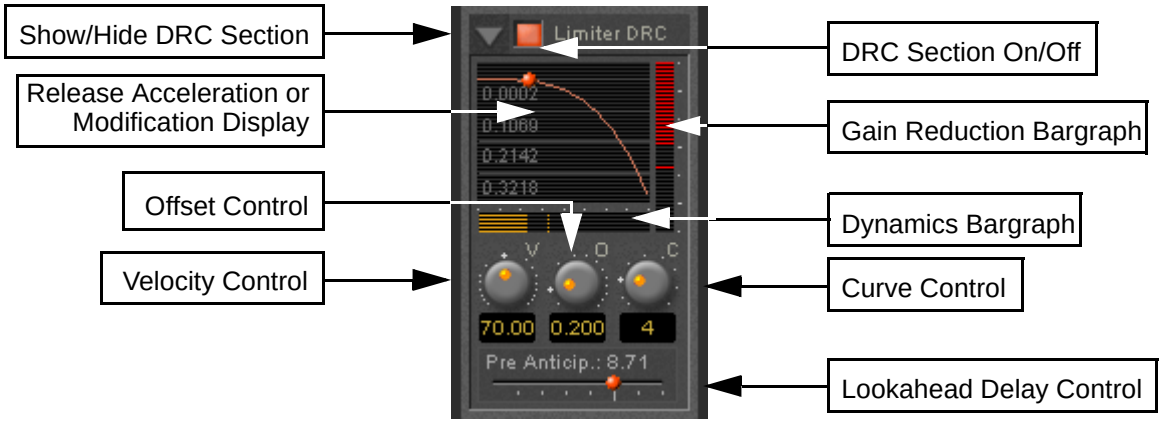
If the input signal level rises above the threshold level, the gain of the limiter is reduced. This limiter guarantees that at no time will the level of the output signal exceed the threshold.

Release control

This parameter controls the amount of time the limiter takes to release. I.e remove the gain reduction) when the input level was above the threshold level and starts fall. During the hold time the gain of the compressor remains constant. The lower the release time, the faster the reaction.

Limiter DRC Section

DRC stands for **D**ynamic **R**elease **C**ompensation. In short, this means the release time of the limiter is altered depending on the dynamic nature of the signal routed through the processor.



Show/hide DRC section

DRC section on/off

Release Acceleration or Modification Display

Shows a curve which illustrates the relationship between the change in dynamics of the input signal and the variation of the release time. The curve can be adapted between linear and power function characteristics (see also the description of the **Curve Control** parameter). During playback the display will also show a small red ball moving along the curve. This shows the range the algorithm is working in.

Gain reduction bargraph

Displays the gain reduction of the limiter while the DRC circuit is active. The scale is fixed at 6 dB.

Dynamics bargraph

Displays the dynamics of the input signal, which is the basis for the DRC algorithm.

Velocity control

Determines the speed of the DRC algorithm. The lower the value, the faster the algorithm reacts to changes of the dynamics of the signal and the more it reacts to dynamics the more the release time will remain constant.

Offset control

This parameter basically sets the minimum release time. In this sense the release control of the limiter defines the maximum release time, so the release time determined by the DRC algorithm will vary between these two times.

Curve control

This parameter controls the characteristics of the relationship between the dynamics of the signal and the resulting release time

Pre-Anticipation (Lookahead delay) control

This parameter changes the integration time for RMS detection and thus changes the effect of the DRC circuit.

The delay setting here also determines the delay that will be applied to signals passing through the plug-in NOT not be selected for processing when Delay Compensation is switched ON

> **Note:** Please note that this parameter delays the all signals running through the **Bus Tools** plug-in, so phase or other timing errors may occur when the plug-in is used in places other than the mix bus.

EQ and Output Sections

These are identical to the Strip Tools versions.

It is worth noting that, since the Limiter is in this case a brickwall design, the Automatic Gain Make-up function compensates for the same amount as the value set by the **Threshold Control** of the **Limiter**. The resulting signal will be close to, but never exceed 0dBfs. If **Gain Make-up** is **Off** the **Output Level Control** will act as a 'ceiling' control, setting the absolute level of the resulting output signal.

Delay Compensation / Pre-Anticipation

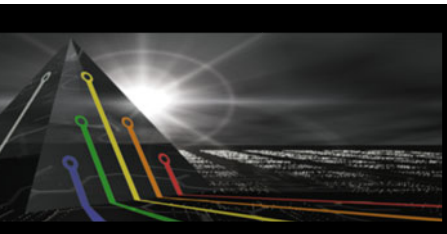
Example

5.1 Surround Mix Bus using two Bus Tools						
Channel	**BUS 1**	**BUS 2**	**BUS 3**	**BUS 4**	**BUS 5**	**BUS 6**
Routing	L	C	R	SL	SR	SW
Instance 1	IN	OUT	IN	OUT	OUT	OUT
Delay	8,71 (PA)	8.71 (DC)	8,71 (PA)	8.71 (DC)	8.71 (DC)	8.71 (DC)
Instance 2	OUT	OUT	OUT	IN	IN	OUT
Delay	5.8 (DC)	5.8 (DC)	5.8 (DC)	5.8 (PA)	5.8 (PA)	5.8 (DC)
Total Delay	14.51 ms	14.51 ms	14.51 ms	14.51 ms	14.51 ms	14.51 ms

In this table Bus Tools Instance 1 is IN circuit for the Left and Right channels of the mix and Bus Tools Instance 2 is IN circuit for the Left Surround and Right Surround channels. For the Center and Sub-Woofer Channels both Bus Tools are OUT of circuit. BUT Pre-Anticipation and Delay Compensation is switched ON for the channels selected for processing. To ensure proper time alignment all channels are automatically delayed by the same total amount. (the 8.71 and 5.8 figures are arbitrary)

If all channels are selected for processing (in circuit) with linked Pre-Anticipation then there is no need to activate Delay Compensation.

16 Project Processes



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Dither

Whenever changes are made to digital audio signals such as mixing, altering gain, eq or reverb, the result is usually an increase in the number of bits. These extra bits have to be removed to suit the requirements of delivery and interconnect standards. If the bit depth is reduced by simply ignoring the extra bits (truncation) or even rounding the least significant bit up or down, the resulting error can give rise to audible distortion of low signal levels. Obviously, there is also a permanent loss of resolution. These effects are cumulative. I.e. If the signal is repeatedly processed and bit reduced to shorter word lengths, there will be a significant and audible loss of accuracy in subtle, low level sounds. Human hearing makes use of this low level information in imaging and unless something is done to avoid the problem, space and clarity will be adversely affected.

In Pyramix all processing takes place in 32 bit floating point so, if signals are kept within this environment, there is no need for bit depth reduction until the final stage before output. Truncation or rounding are undesirable but a single 'dithering' stage can reduce bit depth whilst maintaining low level linearity. This is achieved by adding a controlled amount of low level noise to the signal. Since there is no such thing as a free lunch, the trade off is a slightly increased level of noise. However, the noise can be 'shaped' to reduce its perceived audibility.

See also: Dithering Options on page 282

It is important dithering is only applied once.

Archiving Metadata

Overview

Custom Metadata may be user defined and associated with rendered files. Metadata may be added during:

- **Render**
- **Mixdown**
- **Directly during Recording** (Normal Recording and Dubbing modes)

Single Media, **One File per Track** and **One File per Bus** are supported. The same Metadata Set is embedded in all files in the latter two cases.

Riff and **RF64** (>4GB) Files are supported.

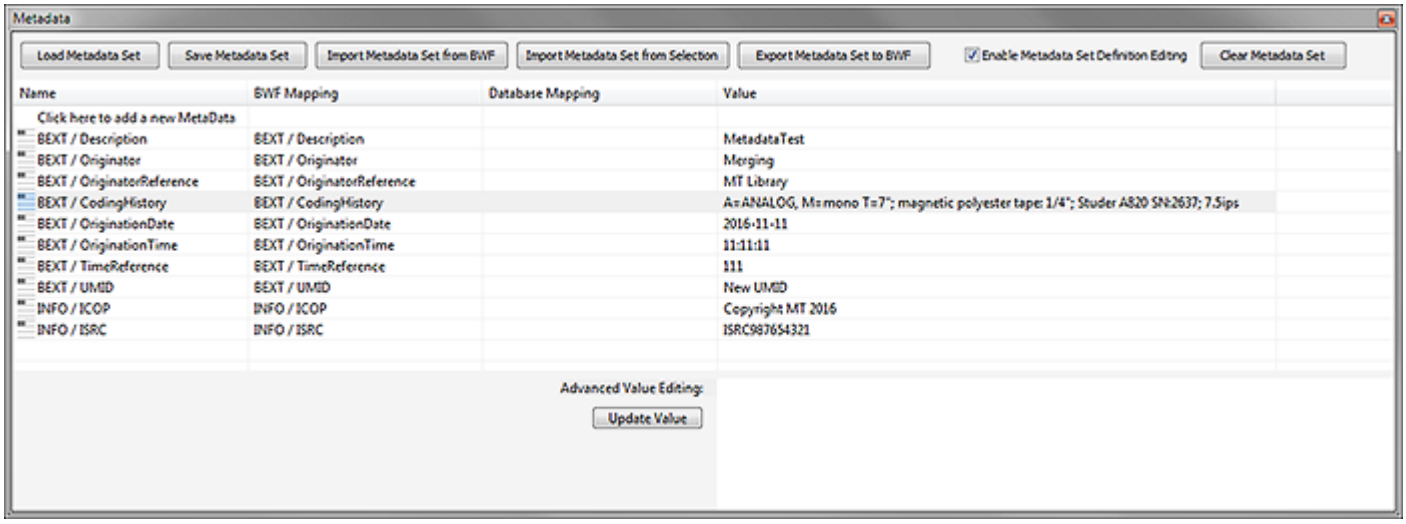
> **Note:** If a file is almost at the 4GB boundary and updating its Metadata would take it over this limit then the update will be refused.

Any **Media Markers** set in any files in the Timeline are also exported in the Metadata XML.

Defining Metadata

The Metadata is defined in the Metadata Tab Window

Metadata Tab Window



MetaData Tab Window

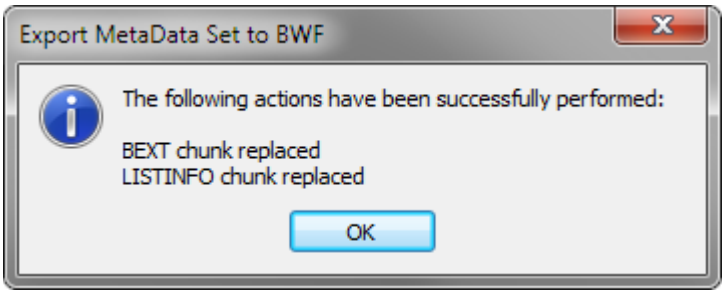
Load Metadata Set and

Save Metadata Set **Load** and **Save**, respectively**,** the **Metadata** definition including the **BWF mapping** and **Values**. Metadata definition templates can be created that can be loaded in other projects.

Import Metadata Set from BWF Opens a File Browser window to locate the target **BWF** file. When the target file is selected, clicking on **Open** loads the Metadata set present in the **BEXT** and **LISTINFO** chunks.

Import Metadata Set from Selection Imports the Metadata set from the (**BWF**) Clip currently selected in the Timeline.

Export Metadata Set to BWF Opens a File Browser window to locate the target file. When the target file is selected, clicking on **Open** updates the Metadata in the target file. A message box pops-up to confirm that the action has been carried out:



Export MetaData Set to BWF message box

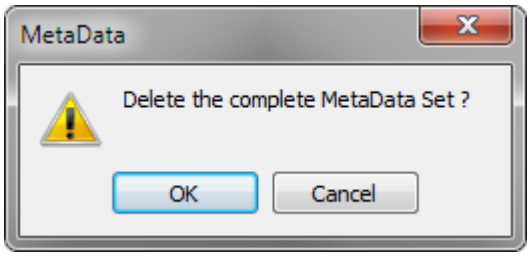
Click on **OK** to close the box.

Enable Metadata Set definition Editing gives control over Metadata editing:

When checked, the **Name, Mapping**, **Database Mapping** and **Value** fields are editable and new Metadata entries can be added. This is for editing the **Metadata Set definitions**.

When unchecked, only the **Value** field is accessible for modification. No new Metadata entries can be added. This is for normal operation of editing Metadata content.

Clear Metadata Set This button deletes the entire Metadata Set currently present in the Metadata Tab Window. A confirmation dialog pops-up for safety:



Delete MetaData confirmation dialog

Click on **OK** to confirm the deletion or **Cancel** to cancel.

Metadata Fields

Four columns are accessible for defining, editing and exporting Metadata:

Name: The key name of the metadata, identifies this metadata, consists of a freely definable string of characters.

BWF Mapping: A list of fields available in the BEXT header or in the LIST-INFO chunk. Any Metadata Value can be mapped/written to when a file is rendered in BWF format. These fields are:

BEXT / Description	BEXT / Originator
BEXT / OriginatorReference	BEXT / OriginationDate
BEXT / OriginationTime	BEXT / TimeReference
BEXT / CodingHistory	BEXT / UMID
INFO / IARL	INFO / IART
INFO / ICMS	INFO / ICMT
INFO / ICOP	INFO / ICRD
INFO / IENG	INFO / IGNR
INFO / IKEY	INFO / IMED
INFO / INAM	INFO / IPRD
INFO / ISBJ	INFO / ISFT
INFO / ISRC	INFO / ISRF
INFO / ITCH	

Database Mapping This field is for Database Mapping information that is exported in the XML so that a database parsing the XML can map this Metadata with specific Database fields. These values are free text.
A set of predefined values can be set in the registry in:
HKEY_CURRENT_USER\Software\Merging Technologies\Pyramix\Archiving-MetaData\DatabaseMapping
as **String** entries where the names of the strings are the preset values for database mapping values.

Value: The actual **Value**, or useful content of the metadata, consists of a freely definable string of characters.

- Below the Metadata list columns, the **Advanced Value Editing** text field enables multiple lines of text to be edited for the selected Metadata.

Note: The **Update Value** button must be clicked to save the edited data.

- The Metadata Set currently defined in the MetaData Tab is simply saved in the current project.

Render with Archiving

In the **Render** dialog window (accessible through the menu **Project > Render**) a new **Archiving Metadata** section has been added, offering two options:

Insert Archiving Metadata if target is BWF

This will insert all Metadata entries defined in the current Metadata Tab that have a BWF Mapping field set correctly into the corresponding field of the generated BWF file.

Only the Metadata **Value** field content is inserted in the file fields/chunks. The Metadata **Name** information is not inserted in the target file, this is only present for information in the application during editing and rendering.

Generate Archiving Metadata XML along with rendered files

This will generate an XML file along with any rendered files (of any format, even if not BWF) containing all Metadata defined in the Metadata Tab.

If the target rendered file is named **x:\yyy\zzz\file.typ** the generated XML will be named **x:\yyy\zzz\file.typ.xml**

Sample MetaData Set

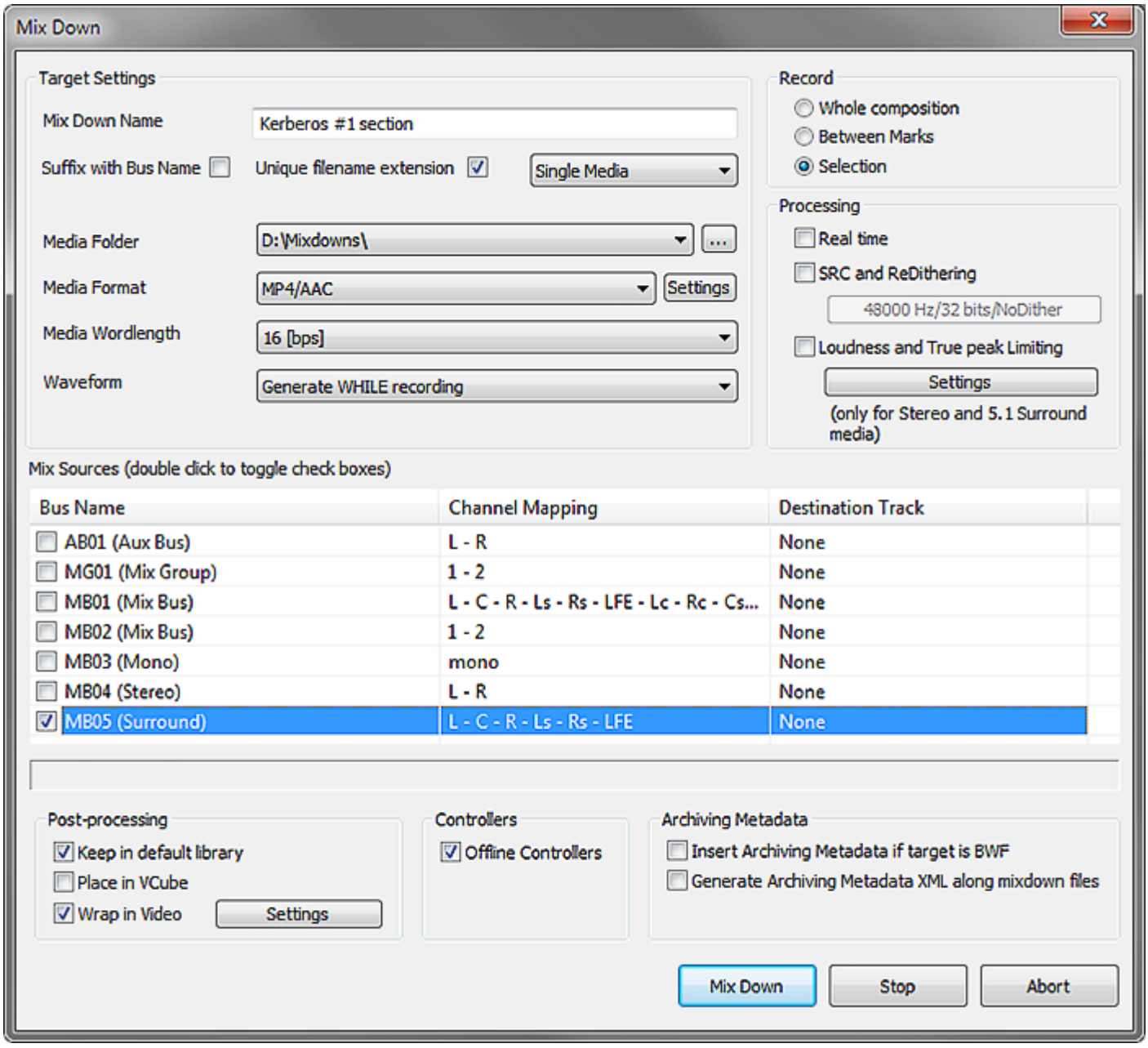
```
<?xml version="1.0" encoding="UTF-16" standalone="true"?>
<MetaDataSetDefinition>
  <MetaDataSet>
    <MetaData>
      <Name>Originator</Name>
      <BWFMapping>BEXT / Originator</BWFMapping>
      <BWFMappingEnum>2</BWFMappingEnum>
      <Category/>
      <Value>US, LOC/RSS</Value>
    </MetaData>
    <MetaData>
      <Name>MAVIS number</Name>
      <BWFMapping>BEXT / OriginatorReference</BWFMapping>
      <BWFMappingEnum>3</BWFMappingEnum>
      <Category/>
      <Value>143223-2-1</Value>
    </MetaData>
    <MetaData>
      <Name>Coding History</Name>
      <BWFMapping>BEXT / CodingHistory</BWFMapping>
      <BWFMappingEnum>7</BWFMappingEnum>
      <Category/>
      <Value>A=ANALOG,M=mono,T= 7"; magnetic polyester tape; ¼"; Studer A820 SN:2637; 7.5 ips A=PCM,F=96000,W=24,M=mono,T= Merging Horus SN:
        00088; Pyramix 9.1 SN:PCT00407 </Value>
    </MetaData>
    <MetaData>
      <Name>IARL</Name>
      <BWFMapping>INFO / IARL</BWFMapping>
      <BWFMappingEnum>9</BWFMappingEnum>
      <Category/>
      <Value>US, LOC/RSS</Value>
    </MetaData>
    <MetaData>
      <Name>ICMT</Name>
      <BWFMapping>INFO / ICMT</BWFMapping>
      <BWFMappingEnum>12</BWFMappingEnum>
      <Category/>
      <Value>143223-2-1, local, system-generated number, MAVIS number RXG 0639, local, LOC source location number</Value>
    </MetaData>
    <MetaData>
      <Name>ICOP</Name>
      <BWFMapping>INFO / ICOP</BWFMapping>
      <BWFMappingEnum>13</BWFMappingEnum>
      <Category/>
      <Value>Publication and other forms of distribution or duplication may be restricted. For details, contact the Recorded Sound Section of the Library of
        Congress. </Value>
    </MetaData>
    <MetaData>
      <Name>INAM</Name>
      <BWFMapping>INFO / INAM</BWFMapping>
      <BWFMappingEnum>19</BWFMappingEnum>
      <Category/>
      <Value>Interview with Bo Dollis at WWOZ, New Orleans, 1999-03-24</Value>
    </MetaData>
    <MetaData>
      <Name>DAW</Name>
      <BWFMapping>INFO / ISFT</BWFMapping>
      <BWFMappingEnum>22</BWFMappingEnum>
      <Category/>
      <Value>Pyramix 9.1</Value>
    </MetaData>
    <MetaData>
      <Name>Creation Date</Name>
      <BWFMapping>INFO / ICRD</BWFMapping>
      <BWFMappingEnum>14</BWFMappingEnum>
      <Category/>
      <Value>01-07-14</Value>
    </MetaData>
  </MetaDataSet>
</MetaDataSetDefinition>
```

MetaData Sample Set

Mixing Down Projects

Exporting a Composition to a File

Once you have finished editing your **Composition**, the complete **Composition** or any selected area can be exported to an audio file (or files). This is really the same as mixing down the **Composition** to a file instead of to an audio output.



Mix Down dialog

1. Choose **Project** > **Mix Down** to open the **Mix Down** dialog box.
2. In the **Target Settings** section, type in an appropriate file name under **Mix Down Name** or use the default which will be **Mix Down of "Project Name"**; choose the folder to which the file will be saved from the **Media Folder** drop-down list (only previously mounted folders will be available as options) or use the **...** open a browser to navigate to and mount an alternative.
3. The **Suffix with Bus Name** option will create files named like:

   Terminator_Final-M&E-Stem1-L.wav

   Terminator_Final-M&E-Stem1-C.wav

   Terminator_Final-M&E-Stem1-R.wav

Unique filename extension when checked, produces files with a unique identifier.

4. The **Single Media** drop-down list offers the choice of **Singe Media** to make a single multi-track audio file, or **One file per Track** to generate separate audio files for each Track or **One file per Bus/Stem** and choose the appropriate export file type from the **Media Format** pop-up list, choose the bit depth/word length from the **Media Wordlength** combo box.

   Note: These settings are completely independent of the settings for **Recording** and **Render**.

5. In the **Record** section, choose to export the **Whole composition**, or the area between the **In** and **Out** Markers with **Between Marks**, or a **Selection** made previously, by clicking the appropriate radio button.
6. **Processing** choose **Real time** for a real-time mixdown otherwise, leave unchecked for a faster mixdown at the same quality.
7. If the mixdown is required at a sampling rate other than the Project sampling rate check the **SRC and ReDithering** box. **Clicking the 48ooo Hz/32bits/NoDither** button opens the **SRC Output Settings** dialog.
8. **Mix Sources** - Choose the appropriate output bus(es) as the source for the exported file. All output buses configured in your **Mixer** will be available in the **Bus Name** list. Click the check boxes to add buses to the mixdown. If the bus is a GP bus clicking in the **Channel Mapping** column will pop-up a list of mapping choices. Clicking in the **Destination Track** column drops-down a list of all existing tracks in the Project plus the options, **Create New Tracks** and **None**.

   Note: The names displayed will correspond to the labels in the mixer strips.

9. **Mix Down** begins the process.
   Stop pops-up a **Stop Record?** confirm dialog. If you click **Yes** the recording stops at the point where you clicked and is retained up to that point. The **Mix Down** dialog is closed.
   Abort pop-ups an **Abort Record?** confirm dialog. If you click **Yes** the recording is stopped at that point and discarded. The **Mix Down** dialog is closed.

Options

Processing

Real Time	When checked the Mix Down will take place in Real Time
SRC and ReDithering	When checked the settings shown in the button below come into play. Clicking the button opens the SRC Output Settings Properties dialog. **Please see: Properties... on page 76**.

Note: Please be aware that the **SRC** option in the **Mixdown** is shared with the **Media Manager Sampling Rate Conversion tool**. This means that if, following a Mixdown that has SRC applied, if you subsequently use the Media Manager Sampling Rate Conversion tool and change the SRC parameters, then those values will also be changed in the **Mixdown Dialog Box SRC** section.

Loudness and True peak Limiting

When checked Loudness control and True Peak Limiting will be applied to the mixdown.

Note: The **Final Check** key is required to use these options.

Note: One file per Bus/Stem mode must be enabled.

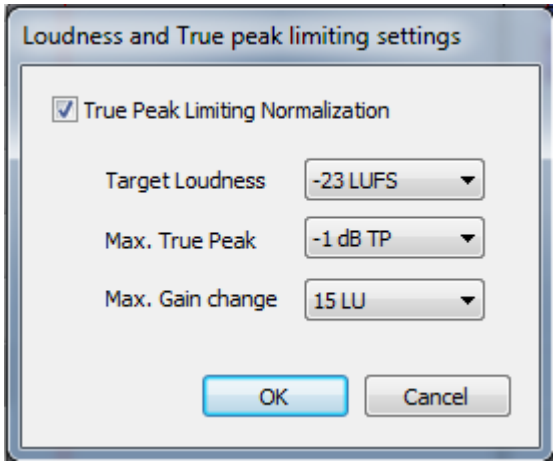
Loudness Column in Mix Sources

The **Loudness** column in the **Mix Sources** section allows independent selection, among the Sources selected as to which one will perform the Loudness Analysis and True Peak Limiting, following the global Loudness Analysis and True Peak Limiting settings available in the Processing section. Click on an entry in the **Loudness** column to choose between **Enabled** and **Disabled**.

- This feature is only useful when in **One File per Bus/Stem** mode. This enables the Loudness Analysis and Correction to be performed on selected Buses and not on others. This allows for a single pass mix-down with multiple selections.

- In **Single Media** mode all Busses will automatically have the same settings, only global Loudness Analysis/Correction is possible in this mode.
- In **One File per Track** mode this feature is not available (N/A), no Loudness Analysis/Correction is possible in this mode

Settings Click on **Settings**to open the **Loudness and True peak limiting settings** dialog:



Loudness and True peak limiting settings dialog

True Peak Limiting Normalization Check the box to enable.

Target Loudness The drop-down list offers a choice of target loudness levels.

Max. True Peak The drop-down list offers a choice of maximum peak levels.

Max. Gain change The drop-down list offers a choice of maximum allowable gain change to be applied by the processing.

A measurement report will be displayed after the Mixdown process.

The measurement report is available in a Log file in the same location as the Mixdown media file(s).

Post-Processing

Keep in default library When checked the resultant mixed down file(s) will be placed in the Default Library

Place in VCube When checked the resultant mixed down file(s) will be placed in new Tracks in the VCube Timeline automatically. All pre-existing audio Tracks are removed. See also note below.

Wrap in Video When checked, once the Mixdown is complete, the resultant file will be "wrapped" into a destination Video file. The **Settings** button opens a **Settings** dialog for this.
Please see: Wrap in Video on page 559

Controllers

Offline Controllers When checked Hardware Controllers will be switched Offline automatically for the duration of the Mix Down. If the box is left unchecked it is possible to use the Hardware Controller for changing Monitor volume etc. or to fade out.

Archiving Metadata

Insert Archiving Metadata if target is BWF When checked Archiving Metadata is inserted in the resultant file(s).

Generate Archiving Metadata XML along mixdown files When checked an XML Metadata file is generated in the same location as the output audio file(s).

Please see: Archiving Metadata on page 470

Notes on 'Place in VCube'

The following notes apply when VCube is running on a different machine running on the same local network.

Important! If using the Post-Processing **Place in VCube** function with separate standalone machines. I.e. a Pyramix and a VCube the Mix Down Destination Folder must be mounted as a network path, e.g. \\server\sharedisk\folder\file.pmf. The files must be accessible from both machines using the same net-

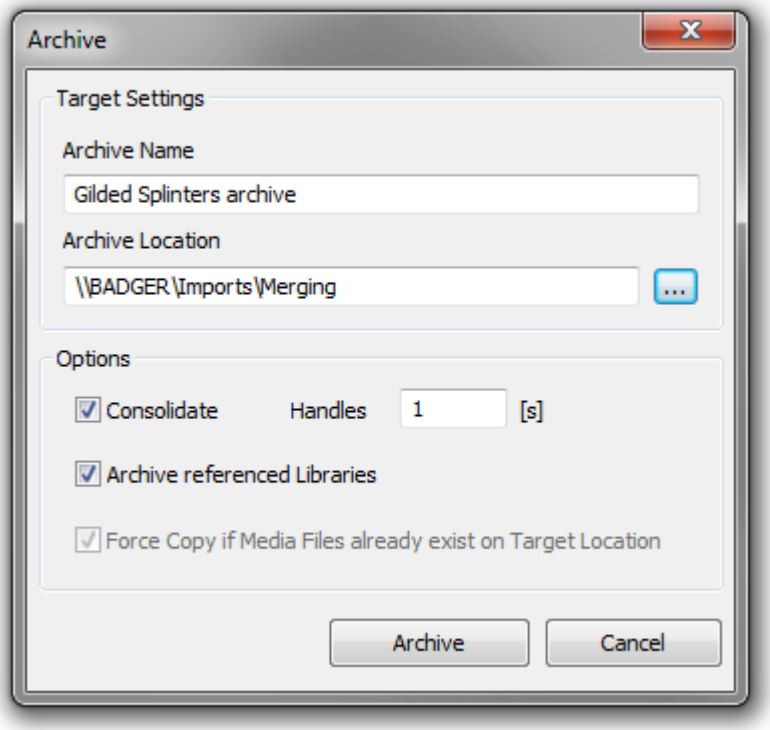
work name.
Typically the share name of a disk can be seen differently from both machines if not set correctly, e.g. one can see e:\media\file and the other see \\machine\shared\media\file in such case Pyramix cannot translate the name for the VCube.

Non Real-Time Mixdown

Note: In Pyramix, non real-time mixdowns introduce no degradation whatsoever and are a considerable aid to productivity since they are usually (much) faster than real-time.

Archiving Projects

Project > **Archive** opens the **Archive** dialog :



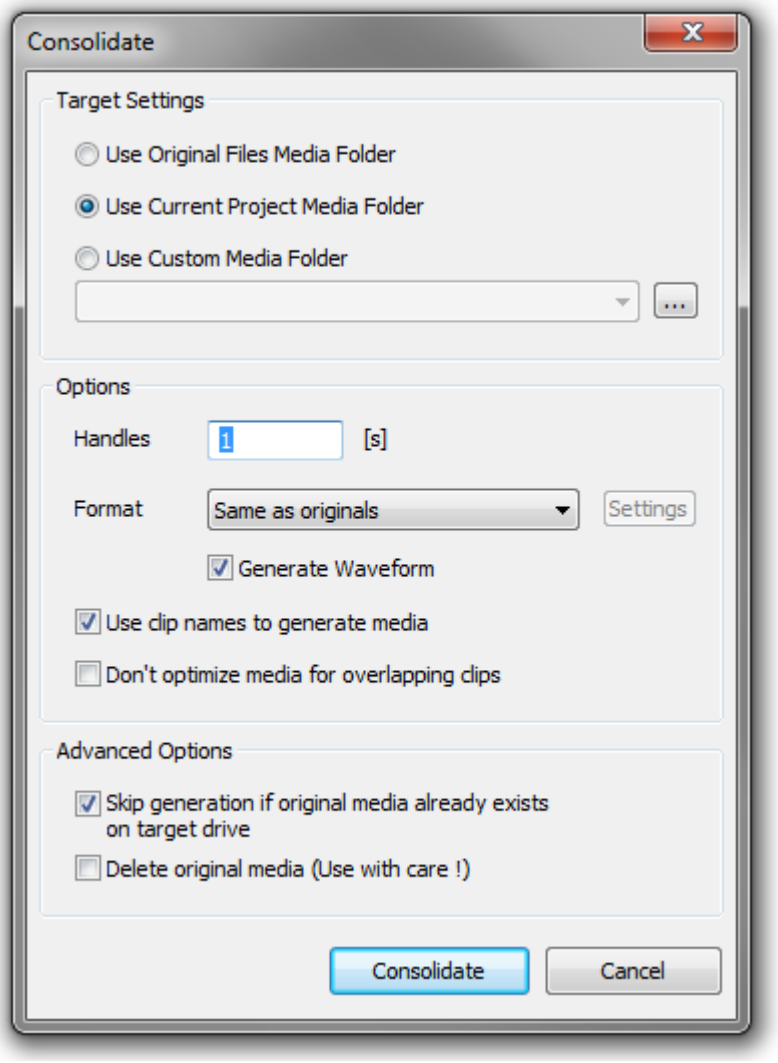
Archive dialog

This function copies the Project and media utilized to a single location.

If **Consolidate** is checked then new audio Media Files be created containing only the audio used in the Project not the entire original Media. **Handles** may be added by typing a handle length in the box.
Project Libraries referenced in the Project are also Consolidated but not Global Libraries.

Force Copy if Media Files already exist on Target Location is grayed out when **Consolidate** is active.
When checked Files will be copied regardless of whether they already exist at the target location.

Consolidating Projects



Consolidate dialog

Consolidating a Composition is a method of reducing the storage space used by Media files and of bringing all elements of the Composition together to move it to another machine or storage medium. The Consolidate function makes a selective backup of the media used in the Composition. Instead of backing up the whole of every media file referenced by the Clips in a composition, Consolidate backs up only those parts of the media files that are referenced by the Clip segments.

Target Settings

The Radio Buttons offer a choice of locations for the consolidated Composition.

Use Original Files Media Folder

The Consolidated Composition will be saved in the same location as the original files

Use Current Project Media Folder

The Consolidated Composition will be saved in the same location as the current Project Media

Use Custom Media Folder

The Consolidated Composition will be saved in a user selected location.

Options

Handles

To allow for limited further editing of the Consolidated Composition, changing fade durations etc. extra material (if it exists), can be retained at each end of every Clip, beyond that which is defined by the Composition EDL. Enter a value in seconds.

Format

This drop down list enables the Consolidated Composition to be saved in the same format as the original or to be converted to any supported format.

Generate Waveform

When checked, waveform files will be generated and saved with the Consolidated Composition

Use clip names to generate media

When checked, the original Clip names are used for the newly generated media

Don't optimize media for overlapping clips

Advanced Options

Skip generation if original media already exists on target drive

When checked new media will not be written where a version already exists on the target drive.

Delete original media (Use with care!)

When checked the original media files referenced by the consolidation are deleted after the consolidation is complete. **N.B. Destructive!**

Converting Projects

Changing Project Length / Pitch

Processes whole Projects. Offers Time Compression or Pitch Reduction of 4% (24fps to 25fps) or Time Expansion or Pitch Rise of 4.17% (25fps to 24fps)

Given an Origin Reference and a Ratio, all Clips of the project are stretched/squeezed and moved accordingly to the stretch ratio and origin reference. Optionally all media can be consolidated to process only the part of audio required by the Clips. This function is available through the menu Project / Stretch and requires the Prosoniq MPEX4 authorization key to be entered.

Reconforming a Project

Processes entire project. To be used where the existing project was created by Autoconforming material to a CMX EDL.

Surround Post-Processing Projects

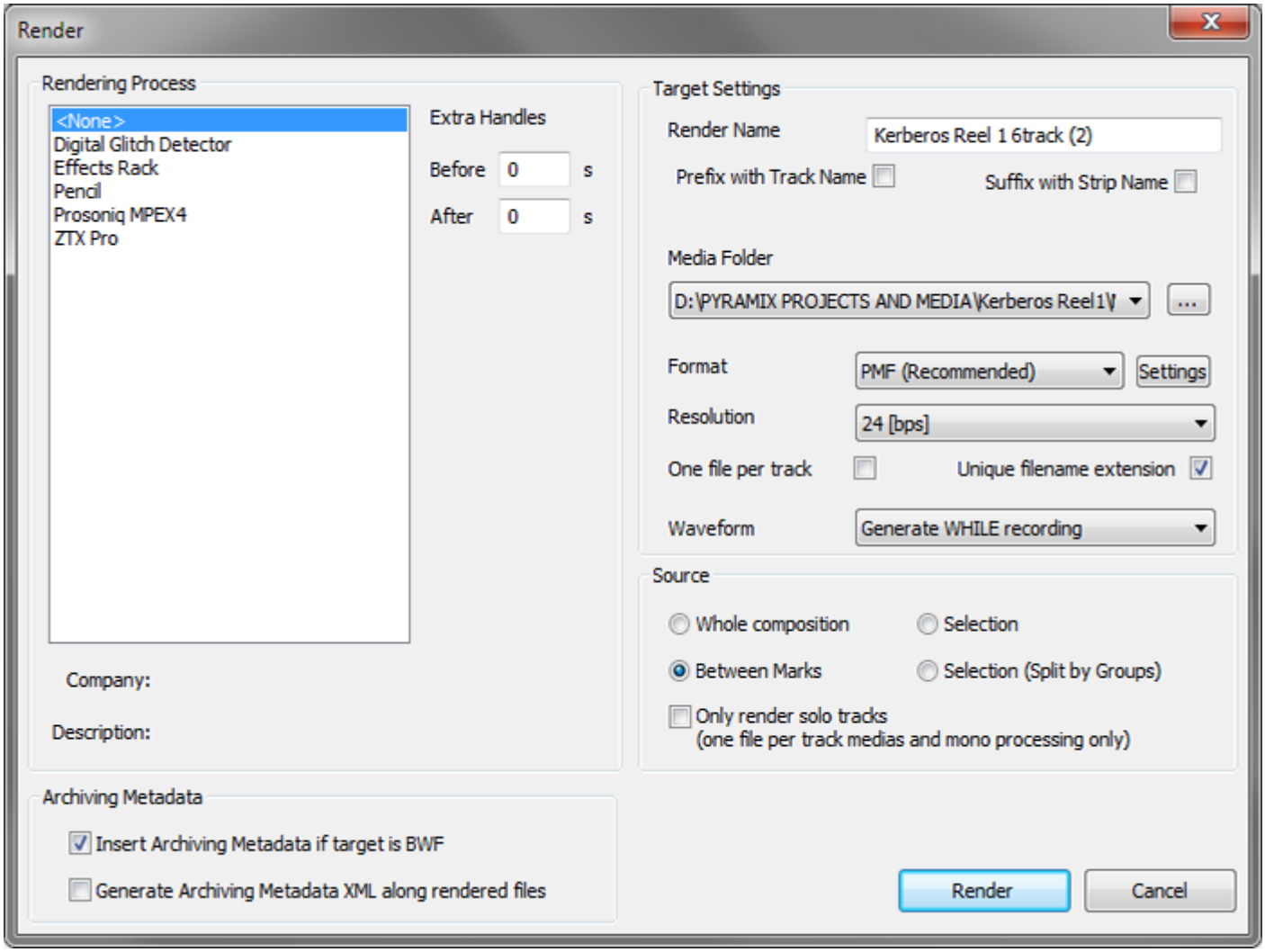
The Surround Source Stem can be selected from a list of available stems from all Surround buses.

Available processing plug-ins are:

- Multiple File Export
- Minnetonka AC3 (Dolby Digital) Encoder (to be purchased separately)
- MPEX4 Cinema 24fps to 25fps or 25fps to 24fps Multi-channel Time Stretcher by Prosoniq (optional)

Rendering Projects

The Render function available in menu **Project > Render** offers a choice of Rendering plug-Ins. **Please see also**: **Render with Archiving on page 472**



Render dialog

Rendering Process Lists the Rendering Processes and is where you select the one required.

Extra Handles The before and after boxes allow a time value to be entered for extra material (where available) to be included in the material used for analysis by the process (where applicable).

Note: Handles added in the Render menu are not meant to be processed. They're only used to give some extra material to processes that need analyzing before or after the given portion of data.

Handles will NEVER be processed by any Render plug-ins.

Target Settings Affect the Output File.

Render Name A text entry box where any legal filename may be entered.

Media Folder The drop-down list allows mounted Drives/folders to be selected as the destination for the output file. The adjacent **...** button opens a browser window if more options or a new folder are required.

Resolution A drop down list with all valid choices of bit-depth for the output file(s)

One file per track When checked, multi-track sources will be rendered as separate files.

Unique filename extension When checked, ensures the output files have unique extensions.

Format	The drop-down list allows a choice of output formats.
Settings	If options are available for the chosen format, this button accesses them. If no options are available the button is grayed out.
Waveform	The drop-down list offers Waveform generation options. **None**, **Generate AFTER recording** or **Generate WHILE recording**.

Note: These settings are completely independent of the settings for **Recording** and **Mix-down**.

Source Offers a mutually exclusive choice of sources between **Whole composition**, **Between Marks**, **Selection** or **Selection (Split by Groups)**

Selection (Split by Groups) splits the rendering process into multiple renders for each selected Clip Group in the timeline. In this case the **Render Name** text edit box is ignored and all renders take the name of the first Clip in time of each group.

Only render solo tracks (one file per track medias and mono processing only)

When checked, only soloed Tracks will be rendered. Only media files with 'one-file-per-track' will be processed and processing will be mono only.

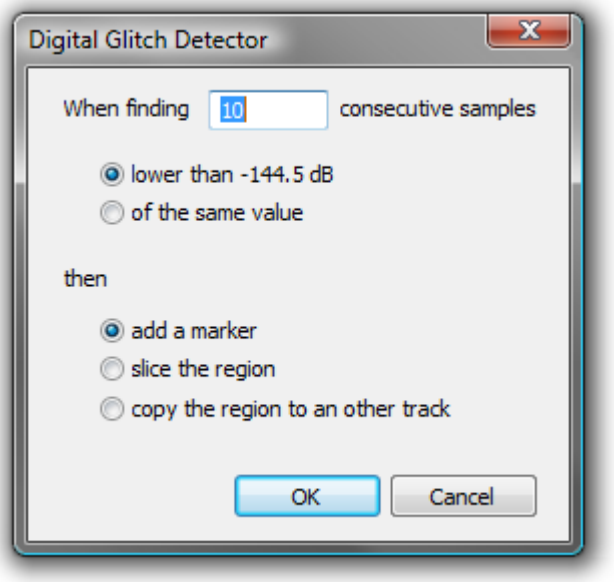
Render Initiates the Render Process.

Cancel Cancels all changes made in the dialog and closes it without rendering.

Process Plug-ins

Glitch Detector

Finds Glitches and Pops. Select **Digital Glitch Detector** in the **Rendering Process** list in the **Render** dialog, make other settings as required then click on **Render** to open the **Digital Glitch Detector** dialog:



Digital Glitch Detector dialog

Type the number of consecutive samples to detect on in the **When finding _____ consecutive samples** box. (Default is **10**)

Choose detection method:

lower than -144.5dB

or

of the same value

Now select what you wish Pyramix to do when it detects the type of potential glitch chosen above:

add a marker

slice the region

copy the region to another track

ZTX Pro

Optional high quality pitch-shift and time-stretch renderer from The Zynaptiq.

> **Note:** Merging Technologies ZTX Pro key is required.

Accessing ZTX Pro

When a valid key is present ZTX Pro replaces Timezone as the Default Time-stretch tool in Editing.

It can also be defined under **Settings > Application > Editing > Time Stretch Tool**

TimeZone is no longer supported and no longer available.

Configuration

Dirac is configured is in Pyramix Settings under **Settings > Application > Time Stretch > ZTX Pro Settings**

Three quality modes are available: **Good**, **Better**, **Best**.

Time/Frequency localization setting

1. Selects full time localization. Good setting for single instruments and voice.
2. Time/frequency localization with emphasis on time localization. If setting **1.** produces echoes this give better results.
3. This sets the time/frequency localization halfway between time and frequency domains. It is the best setting for all general purpose signals and should be set as default for non-preview processing.
4. Higher frequency localization and less time localization. May be a better choice for classical music than the lower Time/Freq localization settings.
5. Highest frequency localization. This may not be an ideal choice if you're dealing with signals with very fast attack transients.

Effects Rack

Enables chains of up to eight VS3, VST and or Direct X plug-ins to be used as rendered processes. Select **Effects Rack** in the **Rendering Process** list in the **Render** dialog, make other settings as required then click on **Render** to open the **Effects Rack** Window

Effects Rack Window

Note: The Effects Rack processes up to six channels. Automatic Delay compensation is available. VSt3 plug-ins are not currently supported.

Each of the eight slots can be loaded with one plug-in effect.

Most of the buttons are self explanatory.

Load FX

Opens a pop-up with lists of installed VS3 and VST plug-ins. Selecting **None** removes the currently loaded effect.

Show

Toggles the control Window for the currently loaded effect visible or hidden.

M

Mutes the effect in this slot

S

Solos the effect in this slot

Bypass

Bypasses all effects in the rack when lit

Audition

Plays the Timeline to audition the effects

Stop

Stops the Audition

Process

Closes the Effects Rack Window and initiates the Rendering Process

Cancel

Closes the Effects Rack Window and cancels the Render

Load Preset

Pops up a menu with **Recall... >**, **Remove... >** and **Load From File** options.

Hovering the mouse pointer over **Recall... >** reveals a list of all Presets present. Selecting one loads all its effects and parameters into the Effects Rack.

Hovering the mouse pointer over Remove... > reveals a list of all Presets present. Selecting one erases it from the Presets list.

Selecting **Load From File** opens a Browser Window to enable a previously written Preset File to be located and loaded.

Save Preset

Opens a pop-up with two options: **User >** and **Save To File**.

Hovering the mouse pointer over **User >** reveals the option to **Create New...** and a list of all existing Presets. Selecting an existing preset will overwrite the current contents of the selected Preset.

Selecting **Save To File** opens a Browser Window where you can name the Preset and navigate to a suitable location for the file.

Mutes Reset

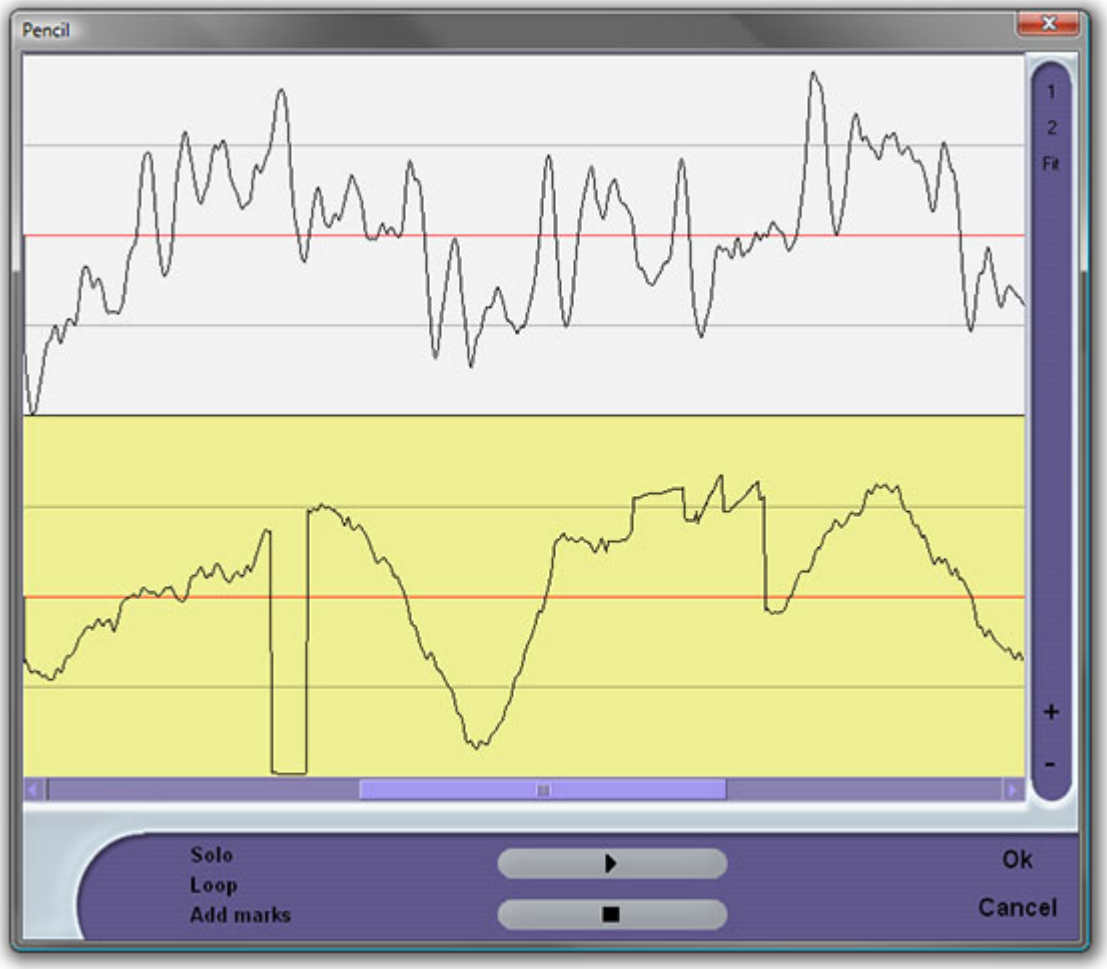
Resets all slots Mutes

Solos Reset

Resets all slots Solos

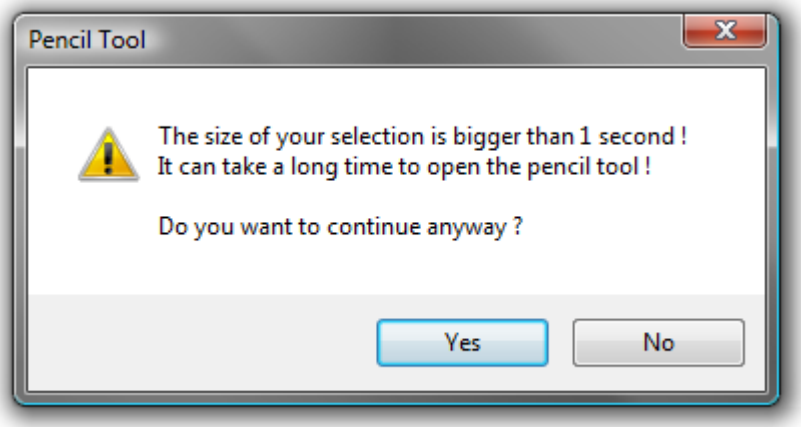
Pencil

For retouching waveforms. To use the **Pencil** tool first select the section of audio containing the waveform you wish to modify. Now select **Pencil** in the **Rendering Process** list in the **Render** dialog, make other settings as required, then click on **Render** to open the **Pencil** window:



Pencil Window

Note: If you select a section of audio longer than 1 second this Pencil Tool dialog will appear:



The yellow Track is the one currently selected for treatment.

The **1** and **2** buttons on the right determine whether one or both Tracks of a two Track selection are shown. **Fit** shows all selected Tracks.

The **+** and **-** buttons zoom in and out in time.

Solo	When ticked solos the selected Track
Loop	When ticked preview playback will loop
Add Marks	When ticked adds a Marker to the Timeline where the Pencil Render has taken place

The > button initiates preview playback and the square stop button stops preview playback.

Prosoniq MPEX 4

An optional Multi-channel Time Stretch / Pitch Scaling with Formant plug-in. **Please see: MPEX4 Timestretch and pitch change on page 413**

ReNOVAtor

An optional renovation suite plug-in by Algorithmix.

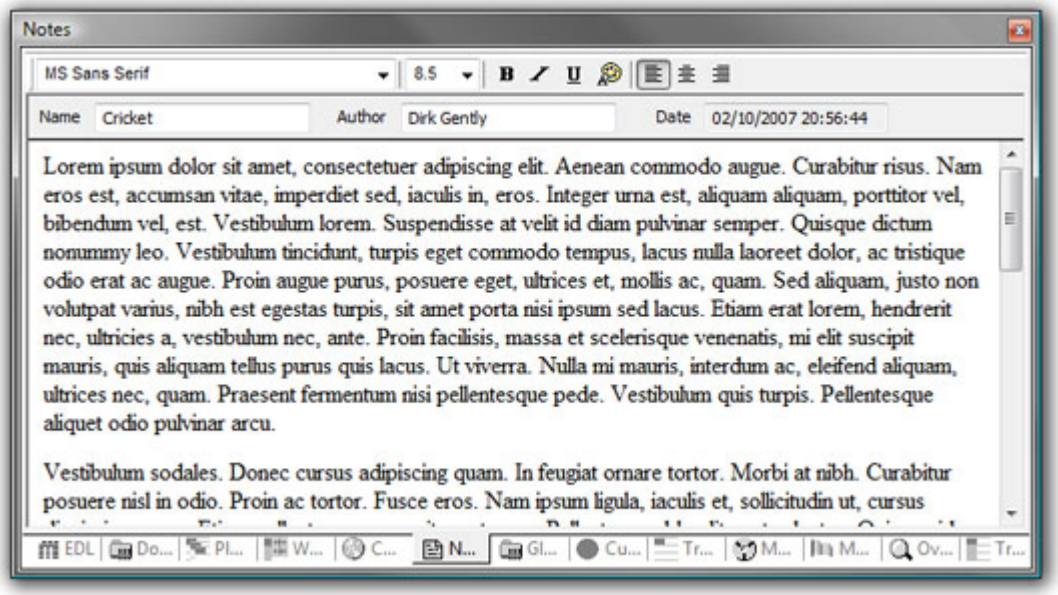
Cleaning Up Project media

Deletes all Media files in the selected folder which is not used in, or referenced by the current Project.

N.B. This operation is NOT reversible. There is no **UNDO**!

Project Notes

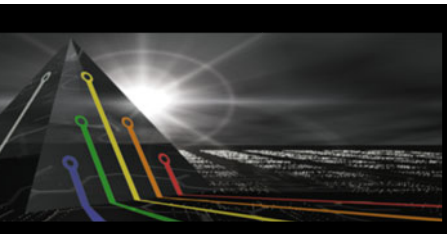
Click on the **Notes** tab to add text notes to a project. Type or cut and paste text into the editor. Drop down list boxes give a choice of font and size. Text can be emboldened, italicized, underlined and colored. Justification can be left, centre or right.



Notes Tab Editor

Notes entered here are saved with the project. The notes can be reviewed, edited and copied into other applications by highlighting the text and copying with **Ctrl + C**.

17 Final Check Metering



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Final Check Metering

Scope

Pyramix has an optional plug-in dedicated to precision metering. As the name implies this window brings together all the tools necessary to ensure that masters conform to the relevant standards.

Final Check enables you to monitor and check a wide variety of mix characteristics objectively. Final Check presents this information via a simple and easy to read user interface making it easier to be confident that your mix will conform to the specifications required by your clients.

Note: FINAL CHECK supports GENERAL MIX BUSES in Stereo and L C R LS Rs Lfe formats ONLY.

Final Check Window

Open the **Final Check** window either by clicking on the icon or **View > Windows / Tools FinalCheck Metering**.

The Final Check Window is presented with two tabbed pages, **Metering** and **Setup**.

In the Upper left-hand corner, the yellow square toggles the plug-in between active and inactive states.

The Window can be resized by clicking and dragging. Double-clicking on the upper boundary maximizes the Final Check Metering window automatically and sets the window to full screen.

If you are using more than one monitor, it will be maximized on the screen where most of the window was located previously. Double-clicking again restores to the previous size.

In the upper-right corner the **[X]** box closes the Final Check window.

Metering Tab

Final Check Metering Page

The **Metering** page is divided between the upper Stereo-panel and the lower Surround-panel. If one panel is not required for the current application, it can be minimized by simply clicking on the (-) icon at the top-left of the panel. To restore, click the (+) icon. The window is resizable using the usual edge handles and double-headed arrows.

At top-left the button must show yellow before the meters will operate. Clicking the button toggles between on and off.

At top right of each panel, the down arrow accesses a list of all buses in the current Pyramix mixer. Click on an entry to select which bus will be monitored. If a bus contains more than one stem, an additional menu allows you

to select which stem to monitor. It is not possible to monitor a combination of bus and/or stem. To achieve this simply create an additional bus in the mixer and route the multiple stems as required. The bus and stems being monitored currently, appear ticked. Final Check will even perform useful tricks such as managing a fold-down of the selected Surround Bus to be monitored by the Stereo Panel, thus enabling you to see what the levels would be after mixdown. Select **Use Stereo Mixdown** from the Stereo section bus list to access this option.

Keyboard Shortcuts

In the **Metering** page [**P**] clears ALL peak indicators. (Same shortcut as Pyramix Mixer.)

In the **Metering** page [**R**] resets all the History graphs and LIaR. Same as Right-click on a History Graph and selecting **Reset all** or [**Shift**] + click on **Reset** on LIaR.

Meters

Once the Bus(es) is (are) selected, any or all of the following meters will be active depending on the choices made in the **Setup** page:

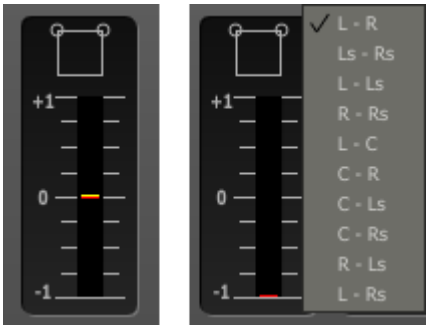
Phase Meter Stereo

Stereo Phase Meter

This displays the value of the phase correlation within the mix. A clear colour code allows you to easily spot negative correlations.

Yellow = In phase, Red = Out of phase.

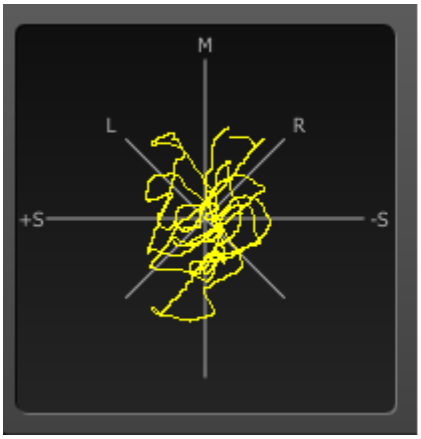
Phase Meter Surround



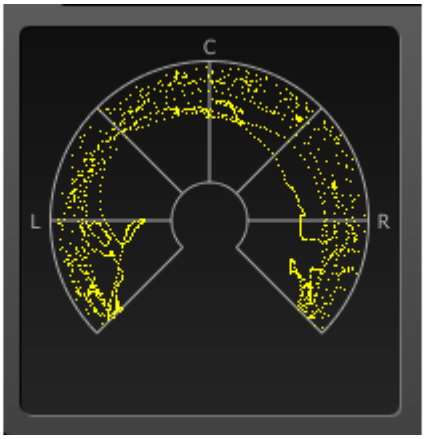
Surround Phase Meter and Channel Assign

For a surround mix, a simple right-click allows you to select which two channels you want to monitor. An Icon at the top of the phase meter shows the user which two channels are selected. Alternatively, this can be selected via the **Setup** page. Please see: **Setup on page 496**

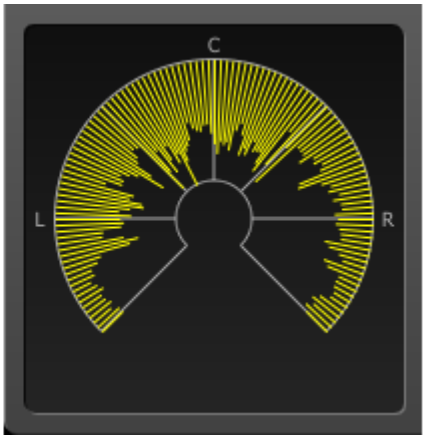
Phase Oscilloscope (stereo mix only)



Stereo Phase Oscillo Interpolate on



Stereo Phase Oscillo Meter



Stereo Phase VU Meter

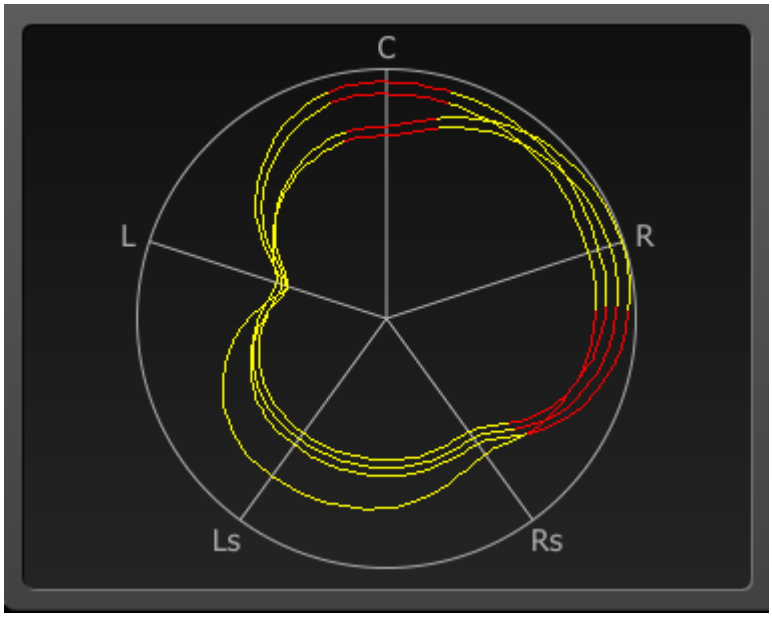
A classical phase oscilloscope, which also includes two new display modes :

Stereo Phase stereo-meter : A polar co-ordinates plot of the points displayed by the classical phase oscilloscope

Stereo Phase VU Meter : A circular graph showing directional RMS of the points of the phase stereo-meter as described above.

Note: Any points or lines below the **L - R** line represent out of phase samples.

Surround Monitor (surround mix only)



Surround Monitor

This meter shows a true 360° display of your surround-mix. With the added feature of a simple colour code allowing the user to quickly detect phase issues by highlighting them in red.

Principle

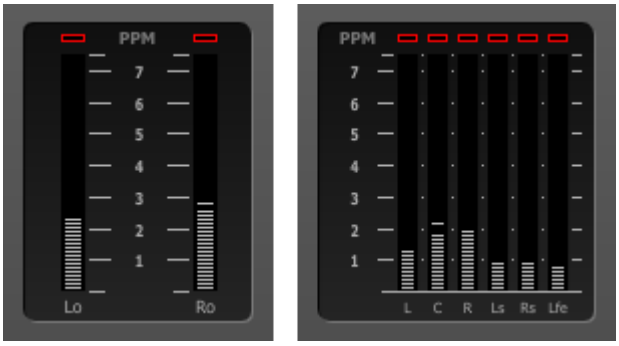
A negative phase between two neighboring channels (L-Ls, Ls-Rs, Rs-R, R-C and C-L) is displayed by a “symmetric” red segment centred halfway between the two channels in question. For example, a phase just below zero between Ls and Rs will result in a red dot at the “back” i.e. lowest part of the surround monitor display. If, on the other hand, Ls-Rs were totally out of phase, (phase = -1) the whole 72° (one fifth of 360°) between Ls and Rs lines would be red. The rule is : a phase of -x will turn red a region of x*72° (linearity is also to angle, not to segment length).

Additionally, the LR phase is displayed (although L and R are not neighboring channels) centered midway between L and R, that is on C… Consequently, it is possible for the red regions to overlap if LR and LC/RC phase correlations are all negative.

To gain familiarity, we suggest you experiment using the Phase Correlation meters and the Surround Monitor together, in a Project that just uses sine wave at the same frequency, e.g. 1kHz, and see what happens when the various elements are phase reversed.

> **Note:** In simple terms, any red segment means there is a phase issue which should be investigated since it may have an adverse effect on your mix.

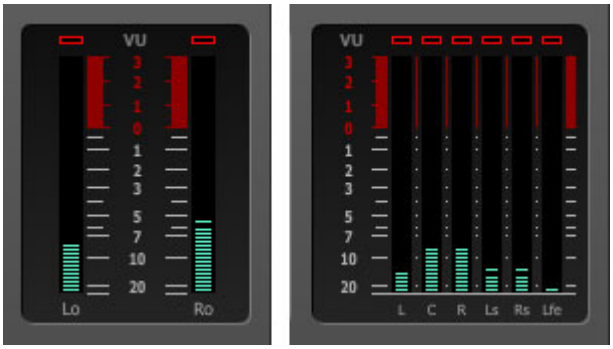
Peak Programme Meter (PPM) :



PPMs (Peak Programme Meters)

This digital replication of the old analogue PPM includes separate overload indicators and a **Slow** option enabled in the **Setup** page. Clicking on the **Slow** button activates the mode and the button turns red. A selection of different, presets for scale and dynamics (DIN, Nordic, BBC or EBU) are available in the **Setup** page.

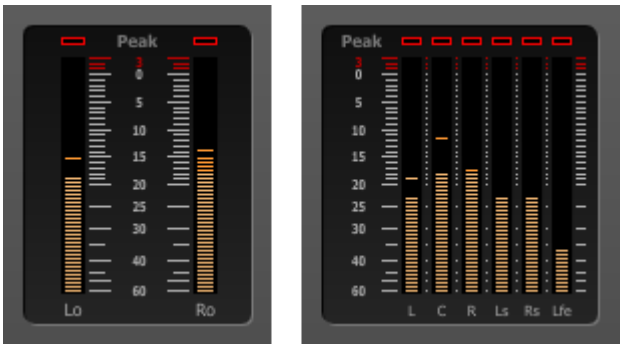
VU Meter :



VU Meters

A classical Volume Unit (VU) indicator which also comes with a separate overload indicator.

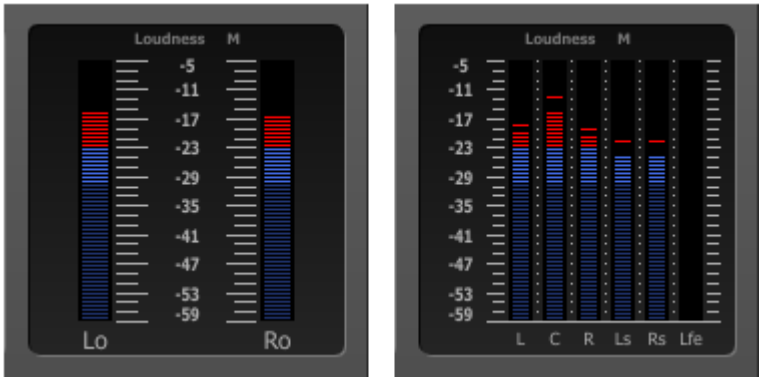
True Peak Meter :



True Peak Meters

This is also known as an "inter-sample peak meter". In accordance with EBU R128, it allows you to spot areas susceptible to producing analog overflows, after D/A conversion, with high accuracy even beyond +0dBFS.

Loudness Meter :



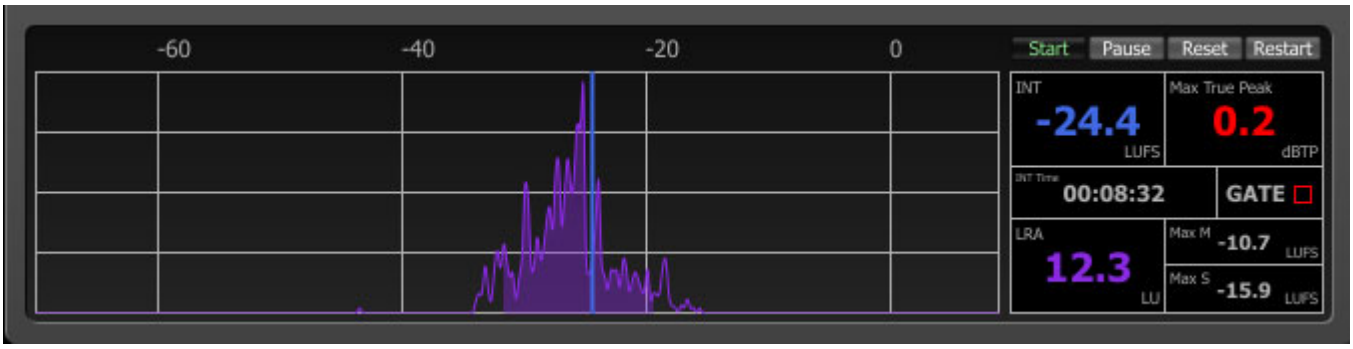
Loudness Meters

As recommended by EBU R128. Three different loudness bargraphs can be displayed, differentiated by their integration time.

Loudness M	**(EBU mode Momentary : 400 ms)** integration time.
Loudness S	**(EBU mode Short-term : 3 s)** integration time.
Loudness Custom	**(Custom integration time)** An additional loudness meter with any integration time you wish. (Defined via the setup page.) Note the different names on the meters themselves.

Loudness metering is rapidly becoming the standard for transmission-ready mixes for TV and in most territories conformity to a LUFS level is now a delivery requirement. It is also fully compatible with ATSC (Advanced Television Systems Committee) A/85.

LIaR (Loudness Integration and Range) :



LRA Curve **Values Panel**

Values Panel

The right-hand panel shows several values and indicators and also contains the **Start**, **Pause**, **Reset** and **Restart** buttons.

Values

INT	The integrated **LUFS** total for the period when the instantaneous loudness is above the gate threshold.
Max True Peak	Shows the Maximum True Peak value in dBTP since the last reset.
INT Time	Shows the elapsed time since the **Start** button was pressed. (Only increments when the transport is running.)
GATE	LED flashes when gating is active. The red LED will turn on when the signal streamed through Final Check is below the gating threshold, and hence isn't taken in account for the measurement. If the gate is set to -70LUFS in the Setup page it remains active at this threshold.
LRA	Loudness Range value. Shows the value in LU between the quasi lowest and quasi highest LU results recorded since the start of recording values**.**

Max M	Shows the **Max**imum **M** value (**EBU mode Momentary : 400ms**) recorded since the last Reset.
Max S	Shows the **Max**imum **S** value (**EBU mode Short : 3s**) recorded since the last Reset.

Controls

Start	Begins the analysis process.
Pause	Stops new data being written and freezes the display. A second click resumes. LUFS values continue to be calculated while in Pause and the first new value after pause resumes will reflect this.
Reset	Clears the values whether running or paused.
Restart	Clears the values and restarts whether in pause or running.

Note: If used with the **Shift** modifier the LIaR controls also affect ALL the History graphs.

LRA Curve

The purple LRA curve (and the other measurements) is refreshed every second, and plots the amount of time the output is at a given Loudness (vertically) against the Loudness, in LUFS (horizontally) The width of the filled space below the curve represents the LRA.

Context Menu

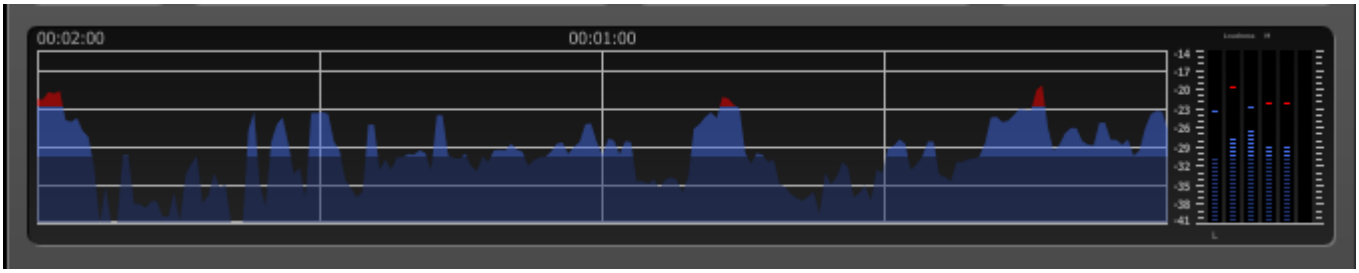
LIaR has a right-click context menu with these entries:

Copy Data To Clipboard	Copies the LIaR data to the Windows Clipboard (to ease export to MS Excel, etc.)
Copy All Data To Clipboard	Copies all FinalCheck Meter data to Windows Clipboard.

History Graphs

All the meters except Phase and Spatialization have the option of a **History Graph**. This shows the values over time. The data recorded can be copied to the Clipboard and used in other applications such as Microsoft Excel to produce graphical or numerical reports. Currently, the History Graphs are most useful where a Project or Song is played continuously from beginning to end.

Loudness History Graph



Loudness History Graph with Meters

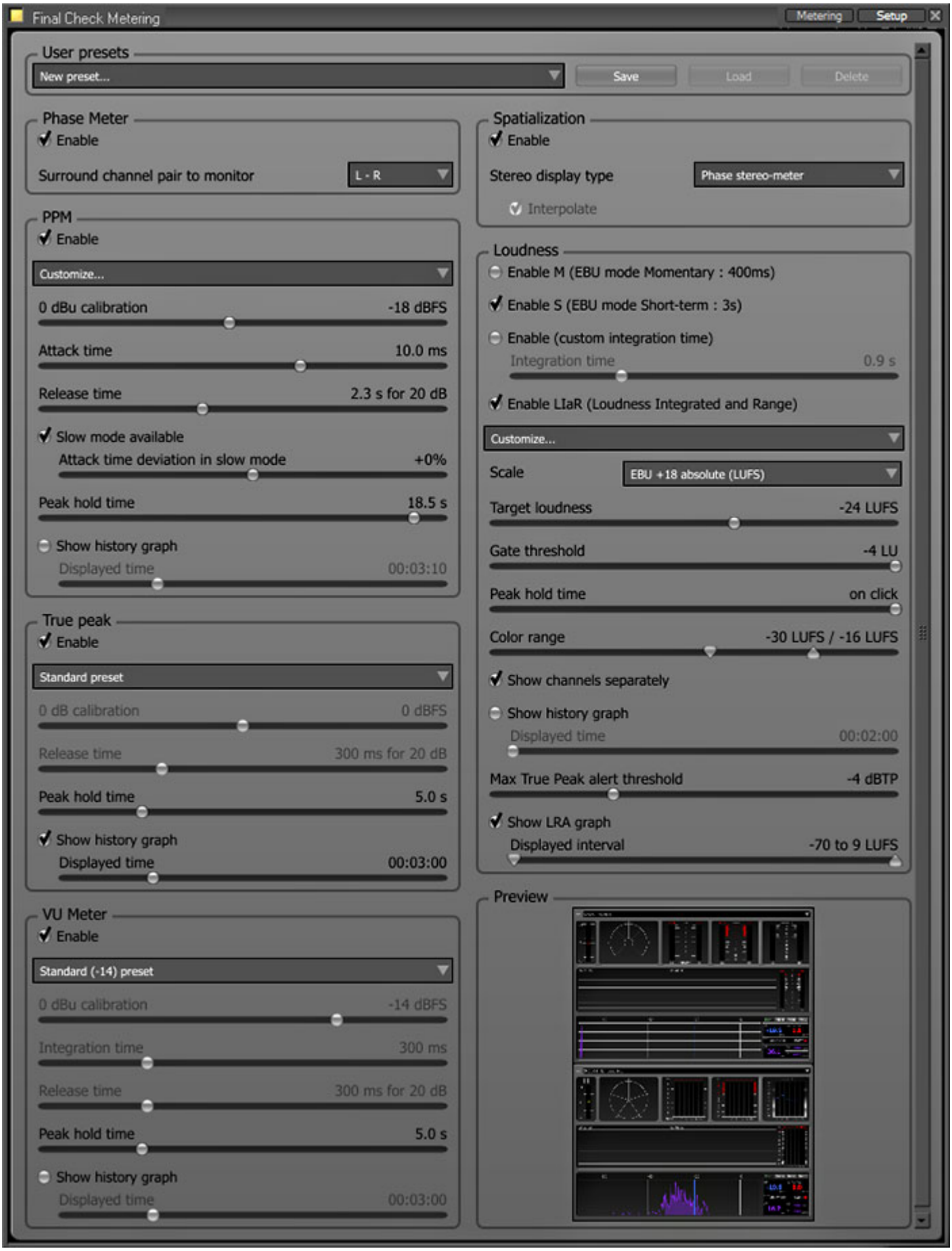
Arguably the most useful of the History Graphs, the Loudness History has three color bands, dark-blue, light-blue and red. The transition thresholds are determined in the Setup page.

Context Menu

Start	When ticked, the History Graph updates constantly with new values. Mutually exclusive with **Pause**.
Pause	When ticked, the History Graph stops scrolling. New values will not be logged until **Start** is clicked again.
Reset	Clears the contents of the History Graph.
Restart	Clears the contents of the History Graph and starts recording.
Start all	Applies to all History Graphs and the LIaR graph. Mutually exclusive with **Pause all**.

Pause all	When ticked all History Graph and the LIaR graph stop scrolling. New values will not be logged until **Start all** is clicked again. (Or one of the individual **Start** context menu entries.)
Reset	Clears the contents of the History Graphs and the LIaR graph.
Restart	Clears the contents of the History Graphs and the LIaR graph and starts recording.
Copy Data To Clipboard	Copies the History Graph's data to the Windows Clipboard (to ease export to MS Excel, etc.)
Copy All Data To Clipboard	Copies all FinalCheck Meter data to Windows Clipboard.

Setup



Final Check Metering Setup Tab

Click on the **Setup** tab at top right of the Final Check window, adjacent to the **X** (close) box to open the **Setup** page.

Click on the **Metering** tab to return to the main **Final Check Metering** page.

The **Setup** tab has a **User presets** management area at the top. The rest of the window is divided into sections for each meter type, in two columns, and a **Preview** section to show how the **Metering** tab layout will appear.

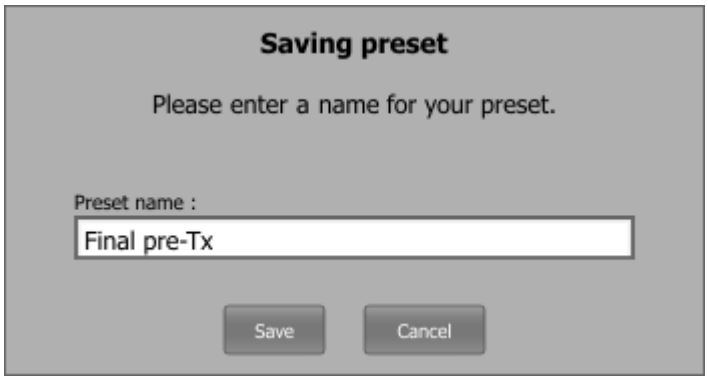
Phase Meter	**Spatialization**
PPM	**Loudness**
True Peak	
VU Meter	**Preview**

User Presets

User presets can be saved, loaded and deleted. A drop down list and three buttons, **Save**, **Load** and **Delete** manage the presets. Deleted presets go to the Recycle bin. If a preset is deleted inadvertently it can be restored. However, restored or copied presets from another location will not be visible in Final Check until Pyramix is restarted.

New Preset... The drop-down list shows all existing presets with **New Preset...** at the bottom of the list. Click on an existing Preset to select it followed by the **Load** button to update the parameters.

To create a new preset click on **New Preset...** adjust parameters until you are happy with the results then click on **Save** to open the **Saving Preset** dialog :



Final Check Saving preset dialog

Common Controls

The **Enable** buttons in each section allow you to show or hide a given meter. Meter settings are accessible only when the meter is enabled.

Note that **Spatialization** refers to the **Oscilloscope** and **Surround Monitor**.

For Bargraph-meters (**PPM**, **TruePeak**, **VU** and **Loudness**), the **Show history graph** button enables the display of a history graph beside the bargraph. It also enables the time range that the history graph should cover to be set using the **Displayed time** slider." Also, when a meter is showing more than one channel, the history graph will log only the maximum of all channels. Therefore, be careful with loudness.

For Bargraph-meters (**PPM**, **TruePeak**, **VU** and **Loudness**) **Peak hold time** sets the time during which overload LEDs and peaks (small horizontal lines above the filled column) remain displayed.

Left boundary (0.0s) will reset the peaks and OL LEDs immediately.

Right boundary (on click) will never reset the peaks and OL leds automatically. You can reset them by clicking on the meters. Tip : hitting **P** on the keyboard will reset all peaks and OL LEDs in Final Check.)

Bargraph-meters (**PPM**, **VU**, **TruePeak** and **Loudness**) have a preset drop-down menu that allows you to select from a variety of presets, or the option **Customize…** Most settings cannot be changed unless **Customize…** is selected.)

If you use **Shift** when operating the **Llar Start**, **Pause**, **Reset** and **Restart** buttons ALL the history graphs will follow suit.

Individual Meters Setup

Phase Meter

Enable When ticked the Phase Meters are active and shown in the **Metering** page.

Surround channel pair to monitor The drop-down list offers the choice of any channel pair in a 6 track surround bus to monitor for stereo phase. (This only affects the Surround Phase Meter.) This setting can also be altered in the **Metering** page, by simply right-clicking on the Surround Phase-Meter.

PPM

Enable When ticked the PPMs are active and shown in the **Metering** page.

Type Label (Type II A (BBC)) Clicking on the label drops down a list of alternative PPM standards. **Type I (DIN)**, **Type I** (**Nordic**), **Type II A (BBC)** and **Type II B (EBU)** or **Customize...**

When Customize is active the following five controls will be available:

0dBu calibration The slider enables adjustment between -24dBFS and 0dBFS.

Attack time The slider enables adjustment between 1ms and 15ms.

Release time The slider enables adjustment between 0.5s and 5.0s for a 20dB fall.

Slow mode available When ticked a **Slow** button will be shown on the PPM scales in the Metering window. Active when red. Clicking the button toggles on/off. When the button on the PPM scale is off, nothing happens. When active, the attack time of the PPM is raised significantly.

Attack time deviation in slow mode The slider sets the attack time when **Slow** is active from -50% to +50% of the PPM slow-mode standard.

Peak hold time The slider sets the amount of time the peak value is held from 0.0s to 19.5s or **on click**, which requires a click on the meter to reset.

Show history graph When ticked the history graph is shown in the **Metering** page.

Displayed time The slider enables adjustment of the time window that the History Graph displays from 00:02:00s to 02:00:00s

True Peak

Enable When ticked the TPMs are active and shown in the **Metering** page.

Type Label (Standard Preset) Clicking on the label drops down a list of alternative standards or **Customize...**

0dB calibration The slider enables offset adjustment between -12dBFS and +12dBFS

Release time The slider enables adjustment between 1ms and 1000ms.

Peak hold time The slider sets the amount of time the peak value is held from 0.0s to 19.5s or **on click**, which requires a click on the meter to reset.

Show history graph When ticked the history graph is shown in the **Metering** page.

Displayed time The slider enables adjustment of the time window that the History Graph displays from 00:02:00s to 02:00:00s

VU Meter

Enable When ticked the PPMs are active and shown in the **Metering** page.

Standard (-14) preset The down arrow drops down a list of alternative presets. **Standard (-14) preset**, **North America / Australia (-18) preset** and **France (-20) preset**.

0dB calibration The slider enables offset adjustment of the 0dB point between -24dBFS and 0dBFS.

Integration time The slider varies the integration time from 1ms to 1000ms.

Release time The slider varies the release time from 1ms to 1000ms. (for 20dB decay)

Peak hold time The slider sets the amount of time the peak value is held from 0.0s to 19.5s or **on click**, which requires a click on the meter to reset.

Show history graph When ticked the history graph is shown in the **Metering** page.

Displayed time The slider enables adjustment of the time window that the History Graph displays from 00:02:00s to 02:00:00s

Spatialization

Enable When ticked the spatial displays are active and shown in the **Metering** page.

Stereo display type The drop-down list offers the choice of: **Phase Oscillo**, **Phase Stereo-meter** and **VU stereo-meter**.

Interpolate When ticked, the dots of the **Phase Oscillo** display will be interpolated. It is irrelevant to other meter displays

Loudness

Enable M (**EBU mode Momentary : 400ms**) enables the display of a loudness bargraph with integration time of 400ms, which corresponds to the momentary mode according to EBU R128.

Enable S (**EBU mode Short : 3s**) enables the display of a loudness bargraph with integration time of 3 seconds, which corresponds to the short-term mode according to EBU R128.

Enable (custom integration time) enables the display of a loudness bargraph with user-selectable integration time. The integration time is set with the **Integration time** slider.

Enable LIaR (Loudness Integration and Range) enables the display of the loudness INT and LRA meter and graph.

Standard ITU preset The drop-down list offers the choice of:

EBU Mode (R128) preset

ATSC A/85 & ITU 1864 preset

Customize... When this option is selected the **Target loudness** and **Gate threshold** sliders are active.

Scale The drop-down menu allows you to select one of the following scales for the loudness bargraphs.

EBU +9 absolute (LUFS) This scale covers a range from -41 LUFS to -14 LUFS and is appropriate for programs with small dynamic range.

EBU +18 absolute (LUFS) This scale covers a range from -59 LUFS to -5 LUFS and is appropriate for programs with large dynamic range.

EBU +9 relative (LU) This scale covers the same range as **EBU +9 absolute (LUFS)**, but is labeled in LU, relative to -23 LUFS, hence from -18 LU to +9 LU. This scale is only available with EBU Mode (R128) preset.

EBU +18 relative (LU) This scale covers the same range as **EBU +18 absolute (LUFS)**, but is labeled in LU, relative to -23 LUFS, hence from -36 LU to +18 LU. This scale is only available with EBU Mode (R128) preset.

Target Loudness When **Customize...** is the selected preset the slider enables adjustment between -30 LUFS and -20 LUFS.

Gate threshold When **Customize...** is the selected preset the slider enables values between -70LU and -4 LU relative to be set. This threshold is relative to the selected Target loudness. When the instantaneous loudness is below this threshold, the integrated loudness calculation does not take the values into account until the instantaneous loudness rises above the threshold again.

Peak hold time The slider varies the peak hold time between 0 and 19.5 seconds in half second increments plus **on click**. (Peak is held until the display is clicked.)

Color Range The two markers set the transition points between the color bands in the Loudness graph displays. Defaults are -30LUFS and -16LUFS.

Show channels separately When ticked each channel will have its own LUFS bargraph display. **Note:** the history graph will NOT display the sum of all channels, when this button is ticked. Instead, it shows the maximum channels loudness.

Show history graph When ticked the history graph is shown in the **Metering** page.

Displayed time The slider enables adjustment of the time window that the History Graph displays from 00:02:00s to 02:00:00s

Max True Peak alert threshold Sets the threshold value (in dBTP) at which the **Max True Peak** numerical display turns red. (In order to make it obvious there is an overload problem.)

Show LRA graph Toggles the **LRA-repartition curve** shown/hidden alongside the **Loudness INT and LRA** display. (where some meters would display a History Graph instead.)

The **LRA curve** (the purple one) and other **Llar** displays are refreshed every second. The LRA curve plots the amount of time a given Loudness occurred (vertically) against the Loudness, in LUFS (horizontally) The width of the filled space below the curve represents the LRA. The left boundary of the filled space is the LRA Inf (the ignored quietest 10%), and the right one, the LRA Sup (the ignored loudest 5%)

Displayed interval The markers set the boundaries of the displayed LRA curve, in LUFS, to enable zooming into the range where the program is located.

Preview

Shows a thumbnail of the layout of the **Metering** page.

Loudness Metering Notes

Loudness Graph Color Range

The boundaries for the dark-blue and red zones can be selected in the Setup page. (**Color range** marker sliders) You can of course choose the maximum LUFS value for the transition to the red band, e.g. -23LUFS, however momentary excursions beyond -23LUFS are not necessarily a problem since it is the average value we are concerned with.

Keeping In the Spirit

Advertisers will always look for ways to make their messages stand out from the crowd. One way of achieving this in the new world of R128 loudness delivery requirements is to have the majority of the advert quiet with one excessively noisy section.

Broadcasters can foil attempts at such subterfuge by specifying a required value for max M or max S, although this is not in the R128 recommendations.

If this is done then it makes sense to set the **Color Range** transition to red at the same value. (For -23LUFS target loudness -16LUFS is a good starting point.)

Report Files

A Final Check report file will look something like this when opened in Notepad or a text editor:

<?xml version="1.0" encoding="UTF-8"?>	XML information
<FinalCheck_Metering>	Title and start of results
<Stereo>	First, showing results for the selected stereo pair
<Loudness_INT>-70</Loudness_INT>	Loudness integrated (=averaged) on the whole file in LUFS
<Loudness_Range_LRA>0</Loudness_Range_LRA>	Loudness range AKA lra in LUs
<Max_TruePeak>-144.5</Max_TruePeak>	Maximum True Peak value in dBFS
<MML>-70</MML>	Maximum momentary loudness AKA Max M
<MSL>-70</MSL>	Maximum long-term loudness AKA Max S
</Stereo>	End of results for the stereo pair
<Surround_5.1>	Start of results for surround
<Loudness_INT>1.50099659</Loudness_INT>	Loudness integrated (=averaged) on the whole file in LUFS
<Loudness_Range_LRA>4.75279236</Loudness_Range_LRA>	Loudness range AKA lra in LUs
<Max_TruePeak>6.76408482</Max_TruePeak>	Maximum True Peak value in dBFS
<MML>1.63770938</MML>	Maximum momentary loudness AKA Max M

<MSL>1.53237224</MSL>	Maximum long-term loudness AKA Max S
</Surround_5.1>	End of results for the surround tracks
</FinalCheck_Metering>	End of file

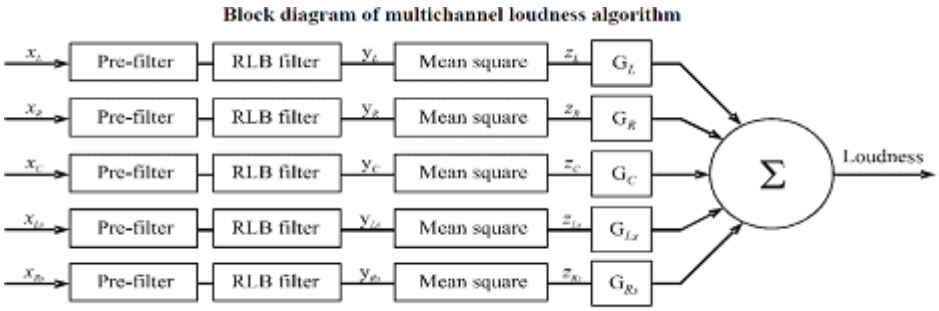
Loudness and Peak Metering

ITU-R 1770-1

This is the new recommendation of the ITU (International Telecommunication Union) about Peak and Loudness measurement. It specifies the requirements for the audio meters employed to measure programme loudness, and/or to indicate true-peak level to assist in the avoidance of overload of digital audio signals.

Loudness Algorithm

The goal of the loudness measurement is to give a numerical expression of the overall loudness that the listener feels. It is expressed in LUFS. The block diagram below shows inputs for five main channels.



The pre-filtering accounts for the acoustic effects of the head. The RLB-filter is a LEQ (Loudness equivalent) frequency-weighting curve that delivers much more precise results than previous LEQ-curves. The G-factors account for different weighting of different channels.

LUFS

Loudness **U**nit **F**ull **S**cale is the unit used for Loudness measurement. To match the ITU recommendation, a mix shall have an overall Loudness of -23 LUFS. This unit is dB-like, in the sense that a variation of 1 dB in a mix will produce a variation of 1LUFS in its loudness as well.

For calibration: a full scale sine wave on one non-surround channel shall read -3.01 LUFS.

LKFS

LKFS (**L**oudness **K**-Weighting **F**ull **S**cale) is the old name for the Loudness unit, which is now called LUFS instead, as recommended by the ITU. These two units are strictly the same, though.

Dolby Dialnorm™

LUFS are the same unit as the Dolby Dialnorm™ unit, and you will therefore get the same results as long as Dolby's automatic speech detection is disabled.

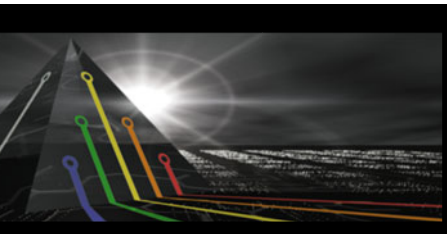
LEQ(A) ?

LEQ(A) is not supported. With the new Loudness algorithm described above, old-fashioned LEQ-curves are now widely obsolete, and are therefore not included in this plug-in.

True Peak Detector

Unlike traditional digital peak detectors that merely check if the input samples are close to digital full scale, a True Peak Detector first performs an oversampling operation. This means that it is able to detect peaks that would occur between samples, possibly with an amplitude larger than 0dBFS (which traditional digital peak detectors cannot detect). With heavily compressed audio material it is not uncommon for a True Peak Detector to show values up to +3 dBFS (or even worse) while a standard digital peak detector would only show + 0 dBFS.

18 File and Project Interchange



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

File Interchange - Formats

Pyramix Supported Audio Files												
File Formats	File Extension	Play	Rec	Export	Audio Data Format	Max # of Channels in a single file	Interleave	Max Bit depth	Max Sample Rate	Max File Size	Unique Identifier (UID)	Data Chunk (metadata) format
PMF	pmf	y	y	y	PMF	Virtually Unlimited (note1)	block	32bit float	384 kHz	virtually unlimited	in Name & PMF	PMF (Proprietary)
PMF (DXD)	pmf	y	y	y	PMF	Currently up to 48	block	32bit float	352.8 kHz	virtually unlimited	in Name & PMF	PMF (Proprietary)
WAV	wav	y	y	y	WAV	Virtually Unlimited (note1)	y	32bit float	384 kHz	4GB	in iXML	iXML
BWF	wav	y	y	y	WAV	Virtually Unlimited (note1)	y	32bit float	384 kHz	4Gb	in BWF	BWF & iXML
WAV	wav	y	y	y	RIFF64	Virtually Unlimited (note1)	y	32bit float	384 kHz	virtually unlimited	in iXML	iXML
BWF	wav	y	y	y	RIFF64	Virtually Unlimited (note1)	y	32bit float	384 kHz	virtually unlimited	in BWF	BWF & iXML
AIF	aif	y	y	y	AIF	Virtually Unlimited (note1)	y	32bit float	384 kHz	4GB	n	n
SD2 (note 3)	sd2	y	y	y	SD2	Virtually Unlimited (note1)	y	24bit	48kHz	2GB	n	n
PMI	pmi	y		y	WAV	Virtually Unlimited (note1)	y	32bit float	384 kHz	virtually unlimited		CD TOC
OMF	omf	y	y	y	WAV or AIF		y	32bit float	384 kHz	2GB	n	n
MXF	mxf	y	y	y	AES3 or WAV		y	32bit float	384 kHz			
AVI	avi	y			WAV		y	32bit float	384 kHz			
QuickTime (note 2)	mov	y			PCM			32bit float	192 kHz			
DSDIFF	dff	y	y	y	DSD64	Currently up to 16	y	1bit	2822 kHz	virtually unlimited	n	PMF (Proprietary)
DSDIFF Em	dff	y		y	DSD64	Typically 2, 5 or 6	y	1bit	2822 kHz	virtually unlimited	n	PMF (Proprietary)

n=not supported
y=supported

note 1: While both block interleaved and sample interleaved formats may theoretically accept an unlimited number of channels, disk performance of multichannel sample interleaved files will degrade severely over 24 to 32 tracks

note 2: QuickTime Pro is required for the QuickTime handler to work correctly.

note 3: Beware of the fragile data fork / resource twin file structure of (MacOS) SD2 file format, requiring special care to be handled properly in a PC. More on this topic at the following URL:

http://forum.merging.com/viewtopic.php?f=23&t=1414

File Size Limitations

By design SD2 and legacy WAV or BWF files are limited to a maximum of 2GB, sometimes 4GB due to their 32bit signed addressing (thus 31 available bits) formats, while 32bits unsigned addressing AIF files are limited to 4GB.

Please keep this in mind when recording and/or exporting to any of these formats, the 2GB/4GB limit might in fact be quite close, particularly when working with high sample rate multitrack files.

Pyramix's WAV/BWF Media handler now accommodates RIFF64 removing the 2/4GB limitation. It does this in the following way: Up to 4GB Pyramix creates a regular (legacy) WAV/BWF, but when a recorded media exceeds 4GB, for example during a recording/render or mixdown, Pyramix will automatically and transparently start creating a RIFF64 instead of a regular WAV/BWF.

When performing file interchange please be aware that the destination workstation/software must be compatible with RIFF64 WAV/BWF to be able to read RIFF64 WAV/BWF files.

Similarly, some "old" applications may only recognize WAV/BWF as proper files if their file size remains below the 2GB limit.

Hard Drive Limitations

A very similar 2GB/4GB* limit can also be encountered the hard way when attempting to write large files, even in PMF format, onto storage units (hard drives, memory cards etc.) formatted using an old 32bit file system such as FAT32 or HFS.

Yet another, higher, limitation also exists with IDE ATA/ATAPI drives. This will show up at around 137GB. This may be caused by part of a system (drivers, controllers and/or old Windows version) only recognizing the 28bit addressing of the original ATA specifications, and not the enhanced 48bits available on newer equipment. This is usually solved by installing fresh and or updated BIOS/Drivers/OS.

*The official limit is 4GB, but serious trouble can start at around 2GB.

PMF

PMF or **P**yramix **M**edia **F**ile is Merging Technologies native format. It carries a number of advantages when compared with others, especially where multi-channel recordings are concerned.

- PMF has a 64bit addressing structure, so there is no 2GB limit.
- PMF can contain comprehensive proprietary metadata

Note: Please see: Appendix VI - Pyramix iXML Implementation on page 843 for further information.

The advantages of using interleaved PMF for multi-channel files (One file per track **not** selected) are:

- Contiguous blocks on disk so, when reading the same block (same time position) for all the Tracks at once, the disk head does not have to do long and time-consuming seeks.
- It is not necessary to read samples for all Tracks when only one Track is required for replay. E.g. when using a guide mix to edit a multitrack recording.
- Simpler Media Management, one file instead of say, 48 for a 48 track recording.
- Waveforms are embedded in the file."

The only time to consider using a different file format is when material must be exported to an application that does not support PMF.

WAV and BWF

Wave and Broadcast Wave (BWF) files are supported by Pyramix. In Pyramix WAV/BWF is now RIFF64 compatible, so the 2/4 GB file size limitation no longer applies.

The disadvantage of using WAV and BWF for interleaved multi-track recordings is that the audio is interleaved sample by sample for all channels, which may adversely impact the overall throughput of hard drives or any other storage media, particularly when only a subset of all channels present in such a file is being used on subsequent playback.

Example: if, in a given Pyramix project, only channels 1 and 2 out of a 48 track BWF file are being played, the hard drive's head will still have to spend the time scanning the entire data corresponding to all 48 tracks to just retrieve the useful samples corresponding to those two channels. Alternatively, PMF with its much larger channel inter-

leaving in blocks of typically 64 kB can instruct the hard drive's head to only seek to the corresponding blocks containing the required data of channels 1 and 2.

Broadcast WAV file Tips.

File Types

There are two types of BWF file:

BWF P means polyphonic -> multitracks

BWF M means monophonic -> one file per track

The Cantar location recorder produces only **BWF-M** files, and some Avid people want **BWF-P**. To convert **BWF M** **BWF P** mount the file in the **Media Manager** and select **Convert > Quick Export**, then do **NOT** check the **One file per Track** option. (Uncheck it if necessary). All Scene and Takes information present in the original BWF file will be also exported in the resulting BWF-P file.

Metadata

BWF files have a special chunk in the file that contains metadata; this is called the **BEXT** chunk or Broadcast Wave File metadata.

The first field of this chunk is the Description. This is the field we display in the Name column for **BWF** files instead of the file name. We do the same for PMF and OMF. We only display the real filename for Wave, AIFF and SDII that have no metadata.

In v4.2.6 or higher you can add the **FileName** column to also display the real filename of all files. (**Media Manager window View > Options : Columns** tab)

Once renamed in the Media Manager both the **Description** field and the filename of your BWF files should be updated.

iXML

WAV files generated by Pyramix can also contain iXML information and as such carry similar information to data chunk of a BWF.

The iXML metadata of a WAV file is available to any compatible application, if the application is not iXML aware, the file will be seen as a regular WAV.

Quicktime

In order to enable the Quicktime handler you will need to purchase and install Quicktime Pro from Apple.

http://www.apple.com/quicktime/pro/

MTFF

Merging **T**echnologies **F**ile **F**ormat

- Format Support
  - PCM
  - DXD (linear PCM requiring extra HF filtering
  - DSD - DSD 256
- Lossless Compression (Only available for output formats)
- Metadata
  - Unique ID
  - Album Art (under development)
- Settings Options
  - LRC - Lossless Compression
  - Channel mapping presets

DSD

DSD

DXD

DSF

1 bit file format designed by Sony

- playback only
- supports DSD64 and DSD128

WSD

1 bit file format designed by Korg-Audio

- playback only
- DSD64 only

Compressed Audio File Formats

Pyramix supports many compressed file formats, including MP3, Ogg Vorbis, FLAC and AAC, directly. Other compressed formats WMA, RA (RealAudio) AVI and more are supported via Windows DirectShow technology.

Codecs

MP3 and AAC

Pyramix supports MP3 and AAC directly. (Requires the optional **Advanced Audio Codec Support** key.) No separate codec installation is required and no decompressed file is generated.

MP3

Requires the optional **Audio Advanced Codec Support** key.

- MP3 file format support (Encode/Decode)
- No decompressed file is generated for these formats (doesn't use DirectShow)
- Word length: Record 16/24/32 bits, playback 32 bits
- Sampling Rates: 44kHz & 48kHz
- Mono or stereo tracks
- Encoding: MPEG 1 Layer 3 ABR (VBR) mono or Joint Stereo
- Decoding: MPEG-1 Layer 1/2/3 (MPEG-2 and 2.5 are supported but the sample rates required are not supported by Pyramix)

MP4/M4A (AAC)

Requires the optional **Audio Advanced Codec Support** key.

- No decompressed file is generated for these formats (doesn't use DirectShow)
- Wordlength: 16/24/32 bits
- Sampling Rates: Record and playback 44kHz, 48kHz, 88.2kHz, 96kHz
- Record - max 6 tracks, Playback - max 48 tracks
- Encoding: LC-AAC MPEG4
- Decoding: HE/LC/Main/SSR-AAC (MPEG2 or MPEG4), DRM not supported

FLAC

FLAC encoding and decoding is supported directly. No separate codec installation or key is required and no decompressed file is generated.

Note: Additional codec installation is not required

- No decompressed file is generated for this formats (doesn't use DirectShow)
- Wordlength: 16/24/32 bits
- Sampling Rates: 44kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 352.8kHz, 384khz
- Record - max 6 tracks, Playback - max 8 tracks

Ogg-Vorbis

Ogg-Vorbis encoding and decoding is supported natively. No separate codec installation or key is required.

- No decompressed file is generated for this formats (doesn't use DirectShow)
- Wordlengths: 16/24/32 bits
- Sampling rates: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
- Format: Number of tracks: Record - max 6 tracks, Playback - max 255 tracks

MXF

The Pyramix MXF implementation can read and decode MXF files following specifications AS WELL as files coming from Avid / Digidesign workstations.

Pyramix MXF can generate valid MXF files complying with MXF specifications and have passed the validations tests provided by Snell&Wilcox.

As of today, supported MXF formats are OP1A and OPAtom, as well as potentially OP1B, OP1C, OP2A.

MXF Essences supported today are AES3 & Broadcast Wave audio files (conforming to SMPTE 382M).

For the latest MXF interchange information please see:

http://forum.merging.com/viewtopic.php?f=23&t=2094

Dolby

Dolby AC3 encoding and **Dolby E** encoding and decoding can be accomodated via optional Minnetonka Sur-Code plug-ins. These require the relevant iLok authorizations from Minnetonka. Please contact your Merging Technologies sales partner for more information.

Note: The Dolby plug-ins require a separate installer.

Simple File Conversion

To convert to or from PMF audio files use the **Project > Render ><None>** function.

Place the file you wish to convert on a Track or Tracks in the Timeline and select the resultant Clip by clicking on it. Make appropriate settings in the **Render** dialog, click on the **Render** button and voila!

File & Project Interchange with Apple Macintosh

Currently, the recommended Interchange Format when working with Pro Tools 7 is **AAF** / **OMF**, with **BWF** media files. **Please see: AAF on page 514** and **OMF on page 528** for further information and also refer to the Pyramix Interchange Forum in the Support Section (for registered users) for regularly updated information, as well as Interchange tips & tricks :

http://forum.merging.com/viewforum.php?f=23

History

SD2 & Pro Tools 5 Sessions and Legacy Apple File Formats

Old Macintosh files such as SD2 and PT4.x and PT5.x projects files have a Mac-binary, or double-fork structure that the PC cannot handle directly. As opposed to interchange files, PC files or new Mac files (that do carry a simple single file structure), SD2 and PT5 projects files are based on a Data fork (the one you see in every computer file) and a Resource fork (a hidden, second file storing all the file info). While this binary structure was actually quite a clever and convenient move, the fact that half of the file is hidden by design makes it a very fragile cross-platform media.

A sure sign that the resource fork has been lost is when the file appears with a generic icon and is present but unreadable. A broken binary file cannot be rebuilt.

Note: SD2 is only supported on 32-bit systems.

Note: For more info about the specific handling of "old" Apple files, please read the following entry in the Forum's Support Section (for registered users):

http://forum.merging.com/viewtopic.php?f=23&t=1414

Project Interchange

Pyramix Project Interchange Options						
Interchange Format	**Software Key**	**File Format(s)**	**Import**	**Export**	**Max. Sample Rate**	**Max. EDL Duration**
AAF	PSO-AAF	BWF	y	y		
AES31	PSO-AES31	BWF	y	y	192khz / DSD	
CD Import	PSO-CDR	PMF, AIF, WAV, etc.	y			
CMX-EDL	-	-	y	y		
DDP import	See Packs	-	y			
Final Cut Pro XML (v7)	PSO-FCP See packs	-	y	n		13h30
OMF V1 & V2	PSO-OMF	OMF, AIF, BWF/WAV	y	n		13h30
OPEN TL	PSO-OTL	BWF/WAV	y	y		
SACD Edited Master Import	PSO-SAA	DSDIFF Edited Master	y		2822 kHz	
Sonic Solutions	PSO-SONIC	AIF	y			
Video Clips	-	See Supported Video Medias	y			
XML EDL	-	-	y	y		unlimited
	n = Not supported y = Supported					

Pyramix Project Interchange Options Clip and Marker Support							
Interchange Format	**Clip Name**	**Clip Gain**	**Clip Envelope**	**Clip Fades**	**X-fade Curves**	**Markers**	**CD/SACD Markers**
AAF	y	y	y	y	y	n	n
AES31	y	y	y (note 1)	y	y	n	n
CD Import	y						y
CMX-EDL							
DDP Import	y						y
Final Cut Pro XML (v7)							y
OMF V1 unembedded	y	n	n	y	no (all to Power)	n	n
OMF V2 unembedded	y	y	n	y	no (all to Power)	n	n
OMF V2 embedded	y	y	y (note 2)	y	no (all to Power)	n	n
OPEN TL	y	y	n	y	basic	n	n
SACD Edited Master Import	em name	n	n	n	n		y
Sonic Solutions							
Video Clip							
XML EDL	y	y	y	y	y	y	y

n = Not supported

y = Supported

Note 1: clip envelopes will be supported soon when specification is published by AES

Note 2: Export from Pyramix is feasible but not yet import. Currently import is only supported by PT

Import and Export are handled by **InterChange**. In the **Project** menu the **Import** and **Export** options each open a window where a list of available **InterChange** plug-ins is presented.

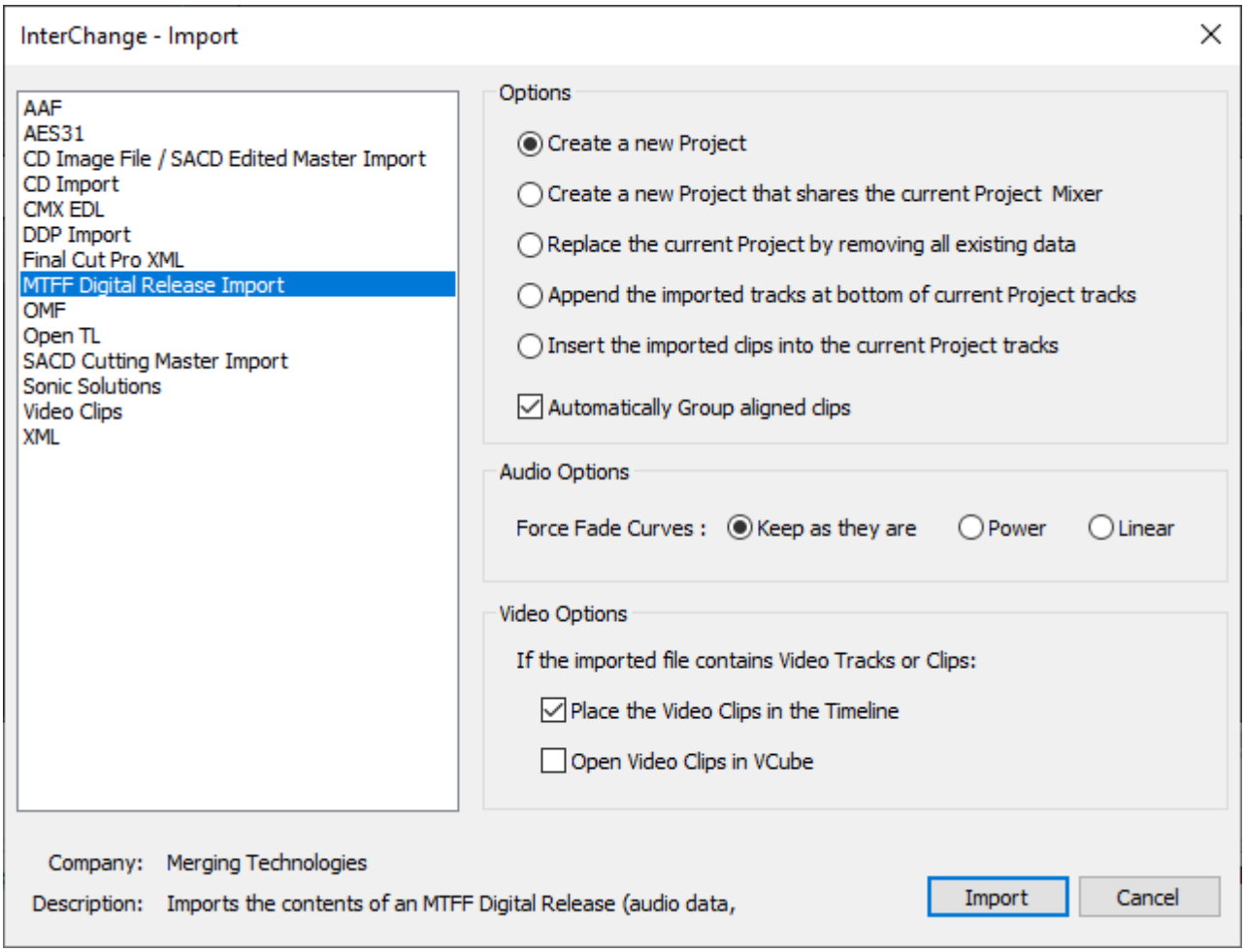
Note: On export, the **Volume Automation** can be set to represent the **Clip Gain**, the **Clip Envelope** or a combination of both.

Import / Export

Import

Note: It is not necessary to have a Project open in order to use the **Import** function since a Project can be created on Import.

Project > Import opens this window:



Project Interchange - Import dialog

The **Options** radio buttons determine how the imported material will affect the current project.

Formats

AAF

AES31

CD Image File / SACD Edited Master Import

CD Import

CMX EDL

DDP Import

Final Cut Pro XML

MTFF Digital Release Import

OMF

Open TL

SACD Cutting Master import

Sonic Solutions

Video Clips

XML

Note: As of Pyramix v12 MTFF Digital Release files can be imported into the Pyramix Timeline to edit the CD tags if corrections are needed, the workflow is similar to PMI CD Image / SACD Edited Master / SACD Cutting Master Import and includes artwork. The import dialog window is resizable.

Option s

- **Create a new Project** - creates a new Project from scratch using the **Default Mixer**
- **Create a new Project that shares the current Project Mixer**. (Mixer Sharing is turned on automatically in the current project when this option is selected and **Import** is clicked.)
- **Replace the current Project by removing all existing data** - Replaces the current project Tracks, Track Groups and Markers then creates new Tracks, Track Groups and Markers from the imported Composition
- **Append the imported tracks at bottom of current Project tracks**
- **Insert the imported clips into the current Project tracks**
- **Automatically Group aligned clips** - When this option is chosen with one of the above, stereo and other multi-channel Clips will be grouped automatically.

Audio Options

Force Fade Curves: the choice made here may be overridden in the subsequent Import dialog depending on the type of Import. e.g. **AAF**

- **Keep as they are** - existing fades rendered or otherwise are retained
- **Power** - forces fades to Pyramix Power curve, usually used where individual fades predominate
- **Linear** - forces fades to Pyramix Linear curve, usually used where crossfades predominate

Video Options

If the imported file contains Video Tracks or Clips:

- Place the Video Clips in the Timeline.

If this option is checked then any Video Clips present in the imported file will be placed in the Timeline as black Video Clips. These Clips are usable only for reference and are not played back as such by Pyramix (see below for playing them back). Audio in a Video Clip container is also imported and placed in the Timeline according to the method chosen in the **Options** section of the dialog.

Open Video Clips in VCube:

- Open Video Clips in VCube.

Single or multiple Video Clips are opened in VCube.

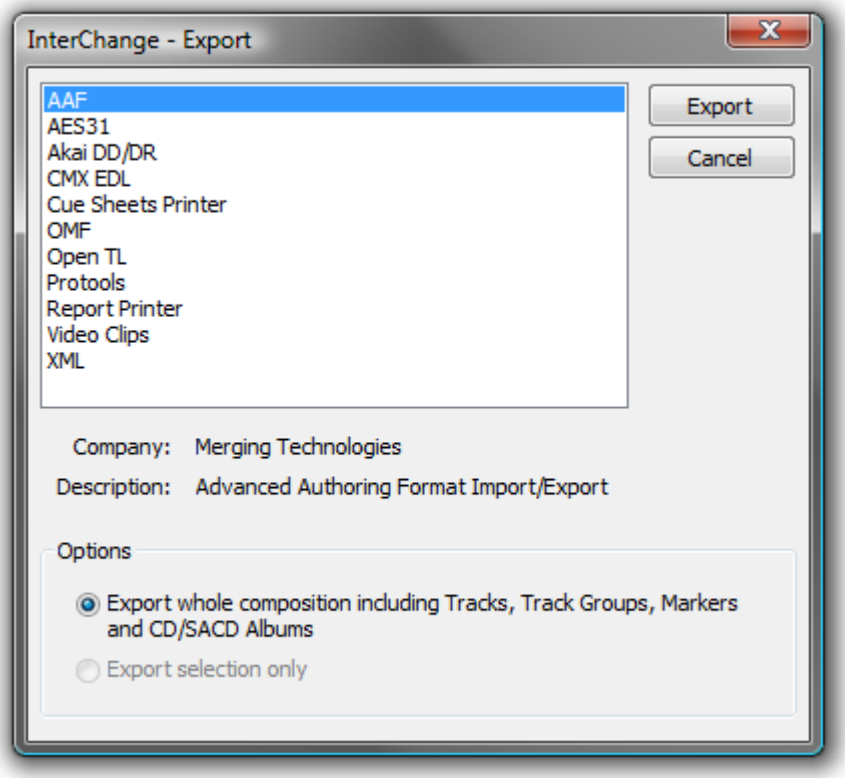
Imported Video Clips are saved in the project, so, when the project is opened, the Video Clips will again be present on the timeline. The referenced Video Media will be opened automatically in VCube depending on the same options as above, but for general project opening that can be found in:

Settings > All Settings > Application > General : Project Opening Section

- Open Video Clips in VCube

Export

Project > Export opens this window:



Project Interchange - Export dialog

Options

- Export whole composition including Tracks, Track groups, Discs and Markers
- Export selection only

Note: The **Export selection only** choice will be grayed out if there is no selection in the Project Timeline.

AAF

Pyramix can import and export projects in AAF (Advanced Authoring Format)

> **Note:** Pyramix can also use MXF audio files and export MXF audio files. **Please see: MXF on page 508**

About AAF

AAF is a set of specifications for project interchange (.aaf) files. Media files can be embedded or referenced by link.

When embedded, audio can be in a WAV or AIFF wrapper or be in simple PCM format. When imported from an AAF file PCM audio must be 'wrapped' for playback. E.g. as BWAV, Wave or PMF files.

AAF files can have envelope information, static level information or both.

> **Note:** AAF files can specify sample and frame rate per track.

Alternates

The AAF specification accommodates **Alternate** Clips. I.e. Alternative media for a given Clip. Unfortunately not all applications deal with the alternates in the same way when exporting and importing. Therefore we have attempted to accommodate the common variations.

Sample Accurate Edits

Certain NLE applications require audio edits to occur only on frame boundaries. It is often desirable to have audio Clips start or finish somewhere other than a frame boundary. Therefore some applications allow this to be accomplished but add small padding Clips of silence to maintain frame boundary compliance. In a large project large numbers of these tiny Clips can make editing in a DAW difficult or impossible. Therefore we have included an option to remove them on import and also an option to add them on export for applications down the line which require them.

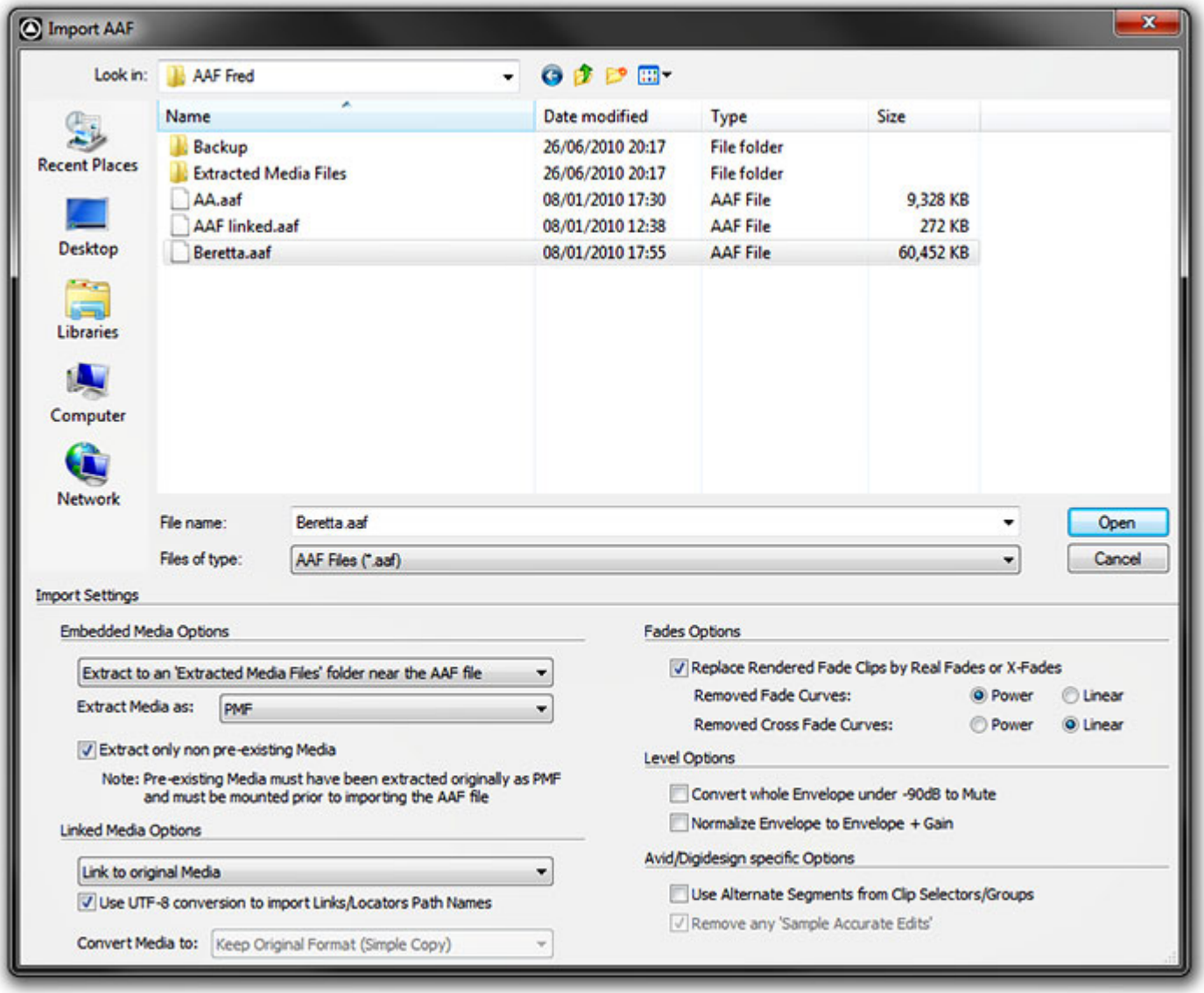
Recommendations

- Use embedded audio in AAF files where possible.
- In a controlled network workflow with proven file compatibility AAF files with linked Media files may be more appropriate to avoid needless duplication.
- Where the AAF file contains embedded PCM audio (E.g. AAF export from Pro Tools) Normalize Envelope to Envelope + Gain. This option offers greater clarity and flexibility.
- Remove 'Sample Accurate Edits'. If these are not removed, editing complex projects becomes difficult or impossible due to all the tiny 'padding' Clips. Sync is not affected in any way by selecting this option.
- Use mono WAV files for stereo and multi-channel Media files for maximum compatibility with other applications.

Import

Select **AAF** in the **Interchange Import** dialog. Choose the appropriate import options leaving **Audio Options Force Fade Curves:** set to **Keep as they are** and click on **Import**.
(Please see also: Option s on page 512)

The **Import AAF File** window opens:



Interchange - Import AAF dialog

The lower section of the dialog contains **Import Settings**, the upper section is a File Browser. The **Open** button initiates the Import once a suitable AAF file has been selected and the Import Settings have been made.

Import Settings

Embedded Media Options

The drop-down list has the following options:

- Extract to an 'Extracted Media Files' folder near the AAF file
- Extract to the Project Default Media Folder
- Extract to a new Sub-folder in the Project Default Media Folder
  (Sub-folder will be named automatically after the AAF source file)
- Prompt for a Folder to Extract Media to
- Do not Extract any Media

Note: You will see:

- (N/A) Extract to the Project Default Media Folder

and

- (N/A) Extract to a new Sub-folder in the Project Default Media Folder

If either a new Project is to be created or no Project Media Default Folder has been set in the **Settings > All Settings > Project > General** page. (**Please see also: Project Media Folder on page 770**)

Extract Media as :

The drop-down list has the following options:

- PMF
- BWF/Wave

Extract only non pre-existing Media

Note: Pre-existing Media must have been extracted originally as PMF and must be mounted prior to importing the AAF file.

When ticked if Media used by the imported AAF file already exists as PMF files and is mounted then it will not be extracted again. This is big time saver when working with AAF imports subject to frequent updating.

Linked Media Options

The main drop-down list has the following options:

- Link to original Media
- Copy/Convert to the Project Default Media Folder
- Copy convert to a new sub-folder in the Project Default Media Folder
  (Sub-folder will be named automatically after the AAF source file)
- Prompt for a Folder to Copy/ Convert Media

Note: You will see:

- (N/A) Copy/Convert to the Project Default Media Folder

and

- (N/A) Copy/Convert to a new Sub-folder in the Project Default Media Folder

If either a new Project is to be created or no Project Media Default Folder has been set in the **Settings > All Settings > Project > General** page. (**Please see also: Project Media Folder on page 770**)

Convert Media to:

Only available when **Prompt for a floder to Copy/Convert Media to** is chosen in the main **Linked Media** drop-down. The drop-down offers the choice of:

- Keep Original Format (Simple Copy
- PMF
- BWF/Wave

Use UTF-8 conversion to import Links/Locators Path Names

Default is ticked I.e. On. This allows the referenced path names (called Locators in AAF/OMF) to be converted using UTF-8 coding. If you experience problems with the conversion untick the box.

Fades Options

Replace Rendered Fade Clips with Real Fades or X-Fades

When the box is ticked there is a radio button choice of **Power** curve or **Linear** curve for both:

- Removed Fade Curves:

- Removed Cross Fade Curves:

The default settings are **Power** for Fade Curves and **Linear** for Cross Fade curves.

Level Options

Convert whole Envelope under-90dB to Mute

When ticked does as it says.

Normalize Envelope to Envelope + Gain

When ticked the highest envelope point in the Clip is normalized to 0dB and a corresponding inverse static gain adjustment is applied. For example, if the highest envelope point is -10dB all envelope points will be increased in value by 10 dB and the static gain will be reduced by 10dB.

> **Note:** This function is selected automatically and grayed out when **Replace Rendered Fade Clips with Real Fades or X-Fades** is ticked.

Avid/Digidesign specific Options

Use Alternate Segments from Clip Selectors/Groups

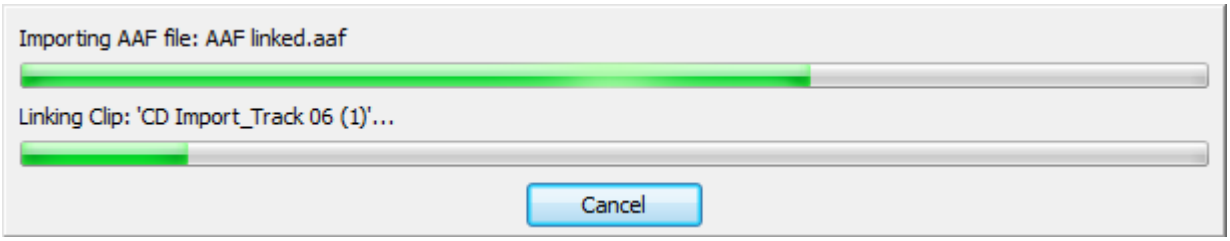
The AAF specification allows for alternative media to be specified for Clips. Unfortunately, not all applications apply this in the same way. If you experience problems with missing media checking the box may help.

Remove any 'Sample Accurate Edits'

Only available when **Replace Rendered Fade Clips By Real Fades or X-Fades** is not ticked.(see **Fades Options** above) When selected all the tiny, mute 'padding' media files used to ensure edits are always on frame boundaries will be removed. The Media Clips with wanted material will be in precisely the correct positions.

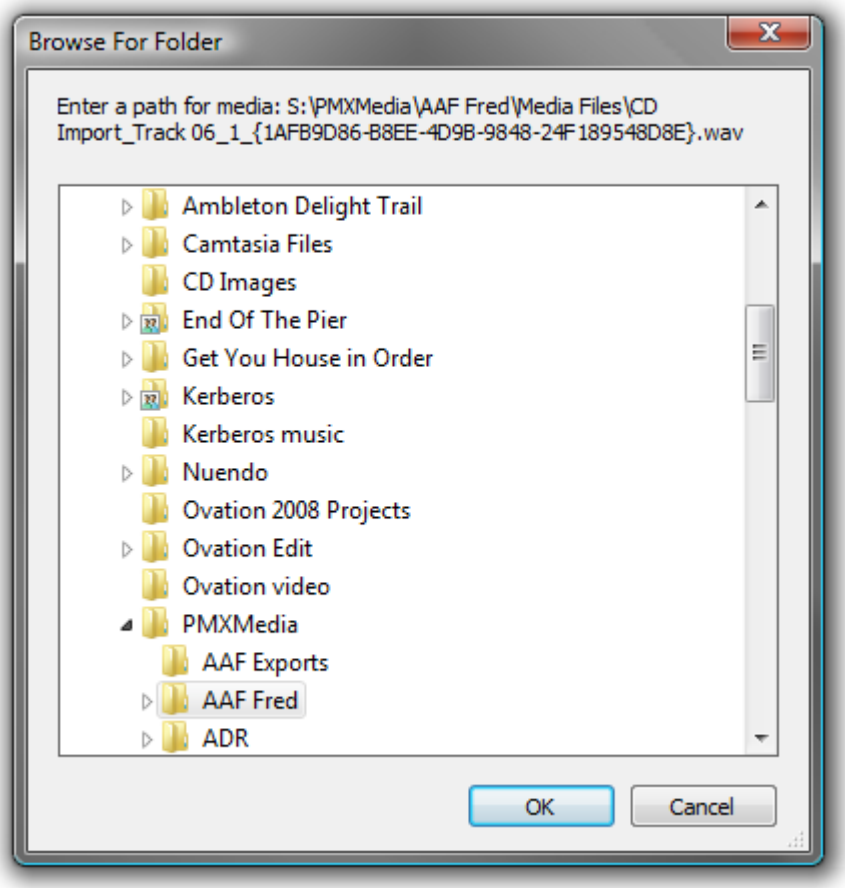
Execute Import

Navigate to the required AAF file or type its name in the **File name** box and click **Open** to begin the Import process. A progress box opens to inform the user:



Import Progress Window

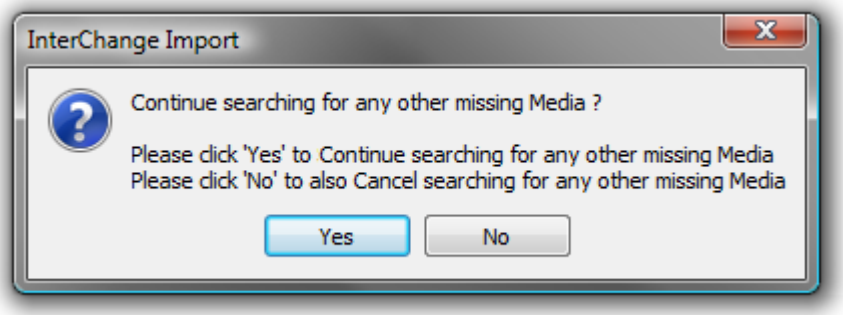
If a linked Media File or Files cannot be located, a browser window opens:



Browse For Folder Window

The browser enables the user to navigate to the missing file. If the file cannot be found or is known to be absent, click on the **Cancel** button to ignore the file.

A further dialog box opens with the option to ignore just the one file or the current file and all subsequent missing files :



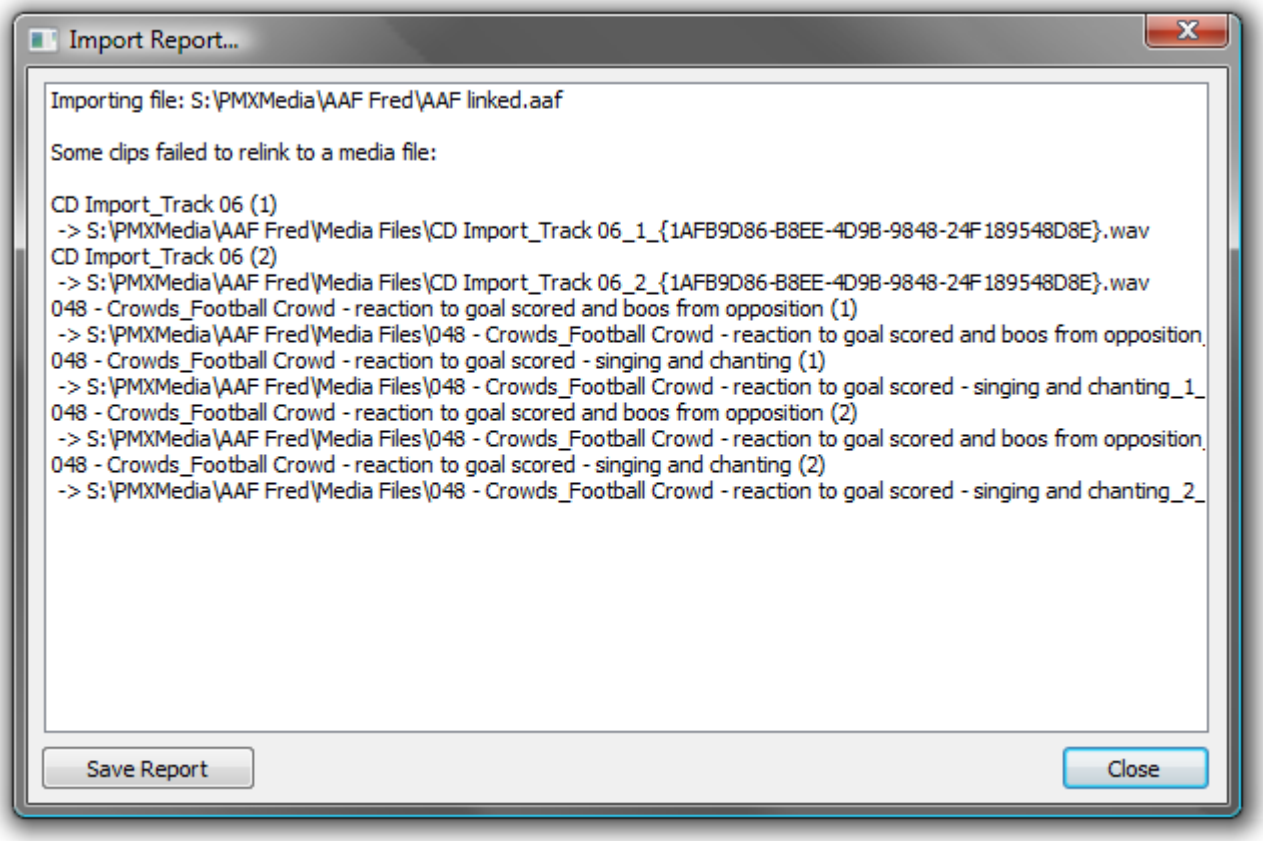
Click on **Yes** to skip the current missing Media file and Continue searching for any other missing Media

Click on **No** to skip the current missing file and Cancel searching for any other missing Media.

If a subsequent missing file is identified the Browser opens again. with the same options as above.

Import Report

If files are skipped during the Import process, the **Import Report** window appears :



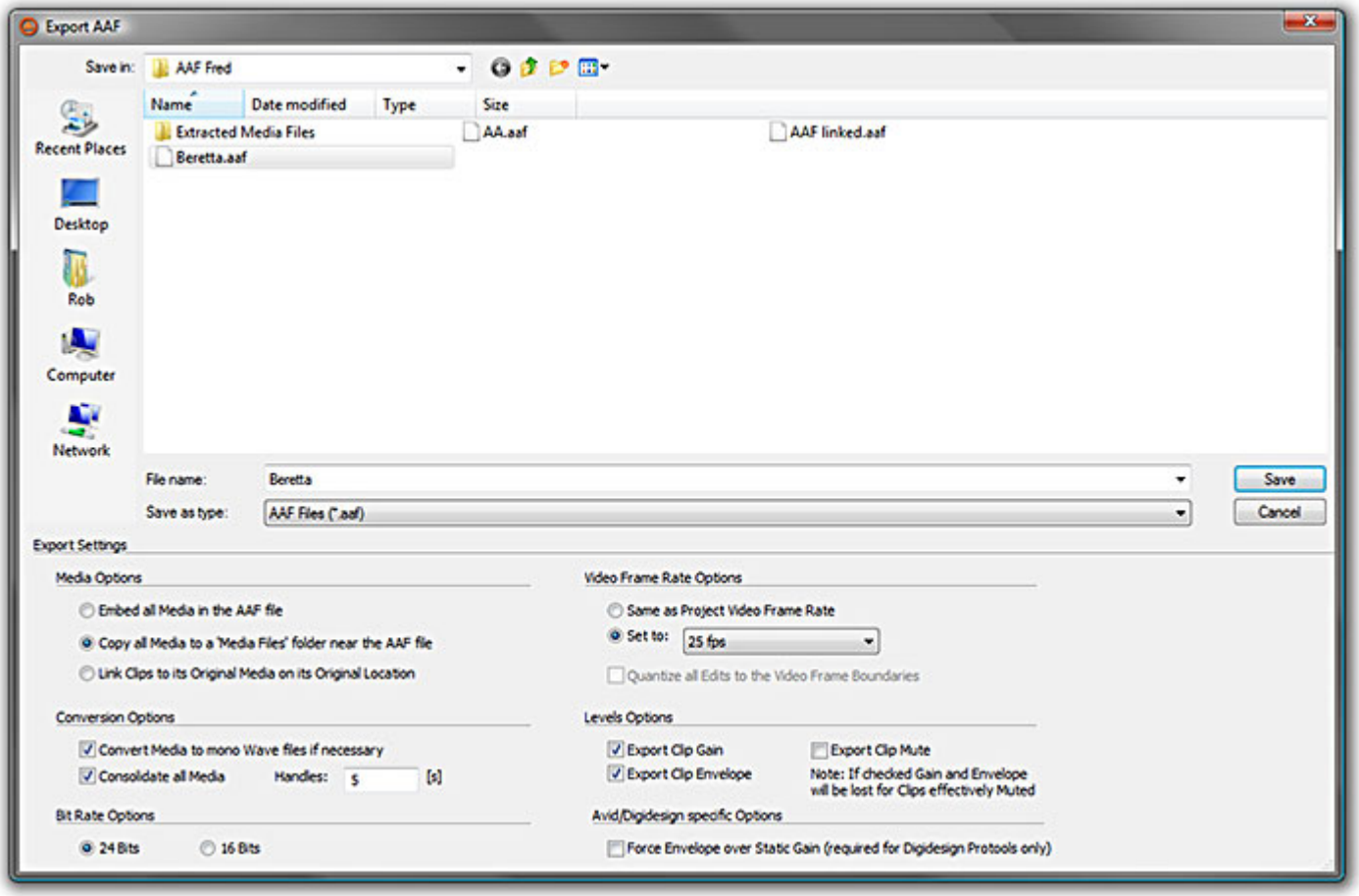
All skipped files are listed along with the locations searched.

Clicking on the **Save Report button** opens a **Save As** dialog. Here you can save the Import Report as a Text File.

Close simply closes the Import Report without saving.

Export

Select **AAF** in the **Interchange Export** dialog. Choose the appropriate export option and click on **Export**. The **Export AAF File** dialog opens:



Interchange - Export AAF dialog

The lower section of the dialog contains **Export Settings**, the upper section is a File Browser. The **Save** button initiates the Export once a file name has been typed and the Export Settings have been made.

Export Settings

Media Options

The radio buttons offer the following options:

- Embed all Media in the AAF file. - All Media will be embedded in the AAF file in PCM format.
- Copy all Media to a 'Media Files' folder near the AAF file.
- Link Clips to original Media in its Original Location

Conversion Options

Convert Media to mono Wave files if necessary

When ticked (default) all Media not already in the form of mono Wave files will be converted to mono Wave files.

Note: This option is unavailable when **Embed all Media in the AAF file** is selected.

Consolidate all Media

When ticked only Media used in the project (plus handles - see below) will be embedded or copied. (This function will be grayed out and unavailable if **Link Clips to original Media in its Original Location** is selected above)

Handles:

Handles at the beginning and end may be added to Consolidated Media files to facilitate future editing. Type the required handle length in the box. (Handles will not be added when a Clip begins at the beginning or ends at the end of the Media file)

Bit Rate Options

The radio buttons offer the following options:

- 24 Bits (default)
- 16 Bits

Use 24 bits unless you have a good reason not to.

Video Frame Rate Options

The radio buttons offer the following options:

- Same as Project Video frame Rate - I.e. same as the Pyramix source project
- Set to: - The drop down list offers the choice of all conventional frame rates.

Quantize all Edits to the Video Frame Boundaries

When ticked 'padding' files will be added to ensure that all edits occur on Video Frame Boundaries. This option is not available when **Link Clips to original Media in Original Location** is selected.

Level Options

The radio buttons offer the following options:

- Export Clip Gain
- Export Clip Envelope
- Export Clip Mute

Note: If checked Gain and Envelope will be lost for Clips effectively muted.

Avid/Digidesign specific Options

Force Envelope over Static Gain (required for Avid Pro Tools only)

If the Pyramix Project contains Static Gain variations and or Envelope information the two are combined into Envelope information.

Execute Export

In the Browser section navigate to the required destination drive/folder, type in a suitable name for the AAF file in the **File name** box and click **Save** to begin the Export process. A progress box opens to inform the user:

When the export is concluded this info box appears:

AAF Interchange Export Succeeded info box

Note: EMBEDDED MEDIA When exporting to AAF with embedded Media the Clip names may change when the file is opened in Pro Tools. In order to avoid problems getting AAF files into Pro Tools there are some limitations to the structure of the AAF file and where the Clip name can be stored. For AAF files referencing external media, these restrictions don't cause any noticeable differences. When exporting embedded AAF files, the Clip name basically needs to be associated

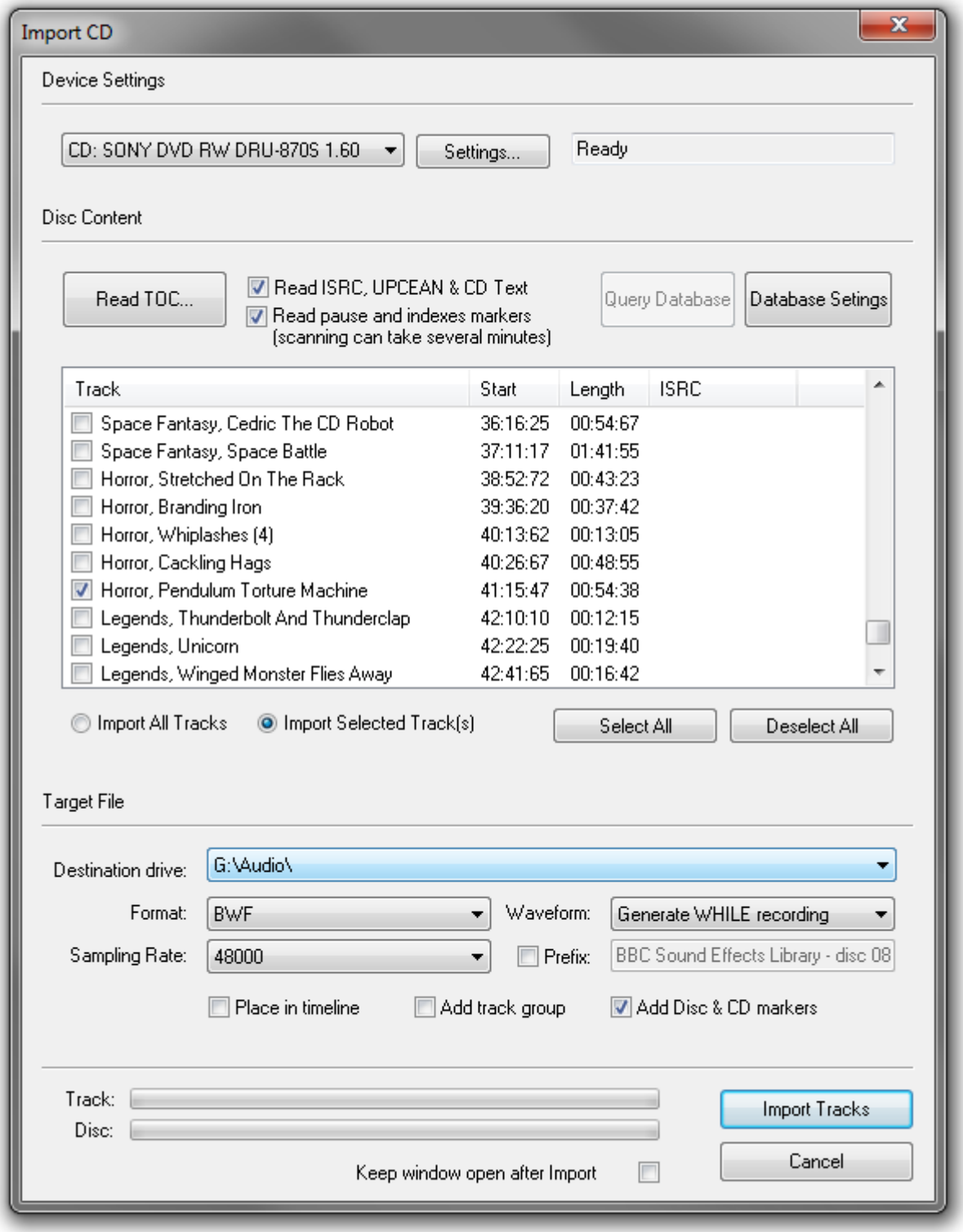
AES-31

Straightforward Import and Export in AES-31 format.

Genex Cuepoint files are supported. If a **.CPT** file exists near the **.ADL** file, cue points will be converted to Pyramix markers.

CD Import

Pyramix has comprehensive CD import functions. **Project > Import** opens the **Interchange Import** dialog box. choose the appropriate destination option and choose **CD Import**



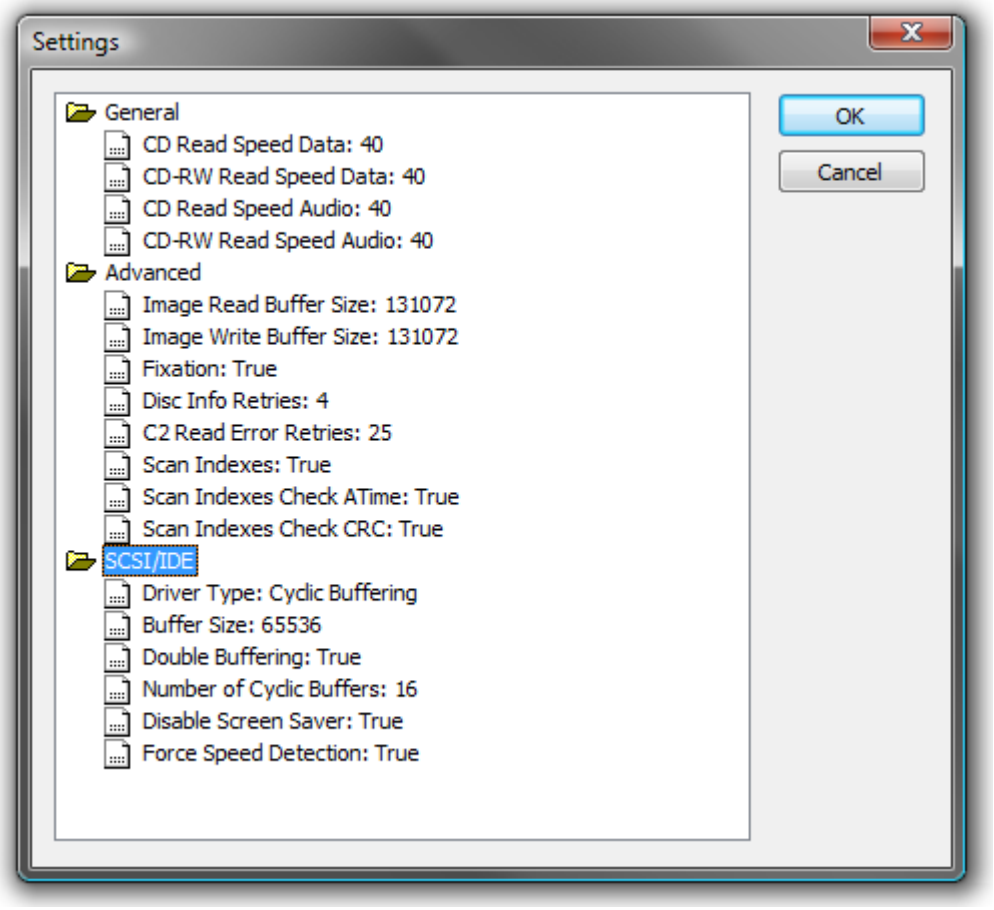
CD Import dialog

Device Settings

The combo box drop-down list shows all suitable drives on the machine.

Settings

The **Settings** button opens a dialog box with specific drive settings. These settings may be altered if required by clicking on an entry and typing a new value in the box.



CD Import Settings dialog

Status

The field to the right of the **Settings** button shows pertinent information about the CD import process.

Disc Content

Read TOC...

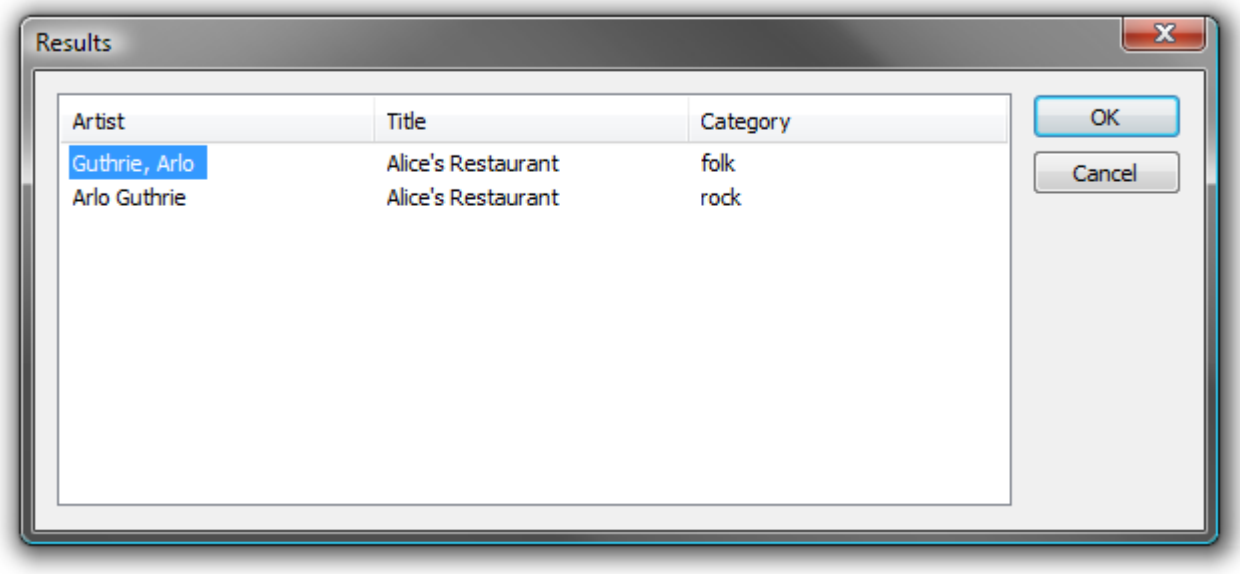
Click the **Read TOC** button to read the Table Of Contents on the CD. The tracks are listed in the pane below.

Read ISRC, UPCEAN & CDtext When checked this information will also be read, if present.

Read pause and index markers When checked the **Pause** and **Index** markers will be read.

(Scanning can take several minutes) This can take several minutes longer than a simple read.

Query Database Click to use an online database to obtain track names and other data about commercial CDs. Results are shown in a dialog :



CD Import Query Database results dialog

If multiple disc titles are shown, click on the appropriate one to select it then click on **OK** to import the data. The disc name is automatically entered in the **Clip Prefix:** field.

Database Settings Click to access a dialog where the database address and other settings can be changed:

CD Import Database Settings dialog

Default settings are shown above. To change a setting, click on the entry and type. Click **OK** to save the edited settings. **Defaults** restores the default settings and **Cancel** closes the dialog without making changes..

Import All Tracks When active all tracks on the CD will be imported regardless of individual selections in the track list check boxes.

Import Selected Track(s) When active only the tracks selected (ticked in the track list) will be imported.

Select All Click the button to select all tracks in the list.

Deselect All Click the button to deselect all tracks in the list.

Target File

Destination Drive: The combo box drop-down lists all mounted folders.

Format: Shows the format selected and offers the choice of :

PMF, **SD2**, **AIFF**, **FLAC**, **Ogg Vorbis**, **MP3/MPEG-1/2 Audio**, **MP4/AAC**, **DSDIFF**, **DSDIFF Edited Master**, **Virtual Tape**, **Wave**, **BWF**, **CD Image**, **MTFF**, **Digital Release**, **OMF**.

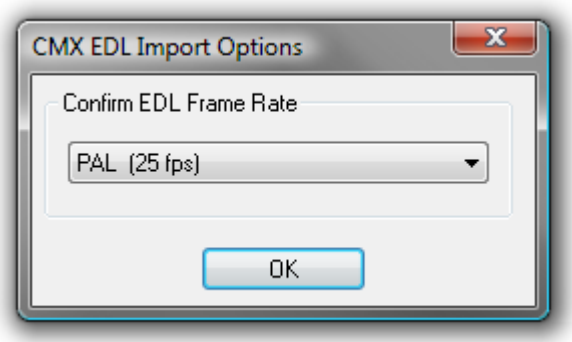
Waveform:	Offers the choice of **Generate WHILE recording**, **Generate AFTER recording** or **None**.
Sampling Rate	Offers an extensive choice of sampling rates for the imported tracks. CD tracks are saple rate converted automatically on import if anything other than 44.1kHz is selected.
Prefix	When checked a prefix will be added to each imported track. This defaults to the CD title but any desired prefix may be typed in the field when the box is checked.
Place in timeline	When checked imported tracks will be placed in the Timeline.
Add track group	When checked a Track Group will be added for the imported tracks.
Add Disc & CD markers	When checked Disc and CD markers will be added.
Track	Bar illustrates progress bar for each imported track
Disc	Bar illustrates import progress of all selected tracks or the entire disc.
Import Tracks	Click to initiate the import process.
Cancel	Click to abort an import in progress or to close the dialog without importing.
Keep window open after Import	When checked the CD Import window remains open, e.g. for further imports, after the import is completed. The Place in timeline, Add Track Group and Add Disc & CD markers options and the **Prefix** label field will be grayed out when this option is selected.

Keep open keeps the **CD Import** window open after the import is completed and grays out the **Place in timeline, Add Track Group** and **Add Disc & CD markers** options. (Since these only take effect when the window is closed.)

CMX EDL

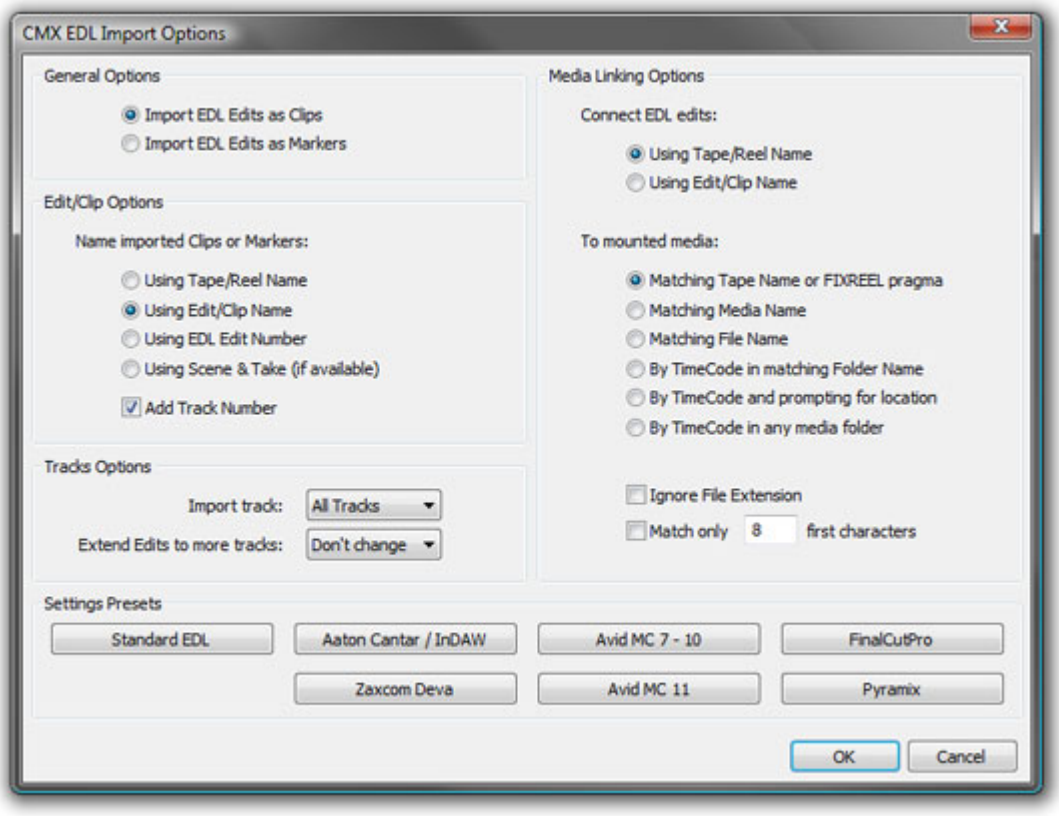
Importing a CMX EDL

Select **Project > Import** and choose **CMX EDL** in the **InterChange-Import** dialog then click on the **Import** button. Select the desired edl file in the **Open** file-browser window. The CMX EDL Import Options dialog opens:



CMX EDL Import Options dialog

If the EDL Frame Rate is correct, simply click the **OK** button. Otherwise, select the correct rate from the drop down list and click the **OK** button. The CMX EDL Import Options main dialog opens.



CMX EDL Import Options dialog

The **Settings Presets** buttons at the bottom of the box set the options for a variety of common CMX variants. If the edl you wish to import matches one of these, simply click the appropriate Preset button. The settings are reflected in the rest of the dialog. Click the **OK** button to begin the Import.

If the edl is not one of the common variants or the intention is to perform a partial or re-conform, make the appropriate choices in the dialog before clicking on the **OK** button to begin the Import.

Exporting a CMX EDL

To export a **CMX EDL** choose **Project > Export...** and select **CMX EDL** in the **Interchange - Export** dialog. Click on the **Export** button to open a file browser where you can select or create a suitable destination for the file.

Click on the **Save** button to start the export.

> **Note:** Any Compositions or Cues which cross "TimeCode Midnight" into a different day will be split and wrapped back to the start. E.g. I have a Cue which starts at **23:59: 51:00** in Day0 and finishes at **00:01:10:00** in Day +1. In the EDL this Cue will be split into two Cues. The first will run from **23:59:51:00** to **24:00:00:00** and the second from **00:00:00:00** to **00:01:10:00** both in Day 0.

Cue Sheets Printer

The **Cue Sheets Printer** is a mini application for printing Cue Sheets from a Project. Full instructions can be found at the end of this chapter. **Please see: Cue Sheet Printer on page 534**

> **Note:**

DDP Import

Import DDP file.

Final Cut Pro XML

Note: FCP X is NOT supported.

Supports import and export of MasterClips, Bins, Sequences or Projects to and from Pyramix.

To export a FCP XML file from Final Cut Pro, either select a single Sequence or a full Project in Final Cut Pro and select **File > Export > XML**. This will export either a single Sequence (with the choice of all referenced MasterClips along with it) or a full Project including all Sequences and MasterClips contained in it.

To import a FCP XML file into Pyramix, create an empty project and select **Project > Import** and choose the **Final Cut Pro XML** format.

Note: When importing in Pyramix a FCP XML file containing more than one Sequence or MasterClip, Pyramix will prompt you to choose which of the available Sequences you would like to import into the Timeline and will allow you to import all others into the Default Library of the current project.

Scope

The following items are imported by Pyramix:

- **Video and Audio Bins, Sequences and MasterClips**
- **Video and Audio Tracks Names**
- **Video and Audio Clips**
- **Audio Clips Fades**
- **Audio Clips Gain**
- **Audio Clips Envelopes (Key Frames)**
- **Clips Sync Points**
- **Clips Comments and Metadata (Master Comments, Clip Comments, Labels and Scene & Take)**
- **Links and Groups**
- **Clips colors**

Known limitations

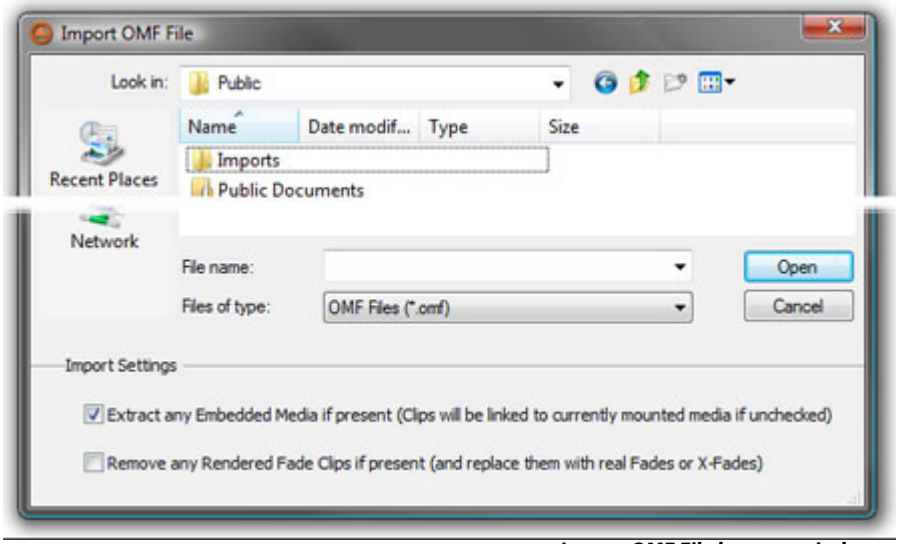
- **FCP XML Export from Pyramix is not yet implemented**
- **Video Clips from HD compositions have length and positions truncated to an even number**

OMF

OMF Import supports both OMF1 and OMF 2 format. Supports 10.5.3 / 11 sub-compositions.

When exporting OMF from another application, there is a choice of either embedding the audio files into the OMF file, or keeping them external as a link. Pyramix supports both approaches.

Selecting **Project > Import** followed by **OMF** in the **Interchange Import** dialog opens the **Import OMF File** browser window.



Import OMF File browser window

Import Settings

At the bottom of the browser window two import settings check boxes offer the options to:

Extract any Embedded Media if present (Clips will be linked to currently mounted media if unchecked)

(default is ticked) and

Remove any Rendered Fade Clips if present (and replace them with real fades or X-Fades)

Default is un-ticked

When importing an OMF file with embedded audio for the first time, leave the **Extract** option ticked to extract the media files. Please un-tick the **Extract any Embedded Media if present** box on subsequent imports of the same OMF file (because the media will already be present).

If the same file is imported a second time, there's no need to extract the audio twice, simply mount the folder where it's been extracted to, prior to importing the OMF file. The OMF Media Handler generates an external Waveform (.pk) file when the file is first imported.

When importing an OMF file that references (links) to external audio files, the folder(s) that contain these files must be Mounted in Pyramix before importing the OMF file. (This also applies to Sonic Solutions import).

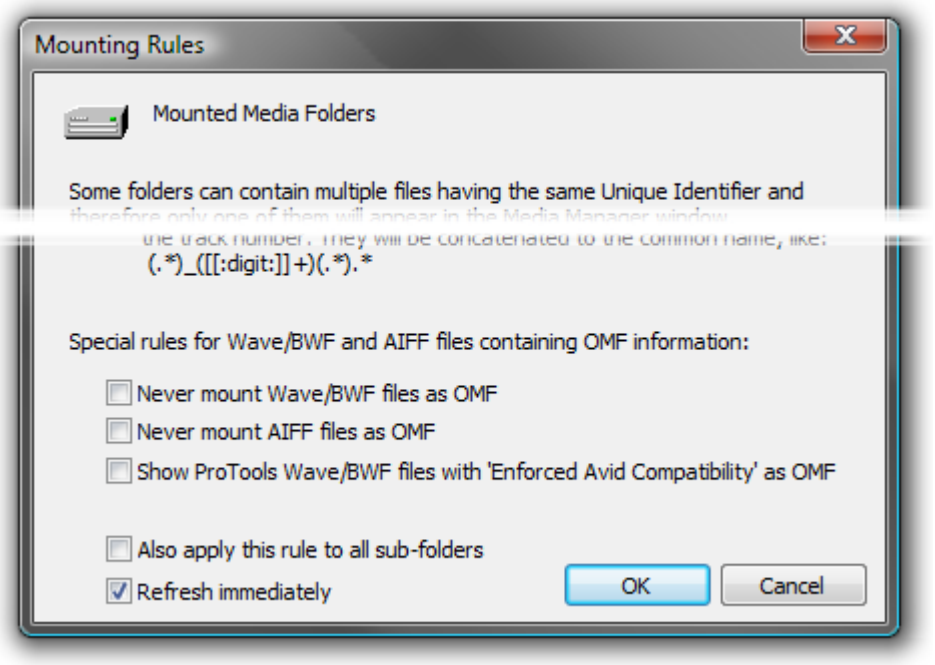
Ticking the **Remove any Rendered Fade Clips if present** box converts any rendered fades or X-fades present in the OMF file into normal Pyramix real-time fades. These can subsequently be manipulated in the usual Pyramix manner.

OMF Mounting Rules

(**Media Management Tab** window, **Media Folder > Mounting Rules**)

AIFF files generated by Avid systems and BWF files generated by Pro Tools with the option **Enforce Avid Compatibility** have a built-in OMF chunk and have always been recognized by Pyramix as an OMF Media. The **Mounting**

Rules dialog has some special Mounting Rules options for folders containing Wave/BWF and AIFF files that have an OMF chunk These enable the default behavior to be altered:



Mounting Rules dialog

- Never mount Wave/BWF files as OMF (for files coming from Avid)
- Never mount AIFF files as OMF (for files coming from Avid)
- Show Pro Tools Wave/BWF files with **Enforced Avid Compatibility** as OMF (the new default behavior is to always show BWF files generated by Pro Tools as BWF even if they have the OMF/Avid compatibility chunk. This option allows forcing these files to be mounted "a la Avid" as in previous Pyramix versions)

Importing Avid and AudioVision bins

Avid and AudioVision bins may be imported as a library. In a library tab window select:

Library > Import OMF library (Avid bin)

Open TL

Straightforward Import and Export in Tascam Open TL format.

Report Printer

(includes EDL, Markers, CD TOC report sheet)

This program really needs a printer. Here is a way to add a printer when no physical printer exists:

1. Start the add new printer wizard. **Start > Settings > Printers > add Printer**
2. In the wizard choose **local printer** and deactivate **automatically detect**
3. Under "Use the following port" choose **File**
4. Select the printer that you will eventually use to print the file
5. The rest of the installation is the same as a standard printer installation

If you print a page test, a dialog will open and ask you the name of the file. Enter the path where you want to write the file.

SACD Edited Master Import

Import Edited Master file.

Sonic Solutions

Straightforward Import in Sonic Solutions format. When importing an Sonic Solutions file that references (links) to external audio files, the folder(s) that contain theses files must be Mounted in Pyramix before importing the file.

Note: Sonic Solutions **HD** format is not currently supported.

Video Clips

Pyramix

Please see: **Importing Video Clips on page 555**

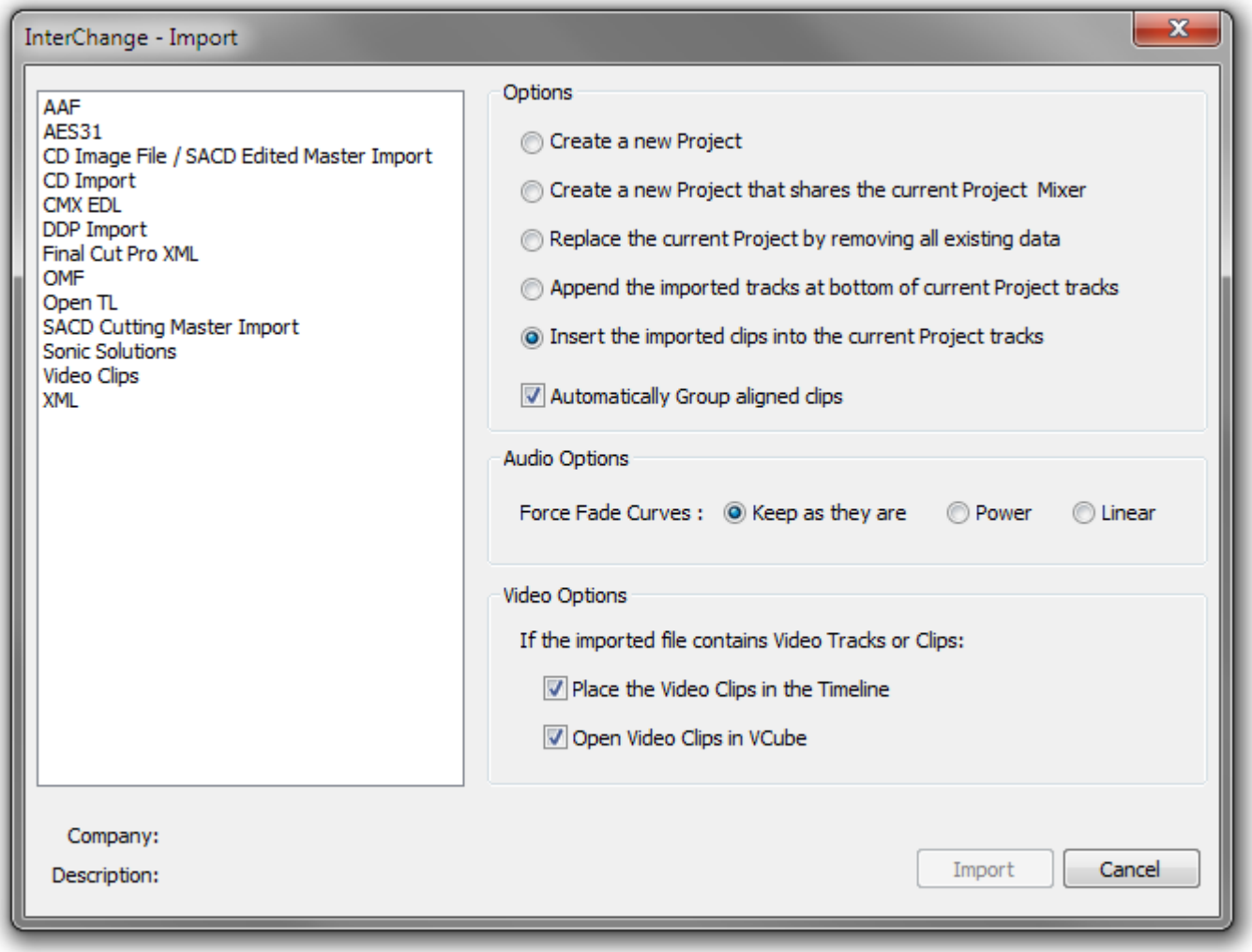
VCube

Note: If using the ASIO bridge for VCube audio I/O then prior to importing video clips launch Pyramix followed by VCube when Pyramix has finished starting. Check that the VCube is shown and connected in **Settings > All Settings > Remote Control > Virtual Transport 2**.
(If using a separate ASIO device or no VS3/ASIO audio then the boot order is unimportant.)

Import

Note: Prior to using **Project > Import : Video Clips** VCube should be running and connected via VT2. To ensure that imported Clips open in VCube when the Project is reopened subsequently make sure that **Save the VCube composition in the Pyramix project** is active in the **Settings > All Settings > Remote Control > Virtual Transport 2** page.

Selecting **Project > Import...** opens the **Interchange - Import** dialog.



Interchange - Import dialog

1. Select **Video Clips** in the left-hand list.
2. Choose the appropriate Import **Options**.
3. Click on **Import**.
4. The **Import Video File** browser window opens.

5. Select the file you wish to import.
6. Click on **Open** to import the video file.

Note: Audio Tracks are also imported and placed in the Timeline. The method of placement follows the Replace/Append/Insert rules as per other (composition based) formats. **Please see: Option s on page 512**

Export : Video Clips

Under Construction

XML

Straightforward Import and Export in Pyramix XML format.

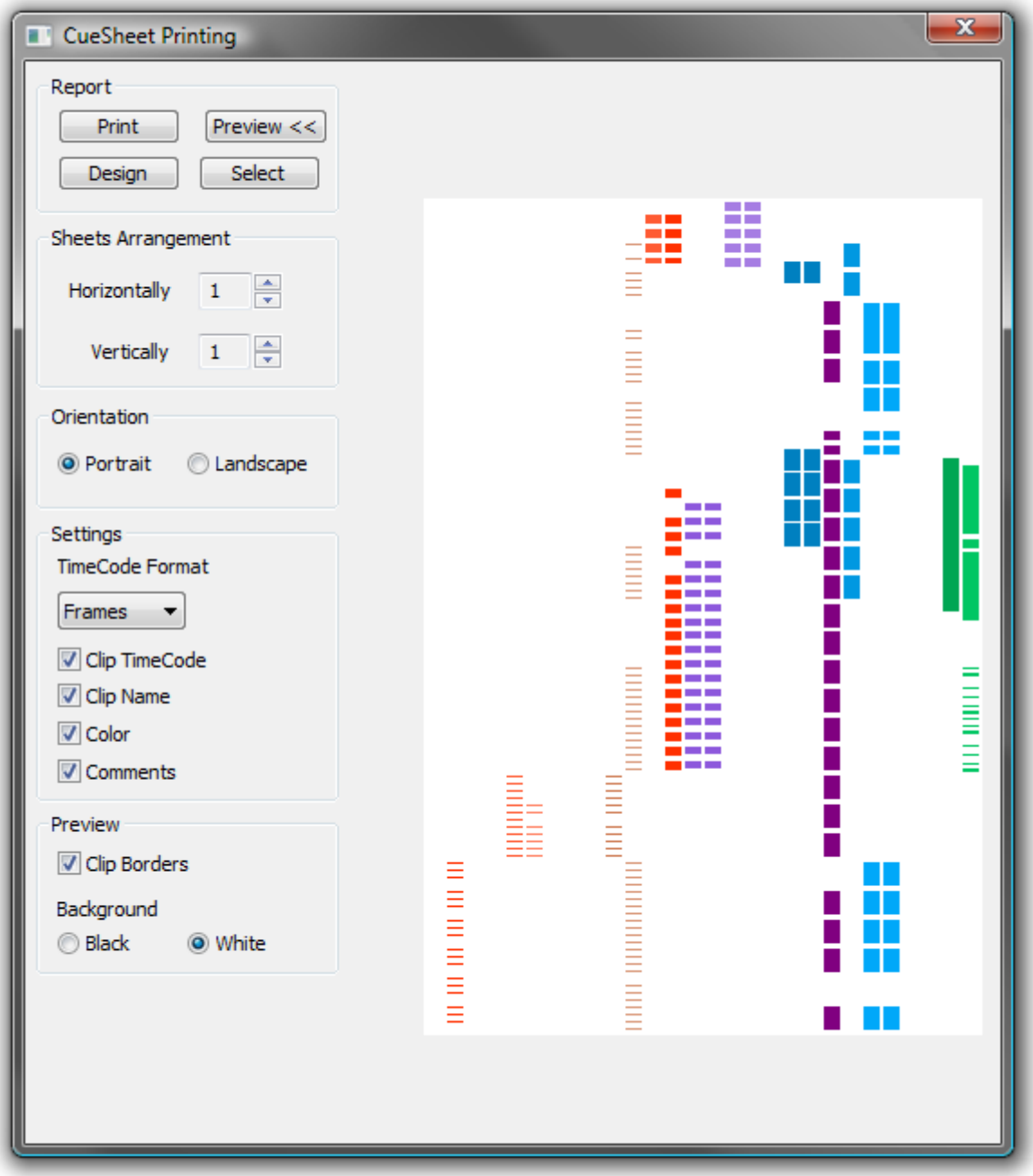
Note: This will NOT work with Final Cut Pro (X or earlier versions).

Cue Sheet Printer

The **Cue Sheet Printer** offers comprehensive options for printing out a graphic representation of the Timeline. Cuesheets are frequently a contracted delivery requirement which takes much time and effort to produce.

Select **Project > Export**. This opens the **Project Export** dialog box. Select **Cue Sheets printer** and click on the **Export** button. (or simply double-click the **Cue sheets printer** entry)

The **CueSheet Printing** window opens. (Shown with the **Preview** option selected.):



CueSheet Printing Window

Report

Print

Click this button to print the cue sheet(s) with the selected options. This opens the **Print Options** dialog box unless the **Orientation** selected is different from the printer's default. If it is the **Paper Orientation conflict** dialog

box pops-up with buttons which offer a choice of **Select other report**, **Change Orientation**, **Force** or **Cancel**. **Force** should make the printer change orientation for this print. Some printers will not accept this. If this is the case, see below.

Print Options dialog box

Offers the choice of which pages to print and the number of copies. Allows any installed printer to be selected and configured. If **Force** does not result in correct page orientation the printer page orientation can be changed by clicking **Change** then **Select** in the next screen which should give access to the Printer's set up dialog with options dependant on the selected printer.

Preview

Adds a graphic preview of the Cue-Sheet(s) to the right-hand side of the window.

Design

Opens the design software used to create the Cue-sheets. Please see the Design Report **List and Label Designer** documentation, which is installed with Pyramix and can be found here:

C:\Program Files\Common Files\Merging Technologies\LL\Docs\ListAndLabelDesigner.pdf

Select

Opens a file browser. Saved Cue-sheets can be loaded for printing.

Sheets Arrangement

Horizontally and **Vertically** set the number of pages with the increment / decrement buttons. This also controls the time scaling.

Orientation

Portrait / Landscape

Toggle between vertical and horizontal page orientation.

Settings

TimeCode Format

Shows the TimeCode format which will be used on the cue-sheets from the choice in the drop-down list. **Frames**, **Samples**, [**ms**] or **CD Frames**

Clip TimeCode

When checked, **Clip TimeCodes** will be printed

Clip Name

When checked, **Clip Names** will be printed

Color

When checked, the cue-sheets will be printed in the colors used in the original project. (With a color printer)

Comments

When checked, **Comments** will be printed

Preview

Clip Borders

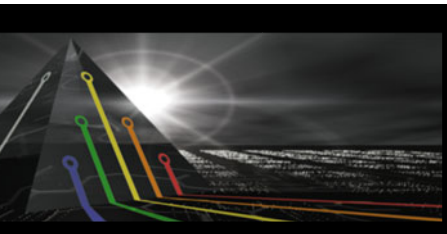
When checked, Clip borders are shown in the preview display.

Background

Black / White

Toggle the preview background color.

19 Customizing Pyramix



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Customizing the User Interface

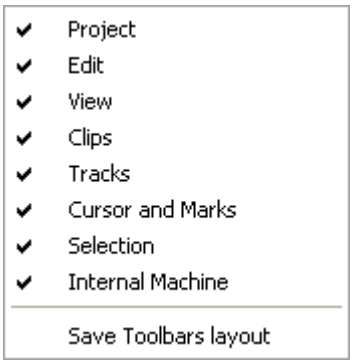
Pyramix Virtual Studio allows considerable customization of the user interface. Apart from the usual Windows interface possibilities Pyramix has **Interface Editors**, user defined **Workspaces**, customizable **Keyboard Shortcuts** and user defined **Macros**.

Desktop Layout, **TimeLine Layout** and **Track Headers Layout** are designed in **Settings > All Settings > Application**

Toolbars and Menus

The Pyramix Toolbars and Menus are almost entirely customizable. Please see: **Desktop Layout on page 790**

Complete Toolbars can be managed by right-clicking anywhere in the blank space in the Toolbar dock to pop up this menu:



Toolbar context menu

Click on the Toolbar names to toggle Toolbars shown (ticked) or hidden.

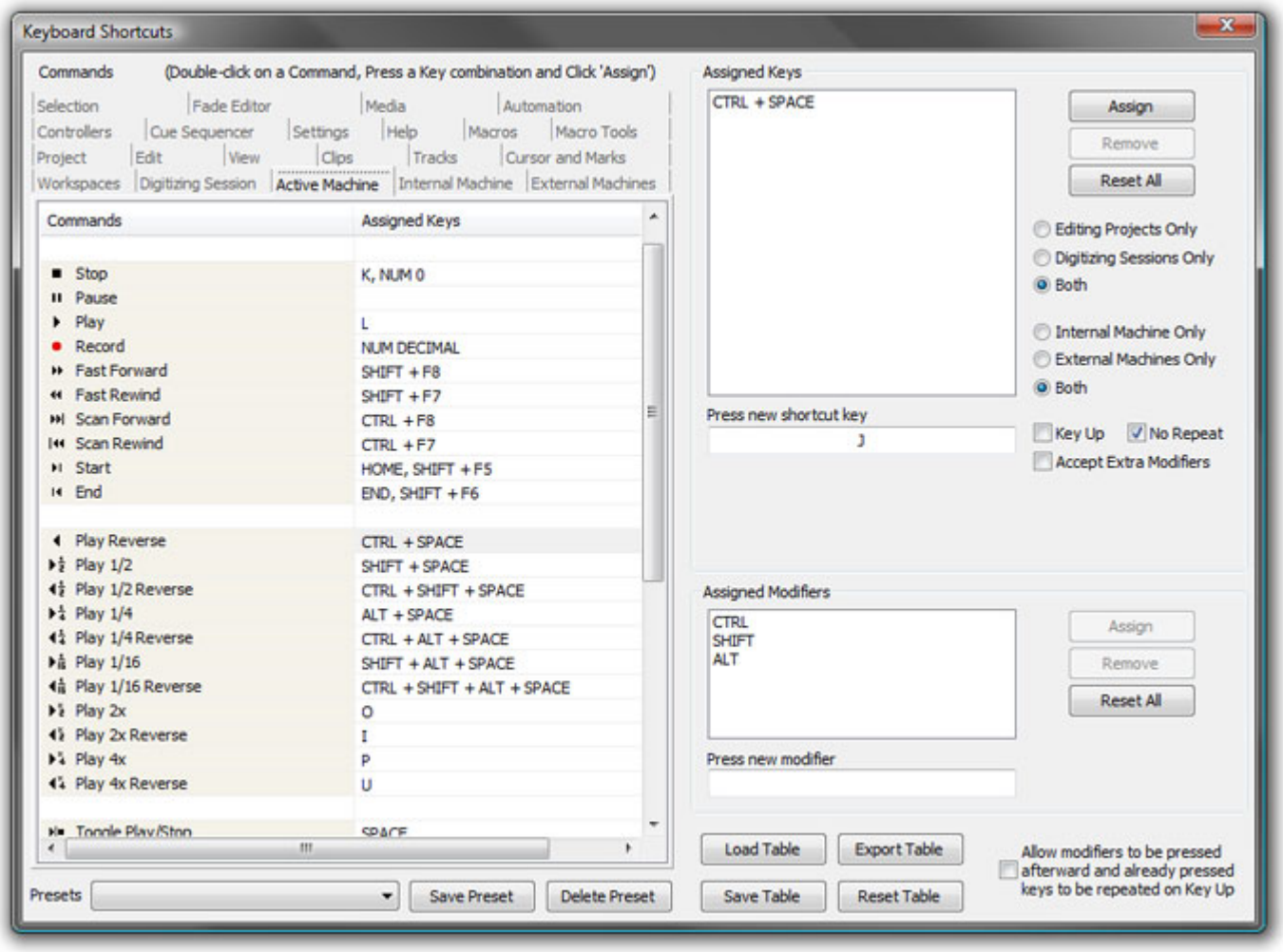
Save Toolbars Layout Clicking on this entry saves the current Toolbar arrangement.

Customizing Keyboard Shortcuts

We strongly encourage you to learn the default Pyramix keyboard shortcuts. These have been used by audio professionals for over a decade, and are powerful, quick and efficient for audio editing and device control. However, if you are already familiar with another style of audio or video editing, you may wish to create your own **Keyboard Shortcuts** for various Pyramix transport and editing functions.

To define your own **Keyboard Shortcuts**:

1. Choose **View** > **Customize** > **Keyboard Shortcuts** from the **Toolbar**. This opens the **Keyboard Shortcuts** window:



Keyboard Shortcuts Window

2. All menu **Commands** are grouped together into **Tabs** within this window. Select the **Tab** with whichever group of **Command** Functions you wish to add or change key assignments for.
3. Click on the appropriate **Command** so that it is highlighted.
4. Click in the **Press new shortcut key** box. The cursor will become a blinking bar.
5. Now press the desired **Key** or combination of **Key** and modifier (e.g. the **Ctrl**, **Shift**, **Alt**, etc.). These will appear in the **Press new shortcut key** box. Note that Pyramix will warn you if the chosen **Key** or combination is already assigned to another function.
6. Click the **Assign** button.
7. Continue assigning **Keys** to **Commands** until you are satisfied.
8. Any set of user defined **Keyboard Shortcuts** can be saved as a **Preset**. To do so, click the **Save Preset** button, then name the **Preset**. Similarly, to recall a previously saved **Preset**, click in the **Presets** box and select it from the pop-up list. Note that several common **Presets** are shipped with **Pyramix Virtual Studio**.The Table will be saved in the system for the user currently logged in and will not affect any other user.

9. A table can be Saved or Loaded to a file so it can be taken to an other system. Just Click on the Save Table or Load Table button.
10. A table can be exported as a Text File along with some comments about commands. This is very useful since it enables you to print it as a command reference guide with your own keyboard shortcuts.

Example:

Many users with a video editing background will be familiar with the J, K and L keys assigned to Reverse Play, Stop and Play respectively. To make these assignments:

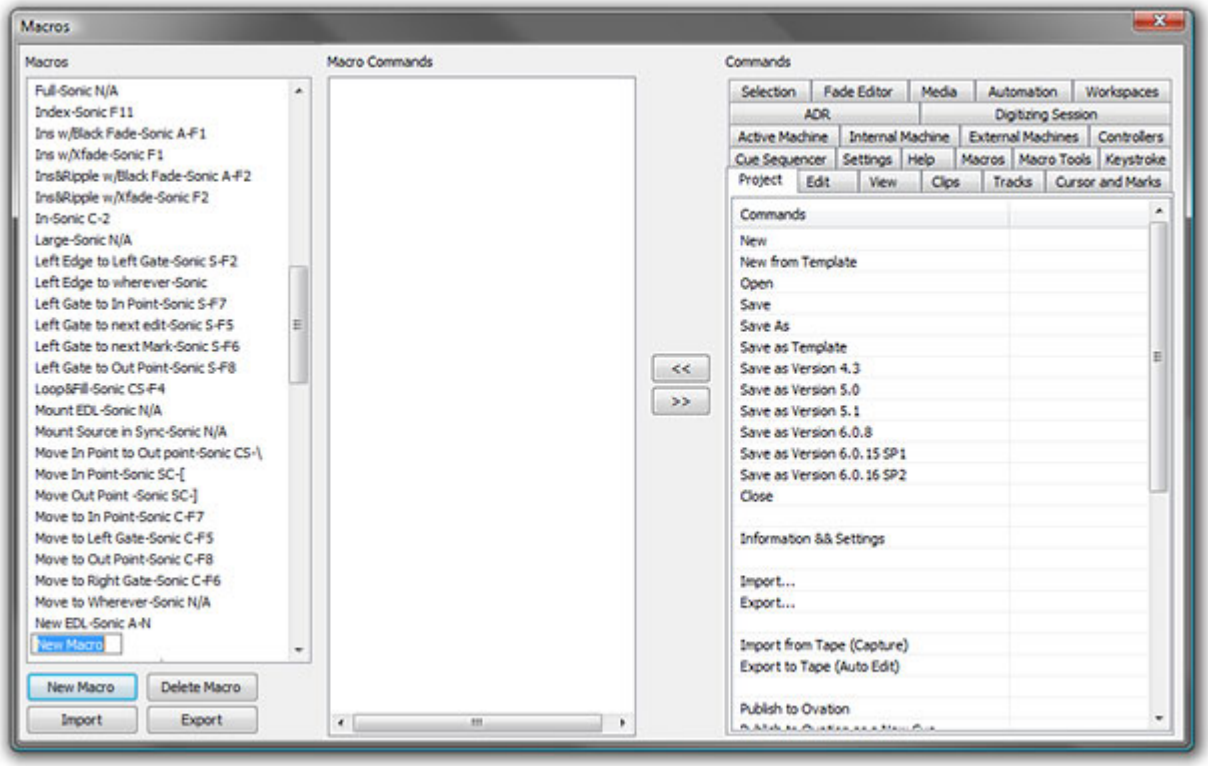
1. Choose **Settings > Keyboard Shortcut Editor** or **View** > **Customize** > **Keyboard Shortcut Editor**
2. Select the **Active Machine Tab**
3. Click on the **Play Reverse** Command to select it.
4. Click in the **Press new shortcut key** box.
5. Type **J** (Notice **J** is not currently assigned to any function)
6. Click **Assign**
7. Click on the **Stop** Command to select it.
8. Double click the **J** in the **Press new shortcut key** box to highlight it.
9. Type **K**
10. Click **Assign.**
11. Repeat steps **7 to 10** substituting **Play** and **L**
12. Save the **Preset**. It is immediately active.

User Macros

Macros are sequences of commands which can be invoked by a single keypress or combination. Macros can be a very powerful aid to productivity.

To define a new **Macro**:

1. Choose **Settings > Macro Editor** or **View > Customize > Macro Editor**. This opens the **Macros** window:



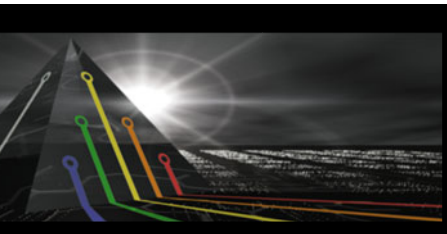
Macros Window

1. Click the **New Macro** button, then name the Macro.
2. Various menu **Command** functions are grouped together into **Tabs**. Select the **Tab** with whichever group of **Command** Functions you wish to add to the Macro.
3. Click on the appropriate **Command** so that it is highlighted.
4. Press the **<<** button to add this command to the **Macro**.
5. Repeat steps **3** to **5** to assign further **Commands** to the **Macro** until it is complete.

A **Keyboard Shortcut** can now call the new **Macro**. Follow the instructions in the previous section for assigning **Keyboard Shortcuts**. In this case, choose the **Macro Tab** within the **Keyboard Shortcut** window. Your new **Macro** will appear as an option inside this window.

> **Note:** macros can also contain keystrokes including: **Enter**, **Shift**, **Tab**, the Arrows (**up**, **down**, **left**, **right**), **Space Bar** and **ESC**

20 Applications



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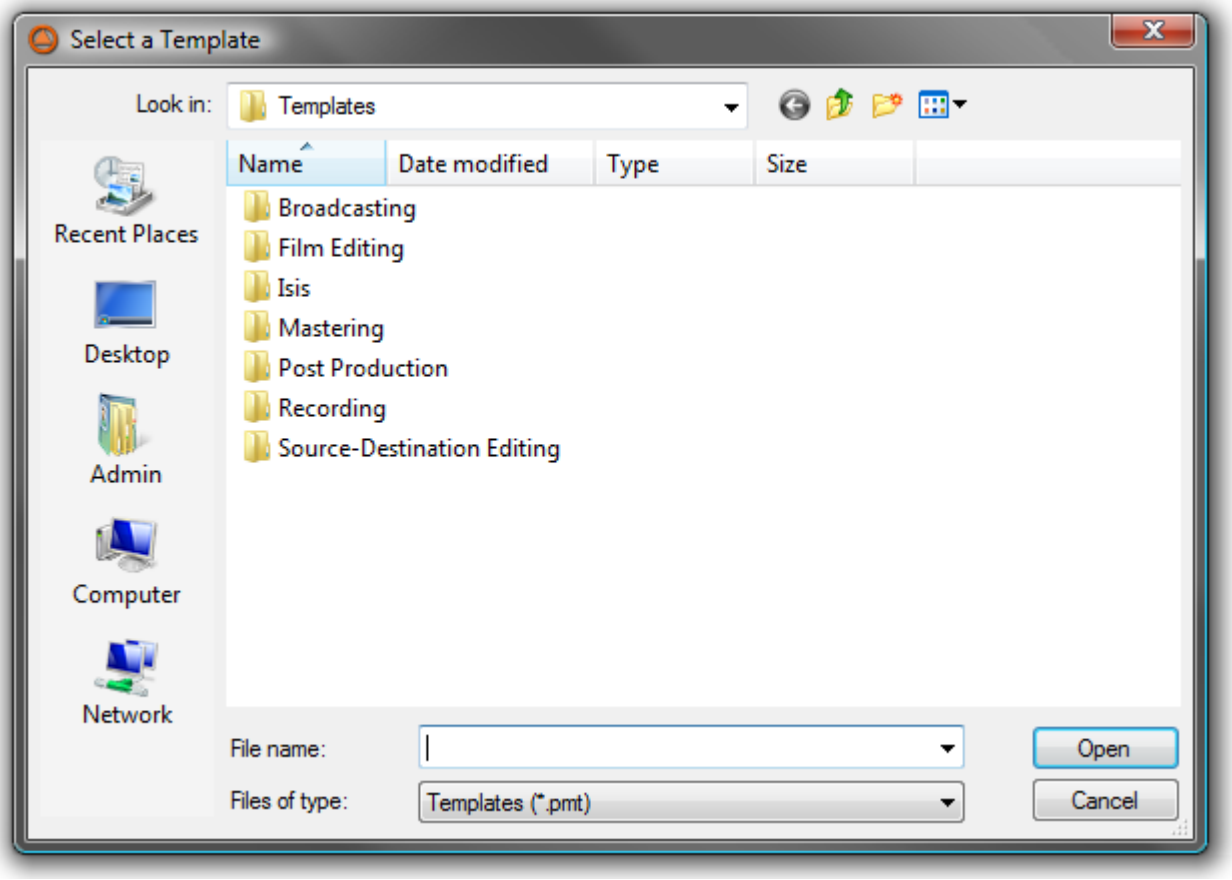
Project Templates

Pyramix provides the user with a number of **Templates** for various applications. A Template is a complete Pyramix Project, without any associated audio, specially configured to suit a particular type of activity. Apart from configuring the appearance of Pyramix, the Track layout and Mixer design, templates also include important optimizations to suit the activity.

Please see: Optimizing Pyramix on page 697

These templates also offer a good starting point for creating your own customized templates. To begin a new project using a template choose **Project > New from Template** which opens the **Select a Template** file browser.



Select a Template dialog

When a template is opened a dialog box appears requesting the user to choose a **Media Folder** for the new project. Unless the project is saved using the **Save As** option, the first time it is saved the **Save As** dialog will appear.

Further Templates will be added as they are developed.

To save a new Template choose **File > Save as Template**, name and save.

Virtual Multi-track

A number of **Template**s suitable for multi-track recording are provided with Pyramix. These **Templates** have all the required settings already in place. If none of the supplied Templates is exactly suitable for your task it will save time if you modify the one closest to your needs and save it as a Template for future use.

Settings for Multi-track recording

Multi-track recording can be demanding on disk performance, DSP and the host CPU. In order to optimize Pyramix for the purpose if not using one of the supplied Templates the following settings should be made in the **Record Page**:

- Flatten Track Numbers: **OFF**
- Quiet if creation failed: **ON**
- Prompt for name after recording: **OFF**
- Keep in default library: **OFF** (Should always be **OFF**)

Suggested Settings

- Group Recorded Clips: **ON**
- Increment Take Number: **ON**
- Prefix with Track Name: **ON**

To Record audio directly into the Tracks of a Project, using Pyramix Virtual Studio as if it were a tape machine:

1. Set the **Destination Drive**, **Resolution** and **Format**.
2. **Arm** each **Track** on which you wish to record. In this case, set each **Track** to **Record Ready** mode (simple **Red Dot**).
3. Check your input levels using the **Mixer**, and adjust as appropriate.
4. Position the **Play Head Cursor** in the **Composition** where you wish the recording to start.
5. Click the red **Master Record** button in the **Transport Strip** or **Transport Window**. The recording will begin, and display a red bar in those **Tracks** you have armed for recording.
6. Press the **Stop** button in the **Transport Strip** or **Transport Window** to stop the recording. A **Record Name** dialog box will appear.

If you are satisfied with the recording, type an appropriate name into the **Record Name** box and click the **Good Take** button. This will save an audio **Media File** of the selected type onto the selected **Media Drive**, with the name you just chose and place a **Clip** in the **Timeline**, also with the same name. If you are not satisfied with the recording, click the **Delete Take** button and the recording will not be saved. The third option is **Bad Take.** A **Bad Take** is saved and a **Clip** placed in the Timeline just like a **Good Take**, but the **Clip**'s color is set to a specific color (definable in the **Settings > All Settings > Application > TimeLine Layout** page) and are numbered the following way: Take 1, Take 2, Take 3 (Bad 1), Take 3 (Bad 2), Take 3 (Bad 3), Take 3, Take 4, Take 5 (Bad1), Take 5, and so on… This helps manage takes where there are mistake(s) but the user wishes to keep them anyway.

To Punch In audio directly into the Tracks of a Project, using Pyramix Virtual Studio as if it were a tape machine with punch in capabilities:

1. Set the Destination Drive, Resolution and Format as above.
2. Arm each **Track** on which you wish to punch in. In this case, set each **Track** to **Record Punch In** mode (**Red Dot with 2 vertical bars**). (**alt-click** on the round **rec/play** button in the Track Header.
3. Check the input levels using the **Mixer**, and adjust as appropriate.
4. Mark a punch in record **In** and **Out** point. This can be done either by marking a selection area on a **Track**, or by setting a **Mark In** and **Mark Out** on the **Time Scale** bar. The simplest way to mark a selection area on a **Track** is to click and drag in the **Track**: a darker gray rectangle indicates the selected area. The simplest way to set a **Mark In** is to **Shift-click** on the **Time Scale** bar: a movable red triangle and vertical line indicates the **Mark In**. The simplest way to set a **Mark Out** is to **Ctrl-click** on the **Time Scale** bar: a movable green triangle and vertical line indicates the **Mark Out**. A selection takes precedence over Mark In and Out for punch in.
5. Position the **Play Head Cursor** before the marked **In** point or **Selection** area.
6. Press the red master **Record** button in the **Transport Strip** or **Transport Window**. The **Play Head** will begin moving through the **Composition**, and **Tracks** will begin playback. Recording will begin on the armed **Tracks** as soon as the selection area or **Mark In** point is reached during playback. A red bar will be displayed in those **Tracks** which are recording.
7. The recording will stop automatically when the selection out or **Mark Out** point is reached. The **Play Head Cursor** will continue playing through the **Composition**.
8. Press the **Stop** button in the Transport Strip or Transport Window to stop playback. A **Record Name** dialog box will appear with the same options as a normal recording.

Multitrack Editing

Pyramix is ideally suited for editing multitrack recordings. Grouping Clips across all Tracks used for the recording allows edit decisions to be made while listening to a single Track or several with the resulting edit changes reflected in all the Clips in the group. Track Grouping functions enable you to work in a way that suits you. The Source - Destination editing model is just one possibility.

Please see the following sections:

Grouping Clips on page 171

Track Groups on page 117

Source - Destination Editing on page 195

Editing with Limited Hardware

Multi-track recordings with many Tracks (E.g. 48 Track 96kHz 24 bit music recordings) can be edited on hardware which cannot support this number of Tracks. (E.g. a laptop) Simply mute Tracks that do not need to be heard using the button in the Track Header. Tracks muted here, rather than in the mixer, no longer access the disk. Providing the Multitrack recording's Clips are grouped across all Tracks, then any editing changes made on the Tracks used for the editing guide sound will also be reflected in the muted Tracks.

Pyramix With VCube

The highly sophisticated VCube video recorder/player has a symbiotic relationship with Pyramix. Whether the VCube is running on a separate remote PC or locally on the same machine (**PyraCube**) there is tight integration between the two. In a Pyracube this extends to synchronized editing and automatic VCube launch when a Pyramix project containing video is opened.

Sony 9-pin (P2) Protocol Support Over IP

Hitherto there have been two principle options for synchronizing a VCube with Pyramix, **Virtual Transport** either locally or over IP and Sony 9-pin (P2) protocol over an RS422 serial connection.

In Pyramix V7.x and later with VCube V3.x and later there is the further, elegant option of using the Sony protocol over IP ethernet. This offers enhanced reliability and simplified configuration. **Please see: Sony P2 Protocol Over IP on page 597**

LTC sync

EXAMPLE - where a cinema projector must be the master

- Cinema projector follows mains (or is crystal controlled) and sends biphase signal to a Biphase -to LTC converter. (E.g. the Rosendahl BIF)
- Converter's LTC output is directly fed to Networked Audio Interface LTC input
- Pyramix is set to "LTC sync" mode and will adapt it's own internal clock to sync to LTC whenever the Pyramix is set to lock and the external LTC is recognized to be playing at about 1x forward speed.
- Pyramix feeds it's own clock to the DA-88 (or similar machine used as an A/D converter) via Word-clock.
- The DA-88 (or equivalent) is set to sync to external Wordclock

All LTC sync ballistics in the Pyramix software have been carefully designed to both allow a large locking range (-7 to +5%) while still exhibiting extremely low instantaneous jitter and more importantly a controlled maximum speed change slope - not more than about 25 PPM per ms (25 Parts Per Million/millisecond) - in order to make sure that any other digital audio equipment connected to it's Wordclock output is provided with a smoothly changing clock speed (free of any abrupt speed changes). Driving the pyramix with the LTC output of the DA-88 is maybe possible in some situations but will demonstrate several limitations which should not occur if you follow precisely the recommended setup as described above.

Dubbing Mode

This mode is provided principally for film re-recording. It allows Tracks to be Armed or Disarmed for recording while recording is taking place.

Dubbing Mode is selected via **All Settings > Settings > Project > Record**

Enable Dubbing

When checked, **Dubbing Mode** is engaged.

Confirm Track Arming

Only available when **Dubbing Mode** is selected in the adjacent check box. A check in this box means that any changes to Track arming made whilst recording must be confirmed by a new Record command before they will take effect.

Example

When recording a final mix in stems (E.g. Dialogue, Effects and Music) you may well wish to retain a previous take for, say Effects, until a certain point. This can be achieved by arming the Dialogue and Music Track Groups, playing the transport and punching into record at the desired point. Once in record, the Effects Track Group can be dropped straight into record at the appropriate moment by simply arming it, or if the **Confirm Track Arming** box is checked, by arming it and, applying a second record command when you wish to begin recording. (either on screen or via MMC, 9-pin etc.)

Discontinuous TimeCode

Auto-Punch mode allows a whole tape with discontinuous TimeCode to automatically be recorded.

- Set all desired Tracks is auto-punch mode
- Place Mark In at 00:00:00:00 and Mark Out at 23:59:59:24 (default values for a new project)
- Plug LTC Out from the tape machine into Pyramix
- Set Chase mode to HARD CHASE
- Rewind the tape

- Press Play on the tape machine

Each time a valid TC is encountered Pyramix will lock and start recording a new Clip, then stop when the timecode jumps. A separate media file will be created for each continuous timecode on the tape.

Reconforming to Original Media from Avid &/or OMF

There are no specific rules for the detailed settings of the procedure described below. It may change from user to user, project to project, etc… It really is up to the user to define a specific workflow including naming of the original recording, importing the stereo/original version into the Avid and making sure that the Video Editor properly keeps track of the proper naming, metadata, etc… Once the method is properly defined and working, the rules should then be communicated to all people involved in a given project, once and for all.

Philosophical Point

Reconforming to New Media always involves some delicate & dirty experimentations in the **Relink to New Media** dialog. This usually requires comparisons of Clip information in Clip Properties and Media information in Pyramix Media Manager. Once some kind of correspondence in the naming structure can be found, then all of a sudden the whole process becomes incredibly simple, the entire TimeLine becomes populated by happy green Clips and an amazing feeling of personal achievement is yours forever.

The following example could and should be interpreted at will to match your specific needs and requirements

Procedure

- Import the OMF from the Avid (even without Avid media, it is not required)
- Mount the original Multitrack session media
- Select **Project > Reconform > Relink to New Media**
- Now the hard part: try to find, in the Clips imported from the OMF, any matching information (in **Clip Properties**) that can also be found in the original media properties
- For instance, you may find that the **Clip** Names match the Original **Media File** Names, but you may very well find that the Clip Names are in fact **Scene & Takes** and should rather match the Original Media Scene & Take, etc…

(OMF is at this better than CMX since it can include information such as Clip Names, Metadata, TimeCodes, etc…)

It finally all depends on how the original media has been documented while recording (BWF metadata) and how the Video Editor and Media "Ingester" have documented the Media and Clips in the Avid.

Again, as already stated above, there are no rules and it may change from user to user, project to project.

Suggested Procedure for Managing a Workflow

- Record the Original Media in **BWF** with TimeCode and name them Take1, Take2, Take3, etc… or any other name that can easily be understood and searched.
- Create a **BWF** 16 bits Stereo Render of your Multitrack recording files **WITH THE SAME NAME** as the original.
- Import these files into the Avid and make sure all Clips created out of these Media keep the Media Name or File Name.
- Export an OMF out of the video edit and import it back in Pyramix (Even without media).
- You should then be able to match the OMF Clip Name to the Original Media File Name, or at least, if the Video Editor messed up with the Clip Names, the OMF Media Names with the Original Media Name or File Name.
- - Once the **Relink** procedure has been successfully achieved, you should have all your Clips referencing the Original Media's first track(s).
- - Then go to **Tracks > Extend**, select all Tracks you want to extend and choose **Auto-Detect**. This should extend all your Clips according to the number of Tracks of your original multitrack recording.

Summary

If something goes wrong with Reconform (apart from SD2 files not recognized, **Please see: File & Project Interchange with Apple Macintosh on page 508**) please look for some sort of timing or wording mismatch between Clips and Media and feel free to try several different settings in the **Relink to New Media** Dialog, till you find THE ONE that matches your topology.

Digitizing a Tape with Discontinuous TimeCode

Pyramix can automatically record a whole tape where the TimeCode is not continuous:

- Set all desired Tracks in **Auto-Punch** mode
- Place **Mark In** at 00:00:00:00 and **Mark Out** at 23:59:59:24 (These are the default values for a new project)
- Plug LTC Out from the tape machine into Pyramix
- Set Chase mode to **HARD CHASE** (**Settings > All Settings > Jog/Chase : Chase Settings -Chase Mode**)
- Rewind the tape
- Press Play on the tape machine
- Each time a valid TC is encountered Pyramix will lock and start recording a new Clip, then stop when the TimeCode jumps. A separate media will thus be created for each continuous TimeCode on the tape.

Loop Recording With Simultaneous Playlist Creation

- Check the **Create an Empty Playlist for each Recording** option in the **Settings > All Settings Project > Record** Page.
- Put the required Tracks in **Auto Punch** mode (Alt + click the Track arming, the Track arming button will display)
- Place **Mark In** and **Mark Out** around the Region to be recorded.
- Put Pyramix in **Chase** Mode (preferably **Hard Chase**) and chase an LTC input.
- Have the TimeCode that feeds Pyramix looping around two boundaries that start a little before the Mark In and stop a little after the **Mark out**. (To make a Preroll Postroll. These should be big enough to let Pyramix sync properly and lock to the incoming TimeCode).
- Pyramix will then, for each loop, sync and lock, enter in record at **Mark In**, stop recording at **Mark Out** and create a new **PlayList** for each loop iteration.

N.B. This requires that an external TimeCode source/generator be used to generate the reference TC loop.

TimeCode Midnight

For those users with a requirement to sync/chase TimeCode with projects near or crossing the day barrier (be it Zero or 24 hours) Pyramix has an **Allow chasing across midnight** option in the **Settings > All Settings > Application > Jog/Chase** page.

If this setting remains unchecked (default) then the Pyramix cursor will always follow the exact given TimeCode and therefore will remain strictly within "day zero" of the Pyramix timeline. For additional security and comfort, if Pyramix is in **locked** state while crossing the midnight barrier, then even with this setting unchecked, there will not be an immediate jump from midnight back to zero while playing or recording in sync. The playback or recording will remain seamless, uninterrupted and cross the day barrier until an out-of-lock status is recognized. Only then is re-chase triggered to whatever the incoming TimeCode currently is.

Editing Multitrack Recordings

To edit Multitrack recordings without listening to all of them just Mute the Tracks and Hide them. All edits performed on the remaining visible one will still occur on all others and only the audio from the visible one will be played back for monitoring. (E.g. a stereo guide mix)

Checking AC3 encoded files in Pyramix

Two types of AC3 encoded files can be played back in Pyramix:

If the file was generated as an .ac3 file, then Pyramix will automatically decode it on the fly and playback 6 channels of audio.

If the file was generated as a .wav file, then Pyramix will consider the file as Wave and simply play two channels of digital encoded AC3 to its (digital) outputs to feed an external decoder.

Most AC3 encoders allow embedding of encoded AC3 signal into a Wave file while encoding, for easy playback. For example, **Minnetonka SurCode** offers this feature.

Working with External Machines

Use Auto-chase

Auto-Chase is a convenient, one button press solution for situations where control must be frequently switched between the Internal Machine I.e. Pyramix and an External Machine or machines.

If all enabled machines are set to **Auto-Chase**, when **Ctrl** is switched between machines the **Active Machine** is automatically taken out of **Chase** mode and the previously **Active Machine** automatically enters **Chase** mode. To activate **Auto-Chase** for all external machines, enable the menu setting:

Machines > External Machine > Auto-Chase

And, to activate **Auto-Chase** for the internal machine, enable the menu setting:

Machines > Internal machine > Auto-Chase

Using Freeze Mode

- If you are using Pyramix for sound-for-picture work, the **Freeze Mode** is a very powerful tool. For example, to position an out of sync car-door slam do the following:
- Use the Transport controls with all machines on-line to position the picture on the point where the door slams.
- Press the **Freeze** button to freeze the external machine(s).
- Select the Clip that has the sound of the door slam.
- Position the **Clip Sync Point** at the beginning of the impact. (Click and drag the red **Clip Sync Point** or position the **Playhead Cursor** and select **Clips > Set Sync Point to Cursor** (**Ctrl + M**)
- Press **Freeze** and the Playhead Cursor will jump to the point at which **Freeze** was activated.
- Now, select **Clips > Send Sync Point to Cursor** (**Ctrl + Alt + M**) and the Clip will move so that its Sync Point is at the Playhead Cursor position and the sound of the slam is synchronized with the picture.

Versioning

When making “promos” and commercials for radio, TV and film there is often a requirement to produce several different versions with, for example, different dates or times or different languages. The effects and music are often the same for each version. Pyramix offers several ways of achieving this.

Probably the simplest method is to select all the Clips you wish to move or copy to a new location in the Timeline then select **Cursor and Marks > Goto TimeCode**, (**NUM 6**) type in the new TC location and then **Cut** and **Paste** or **Copy** and **Paste**. If you have a lot of this work to do, you may want to build a couple of simple macros to do this with the these commands: **Cut** / **Paste to Cursor** and **Copy** / **Paste to Cursor**.

As an alternative to typing in the new cursor TimeCode location, you could use the Nudge Cursor functions to offset it from where it is currently parked. Nudge to the left/right uses one of the 5 predetermined nudge settings.

Another method uses **User Libraries**. Copy the selected Clips and paste to a library or (**Shift + Alt Drag**) then place the Composition using any tool you wish. This method has the advantage that you can save the library and open it in another project.

Object Based Audio Workflow

Pyramix 11.1 supports an immersive audio tool kit for broadcasters by developing the Audio Definition Module (ADM ITU-R BS.2076) and MPEGH (by Fraunhofer IIS) export.

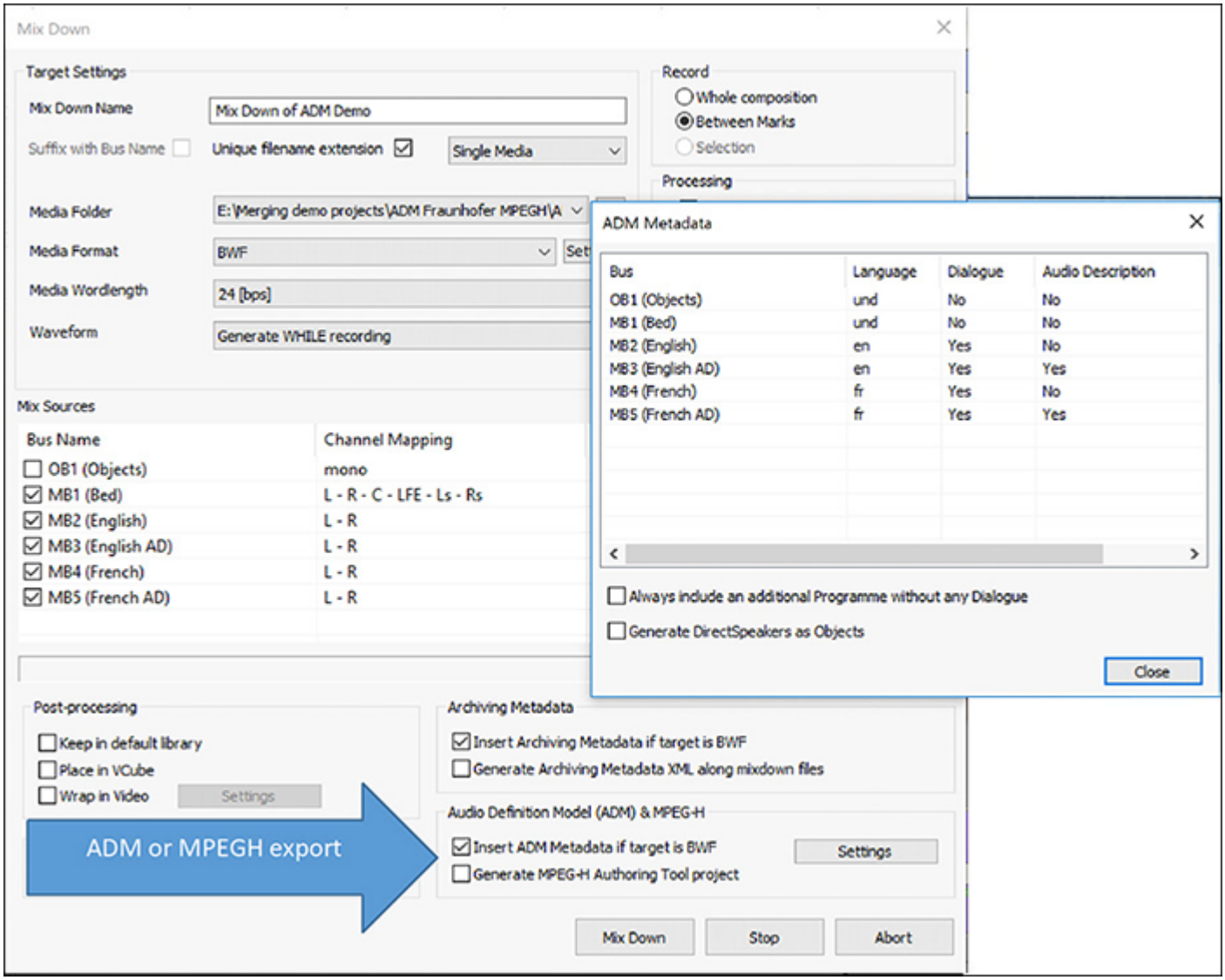
Pyramix 11.1 is the first DAW with a complete workflow to generate master files with Object-Based Audio (OBA) metadata according to the Audio Definition Model (ADM) or MPEG-H 3D audio.

Pyramix 11.1 now consolidates the former OBA workflow, primarily designed for Dolby Atmos mixing for Film or Immersive Live performance, into a comprehensive workflow for TV production with the addition of multi-language support and ADM format export. OBA is the future of sound for broadcasters, to address multiple platforms with the highest quality experience. To achieve OBA Master files, the Audio Definition Model metadata inserted within Broadcast Wave Files constitutes a flexible and free solution to address the next generation of encoders.

As a result of the cooperative development with the Fraunhofer team, a comprehensive MPEG-H workflow is available by exporting Pyramix 11 OBA projects directly to the Fraunhofer MPEG-H Authoring Tool.

This tool is a stand-alone application developed by Fraunhofer IIS for authoring and monitoring of MPEG-H Audio content. It provides monitoring and rendering of channels, objects and higher-order ambisonics content including the import and export of MPEG-H metadata. The MPEG-H Authoring Tool is already in use within the South Korean terrestrial 4K TV broadcast service.

Settings



Mixdown dialog and ADM Metadata dialog

- ADM metadata are exported during a **Mixdown** process and related options are available in the **Mixdown dialog**.
- ADM metadata can only be inserted into **BWF** files using the **Single Media** option.
- In ADM terminology one **ADM Object** corresponds to one **Pyramix Mixer bus**. It must be either a **General Mixing bus** or an **Objects bus**. Exported **ADM Objects** then correspond to the selected **Mix Sources** in the **Mixdown dialog**.
- ADM Programs and Contents are automatically generated based on the selected **Mix Sources** (buses) and embed and refer to **ADM Objects**.

To generate ADM metadata, just tick the **Insert ADM Metadata if target is BWF** check box, ensure **BWF** and **Single Media** are also selected and proceed to **Mixdown**.

ADM Metadata Settings

Additional metadata to define the content of each of the Mix Sources can be edited in the **ADM Metadata** dialo- accessed from the **Settings button** adjacent to the **Insert ADM Metadata if target is BWF** checkbox.

- Each Mix Sources/ Object can be given a Language
- Each Mix Source / Object can set as a Dialogue object
- Each Mix Source / Object can set as an Audio Description object

The above metadata in addition to the selected **Mix Sources** are sufficient for the ADM export process to properly create logical and comprehensive ADM Programmes and Contents

Additional Settings options

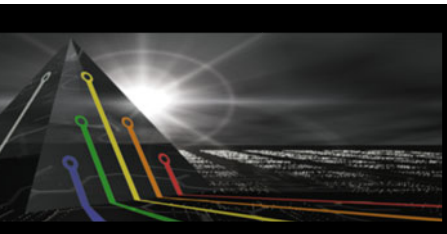
Always include an additional Programme without any Dialogue, allows for adding one additional Programme with only the **Bed** and dynamic **Objects** without any **Dialogue.** This Programme can be useful for dubbing houses for preparing additional languages tracks

Generate DirectSpeakers as Objects allows the EBU standard speaker sets to be bypassed and generates all **Objects** and **Beds** as pure **ADM Objects**. This can be required by some ADM renderers.

MPEG-H Authoring Tool projects

- MPEG-HAT project uses the same metadata used for generating ADM metadata
- The process and settings are the same as for generating ADM (see above), the only difference is:
  - MPEG-HAT requires **BWF** using **One File Per Track**
  - The **Generate MPEG-H Authoring Tool project** check box must be ticked.

21 Video



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Scope

Video Playback Support with up to two independent outputs. (Four may be available optionally at a later date.) These outputs can be displayed on any screen connected to the PC's graphics device. Certain Blackmagic interfaces are also supported. AJA interfaces are not supported.

It's now possible to playback video directly within Pyramix. This video can be imported via the Interchange Import (Video Clips, AAF, XML) or via the Media Manager.

Audio files can be "wrapped" in a Video file using an option in the **Mixdown** dialog.

VCube

For more complex video requirements **VCube** offers a great deal more: Recording/Capture, Rendering, Wrapping, 4k support, ADR support with wipes and clocks, SDI Audio support, Crosslock (TimeCode different to frame rate) and higher performance on a dedicated system/engine.

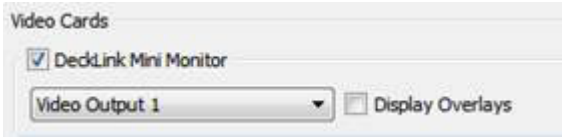
Hardware

Black Magic support

Pyramix supports Blackmagic design Video Cards via the DeckLink SDK. This covers **DeckLink**, **UltraStudio** and **Intensity** product lines. Only **Decklink Studio 4K** has been validated as of now. The **DeckLink Studio Monitor** is known to be working but has no Video reference to ensure genlock.

Video Card Outputs:

The Video card can be enabled under **All Settings > Video > Settings : Video Cards**:



Settings >Video > Settings : Video Cards

In order for this feature to work the correct **Merging Key Pack** and a **Blackmagic Design** Video Card are required.

The Video Output(s) are mirrored to this hardware when a supported Blackmagic DeckLink device is installed on the computer.

Formats

Merging Technologies have tested and validated for use the following file types and codecs in Pyramix's video-in-timeline feature. Other codecs and file types may work, but we only support the ones listed below currently.

Mov: DNxHD (8bit) **

ProRes 422 HQ

ProRes 422 LT

ProRes 422 Proxy

DV25

DV50

H264**

MXF: DNxHD (8bit) **

XDCAM HD**

AVCi, IMX****

Note: 10bit DNxHD is not supported.

**** DNxHD**, **AVCi**, **IMX**, **XDCAM HD** and **H264** (Encode only for VCube encoding via render, H264 Playback is included as standard) are all optional codecs and come at an additional cost to the Pyramix pack. Please contact your local Merging Sales Partner if you wish to purchase one or more of these options. ******

Delay Compensation

The video will often be delayed with respect to the audio whether displayed via the graphics card or a dedicated video card. Pyramix is able to compensate for this.

Separate delay compensation settings are available for the graphics card and optional video card. These may be found in the **Settings > All Settings > Video > Settings** page.

Graphics delay	Compensates for the graphic card(s) output delay.(computer screen) Type a value (in frames) or use the increment / decrement buttons.
Video delay	Compensates for the video card(s) output(s) (Blackmagic Design). Type a value (in frames) or use the increment / decrement buttons.

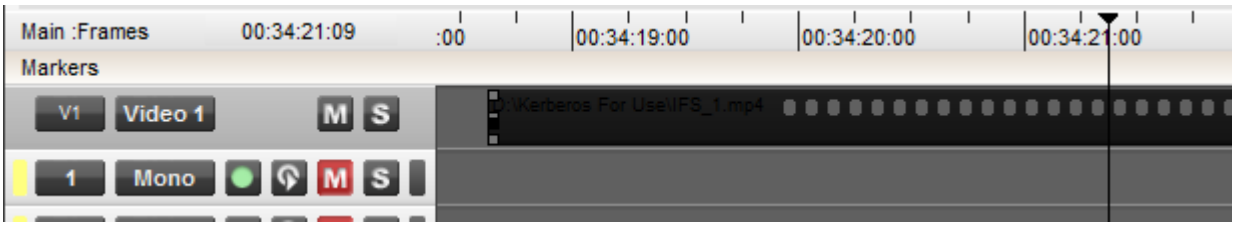
Recommendations:

- To avoid excessive memory consumption and consequent impact on audio performance, work with intra-frame proxy files whenever possible.
- H264 is not recommended for editing.
- If using Video in the Timeline of a a **DXD** or **DSD** Project we recommend using **ONE** video output for optimum performance.

Pro Res or **DNxHD** are recommended for editing and performance purposes.

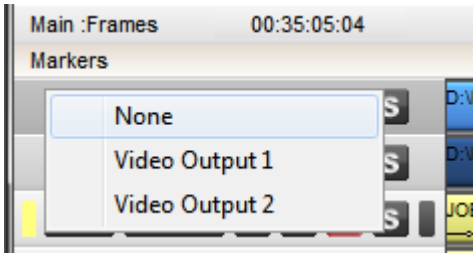
Video Tracks

Video Tracks are quite similar to Audio Tracks and many operations are the same, move, lock, split, cut, copy and paste, dissolve etc.. The **Mute** and **Solo** buttons in the Track Header work in the same way as Audio Mute and Solo.



Video Track

Clicking on the Video Track number (**V1** in this case) pops up a menu to select the **Video Output** for the Track:



Video Track Output pop-up

Adding a Video Track

A new empty Video Track may be added from **Video > New Video Track** or from the right-click context menu accessed when the mouse cursor is over the Track Headers **Add Video Track** or from the Add Video Track button in the Video Toolbar:

Video Toolbar Add Video Track

The new Video Track will be added above the Track selected currently or above the first track if no Track is selected currently.

Video Tracks are added automatically when importing.

Where Video Tracks already exist the Media Manager may be used to place Video Clips in the same way as Audio Clips.

Supported Video Formats

Pro Res or **DNxHD** files are recommended for editing and performance purposes.

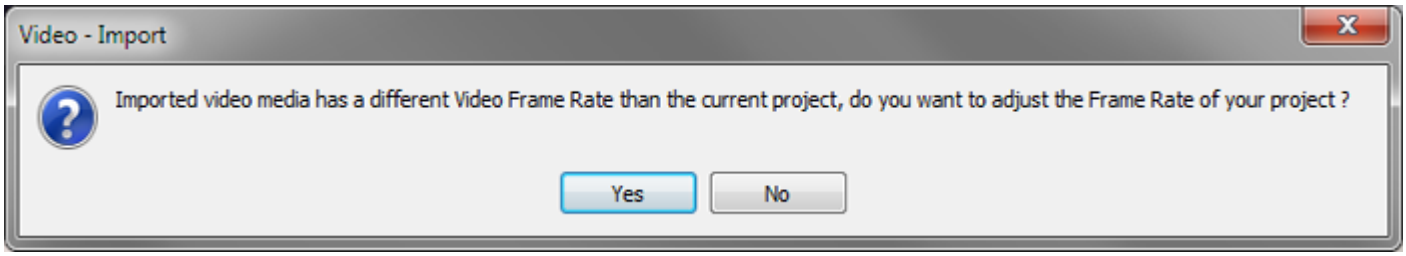
Importing Video Compositions

AAF and **XML** are supported via **Project > Import: AAF** or **XML**. **Please see: Import on page 511**

Importing Video Clips

Video Clips are imported via **Projects > Import: Video Clips**. **Please see: Import on page 511**

If a Video Clip is imported which has a different Frame Rate to the current Project a dialog will appear asking if the Project Frame Rate should be adjusted to match the imported video media. Choose **Yes** to change automatically :



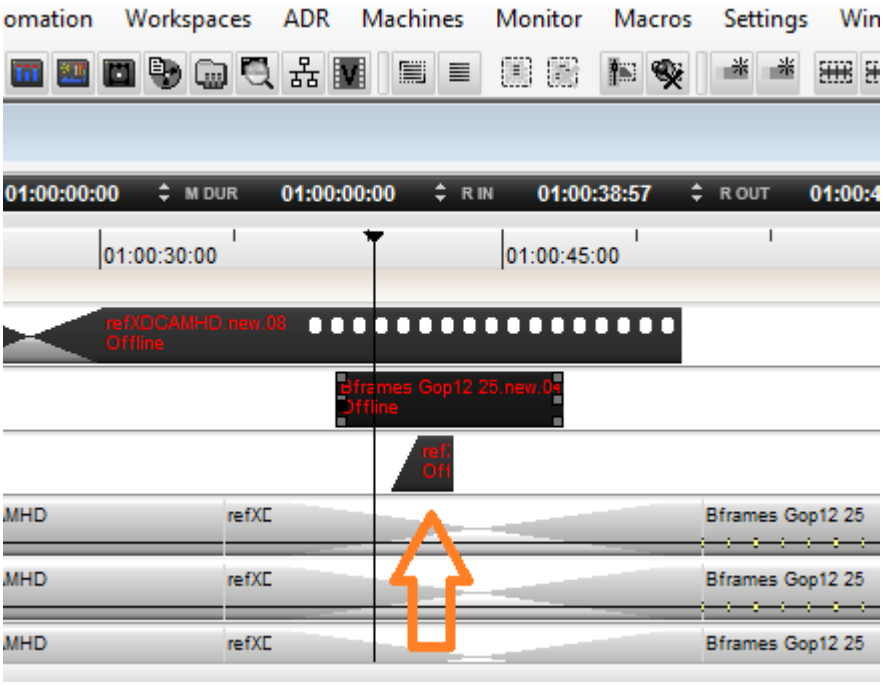
Video - Import dialog

Video in Media Manager

Video Clips can be placed from the Media Manager in the same way as Audio Clips.

Multi Layer Compositions

When a multi-layer composition is imported, Pyramix displays the layers under the main video track (layers are inverted compared to most video editors). The compositing is done bottom-up. In this example the smallest video clip will overlay the 2 other clips:



Video layers Compositing

When several Tracks are patched to the same Video Output, they are composited in the bottom-up order. Two Tracks patched to different Outputs are displayed independently (see Video Tab window and Video Output Windows). This can be useful for comparing Video Clips or in a multi-camera workflow.

Note: By default, all imported layers are patched and composited into Video Output 1.

Thumbnails

Video Thumbnail images may be added to the Video Track in the Timeline. Thumbnails generation is initiated manually by right-clicking on the relevant Video Track and selecting **Display > Image**. Thumbnail Generation may be cancelled by Right-Clicking and selecting **Cancel Image Generation** on the generation message at the bottom left-hand corner of the Pyramix GUI.

Video Output

Output Windows

Output Windows are added from **Video > New Video Window... > New Video Window Output 1,2,3 or 4** or from the **Video Toolbar**.

The left-hand four buttons add Video Output Windows for each of the outputs:

Video Toolbar Create Output Windows

Click on the buttons to create Video Output Windows. Multiple Windows for each output are supported.

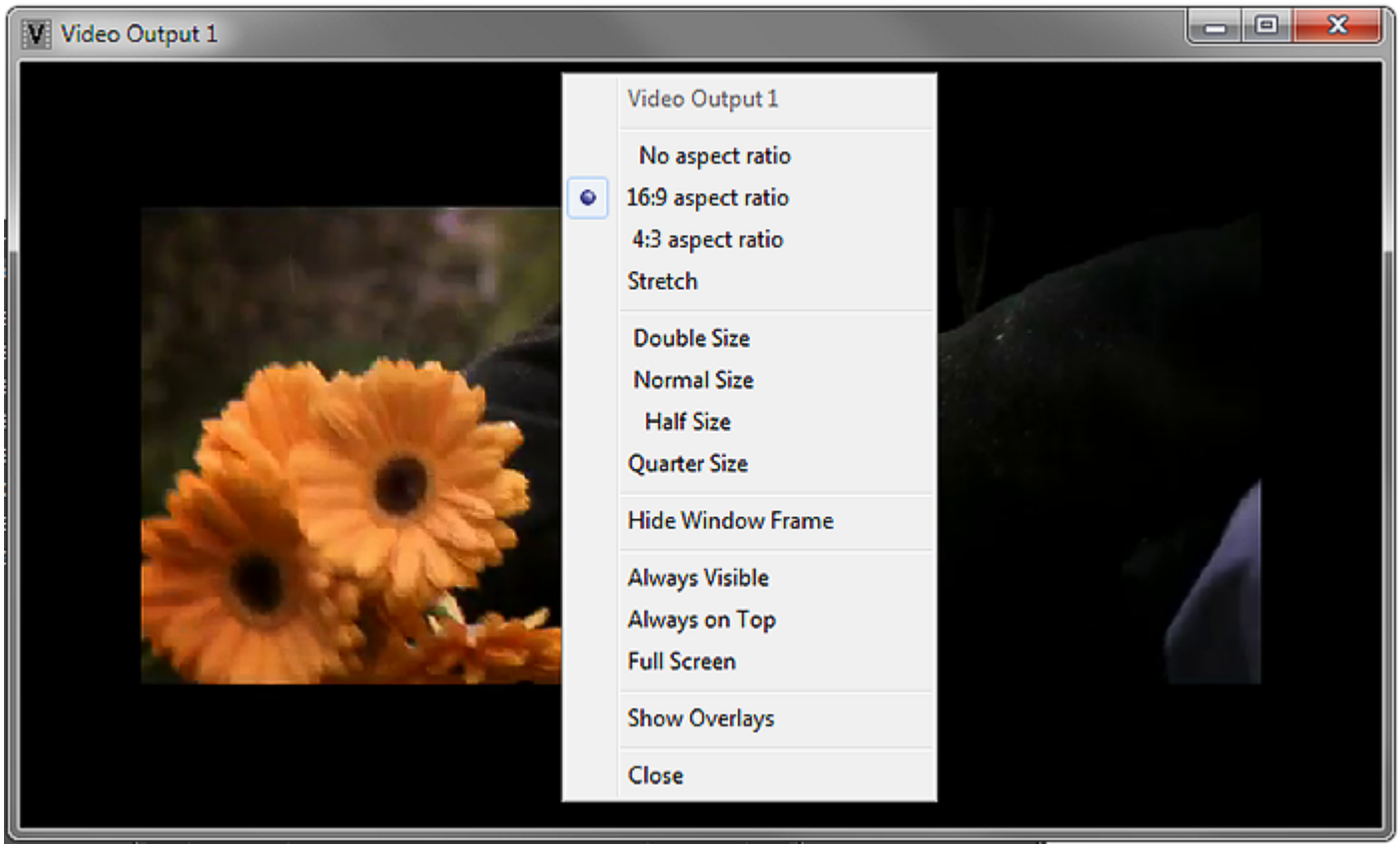
Note: Two Output Windows are available currently. Four may be made available as an option at a later date. The extra buttons are greyed out and inoperative for now.

The right-hand four buttons toggle all Output Windows open and closed per Output:

Video Toolbar Toggle Output Windows

A shortcut key may be assigned to display or hide all the video frames routed to the respective Video Output (1 or 2). This can be bypassed using the **Always Visible** context menu option (see below).

Output Window



Video Output Window with context menu

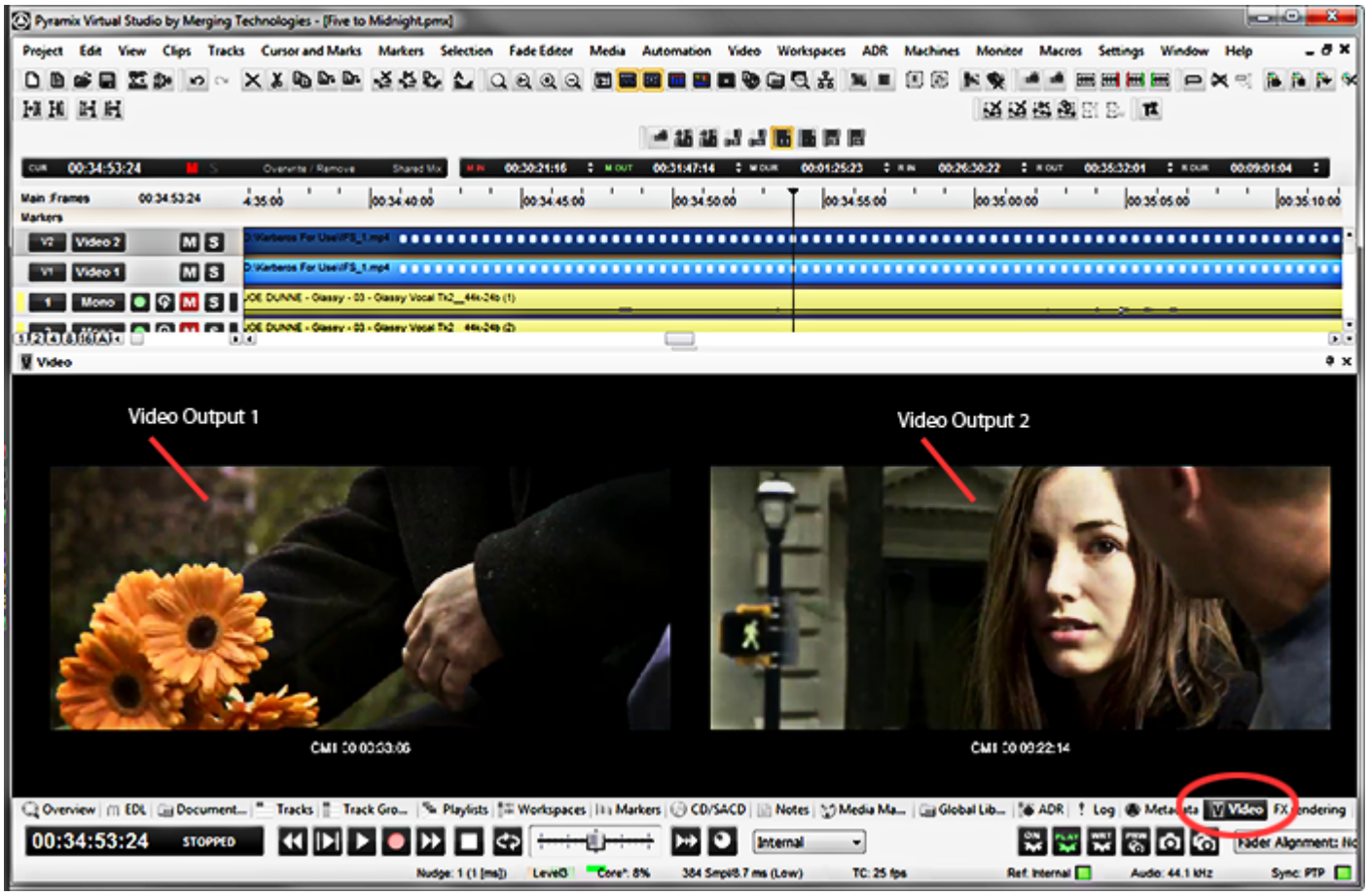
Right-clicking anywhere in the window pops-up a context menu.

Video Output 1	Information only. Shows which of the video outputs is feeding the Window.
No aspect ratio	Output Window may be resized to any shape by clicking and dragging the edges/corners.
16:9 aspect ratio	The Video Output Window is fixed at 16:9 aspect ratio when resized.
4:3 aspect ratio	The Video Output Window is fixed at 4:3 aspect ratio when resized.
Stretch	Image is resized to fit the Video Output Window. This may result in a distorted image.
Double Size	Sets the Video Output Window size to **Double**. normal size.
Normal Size	Sets the Video Output Window size to **Normal** normal size.
Half Size	Sets the Video Output Window size to **Half** normal size.
Quarter Size	Sets the Video Output Window size to **Quarter** normal size.
Hide Windows Frame	Hides the Windows border around the video. In this mode the Video Output window can be moved by clicking and dragging and can be resized from the Right-Click context menu to **Double**, **Normal**, **Half** or **Quarter** sizes.
Always Visible	Overrides the Toggle Video Output Window function and keeps the Video Output Window visible.
Always on Top	The Video Output Window is always displayed on top of any other Windows or dialogs on screen.
Full Screen	Displays the Video Output full screen. (On the monitor the window is on in a multi-screen system.)
Show Overlays	Toggles **Overlays** shown/hidden.

Overlays

Each of the Video Outputs supports independent Overlays of **TimeCode**, **Name** and **Text**. Overlays are set-up in the **Settings > All Settings > Video > Overlays** page. **Please see: Overlays on page 814**

Video Tab



Video Tab Window

If the **Video Tab** is not already present it can be added by selecting **View > Editor Tabs > Video**.

Patched **Video Outputs** are displayed in condensed form. There are no controls or menus in the Video Tab.

Notes

- Video Editing: We recommend using **Pro Res** or **DNxHD** files for editing and performance purposes.
- There is no control over the video output(s) assignment (yet). Video Output 1 will be output to the first detected Video hardware, Video Output 2 to the second, and so on. Multiple output cards are supported.

Wrap in Video

Wrap in Video is a Post Processing option within the **Mixdown** dialog which enables audio Tracks to be "wrapped" into a Video File. It can also be invoked from the Timeline via: **Video > Wrap Selection**.

Note: Audio can only be wrapped in a single Video Clip file.

Wrap Support

- AVI & MPEG: Not supported in Pyramix.
- MXF: Audio: Only 16/24 AES3 samples.
- MP4: Audio: 2-6, 8 channels, 16bits only. Start Timecode not supported.

Wrapping Between File Formats

Constraints if changing extensions in the "Custom Name field" when wrapping are as follows:

- Codec is DNXHD: MXF <-> MOV
- Codec is DV: MXF <-> MOV
- Codec is IMX:\D10: MXF <-> MOV
- Codec is AVCINTRA: MXF <-> MOV
- Codec is Apple PRORES: Valid for mov only
- Codec is MJPEG: Valid for mov only
- MP4 to MOV: Any content. Audio converted to 16 bit pcm
- MOV to MP4: Only H264, MPEG content. Audio converted to AAC
- Codec is XDCAMHD: not recommended, not supported

Note: Any format not listed is unsupported and could produce a corrupted file.

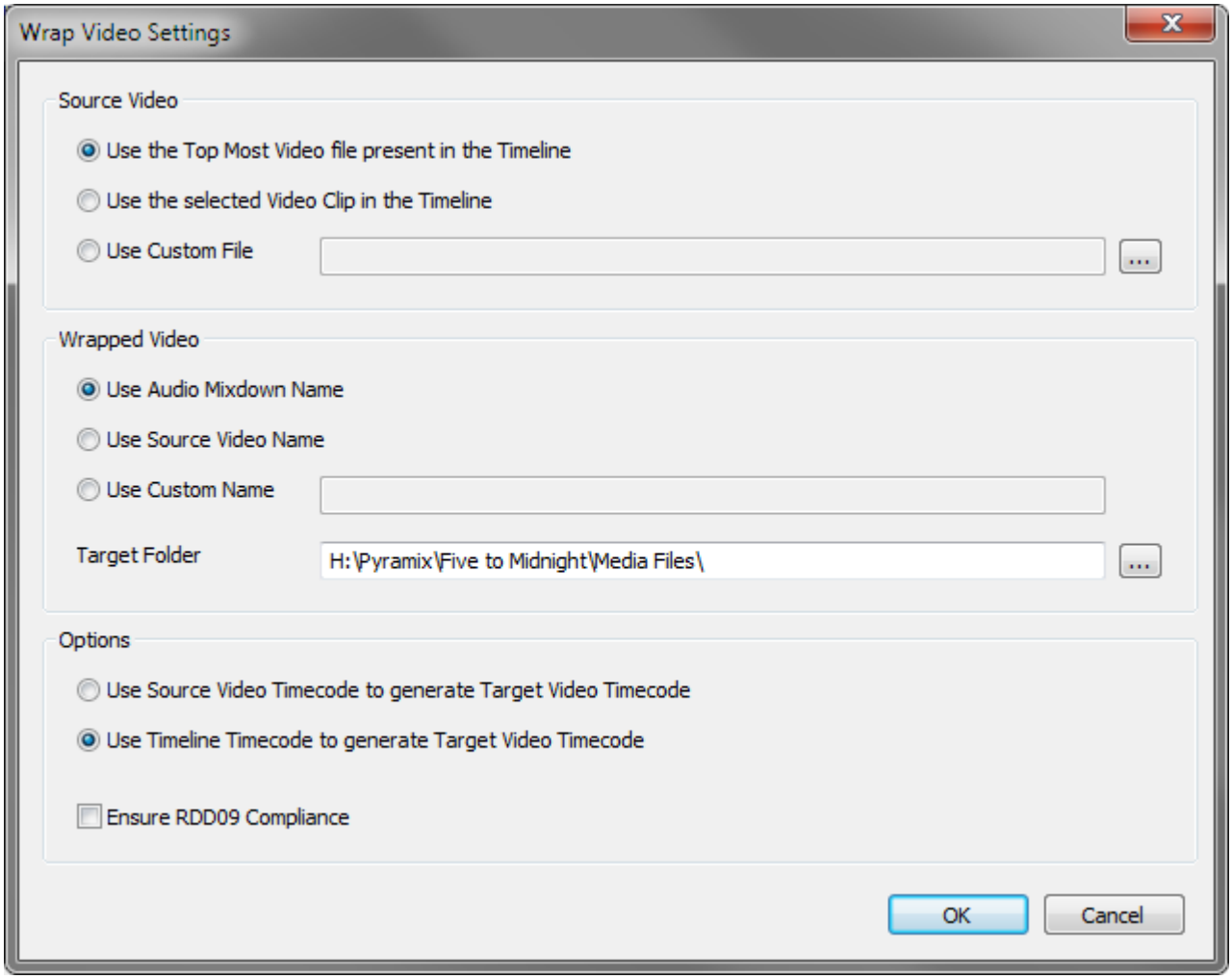
Wrapping Timeline Tracks Files into Video Files using Mixdown

1. Open the **Mixdown** dialog and make audio settings appropriate for the job in hand.
2. Check the **Wrap in Video** box.

§ Video track Wrap Behavior:

If an option was valid for a Wrap and then a Mixdown is done. Afterwards if the timeline change (deselect the video track), on the following Mixdown the Wrap dialog settings will open up allowing you to adjust the source video option.

3. Click on the adjacent **Settings** button to open the **Wrap Video Settings** dialog:



Wrap Video Settings dialog

Source Video

Use the Top Most Video present in the Timeline This will include the top timeline video track in the Wrapped file.

Use the selected Video Clip in the Timeline This will include the Video Clip selected in the Timeline in the wrapped file.

Use Custom File This will include the file whose path is shown in the field in the wrapped file. The **...** button opens a File Browser enabling a file suitable file to be selected.

Note: The **Source Video** options are disabled if not applicable.
If there is no video selected the option **Use the selected video Clip in the Timeline** is disabled.
If there is no video present in the Timeline, then only the option **Use Custom File** is enabled.

Note: If an option was valid for a **Wrap** and then a **Mixdown** is executed, afterwards if the Timeline is changed (deselect the Video Track), on a subsequent **Mixdown** the **Wrap Video Settings** dialog will open to enable a source video option to be chosen.

Wrapped Video

Use Audio Mixdown Name The resulting file name will have the **Mixdown** name selected in the **Mixdown Dialog**.

Use Source Video Name The resulting file name will have same name as the Video Source File.

Use Custom Name Type the name you require name in the field.

Note: If this **Use Custom Name** option is checked but the field left empty the wrapped video file will be assigned the same name as the Audio Mixdown output file. If a file wwith the same name already exists, the new file will be given a Date/Time suffix.

Target Folder Field shows the path to the Target Folder where the wrapped video file will be created. The **...** button opens a File Browser enabling a folder to be selected or created.

Ensure RDD09 Compliance When checked the wrapped file will be checked for RDD09 compliance.

Options

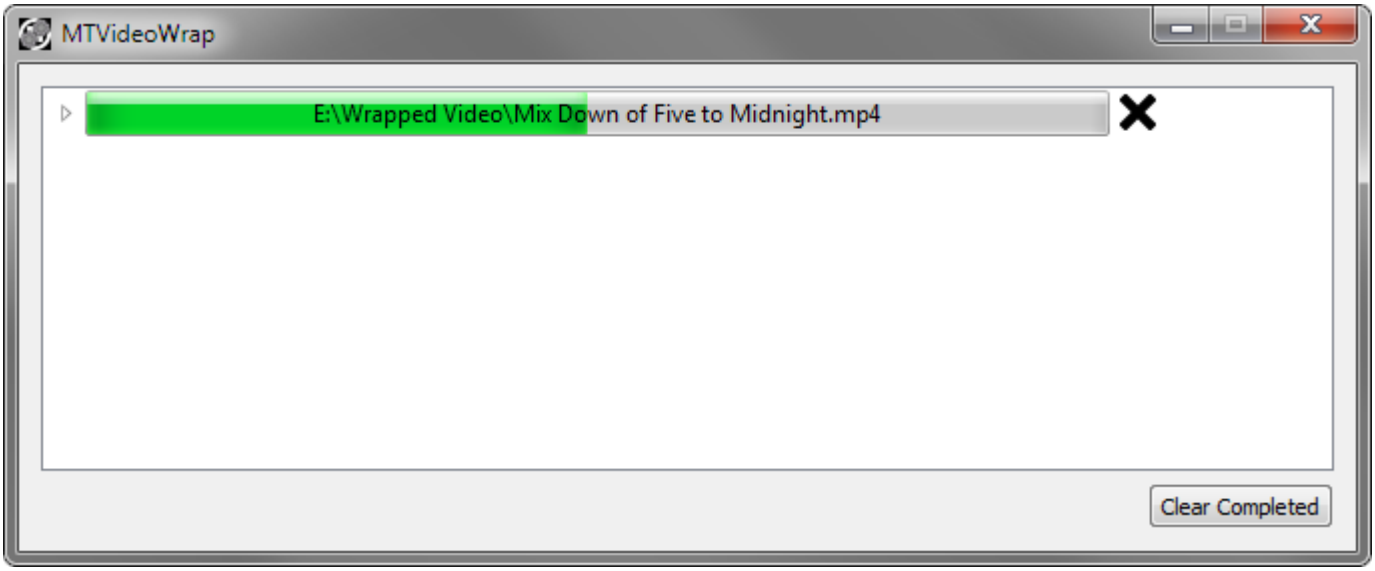
Use Source Video Timecode to generate Target Video Timecode When checked, Timecode in the wrapped file will match the original Video File

Use Timeline Timecode to generate Target Video Timecode When checked, the TimeCode in the wrapped file will match the Timeline Timecode. (Not available for all formats.)

Wrapping the File

Initiate the process by clicking on the **Mix Down** button in the **Mix Down** dialog.

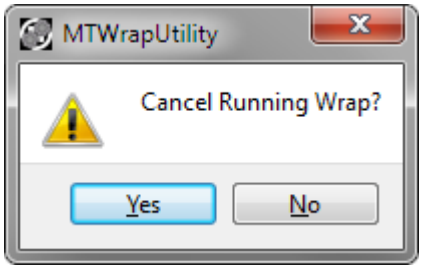
The Audio **Mix Down** proceeds first. When this is complete the Wrap process begins and the **MTVideoWrap** window opens:



MTVideoWrap window

The green bar indicates progress.

Clicking on the **X** button while the Wrap is in progress opens the MTWrapUtility dialog:

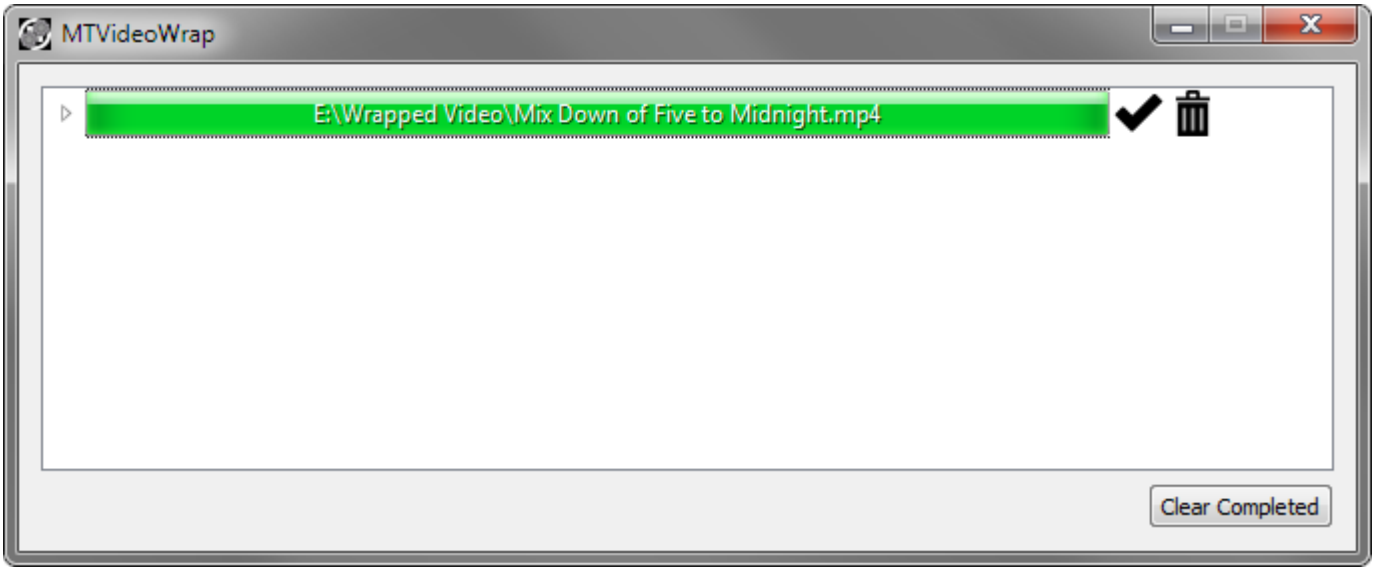


MTVideoWrap window

Click on **Yes** to **Cancel** the Wrap process, or **No** to continue the Wrap.

Successful Wrap

When the Wrap is complete the bar indicates the status of the completed Wrap.

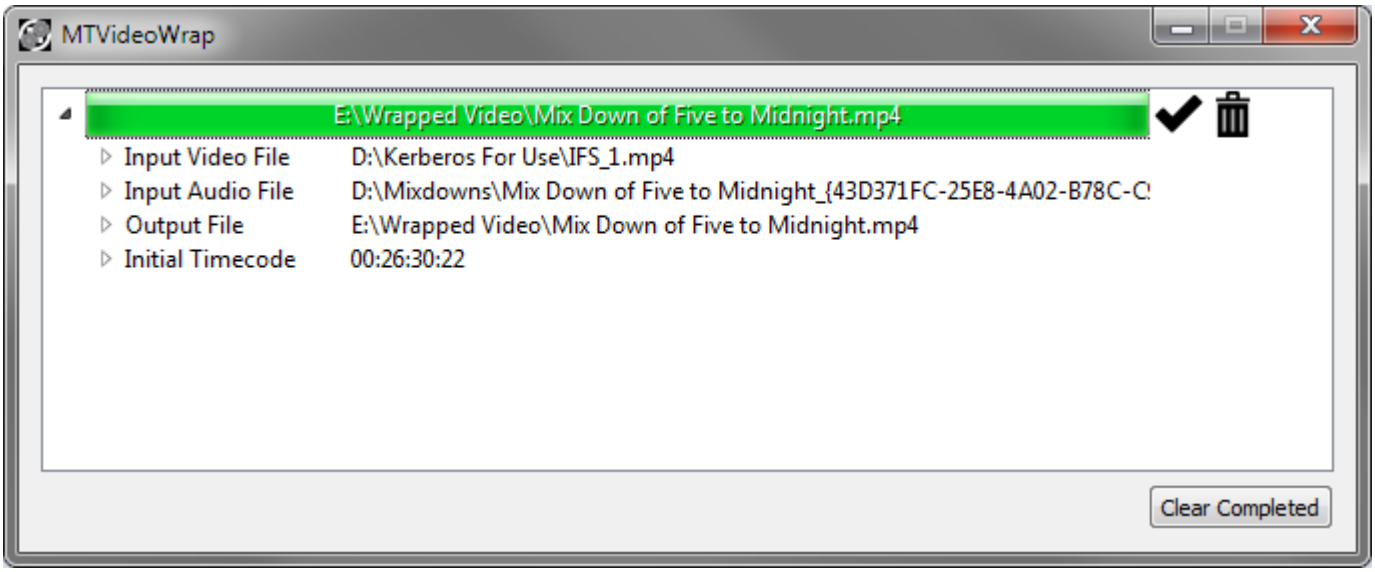


MTVideoWrap window

Green Bar Means that the Wrap was successful.

Red Bar Means that the Wrap failed. (See below)

Clicking on the > arrow shows details about the Wrap:

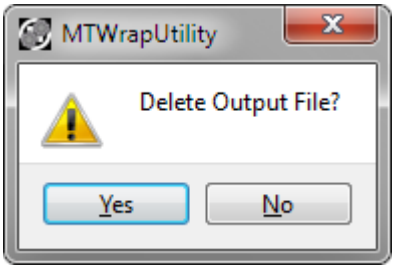


MTVideoWrap window

Clicking on the > arrows in front of each entry will open further details where available.

✔ The Tick button, when clicked, opens the resultant file in a player.

The Bin button, when clicked, Opens a confirmation dialog:



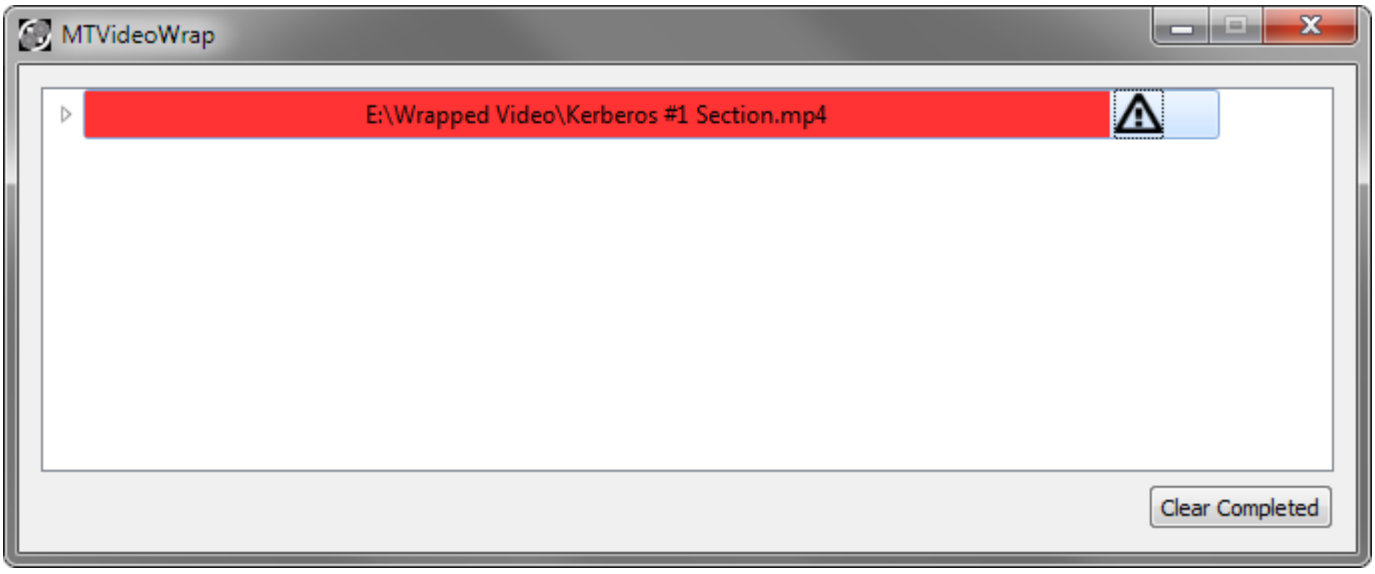
MTWrapUtility dialog

Click on **Yes** to delete the file or **No** to cancel.

Clear Completed Click the button to remove the completed entries from the list. This does **NOT** delete the output file(s).

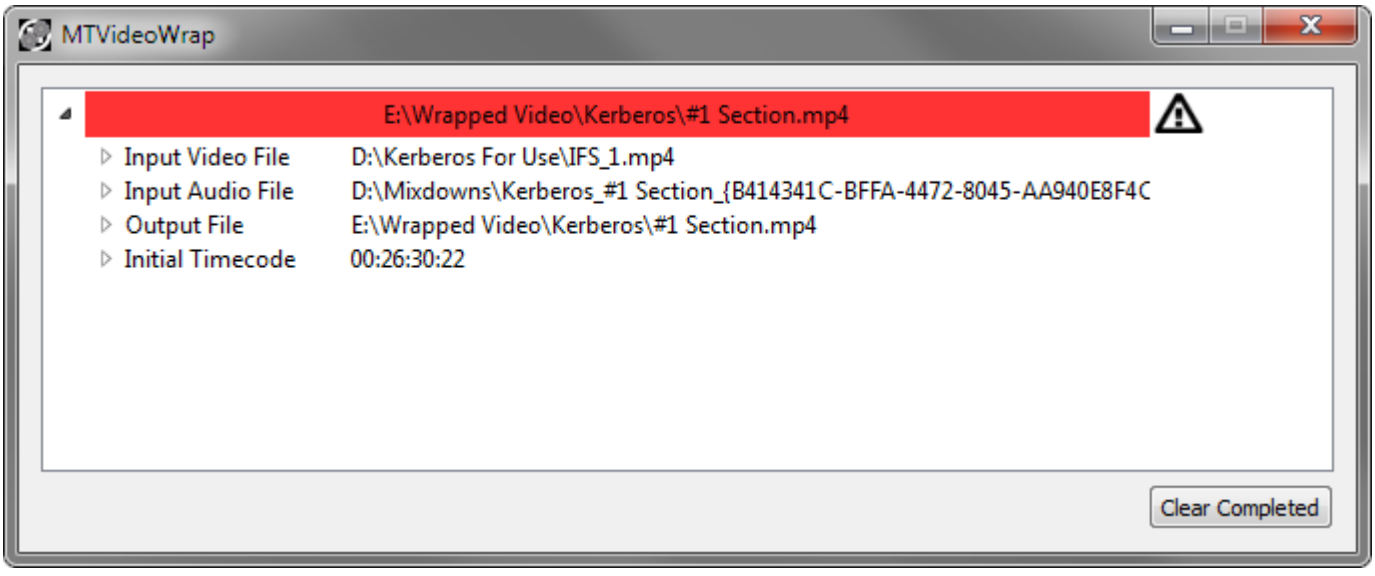
Failed Wrap

If the Wrap fails the bar is red:



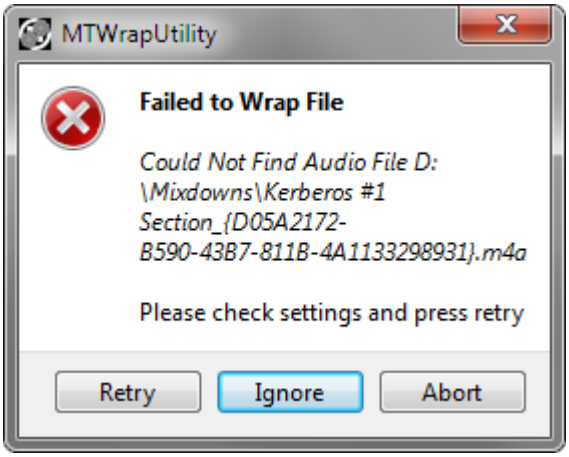
MTVideoWrap window

Clicking on the **>** arrow shows details about the Wrap:



MTVideoWrap window

Clicking on the **!** button opens the **MTWrapUtility** dialog:

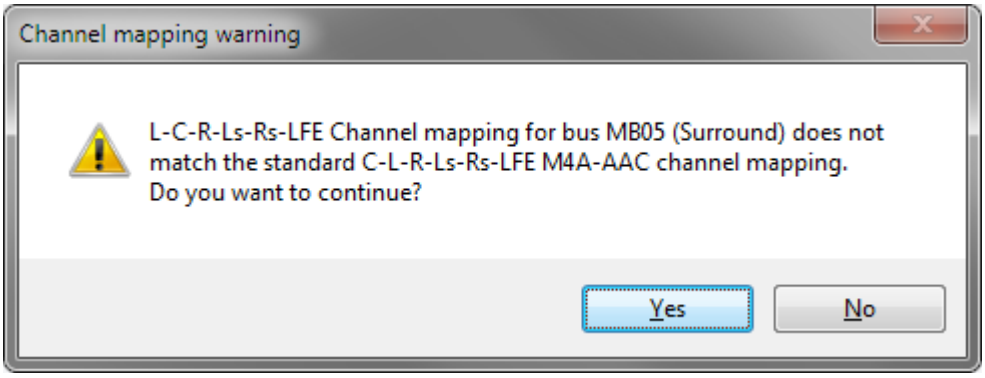


MTWrapUtility dialog

The dialog shows the reason for the failure. Clicking on **Retry** may allow the Wrap to be completed. However, if as in this case the Audio file does not exist, nothing will happen. Clicking **Ignore** leaves the entry in the **MTVideoWrap** list. Clicking **Abort** removes the entry from the list.

Channel Mapping Warning

When the **Mix Down** button is pressed if the Output Bus Channel Format does not match a permissible target Video File Channel Mapping a warning dialog appears:



MTVideoWrap window

Click on **Yes** to continue the Wrap or **No** to abort.

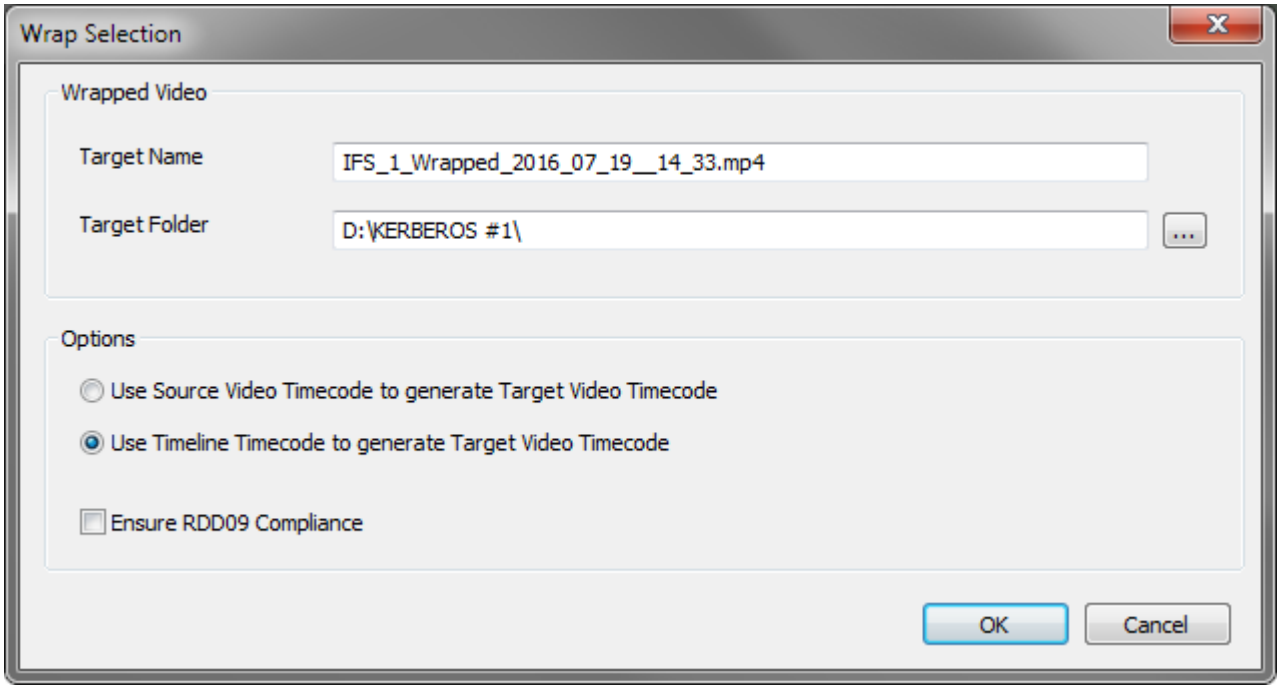
Wrapping Timeline Audio in a Video File using Video > Wrap Selection

This feature enables new audio to be wrapped quickly and easily into a video file directly in the Pyramix Timeline. It is also available from the right-click context menu when the mouse cursor is on a Video clip. **Video > Wrap Selection**.

> **Note:** This method is suitable for direct wrapping from the Timeline without effects processing, automation, mixing etc. If you wish to include any processing such as this, then please use: **Project > Mix Down** with the **Wrap** options described earlier in this chapter instead.

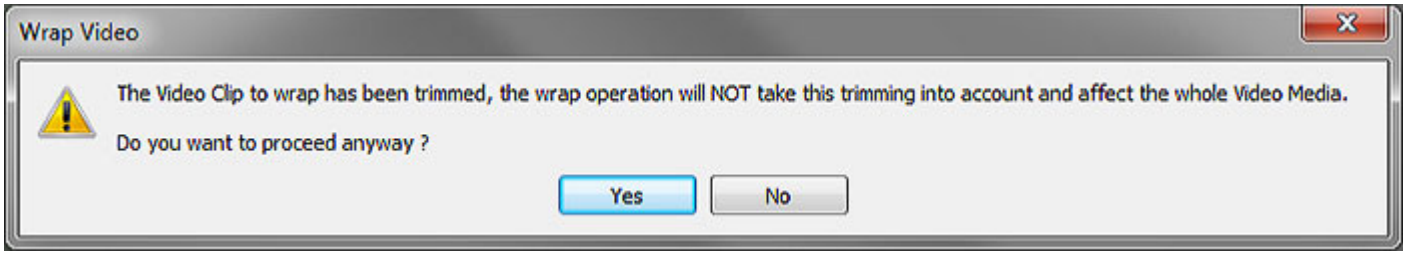
Video > Wrap Selection

1. Select the Video Clip you wish to wrap the Audio into and one or more Audio Clips in the Timeline.
2. Choose **Video > Wrap Selection**. The **Wrap Selection** dialog window opens:



Wrap Selection dialog

> **Note:** If the Video Clip has been trimmed the following warning is displayed:



Wrap Video warning dialog

Wrapped Video

Target Name — Shows the Target Name generated automatically. Click in the field and type if you require an alternative file name.

Target Folder — Defaults to the Project Folder. Click on the **...** button to open a File Browser to choose a different Folder.

Options

Use Source Video Timecode to generate Target Video Timecode As it says when checked. Toggles with:

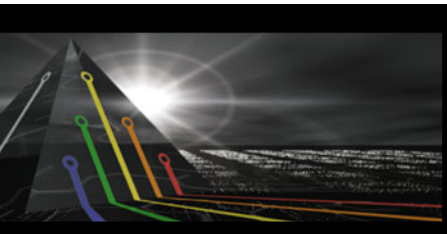
Use Timeline Timecode to generate Target Video Timecode.

Ensure RDD09 Compliance When checked the wrapped file will be checked for RDD09 compliance.

3. Click on **OK** to initiate the Wrap process or **Cancel** to abort.
4. If the Audio clips either reference a single multi-track audio file, or a set of aligned in time audio files, without any editing and/or fades within the Video range, the Audio is wrapped within the Video directly from the audio files. If the Audio clips come from various audio files, are edited within the Video range, have fades, crossfades, etc… then the Audio is automatically rendered first and then wrapped with the Video using **MTVideoWrap**. **Please see: Wrapping the File on page 561**

This **Wrap Selection** option is available from the Right-click context menu.

22 Conforming and Reconforming



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Conforming

Conform

Conforming is the process of making and positioning audio Cues in the Timeline from Audio media files already present in a folder available to the Pyramix PC in conformity with an imported EDL (Edit Decision List.) or video project, for example, AAF, Final Cut Pro or OMF.

Autoconform

Where the Audio media files associated with an EDL are not available to the Pyramix PC, Pyramix can control a tape deck or other device to import the required audio.

Reconform

Pyramix can conform audio to match a several flavours of EDL and also reconform an existing project to match a CMX change EDL.

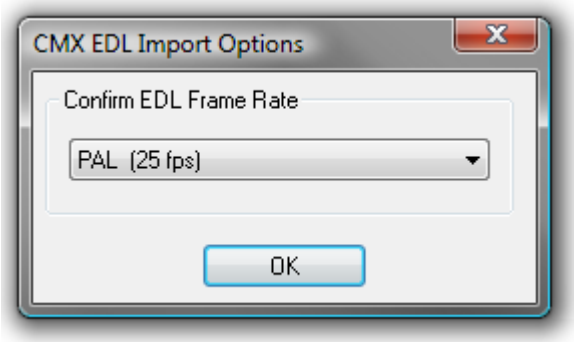
Pyramix can also reconform an audio project by importing two versions of a video project, original and new.

CMX EDLs

CMX is one of the earliest types of EDL. The name comes from the company that developed it in the early 1970s **C**BS **M**emorex e**X**perimental. Over the intervening decades other companies have extended the original format to encompass, for example, more audio tracks. Although there are now several far more sophisticated alternatives, CMX remains the *lingua franca* of EDLs.

Importing a CMX EDL

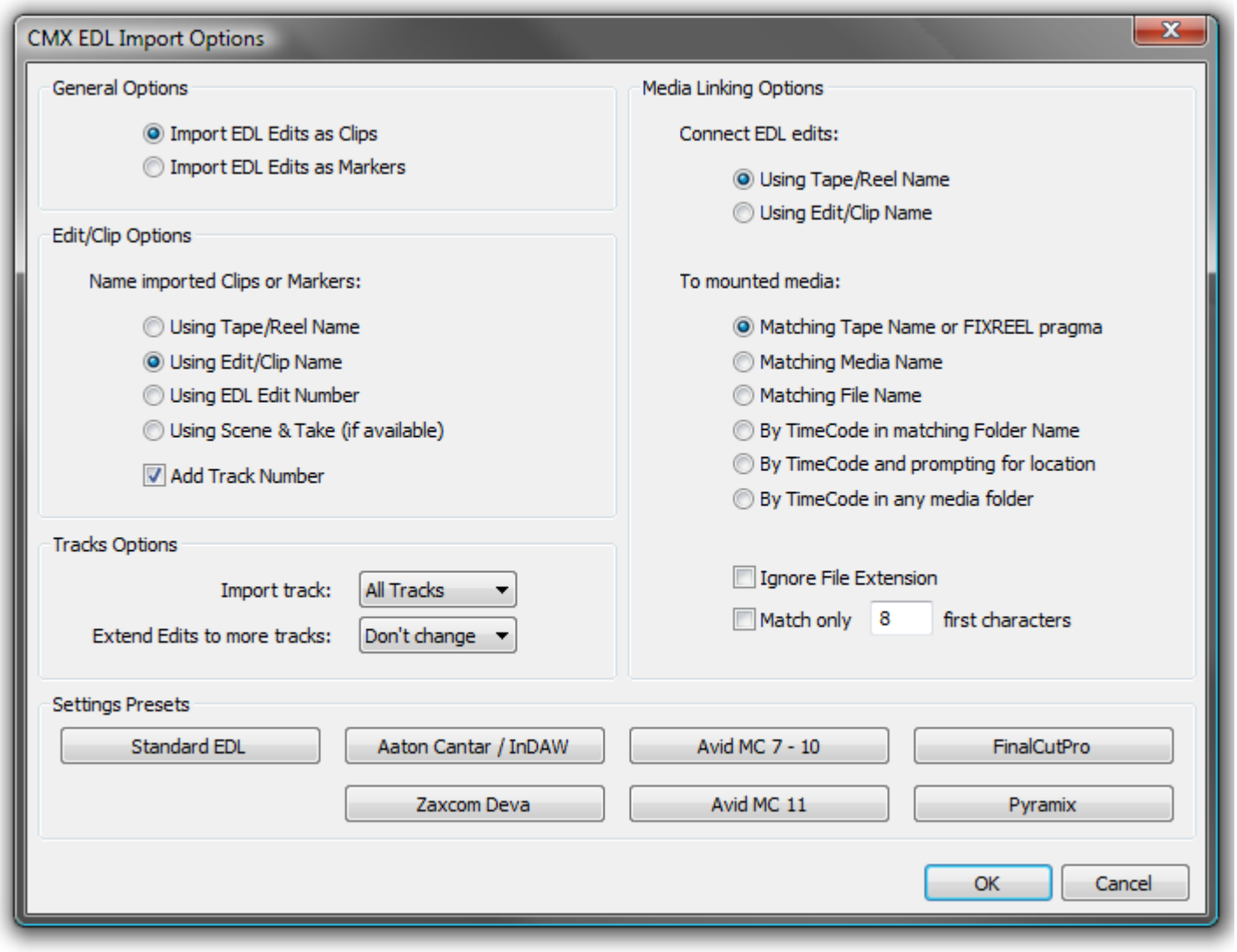
Select **Project > Import** choose **CMX EDL** in the **InterChange-Import** dialog then click on the **Import** button. Select the desired edl file in the **Open** file-browser window. The CMX EDL Import Options dialog opens:



CMX EDL Import Options dialog

If the EDL Frame Rate is correct, simply click the **OK** button. Otherwise, select the correct rate from the drop down list and click the **OK** button.

The CMX EDL Import Options main dialog opens:



CMX EDL Import Options dialog

Common CMX Variants

The **Settings Presets** buttons at the bottom of the box set the options for a variety of common CMX variants. If the edl you wish to import matches one of these, simply click the appropriate Preset button. The settings are reflected in the rest of the dialog. Click the **OK** button to begin the Import.

If the EDL is not one of the common variants or the intention is to perform a partial or re-conform, make the appropriate choices in the dialog before clicking on the **OK** button to begin the Import.

CMX EDL import Options

General Options

Import EDL Edits as Clips

Import EDL Edits as Markers

Edit/Clip Options Choose to name created Clips from either:

Using Tape/Reel Name

Using Edit/Clip Name

Using EDL Edit Number

Using Scene & Take (if available) of linked media file. (E.g. BWF PMF etc. files with information in the **Scene & Take** fields)

Tracks Options

Import Track Drop-down list offering a choice of importing **All Tracks** (default) or any individual track. Importing only the edits made on the first audio track. This can be useful with projects edited on a MediaComposer where the TimeCode of all audio tracks but the first one has been lost from files imported from a Deva recorder.

Extend Edits to more tracks Offers the choice of extending the edits to more tracks than the original list by selecting the desired number of target tracks from the drop down list.

Media Linking Options

Connect EDL edits: Choose the way to relink the audio media to edits by either:

Using Tape/Reel Name

Using Edit/Clip Name

from the EDL...

To Mounted Media: … and match it to either

Matching Tape Name or FIXREEL pragma (the media original)

Matching Media Name (the media original)

Matching File Name (the media original)

By TimeCode in matching Folder name (the media Timestamp in a folder whose name matches the Reel or Edit name)

By TimeCode and prompting for location (the media Timestamp in a given folder)

By TimeCode in any media folder (the media Timestamp in any mounted media folder)

Ignore File Extension When checked any file extension is ignored while comparing file names

Match only X first characters When checked only the given number of first characters in the file-name are compared. (useful for matching files coming from Aaton Cantar or InDAW recorders)

CMX EDL Format

CMX Edls are a set of statement lines which typically look like this:

```
TITLE: An example of CMX EDL

001 TEST AA    C           00:00:24:24 00:00:25:00 00:59:58:00 00:59:58:01

AUD 3 4

* Sine on all tracks

002 DAT12 AA   C           20:18:18:07 20:18:21:13 01:02:40:02 01:02:43:08

* Introduction

003 TAPE1 AA   C           01:15:07:07 01:15:11:13 01:02:43:13 01:02:47:19

004 TAPE1 NONE C           01:15:14:02 01:15:16:04 01:02:47:19 01:02:49:21

AUD 3 4

005 TAPE1 NONE C 1000Hz    01:15:14:02 01:15:16:04 01:02:47:19 01:02:49:21

006 TAPE1 NONE C “A sound” 01:15:14:02 01:15:16:04 01:02:47:19 01:02:49:21
```

Pyramix will extract all the information regarding audio from these EDLs and then paste a set of Clips into the current composition's Timeline.

There are many CMX formats which differ in details, Pyramix should be tolerant enough to accept most of them as long as edit lines fields are well separated by spaces or TABs.

Any errors encountered while parsing an EDL file are stored and reported after loading as much of the file as possible. Any non valid lines, missing media or media sampling rate mismatches are reported.

Media Reconnection

The major problem encountered while importing an EDL is reconnecting to referenced media. Pyramix needs all referenced media to be present (mounted) when the import occurs. After the import, the newly created composition **MUST** be saved as a Pyramix project to keep the connection between Clips and media.

Media are searched while importing the EDL by Media Source name (or Reel name following the EDL terminology), and Source In and Source Out TimeCodes. So, to be reconnected, a Clip needs to find in any media folder a media file with a Media Source name matching field #2 in the EDL, in the preceding example TEST, DAT12 or TAPE1, and where the original TimeCode and length match the Source In and Source Out field.

Source Names - FIXREEL

It often happens that the media is generated with a different Source (Tape, Reel) name than the EDL referencing it. For this purpose we have added a special keyword to the CMX language which allows Pyramix to replace one Reel name with another while parsing the EDL.

FIXREEL: DAT12 DAT012 This preamble added at beginning of the file will replace all occurrences of the reel name DAT12 by DAT012. The preamble can be preceded by the comment asterisk (and a space or TAB) so the EDL remains compatible for import by other systems:

```
* FIXREEL: DAT12 DAT012
```

It is also possible to add the keyword MEDIANAME, FILENAME or FOLDERNAME at the end of this line to tell Pyramix, instead of the Source (Tape, Reel) name, to search for the Media name or the Media Filename:

```
* FIXREEL: DAT12 Ambiance43b MEDIANAME
```

```
* FIXREEL: DAT12 d:\pmxmedia\dat12\ambiance43b.wav FILENAME
```

or to search by TimeCode in the given mounted media folder (this is kind of a conformation to existing digitized material):

```
* FIXREEL: DAT12 d:\pmxmedia\dat12 FOLDERNAME
```

The keyword OFFSET followed by a TimeCode can be added at the end of the line to allow media without origin (original TimeCode, source TimeCode, time stamp) to be referenced, for example WAVE files.

```
* FIXREEL: DAT12 Ambiance43b MEDIANAME OFFSET 08:45:32:00
```

```
* FIXREEL: DAT12 d:\pmxmedia\ambiance43b.wav FILENAME OFFSET 08:45:32:00
```

This covers most cases of media reconnection and should help solve special cases of EDLs exported by exotic systems.

Media Reconnection Failure

An imported Clip whose media has not been retrieved or whose media is not at the same sampling rate as the current project will be associated a 'fake' media.

It **WILL NOT** be possible to retrieve its media file after the import, but it will be possible to associate a new media file in the standard way (Control key pressed while dragging a media file from a media folder).

CMX Autoconform

When a CMX EDL is not accompanied by audio files on disk an **Autoconform** can be performed. A **Digitizing Session** is used to grab the audio referenced by the CMX EDL from an external machine (This may be operated under 9-pin control or simple time-code chase). The CMX EDL can then be imported into an **Editing Project** (as described above) to link to the digitized media.

Please see also: Digitizing Sessions on page 165

Reconform

Introduction

Reconform enables Tracks in an existing project to be conformed to take account of changes in the picture edit. **Reconform > Relink to new Media** can be used to link to new Media files when new Cues without previously associated Media files are produced by the Reconform.

In Pyramix there are three routes to Reconforming. The first two make use of a so-called **Change EDL**. This EDL is a standard CMX EDL generated from a "State 1 EDL" and a "State 2 EDL".

In the first case, **CMX Reconform**, the change EDL is generated by a third party application. This may be the video editing software, or a specialized EDL manager.

Please see: Reconform Using Pyramix with an Existing Change EDL below.

Where there is no existing Change EDL there are two possibilities:

For users with Pyramix and access to both the original and modified video EDLs Pyramix can load the original picture (**Version1** if not already part of the project) plus the new picture (**Version2**) and generate the necessary changes from these.

Please see: Reconforming Using Pyramix for Picture Change Detection on page 576

For users running VCube as well as Pyramix, VCube can be used to generate a Change EDL from the original (**Version1**) and revised (**Version2**) EDLs.

Please see Reconforming Using VCube for Picture Change Detection on page 584

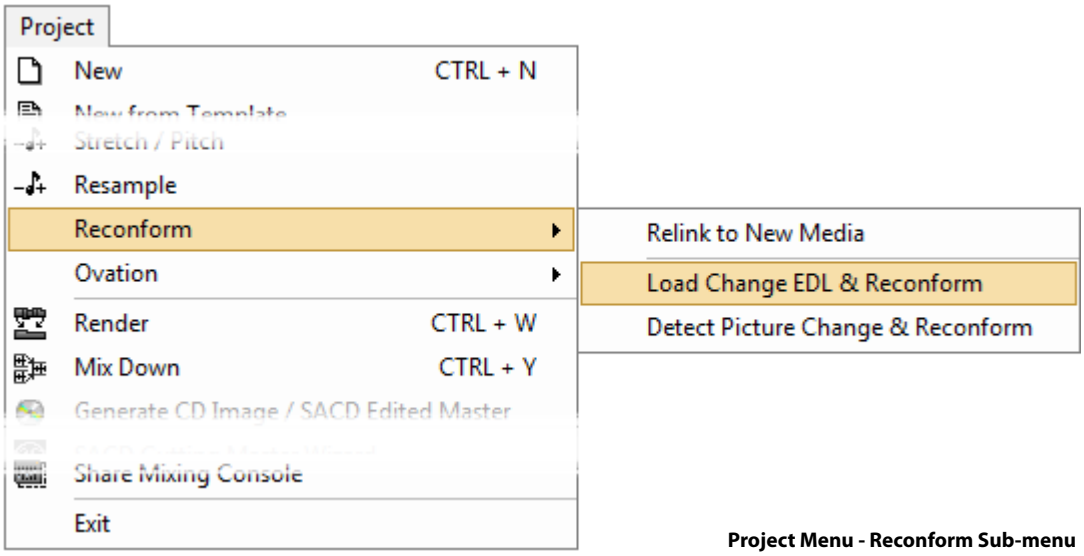
Reconforming with an Existing Change EDL

The **Reconform** function allows picture edit changes to be applied to a project by loading a so-called "**Change EDL**". The **Reconform** function rearranges Cues within the current project where necessary to reflect the change from State 1 to State 2 by creating edits on all Tracks of the project using the original material as sources and placing them to the new destination TimeCodes.

Step 1

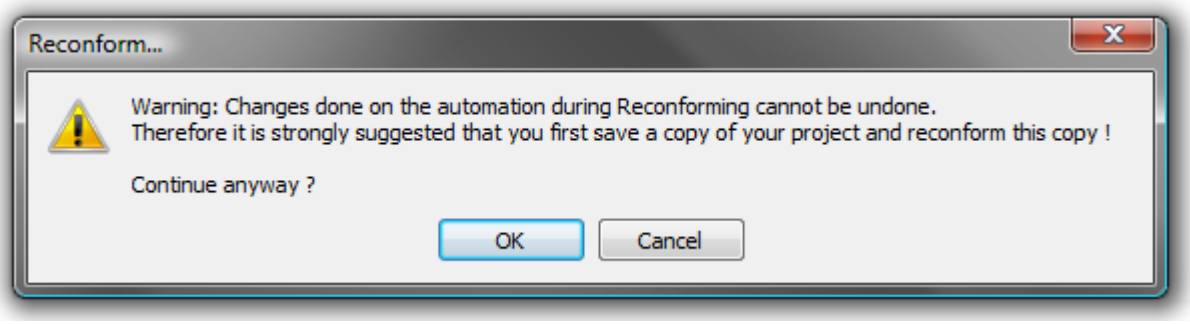
With the Pyramix project you wish to conform open in Pyramix select:

Project > Reconform > Load Change EDL & Reconform



Project Menu - Reconform Sub-menu

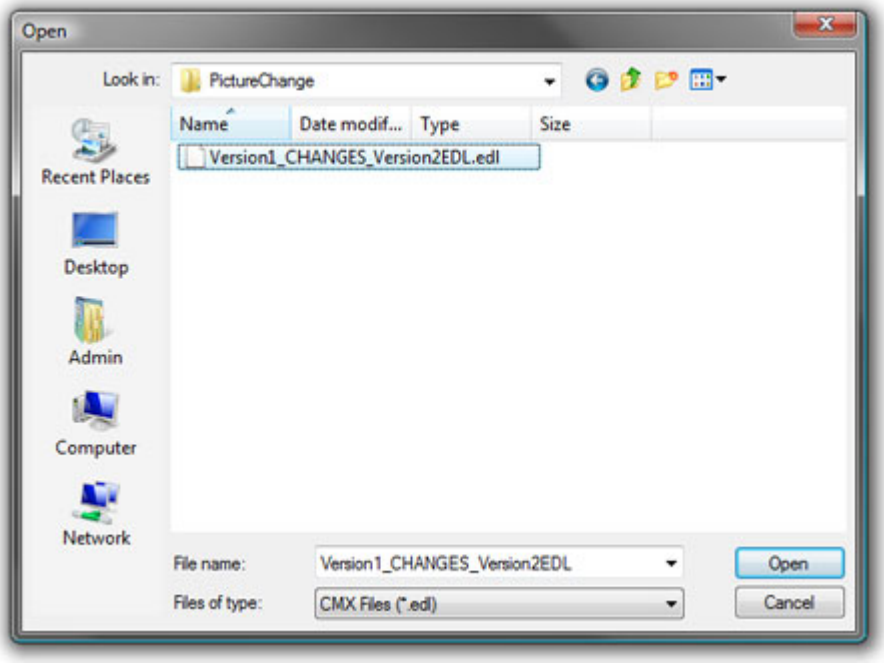
Opens the **Reconform...** dialog:



Reconform... dialog

This **Warning:** gives good advice. It is good operational practice to retain the old Project (**Version 1** in this case) and to reconform a copy, saving this copy with a suitable filename matching the new Video composition version. Assuming you have already done this, click on **OK** to close the dialog.

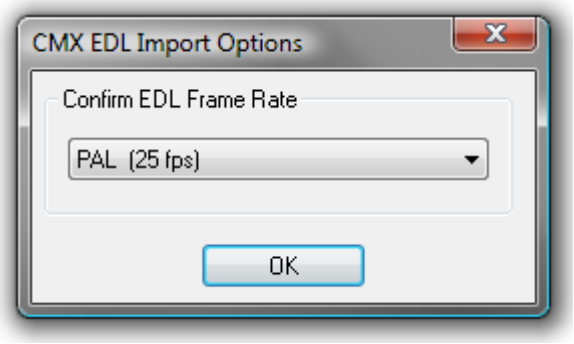
A file **Open** Browser Window opens:



Pyramix Open Browser Window

Now, if necessary, navigate to the folder containing the **Change EDL**. In this case the required file is **Version1_CHANGES_Version2.EDL**. Select this and Click on **Open**.

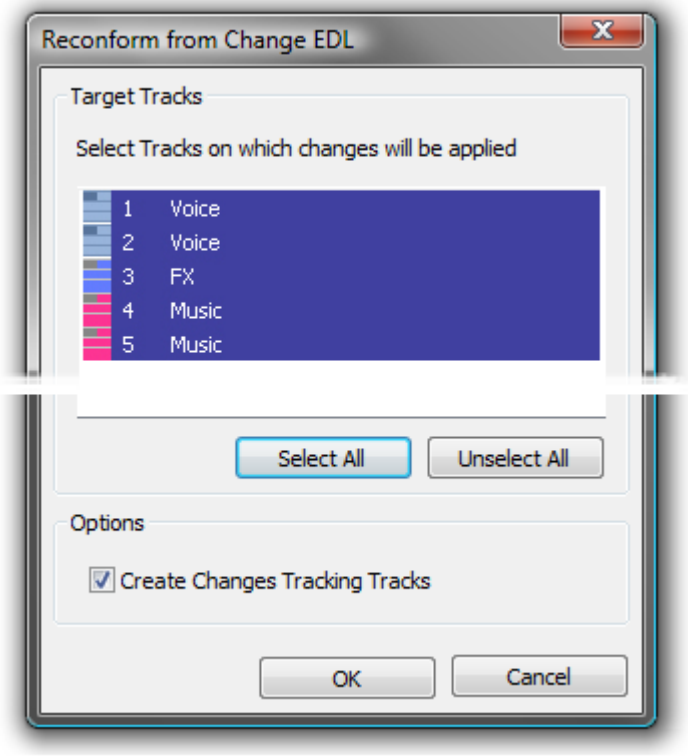
The **CMX EDL Import Options**, **Confirm EDL Frame Rate** dialog opens:



Pyramix CMX EDL Import Options dialog

Check that the EDL Frame Rate matches the Pyramix Project Frame Rate. If the Frame Rate is incorrect, choose the correct one from the drop-down list. Click on **OK**.

The **Reconform from Change EDL** dialog opens:



Reconform from Change EDL dialog

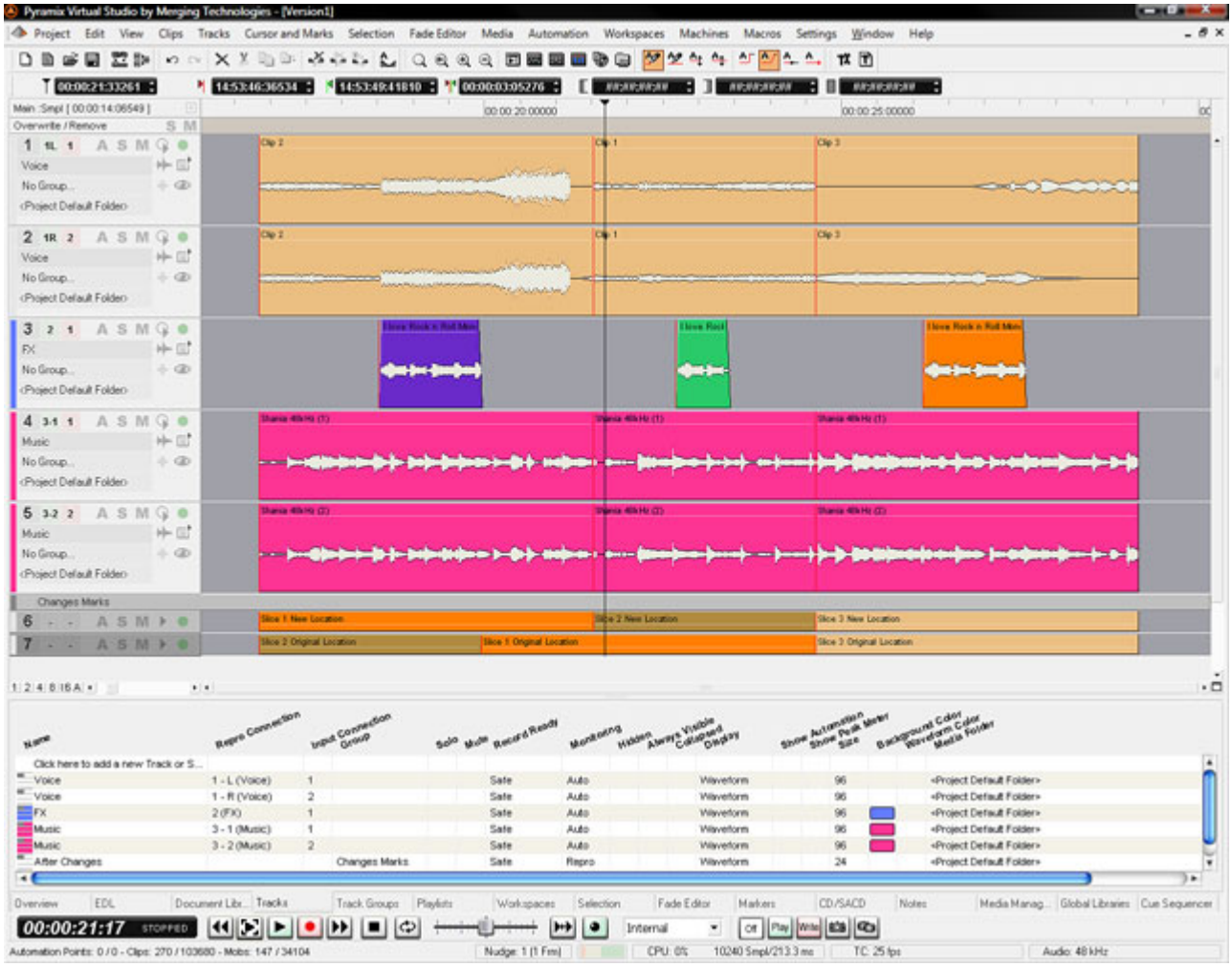
Select all Tracks that will have to be reconformed (generally all Tracks in the project).

Tick the **Create Changes Tracking Tracks** box if these are required.

Click on **OK** to perform the Reconform.

Step 2

Pyramix automatically conforms **Version1** to **Version2** on all Tracks:



Pyramix Version 1 Project Reconformed with Change Tracks

As can be seen in the above screenshot two new 'fake' Tracks have been created and added at the bottom of the Timeline to display the **Change Tracking**. These show in colour which sections of the **Version1** Timeline have been moved, sliced, diced and or squeezed etc. to become **Version2**

Step 3

Selecting **Edit > Undo (Ctrl+Z)** once will remove the **Change Tracking** Tracks.

Note: Once the **Change Tracking** Tracks have been removed they are **NOT** retrievable.

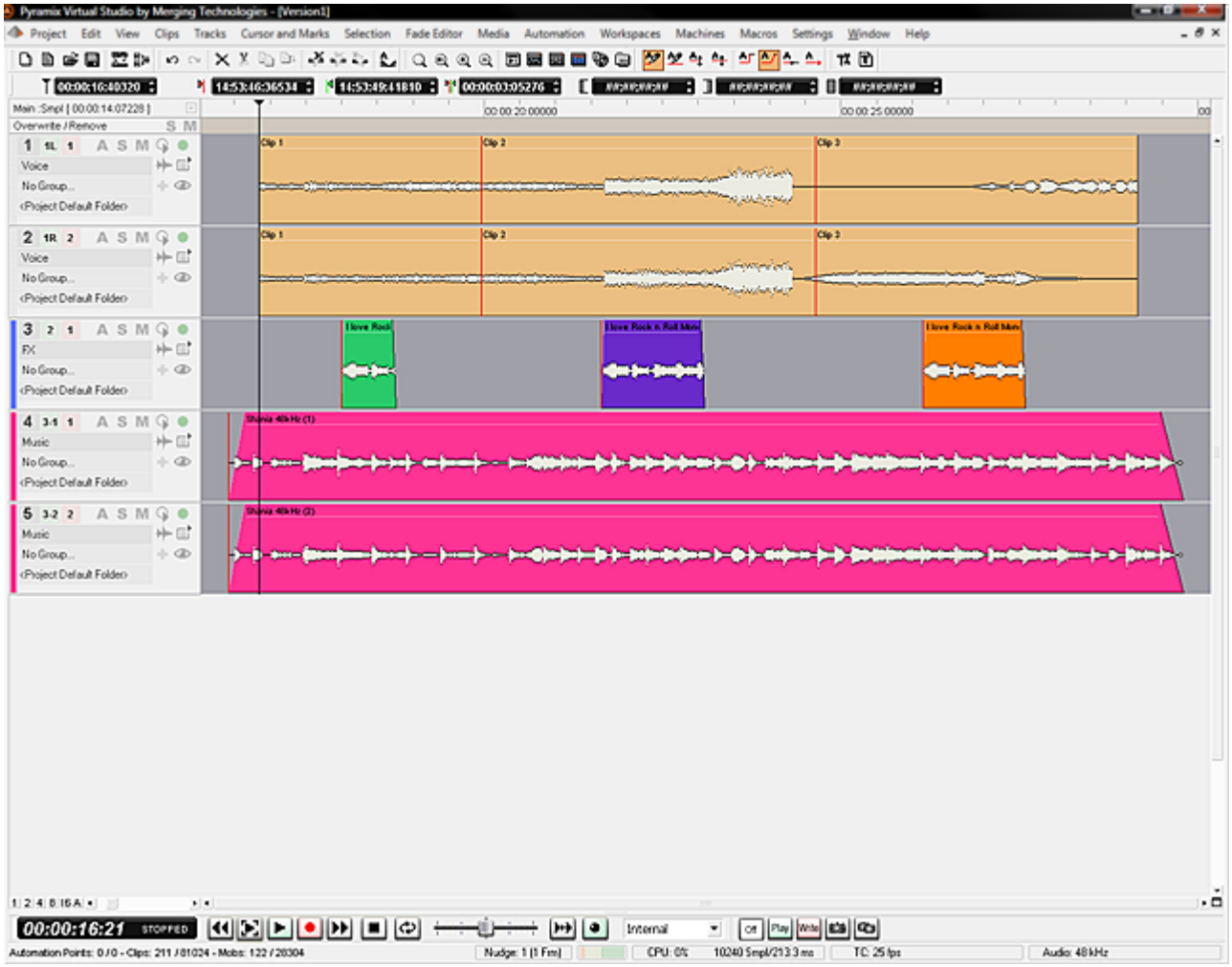
Reconforming Using Pyramix for Picture Change Detection

You can use Pyramix to perform a Reconform from two Video Projects.

Note: The precise details of subsequent Dialog boxes may vary from those shown below depending on the specific format selected:

Step 1

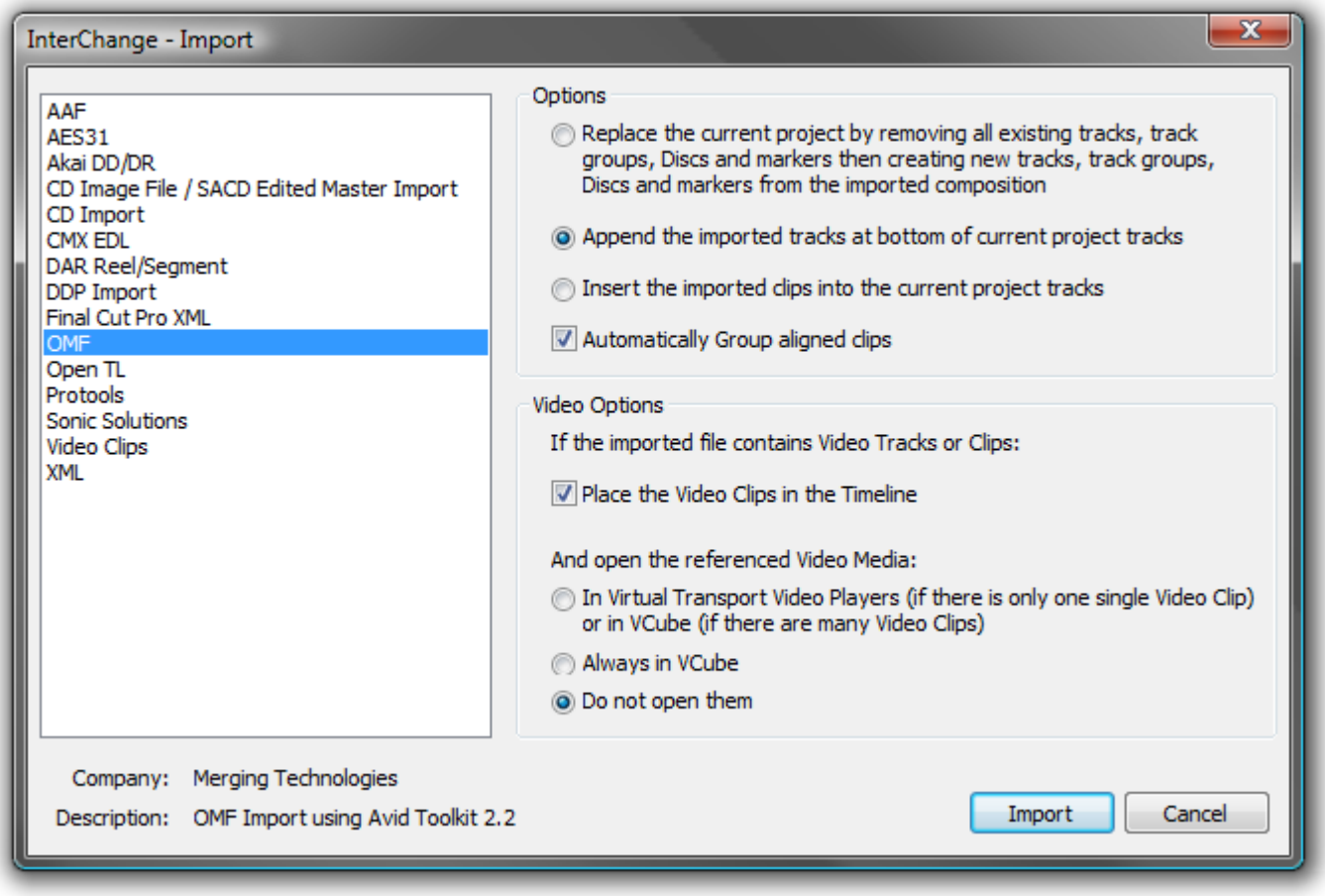
Open the Pyramix Project you wish to reconform.



Pyramix Project Version1 requiring Reconform

Step 2

Select **Project > Import** and choose the appropriate format. (in this case **OMF**)



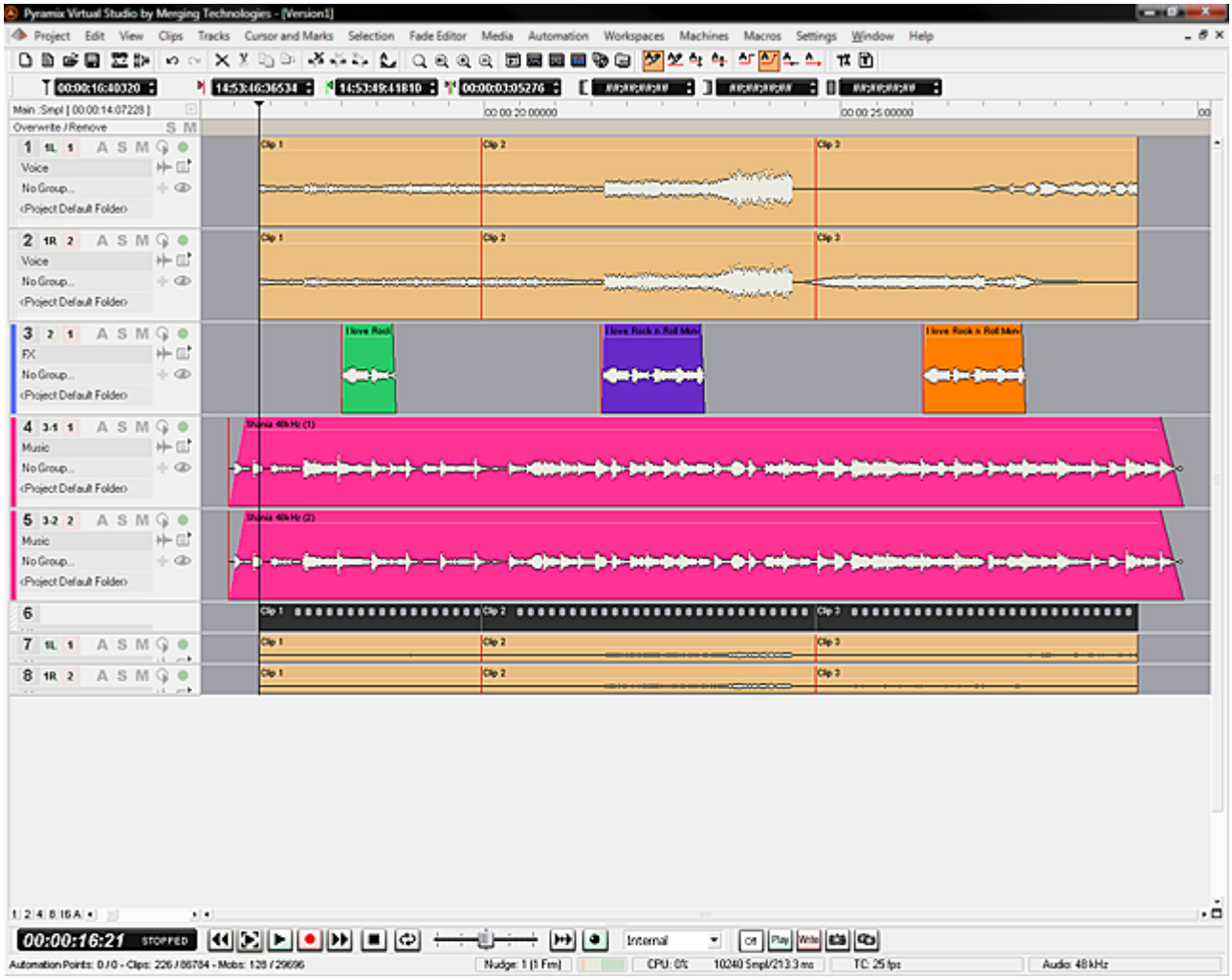
Interchange Import dialog

Select the following options:

- Append the imported Tracks at bottom of current project Tracks
- Place the Video Clips in the Timeline
- Do not open them

Click on the **Import** button to open the **Open** File Browser Window:

If necessary, navigate to the folder containing the **Version1** Video Project file. Select the file and click on **Open**.

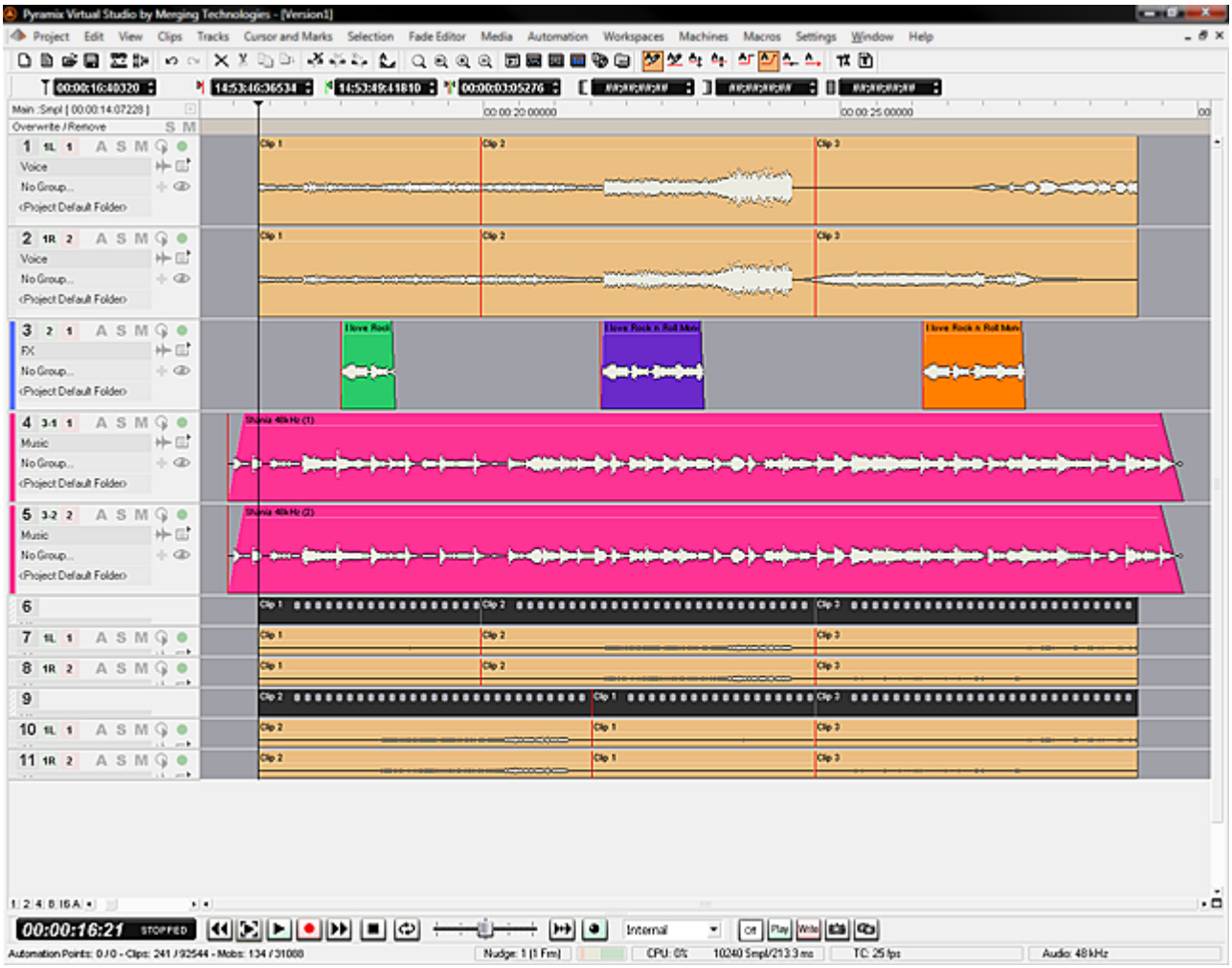


Pyramix Project Version1 with Version1 Video imported

Notice that the **Version1** Video and Audio Tracks have been added at the bottom of the Timeline.

Step 3

Repeat **Step2** with the same options, substituting **Version2** when selecting the Video Project file.

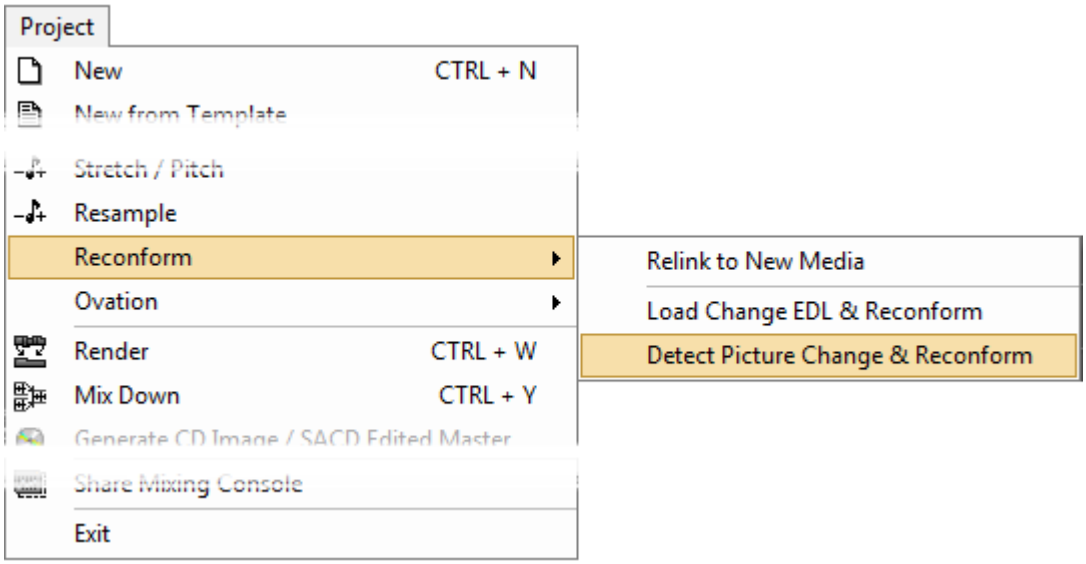


Pyramix Project Version1 with Version1and Version2 Video imported

Notice that the **Version2** Video and Audio Tracks have been added below the **Version1** Video and Audio Tracks at the bottom of the Timeline.

Step 4

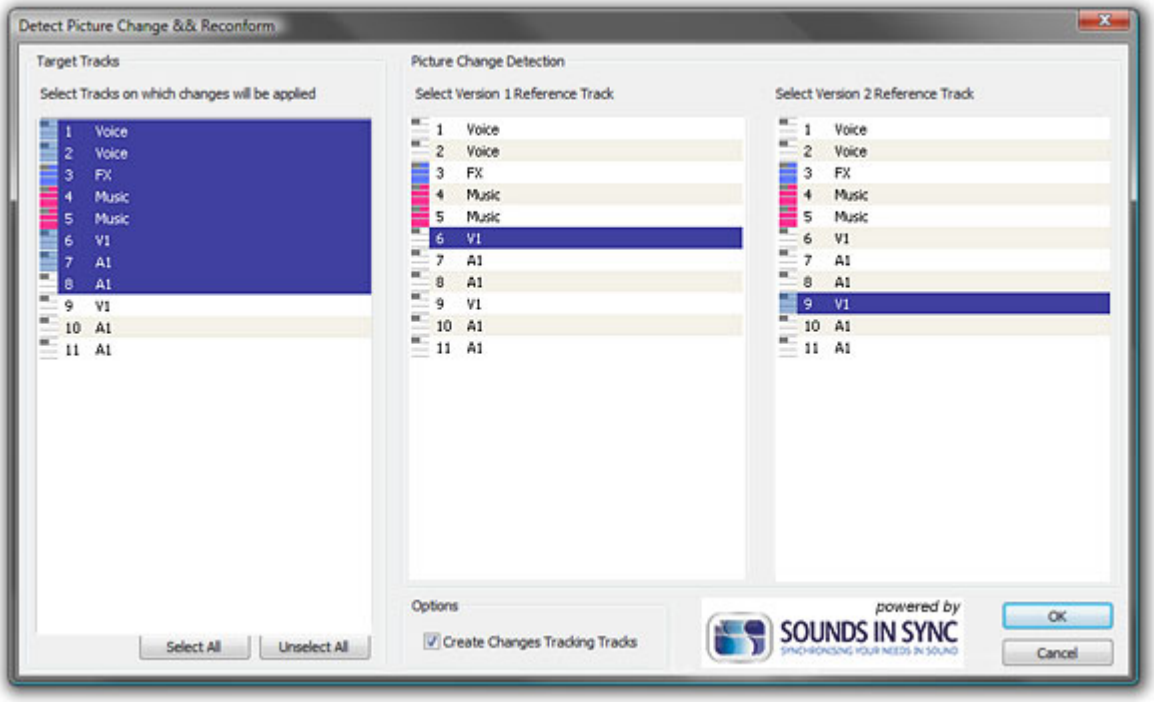
Select, **Project > Reconform > Detect Picture Changes & Reconform (Ctrl+R)**:



Pyramix Project > Detect Picture Change & Reconform

The **Detect Picture Change & Reconform** dialog opens.

Step 5



Detect Picture Change & Reconform dialog

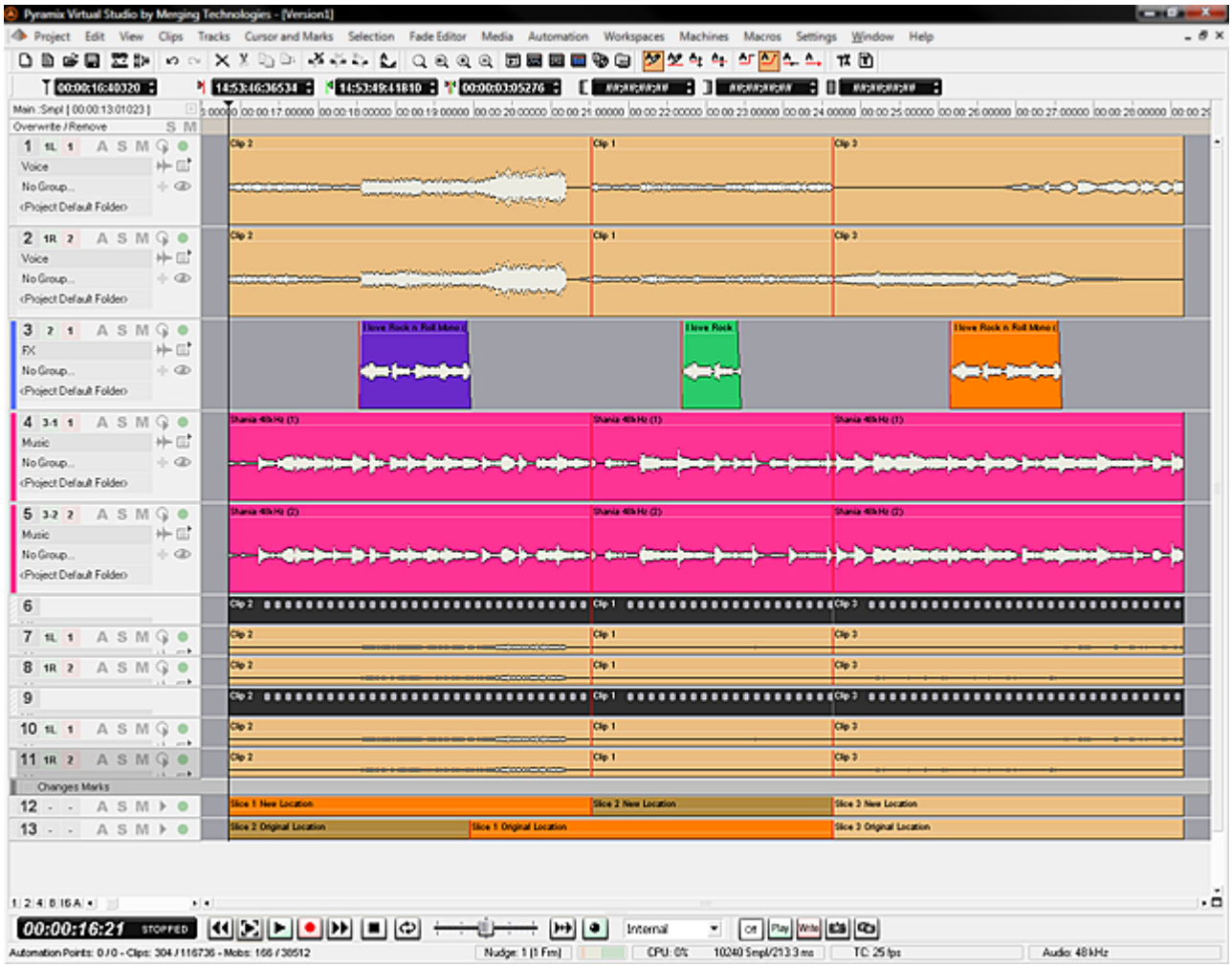
Select all Tracks that will have to be reconformed (generally all Tracks in the project except those belonging to the Version2 Video project, but including Version1 Video and Audio Tracks). Select the Track that will be the **Version1** Reference Track for the picture change detection (generally the **V1** Track of the **Version1** Video Project), then Select the Track that will be the **Version2** Reference Track for the picture change detection (generally the **V1** Track of the **Version2** Video Project).

Tick the **Create Changes Tracking Tracks** box if these are required.

When all the selections have been made click on **OK** to perform the Reconform:

Step 6

The Pyramix Project has now been Reconformed:

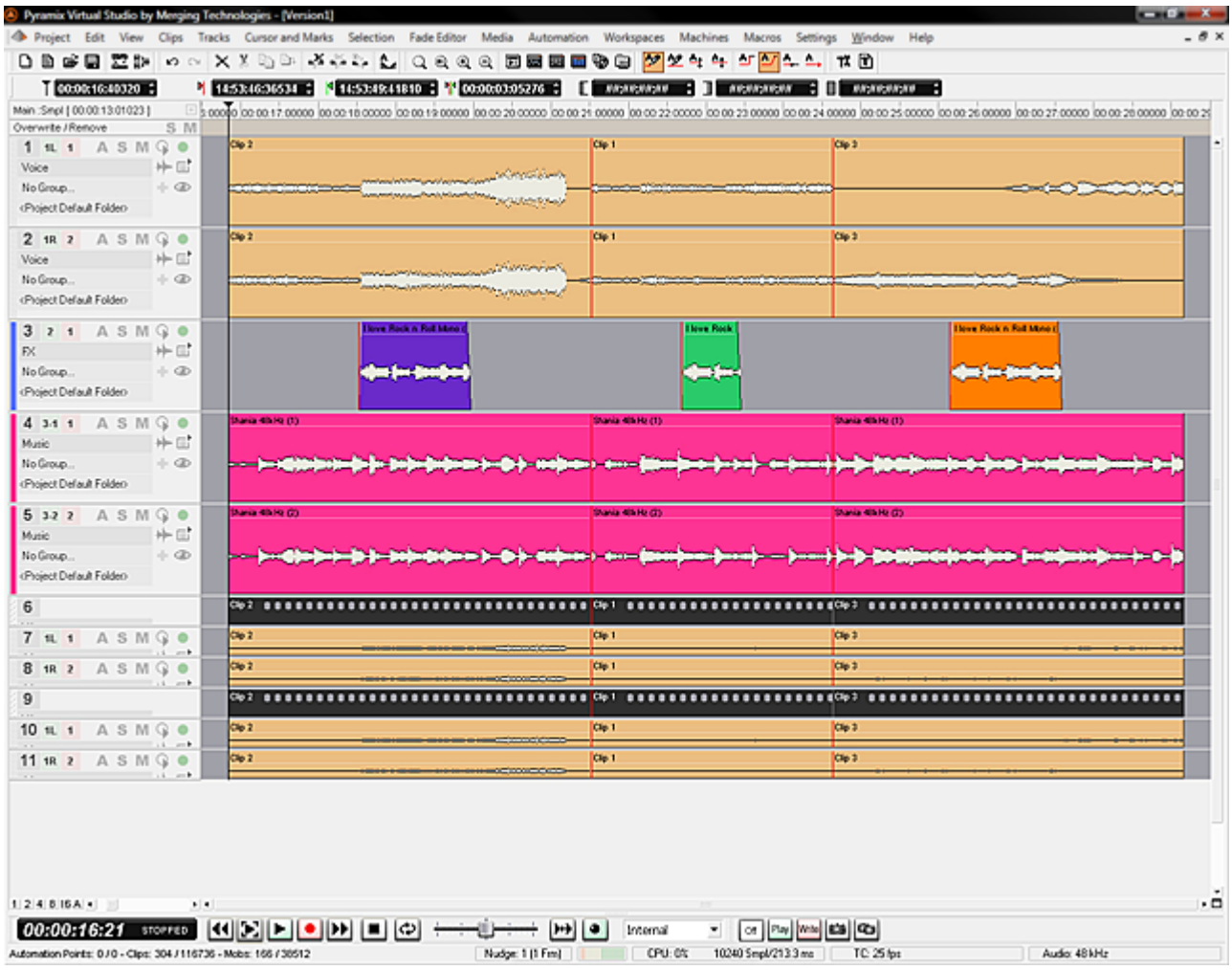


Pyramix Project Version1 and imported Video Project Version1 Conformed to match Version2 Video Project with Change Tracks

Verifications can be made with the **Change Tracking** Tracks, as well as comparing the **Version1** Video Tracks that should now match the **Version2** Video Tracks.

Step 7

Selecting **Edit > Undo (Ctrl+Z)** once will remove the **Change Tracking** Tracks.

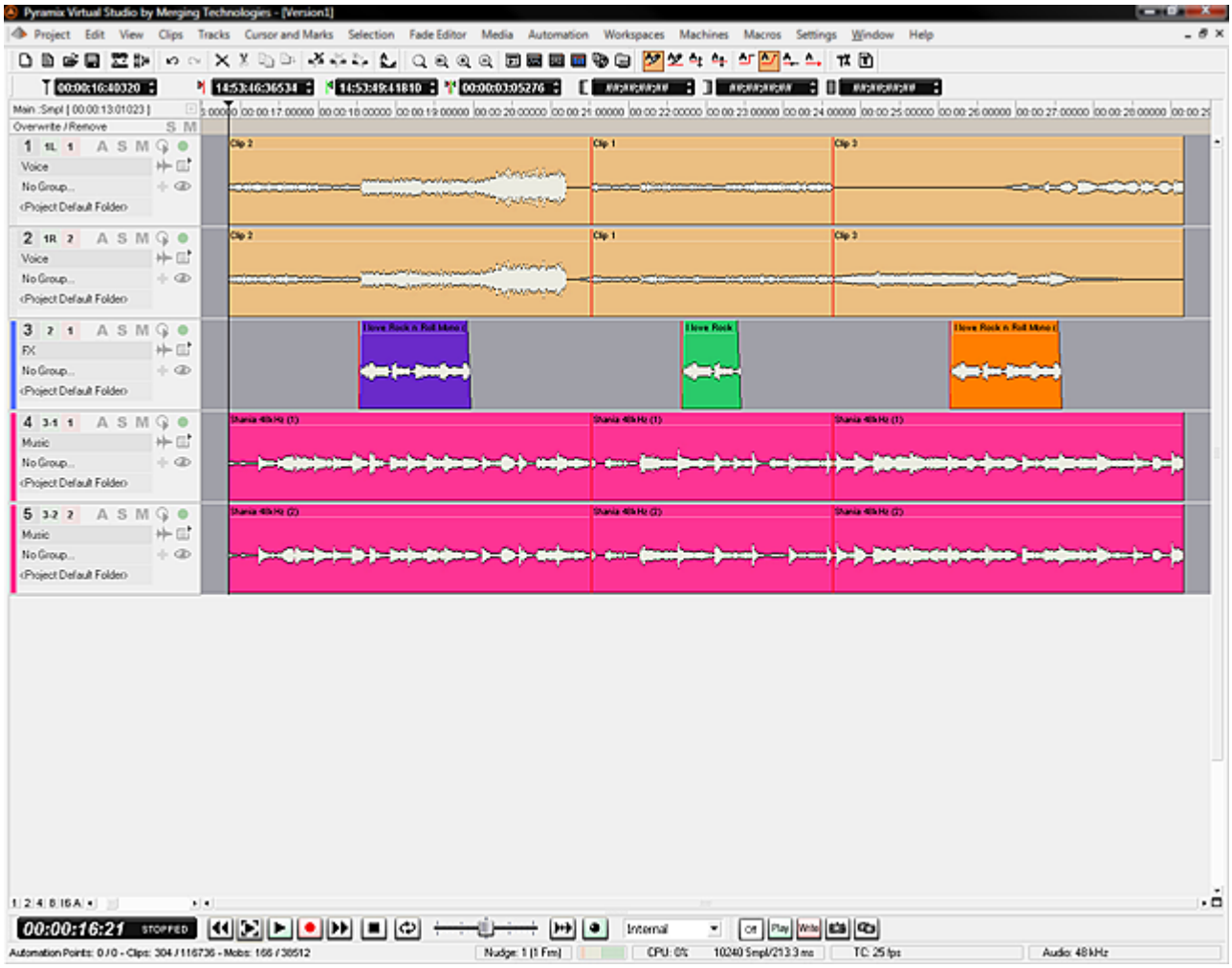


Pyramix Project Version1 Reconformed to Version2 with Change Tracking Tracks removed

Note: Once the **Change Tracking** Tracks have been removed they are **NOT** retrievable.

Step 8

The Video Reference Tracks (with their associated Audio Tracks) can be removed by right-clicking on the first Video Track Header and selecting **Delete To Last Track**. The original Pyramix Project is now reconformed and ready for you to continue working on **Version2**.



Pyramix Project Version1 Reconformed to Version2 with Imported Tracks removed.

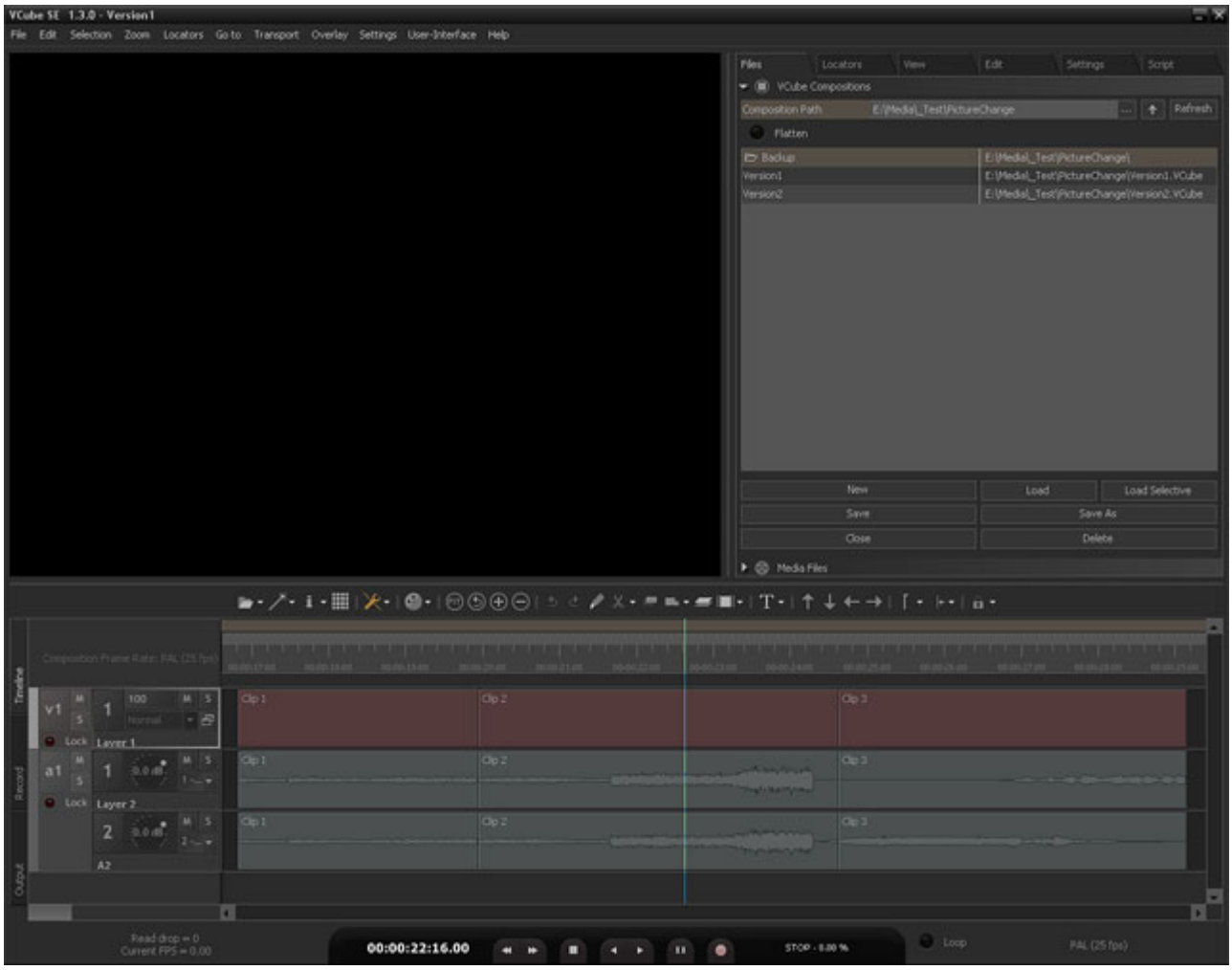
Note: Where the **Version2** project contains new material, it may well be appropriate to move the relevant audio from the **Version2** Audio Tracks up to the main Pyramix Project Tracks before deleting. A future Pyramix version may contain an option to carry out this step automatically.

Reconforming Using VCube for Picture Change Detection

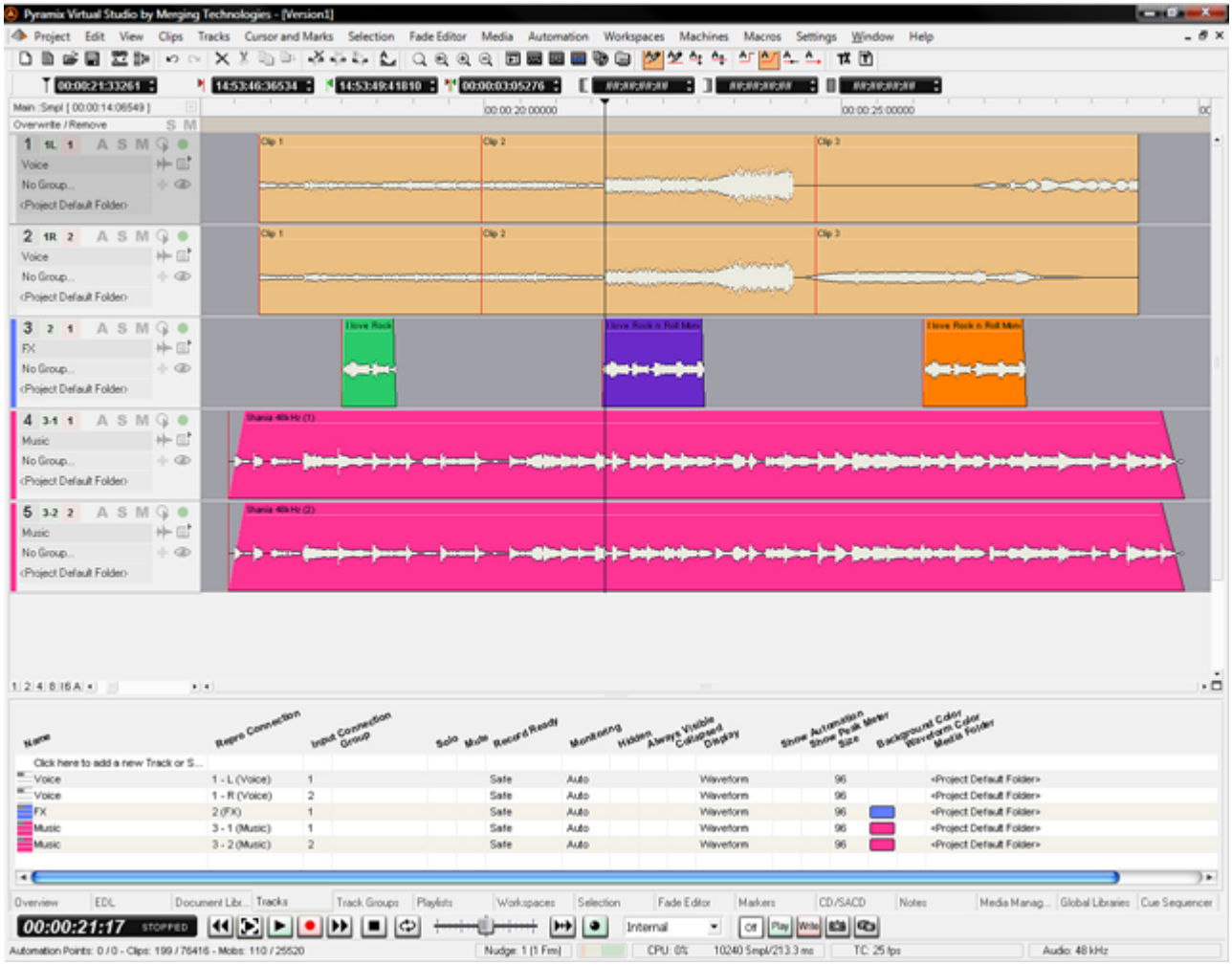
For users with VCube a Pyramix Project can be reconformed to match a new version of a Video Project quickly and simply.

Step 1

Open the original version of the video in VCube and the Project with the matching audio in Pyramix:



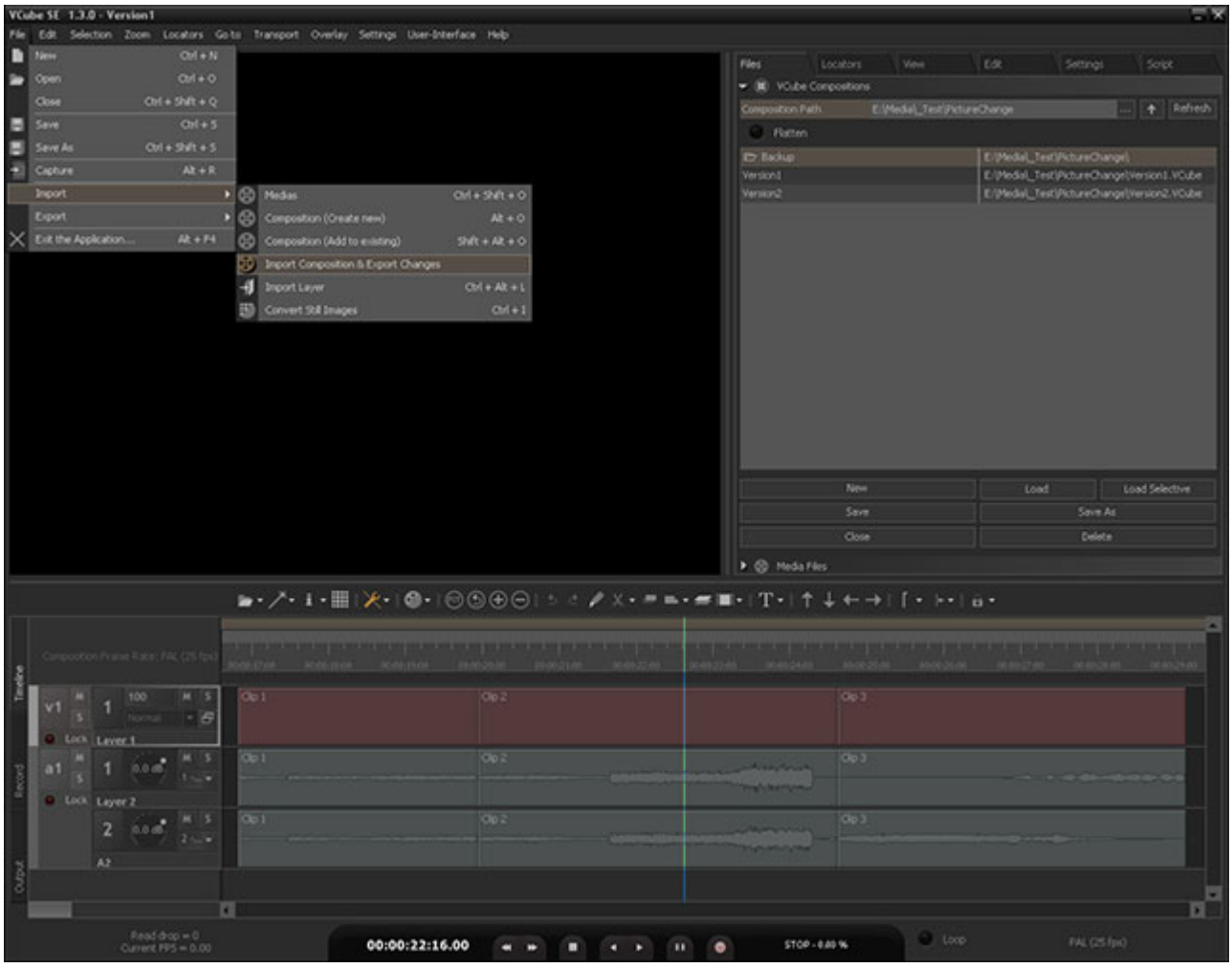
VCube Original Version 1 Composition



Pyramix Version 1 Project with Audio matching Original VCube Version 1 Composition

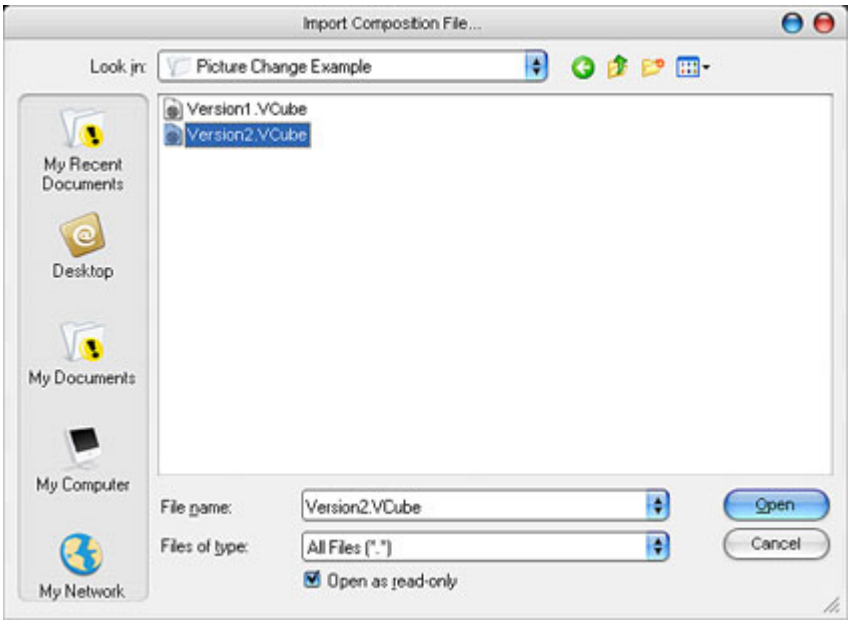
Step 2

In VCube select: **File > Import > Import Composition and Export Changes**:



VCube New Version 2 Composition

This opens a Browser Window.

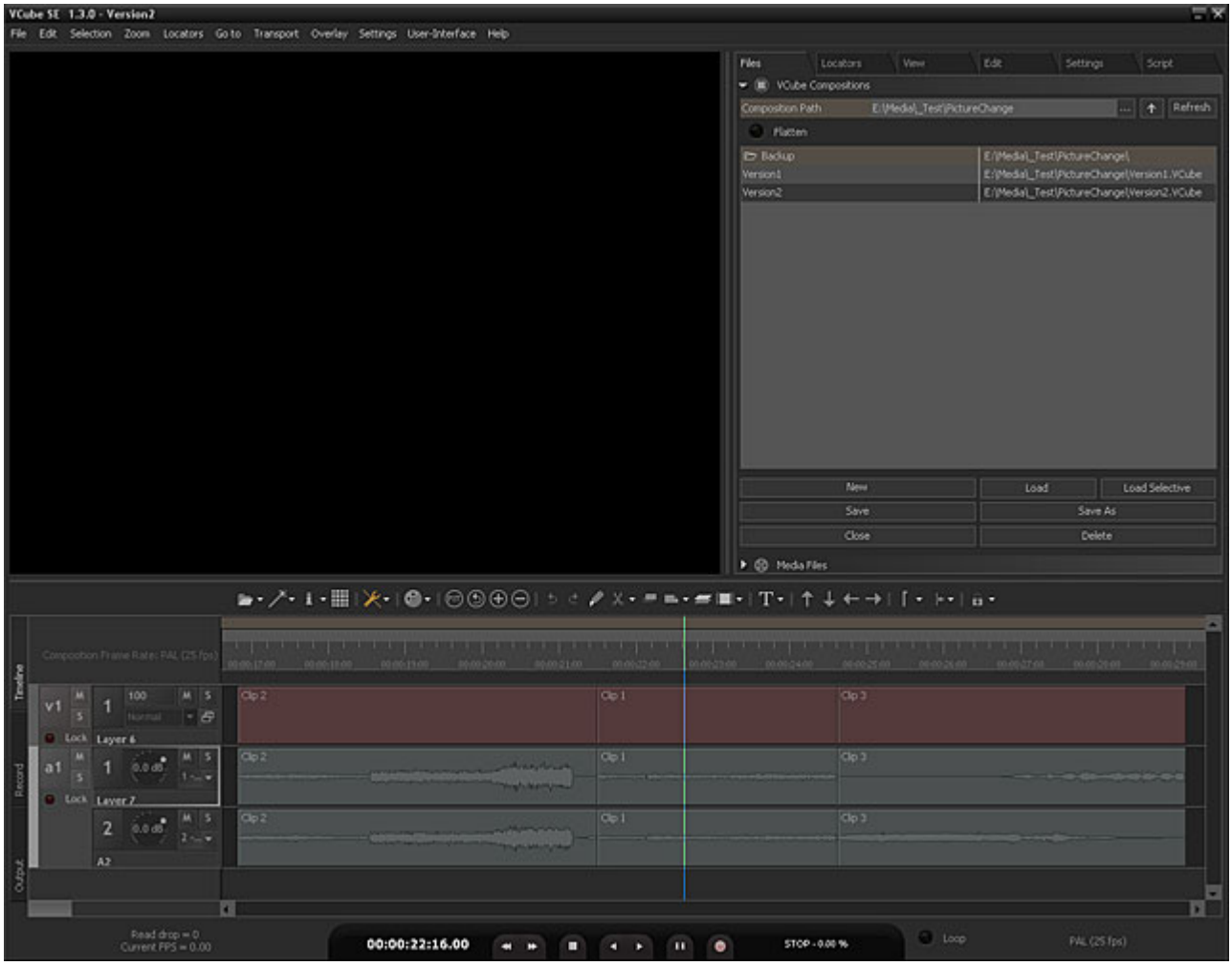


VCube Import Composition File Browser Window

If necessary, navigate to the folder containing the changed version of the Video Composition. Select this and Click on **Open**.

Step 3

The new video file, **Version 2** is now displayed in the VCube Timeline:

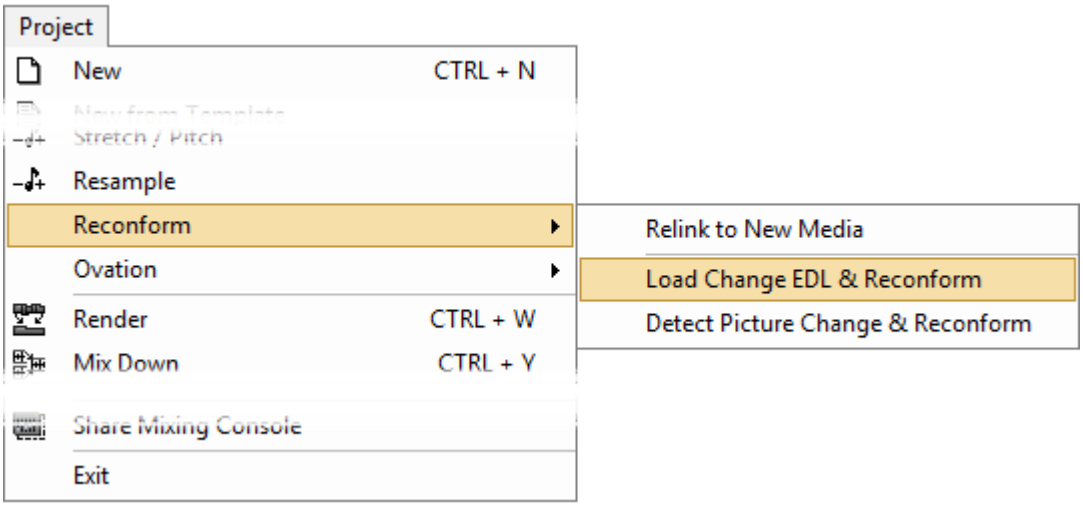


VCube New Version 2 Composition

The changes between the two versions will have been exported to a **Change EDL** file which will be found in the same source folder.

Step 4

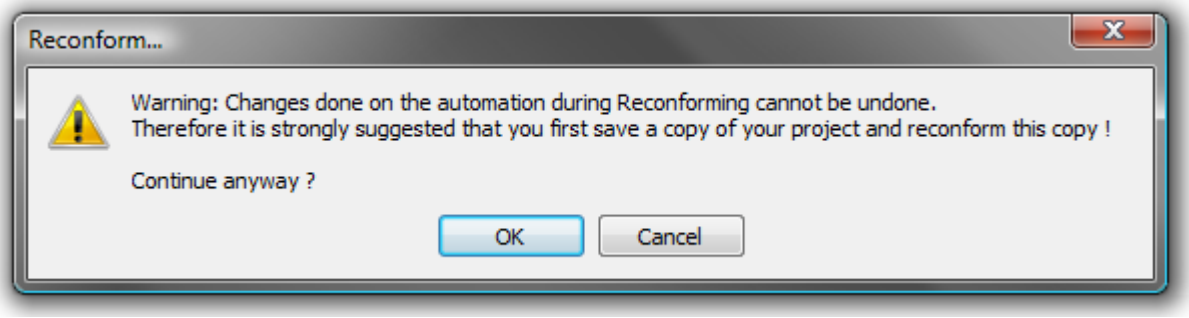
Return to Pyramix, which is still displaying the original Version 1 audio Project:



Pyramix Menu - Project > Reconform > Load Change EDL & Reconform

Select **Project > Reconform > Load Change EDL**.

The **Reconform...** dialog opens:

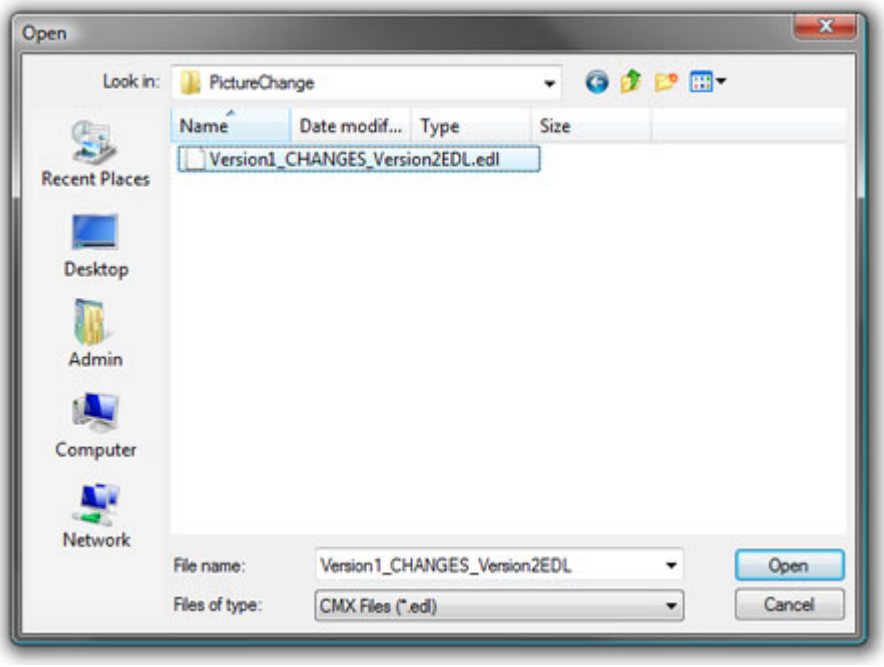


Pyramix Reconform dialog

This **Warning:** gives good advice. It is good operational practice to retain the old Project (**Version 1** in this case) and to reconform a copy, saving this copy with a suitable filename matching the new Video composition version.

Assuming you have already done this, click on **OK** to close the dialog.

A file **Open** Browser Window opens:



Pyramix Open Browser Window

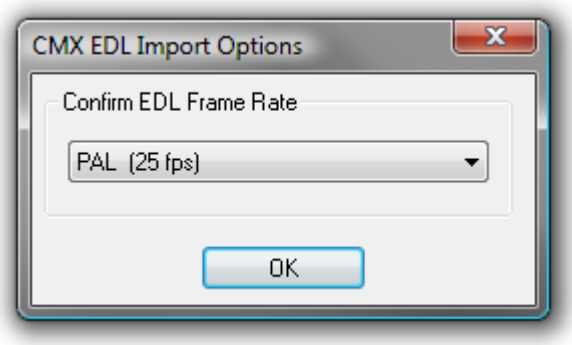
Now, if necessary, navigate to the folder containing the **Change EDL**.

Note: This automatically generated file will be named in the form:

Original Composition name_CHANGES_New Composition name.EDL.

In this case the required file is **Version1_CHANGES_Version2.EDL**. Select this and Click on **Open**.

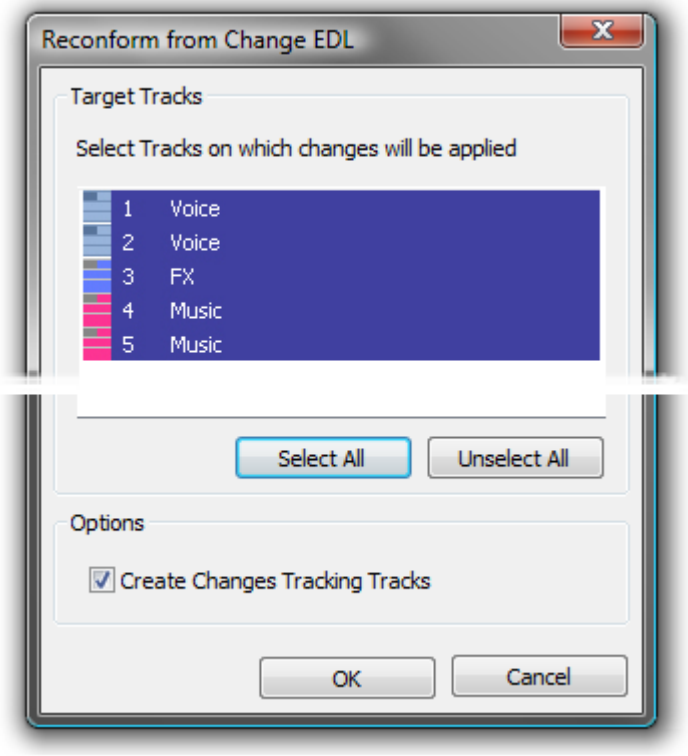
The **CMX EDL Import Options**, **Confirm EDL Frame Rate** dialog opens:



Pyramix CMX EDL Import Options dialog

Check that the EDL Frame Rate matches the Pyramix Project Frame Rate. If the Frame Rate is incorrect, choose the correct one from the drop-down list. Click on **OK** to confirm

The **Reconform Project** dialog opens proposing the creation of two new **Change Tracking Tracks**:



Pyramix Reconform from Change EDL dialog

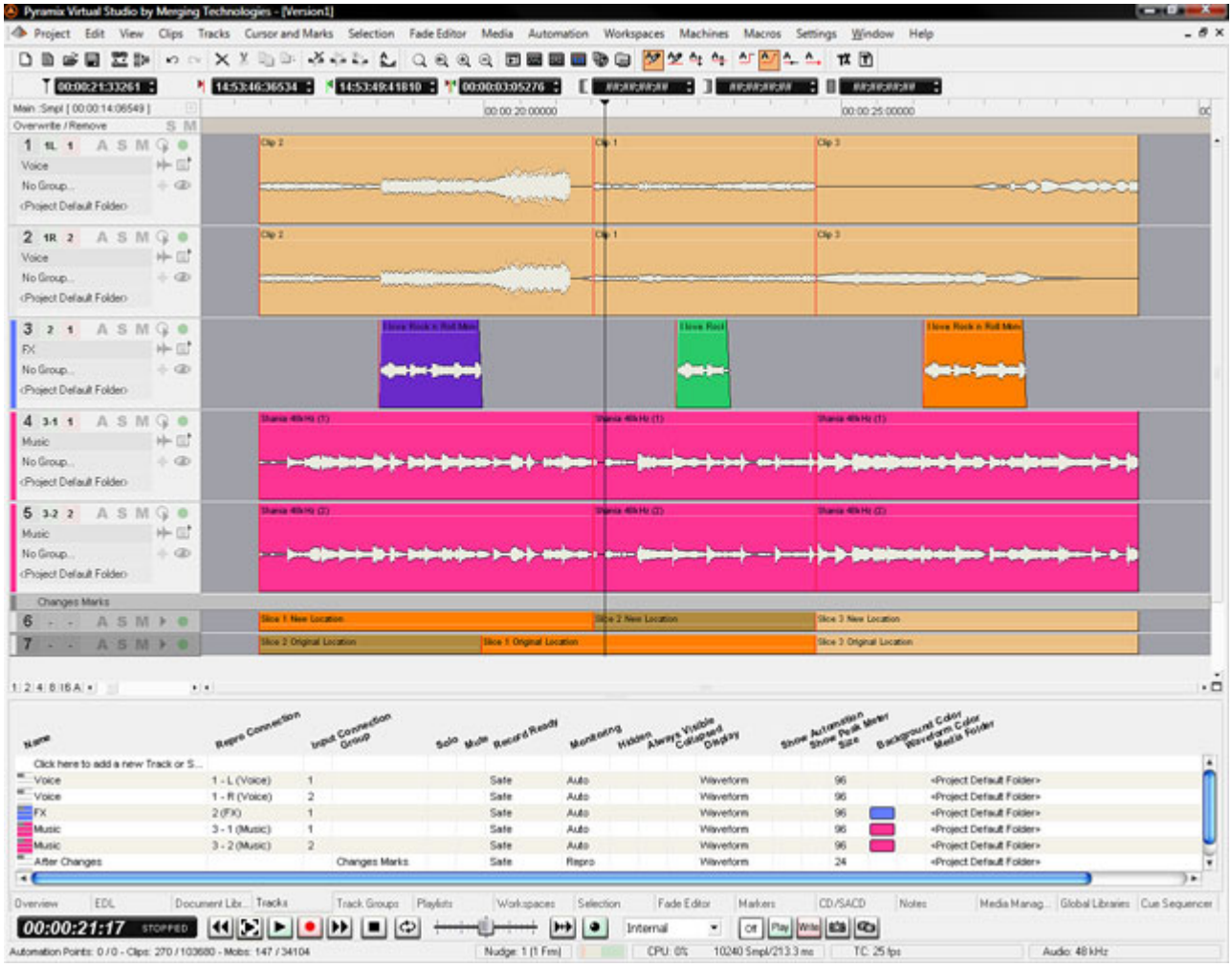
Select all Tracks that will have to be reconformed (generally all Tracks in the project).

Tick the **Create Changes Tracking Tracks** box if these are required.

Click on **OK** to perform the Reconform.

Step 5

Pyramix automatically conforms **Version1** to **Version2** on all Tracks:



Pyramix Version 1 Project Reconformed with Change Tracks

As can be seen in the above screenshot two new 'fake' Tracks have been created and added at the bottom of the Timeline to display the **Change Tracking**. These show in colour which sections of the **Version1** Timeline have been moved, sliced, diced and or squeezed etc. to become **Version2**

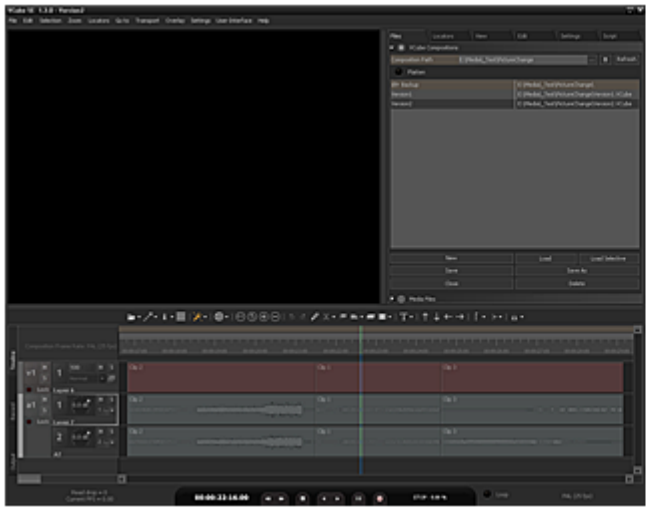
Step 6

Selecting **Edit > Undo (Ctrl+Z)** once will remove the **Change Tracking** Tracks.

Note: Once the **Change Tracking** Tracks have been removed they are **NOT** retrievable.

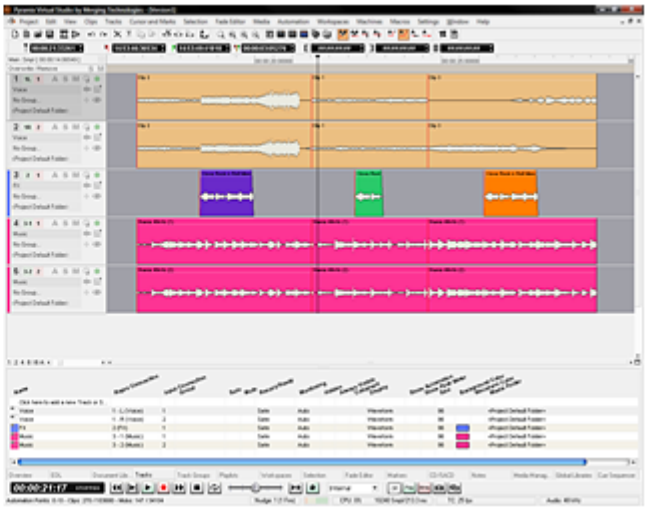
Now you will have both Pyramix and VCube Version2 displayed in the respective applications:

VCube displays the 'real' **Version2** from the editing department and Pyramix displays Version2 Reconformed automatically from **Version1**.



VCube showing Version2 Project

with

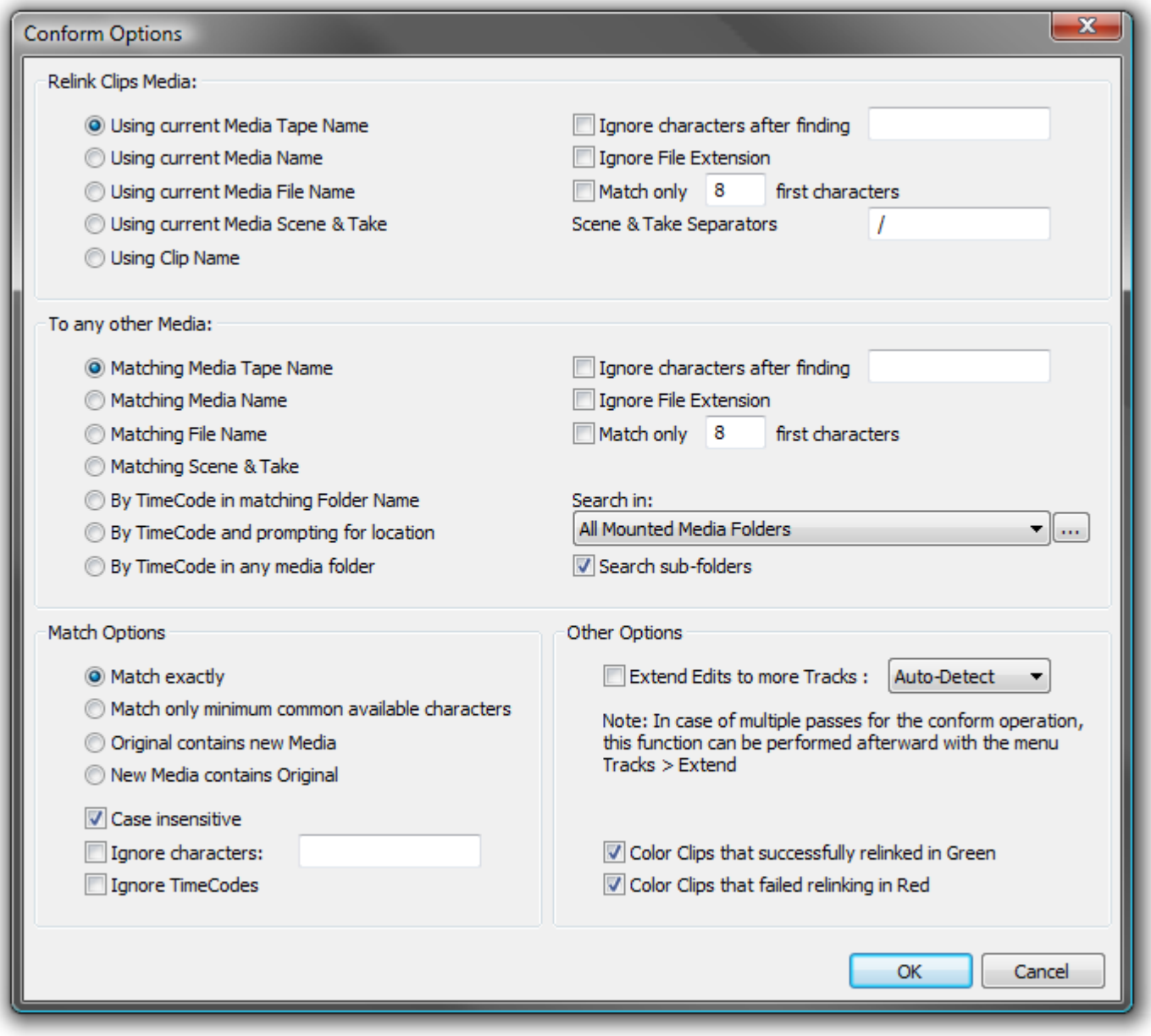


Pyramix showing Version1 Reconfomed to match

Note: The above example used two VCube Projects for the Video. The procedure is identical when importing two AAF, OMF or Final Cut Pro Video Editing Projects.

Relink to New Media

Opens a dialog offering various options similar to the Import CMX EDL function.



Reconform Relink to New Media Options dialog

This allows relinking all or a selection of Clips to new media. Typically. this is used for replacement of 16 bit versions of audio files with 24 bit versions based on the Clip name, media name, Scene & Take information or original TimeCode.

Relink Clips Media Gives options to extract a string from the original Clip:

Using current Media Tape Name

Using current Media Name

Using current Media File Name

Using current Media Scene & Take

Using Clip Name

With various options applicable to the above:

Ignore characters after finding…	ignores the rest of the string after a given substring is found
Ignore File Extension	ignores any characters after the last dot
Match only … first characters	ignores all characters after a given number

Scene & Take Separators gives a choice of characters to be used to separate a Scene name and a Take name from the string.

Note: Note: this is relevant only for Tape, Media and Clip Name, as Scene & Take are already properly separated in a Media Scene & Take tag.

To any other Media gives options to find which information to use from the Media that will be searched:

Matching Media Tape Name

Matching Media Name

Matching Media File Name

Matching Media Scene & Take

By TimeCode in matching Folder name Any Media with overlapping TimeCode in a folder with a matching name

By TimeCode and prompting for location Any Media with overlapping TimeCode with prompting for the folder name/ location

By TimeCode in any media folder Any Media with overlapping TimeCode

With various options:

Ignore characters after finding… ignores the rest of the string after a given substring is found

Ignore File Extension ignores any characters after the last dot

Match only … first characters ignores all characters after a given number of them

Search In allows the choice of which Media Folder to search in

Search sub-folders When checked sub-folders are searched

Match Options Offers options for the matching algorithm:

Match exactly both strings must be identical

Match only minimum common available characters

Take0001.new.01 will match with Take0001

Original contains new Media Take0001 will match with 0001

New Media contains Original 0001 will match with Take0001

Case insensitive TAKE0001 will match with Take0001

Ignore characters… if, for instance, /_+- are specified then 12-A/0001 will match with 12/A_0001

Ignore TimeCodes no checks are made on Original TimeCodes (timestamps). This allows media with erroneous/lost timestamps to be replaced with the correct ones or vice-versa.

Other Options

Extend Edits to more tracks When conforming a Clip referencing multiple Tracks to a Clip referencing a mono media file adds a new Clip (with the same fades, etc…) for all of these Tracks as well.

Note: In the case of multiple passes for the conform operation, this function can be performed afterwards with the menu item **Tracks > Extend** This automatically extends the number of Tracks to accommodate all the Media channels of each of the Clips of one or more timeline Track(s)

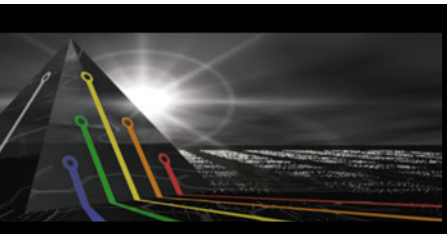
Color Clips that successfully relinked in Green

Re-colors successfully linked Clips in Green

Color Clips that failed relinking in Red

Re-colors Clips that failed to re-link in Red

23 Machine Control



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Pyramix can control and be controlled by a wide variety of external hardware. This chapter, **Machine Control** deals with situations where Pyramix is controlling an external machine or machines. It also deals with Pyramix and VCube running either on the same machine or on separate machines.

Pyramix and VCube

Virtual Transport 2

Virtual Transport 2 provides a simple and robust method of controlling a VCube from Pyramix whether the VCube is running on the same machine as Pyramix or a machine on the same network.

PyraCube

Pyramix and VCube running on the same machine.

VCube Prerequisites

The VCube audio I/O must be set in the VS3 control panel. Options are:

- Use the **ASIO bridge** so that VCube I/O is available to the Pyramix Mixer.
- **Native - ASIO** with an **ASIO** sound device.

  Note: In a non MassCore, Native mode PyraCube the ASIO sound device buffer must be set to 256 samples for correct synchronization between Pyramix and VCube. If this is not possible, for example if the device does not permit it, then you must use the **No VS3/ASIO Audio** setting.

- **No VS3/ASIO Audio**

Apart from this no settings are required to be made in VCube.

Note: If using the **ASIO Bridge** for VCube audio Pyramix must be launched first and complete start up before launching VCube.

Set-up in Pyramix

The VCube will appear in the list in the **Settings > All Settings > Remote Control > Virtual Transport 2**page. If not already connected, click on the VCube and click on **Connect**.

Note that it's status is shown as **Connected**.

If you are intending to use **Import Video Clips** in Pyramix set the **Save VCube composition in the Pyramix project** option to on. (Checked). When the Pyramix Project is opened subsequently, the Video Clip(s) will be opened in VCube.

VCube on External PC

Set-up in Pyramix

The VCube will appear in the list in the **Settings > All Settings > Remote Control > Virtual Transport 2**page.

Click on the VCube and click on **Connect**.

Note that it's status is now shown as **Connected**.

If you are intending to use **Import Video Clips** in Pyramix set the **Save VCube composition in the Pyramix project** option to on. (Checked). When the Pyramix Project is opened subsequently, the Video Clip(s) will be opened in the remote VCube.

No settings are required on the remote VCube

Control of External Device

If Pyramix is controlling another machine, (with the exception of GPO control) this device must be set up as an **External Machine**.

External Machines

9-pin (Sony P2 protocol)

9-pin Control of External Machine

If you wish to control a 9-pin slave machine from Pyramix the target machine must be set up as an external machine. If you wish to control Pyramix as a slave from an external 9-pin controller / synchronizer then the external controller must be set up as a Remote Controller in Pyramix. **Please see: Control by External Device on page 613**

Connection for the Sony 9-Pin protocol

Please see: Appendix IV 9-Pin connection on page 838 for a description of the physical connection between the PC's COM port and the RS-422 connector of the external machine.

Setting up an external machine

- Select the **Settings > All Settings > Remote Control > Machine** page.
- Click the **Add** button.
- Enter a suitable name for the external machine in the **Name** field, such as "Betacam".
- Choose the **Driver** for the machine from the drop-down list. **Sony 9-pin**
- Check the **Enable** field.
- Adjust the Driver Properties, the Port Properties and the Settings according to your needs. **Please see: Sony 9-Pin Protocol Configuration (Machine) on page 805**.
- Click **OK** to confirm all the entries and to add the new machine to the list.

Note: Since Merging Technologies products are based on hard disk and computer technology they do not need to take account of the color framing sequence. (Used to produce 'legal' picture edits). Therefore Sony P2 devices must have their Color Framing mode disabled (2F), in order to synchronize correctly. Please see the device manufacturer's documentation for the correct procedure to do this.

Sony P2 Protocol Over IP

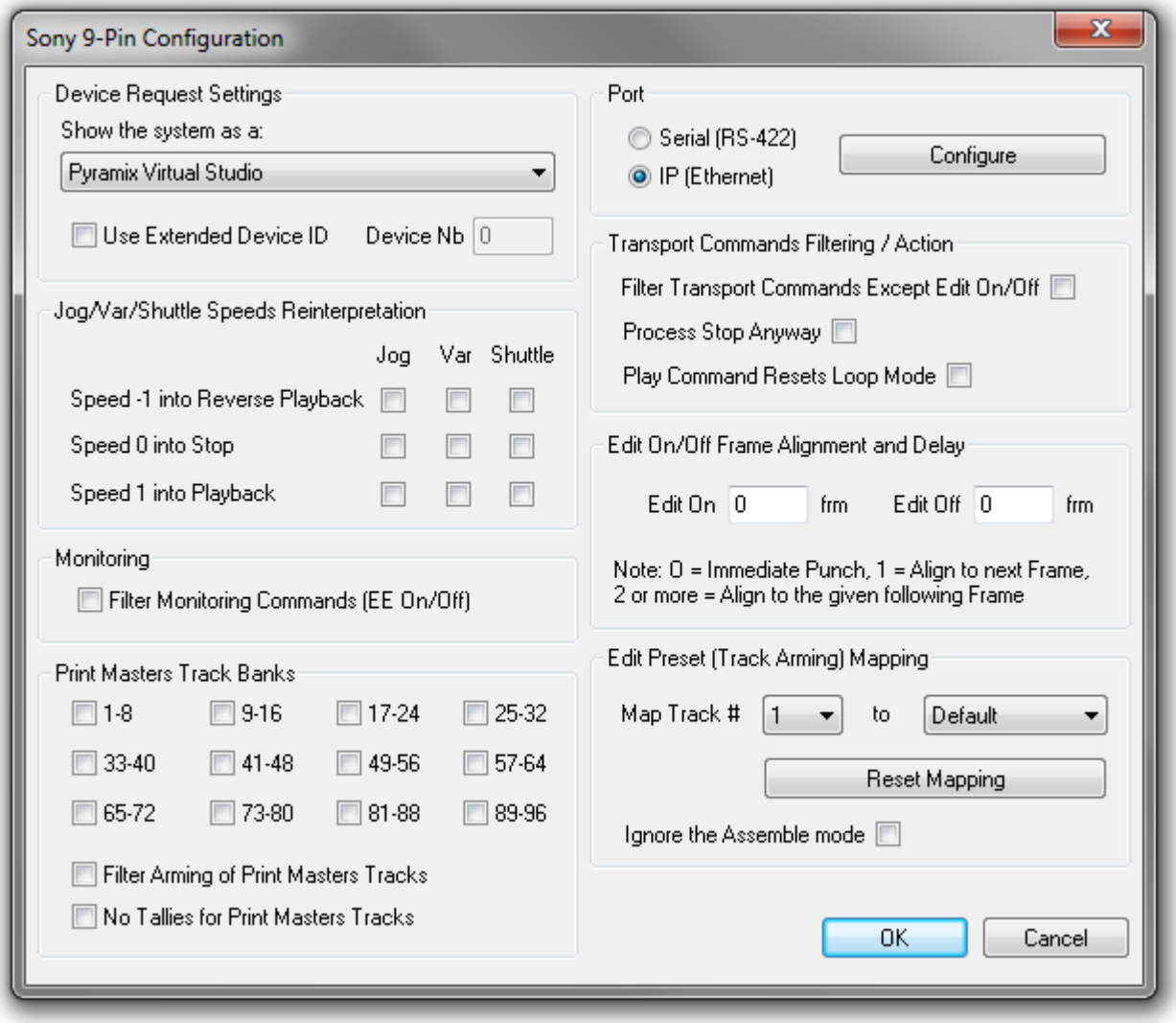
A Pyramix can control one or more Pyramix workstations on the same network using Sony P2 protocol over IP

Note: Both **Machine Control** and **Remote Control** authorization keys are required to use P2 over IP.

Configure 9-pin over IP in Pyramix

- On the **Slave Pyramix** machine select the **Settings > All Settings > Remote Control > Controller** page.
- Click the **Add** button. The **Controller Properties** dialog opens.
- Enter a suitable name for the slave in the **Name** field.
- Choose the **Driver** for from the drop-down list. I.e. **Sony 9-pin**

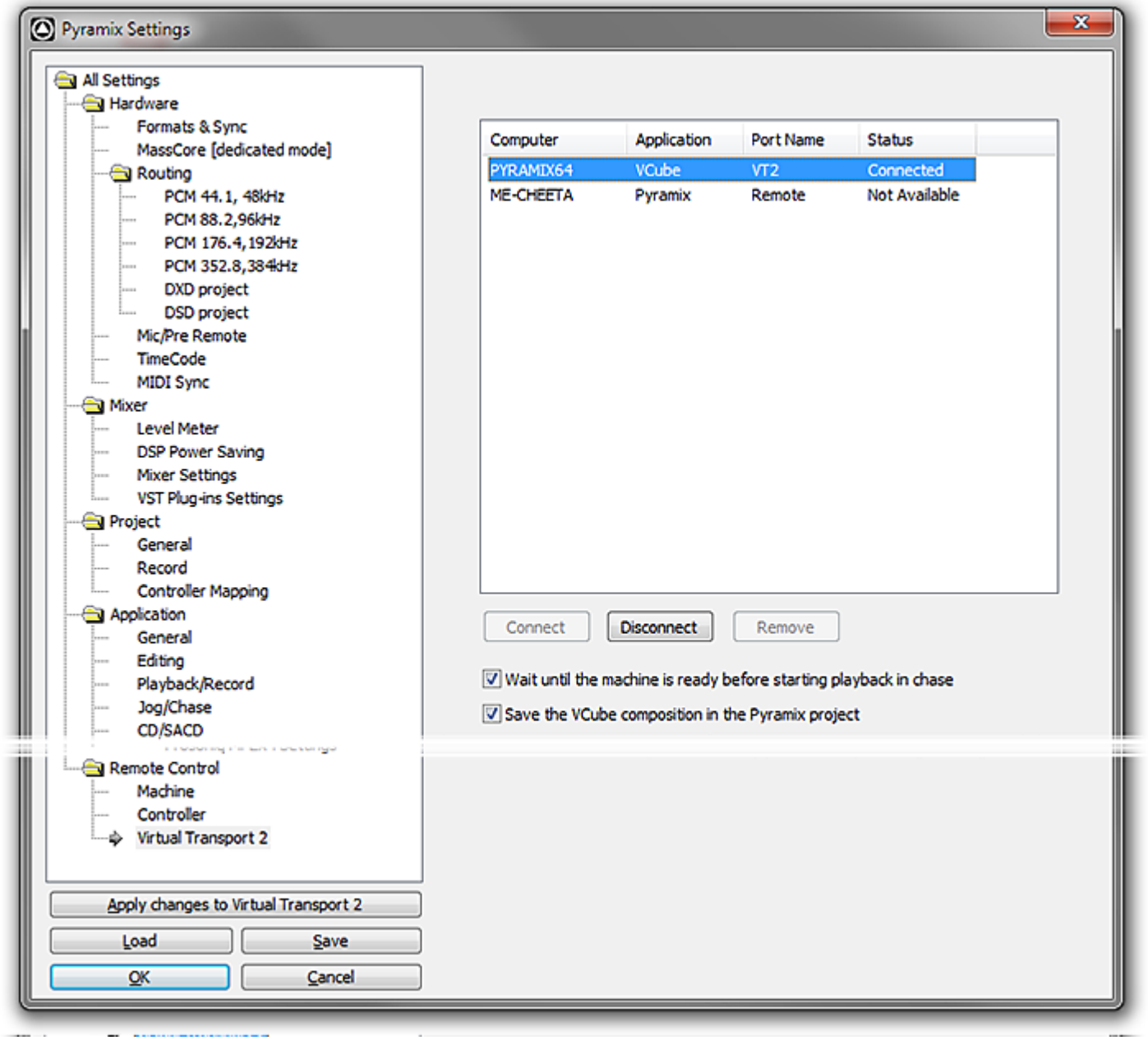
- Click on the **Properties** button to open the **Sony 9-Pin Configuration** dialog.



Sony 9-Pin Configuration dialog

- In the **Port** section click on the **IP (Ethernet)** radio button.
- Click on **OK** to close the dialog.
- Make any other changes you need in the **Sony 9-Pin Configuration** dialog. **(Please see: Sony 9-Pin Protocol Configuration (Machine) on page 805** for a detailed description of the options.)
- Click **OK** to confirm all the entries and to add the new machine to the list.

1. On the Master Pyramix machine open **Settings > Remote Control > Virtual Transport 2**.



- The slave machine will appear in the list. Click on it to select it and click on **Connect**.
- The status will change to **Connected**. The machine will appear in the Pyramix **Transport Control Panel (Alt + T)** window and is now ready for use.

Note: For solid and stable synchronization ensure that all machines use the same **video** reference.

Transport Control Panel

Transport Control Panel

Port In Use

If you attempt to connect to a port which is already in use an error message appears in the relevant section of the Transport Control Panel. In the example above the remote Pyramix on machine ME-CHEETA is already connected via 9-pin over IP therefore the remote VCube on machine ME-CHEETA cannot be connected.

Linking Functions of External and Internal Machines

The following functions can be linked in the **Settings > All Settings > Remote Control : Machines** page by simply ticking the boxes:

- Play and Record
- Play-Record Toggle
- In / Out Points
- Offset

Please see also: Machine on page 803

Synchronizer

Pyramix will chase an external TimeCode source as a slave, however, a far more satisfactory method is to work with Pyramix as the master.

External machines, capable of chasing TimeCode can, of course, follow Pyramix as slaves.

Chase Synchronizer

Pyramix can synchronize external 9-pin (Sony P2 protocol) machines including those that cannot chase TimeCode. No TimeCode connection TO the machine from Pyramix is required. The Chase Synchronizer compares the TimeCode coming FROM the external machine with the required position (including offset, if any) and sends transport commands in order to synchronize the machine.

9-Pin Controller/Synchronizer Explained

The Host Pyramix system (the first machine shown in the Transport Control Panel) is the synchronizer. It may or may not be the Master.

Therefore, when an External Machine is the Master, the Host Pyramix MUST chase it if a second External Machine is to be synchronized. For Example, in a set-up with two External Machines Ext1 and Ext2.

If the Host is the master then either or both Ext 1 and Ext 2 can Chase.

If Ext 1 is the Master then Host and Ext 2 can Chase

If Ext 1 is the Master and the Host is offline then Ext 2 cannot chase.

I.e. whenever an External Machine is in Chase it follows the Host Pyramix.

TimeCode Source

When the Host Pyramix is in Chase it follows either LTC or External TimeCode as determined by the settings on the **All Settings > Hardware > TimeCode** page.

Transport Control Panel

Pressing the Transport Control Panel button or **[Alt T]**, or selecting **View > Windows / Tools > Transport** opens a floating **Transport Window** displaying all available machines with individual sets of buttons and status indicators.

Transport Control Panel floating Window

Note: This Window contains a set of transport controls for each machine installed and enabled with the **Internal** Transport (Pyramix) at the top. Below the machines are displays for LTC and VT2 (and MTC when applicable) TimeCode Sources and at the bottom of the panel there are controls which affect hardware Remote Controllers.

Clicking on the black bar with the machine name toggles the individual area between collapsed and full. For example, **dvcam** is collapsed in the above illustration.

Important! For details of machine installation and settings. **Please see: Machine on page 803**

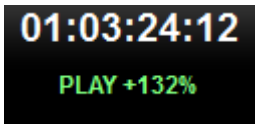
Internal / External Machine panels - Features

Main Counter

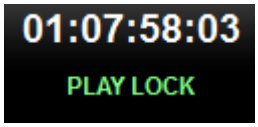
In each machine panel the main counter shows the machine's current position and status of Transport and Record.

The **Master** machine shows **Play** in green when running at sync speed:

The Master machine in jog or shuttle shows **Play** and the + or - percentage off sync speed or **Play Still** when stationary. If the speed exceeds 200% then **Rewind** or **Fast Forward** is shown in yellow :

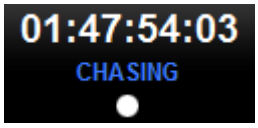


An External Machine shows **Play Lock** in green when it is master and at sync speed:

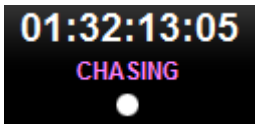


An External Machine shows **Locked** in green when it is locked at sync speed:

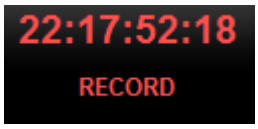
A machine chasing shows **Chase** in blue:



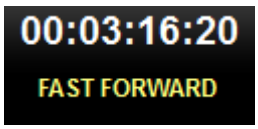
If an offset is applied the status display and TimeCode registers are purple:



A machine in record shows **Record** in red and the main counter also turns red:

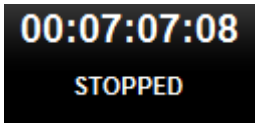


A machine in **Fast Forward** or **Rewind** shows this in yellow:

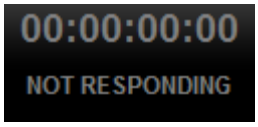


A machine carrying out an **Auto-Edit** shows this in red:

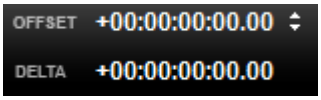
A **Stopped** machine shows this in white:



If a machine is disconnected or there is a problem this is shown in gray:



Chase, Offset register, Capture Offset and Delta



When the button is lit the machine is in Chase Mode (see below)

The Offset Register shows the current Offset value.

An Offset can be captured with the **Offset Capture** button. The button lights when an Offset is set.

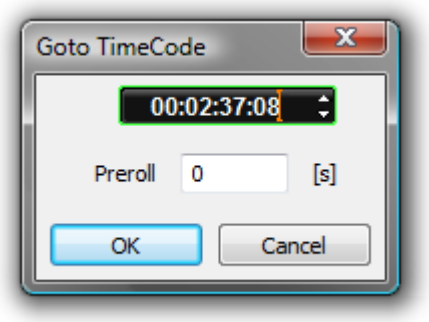
Offset values can also be typed directly into the register and trimmed with the increment/decrement buttons.

> **Note:** A positive Offset Value makes the machine with the Offset later and a negative Offset value makes it earlier. E.g. If you are sourcing picture from an external VCR and the picture is arriving 3 seconds before the sound, enter a 3 second positive offset in the video machine's External Transport control panel.

Delta shows the current difference (error) value between where the machine should be and where it actually is.

Locate

Pressing the Loc **Loc**ate button pops up the **Goto Timecode** dialog:



Goto TimeCode dialog

The register shows the machine's current TimeCode position value and is highlighted, ready for typed input. The value can also be adjusted with the increment/decrement buttons. Clicking the **OK** button sends the machine to the TimeCode value in the register and closes the dialog.

A **Preroll** value can also be set. This value is retained and will be present when the dialog is next opened from any Machine control panel.

Note: Goto TimeCode has no effect if it is invoked from a machine in **Chase Mode**.

Internal Machine panel - Features

Transport Controls

Transport Controls

The Internal Machine panel has the same transport controls as the Transport Control Bar with some extras:

The **Rewind** button moves the **Play Head** at an accelerated speed backward through the **Composition**. A second press doubles the speed.

The **Play Selection** button plays the current highlighted selection area.

The **Play** button plays the **Composition** at normal speed forward from the current position of the **Play Head**. A subsequent press **Pause**s playback and another **Restarts**.

The **Record** button puts **Pyramix** into **Record** mode, and creates a new recording to the disk on the **Tracks** previously armed for recording. The **Play Head** moves forward at normal **Play** speed during the recording.

The **Fast Forward** button moves the **Play Head** at an accelerated speed forward through the **Composition** while it is being pressed. A second press doubles the speed.

The **Stop** button stops playback.

The Loop **Play** toggle button puts **Pyramix** into a loop play mode, which continuously plays through from beginning to end of the current selection.

Pops up the **Goto Timecode** dialog. See above in **Internal / External Machine panels - Common Features**

Chase Please see: **Chase Mode on page 607**

Offset capture button. Captures the current offset which is shown in the **OFFSET** register.

Locate. Opens the **Goto TimeCode** dialog.

In Locates Playhead Cursor to the value in the **IN** register. **Ctrl + In** Captures the current Playhead Cursor position to the **IN** register.

Out Locates the Playhead Cursor to the value in the **OUT** register. **Ctrl + Out** Captures the current Playhead Cursor position to the **OUT** register.

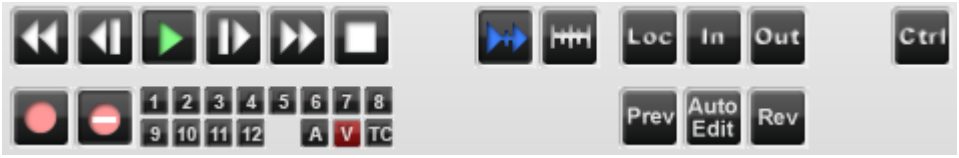
Note: The **In** and **Out** points set for the Internal Machine are the main, red **In** and green **Out**, marker positions in the Pyramix TimeLine.

The **Freeze** button stops all External Machines where they are. See **Freeze Mode** below.

Sets the **Internal Machine** (Pyramix) as the **Active Machine**. See **Active Machine** below.

External Machine panel - Features

Transport Controls



Transport Controls

The **Rewind** button moves the **External Machine** at an accelerated speed backwards.

The **- 1 Frame** button nudges the **External Machine** backwards one frame per press.

The **Play** button starts the **External Machine** in Play mode.

The **+ 1 Frame** button nudges the **External Machine** forwards one frame per press.

The **Fast Forward** button moves the **External Machine** at an accelerated speed forwards.

The **Stop** button sends a Stop command to the **External Machine**.

Chase Please see: **Chase Mode on page 607**

Offset capture button. Captures the current offset which is shown in the **OFFSET** register.

Pops up the **Goto Timecode** dialog. See above in **Internal / External Machine panels - Common Features**.

In Locates Playhead Cursor to the value in the **IN** register. **Ctrl + In** Captures the current Playhead Cursor position to the **IN** register.

Out Locates the Playhead Cursor to the value in the **OUT** register. **Ctrl + Out** Captures the current Playhead Cursor position to the **OUT** register.

Sets the **External Machine** as the **Active Machine**. See **Active Machine** below.

Record and Edit controls

Record and Edit Control

The fifteen small buttons are for arming audio tracks 1-12 and arming the Video and TimeCode. The [**A**] is Assemble mode for machines that support it.

The Record button initiates and indicates recording on the **External Machine**

Inhibits recording on the **External Machine**

Preview Edit Initiates a preview of an edit. The **External Machine** (and any chasing machines) go into play from the **In** point minus preroll and the output on all tracks armed for record switches from replay to direct at the **In** point and back to replay at the **Out** point. The machine Stops at the **Out** point plus post roll.

Auto Edit Initiates an edit. The **External Machine** (and any chasing machines) go into play from the **In** point plus preroll and all tracks armed for record are punched into record at the **In** point and back to replay at the **Out** point with the machine monitor outputs following. The machine Stops at the **Out** point plus post roll.

Review Edit Initiates a review of the **Auto Edit** just performed. The **External Machine** (and any chasing machines) go into play from the **In** point minus preroll and plays to the **Out** point plus post roll.

Note: Pre and **Post roll** for the machine in question are set up in the dialog. This can be found in the **Settings > All Settings > Remote Control > Machine** page by selecting the machine and clicking on **Properties**. Further settings are to be found in the **Sony 9-Pin Protocol Configuration (Machine)** dialog, accessed by clicking on the **Properties** button in the **Machine properties** dialog.

Please see also: Machine Properties on page 804

Chase Mode

Each Machine has a Chase button. The choice of **Hard**, **Soft** and **Vari Chase** is available in the **Settings > All Settings > Application > Jog/Chase** page. When Chase Mode is engaged the Internal Machine can chase LTC, the selected **External Machine** or **Virtual Transport** inputs selected in the **Settings > All Settings > Hardware > TimeCode** page in the **TimeCode Source** and **Ext. TC Source** combo boxes.

Hard — When **Hard Chase** is active, Pyramix will only playback when valid TimeCode is detected on the chosen TimeCode input port. If there is a jump in the incoming TimeCode, Pyramix will adjust to the new TimeCode, re-synchronize and begin playback from the new TimeCode position. Pyramix will run on its own internal TimeCode for up to 1 frame if there is a drop out in the time code. If no valid Time-Code is detected after that time, playback will stop.

Soft — When **Soft Chase** is active, Pyramix will only playback when valid TimeCode is detected on the chosen TimeCode input port. If there is a jump in the incoming TimeCode, Pyramix will not adjust to the new TimeCode, but will continue play-back with an offset from the incoming TimeCode position. Pyramix will continue to run on its own internal TimeCode for up to 1 frame if there is a drop out in the TimeCode. If no valid TimeCode is detected after that time, playback will stop.

Vari — When the **Vari Chase** is active, Pyramix will Varispeed, I.e. alter its sampling rate to follow fluctuations in an external TimeCode. (going back and forth, slowing down, accelerating, playing normally or backwards, up to 8x nominal speed) while in playback (not in record)

Freeze Mode

The **Internal Machine** also has a **Freeze** button. When active, as shown here, all External Machines remain where they are and the point in time at which **Freeze** was activated is kept in memory. Pyramix can be freely used and moved while **Freeze** is active. When the **Freeze** button is cancelled, the Pyramix **Playhead Cursor** jumps to the point where **Freeze** was activated and full control is restored.

This function has many uses. For example, it can be used to position an out of sync effect, say a car-door slam. For detailed instructions **please see: Using Freeze Mode on page 548**

Active Machine

Each Machine's Panel has a **Ctrl** button

which sets it as the **Active Machine**. The Active Machine receives the full input of the **Active Machine** mapped keyboard shortcuts, the **Transport Control Bar** and input from all available Remote Controllers.

The **Machine** combo-box in the Transport Control Bar shows the active machine and can be used to switch between the installed and enabled machines. Alternatively you can toggle through the currently enabled machines. **Machines > Active Machine > Toggle machines**

Auto-chase

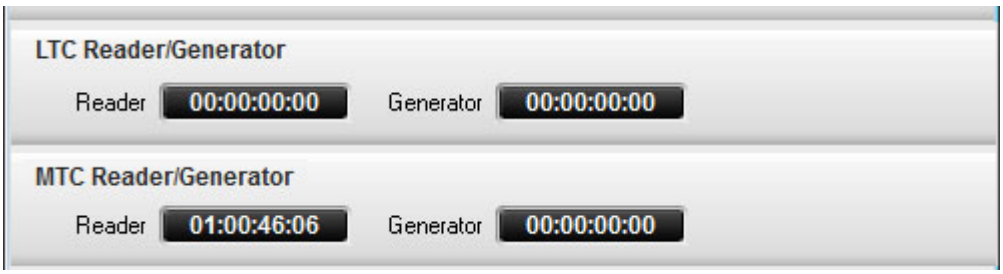
If all enabled machines are set to **Auto-Chase**, when **Ctrl** is switched between machines the **Active Machine** is automatically taken out of **Chase** mode and the previously **Active Machine** automatically enters **Chase** mode. To activate **Auto-Chase** for all external machines, enable the menu setting:

Machines > External Machine > Auto-Chase

And, to activate **Auto-Chase** for the internal machine, enable the menu setting:

Machines > Internal machine > Auto-Chase

TimeCode Registers



TimeCode Registers

Each TimeCode reference source has two registers:

Reader register shows show the current TimeCode incoming on the LTC, MTC physical or logical inputs.

Generator register shows the current TimeCode outgoing on the LTC or MTC physical or logical outputs

In the case of **VT**, Virtual Transport, the **Reader** Timecode is the VT TimeCode and the **Generator** is the TimeCode reported by Pyramix on the corresponding Pyramix VT client.

Controllers Section

Controllers Online/Offline

When the **Controllers** button is lit red all connected Controllers are set **Offline**

Press the button again to toggle to **Online**.

Offline ensures no **External Commands** can be sent to Pyramix while a maintenance or housekeeping operation is in progress.

When performing a **Mix-down**, **Generating a CD image**, or during any **Surround encoding** operation, Pyramix automatically sets all controllers offline to ensure the operation is not inadvertently interrupted and to prevent exaggerated motor fader movements during non real-time processes.

Jog Wheel Mode

Jog

Shuttle

Loop

Navigate

Zoom

Off

The buttons select the hardware Jog Wheel Mode from a choice of **Jog**, **Shtl**, **Loop**, **Nav, Zoom** or **Off**. Many controllers will have buttons either corresponding directly to these functions or mappable to them.

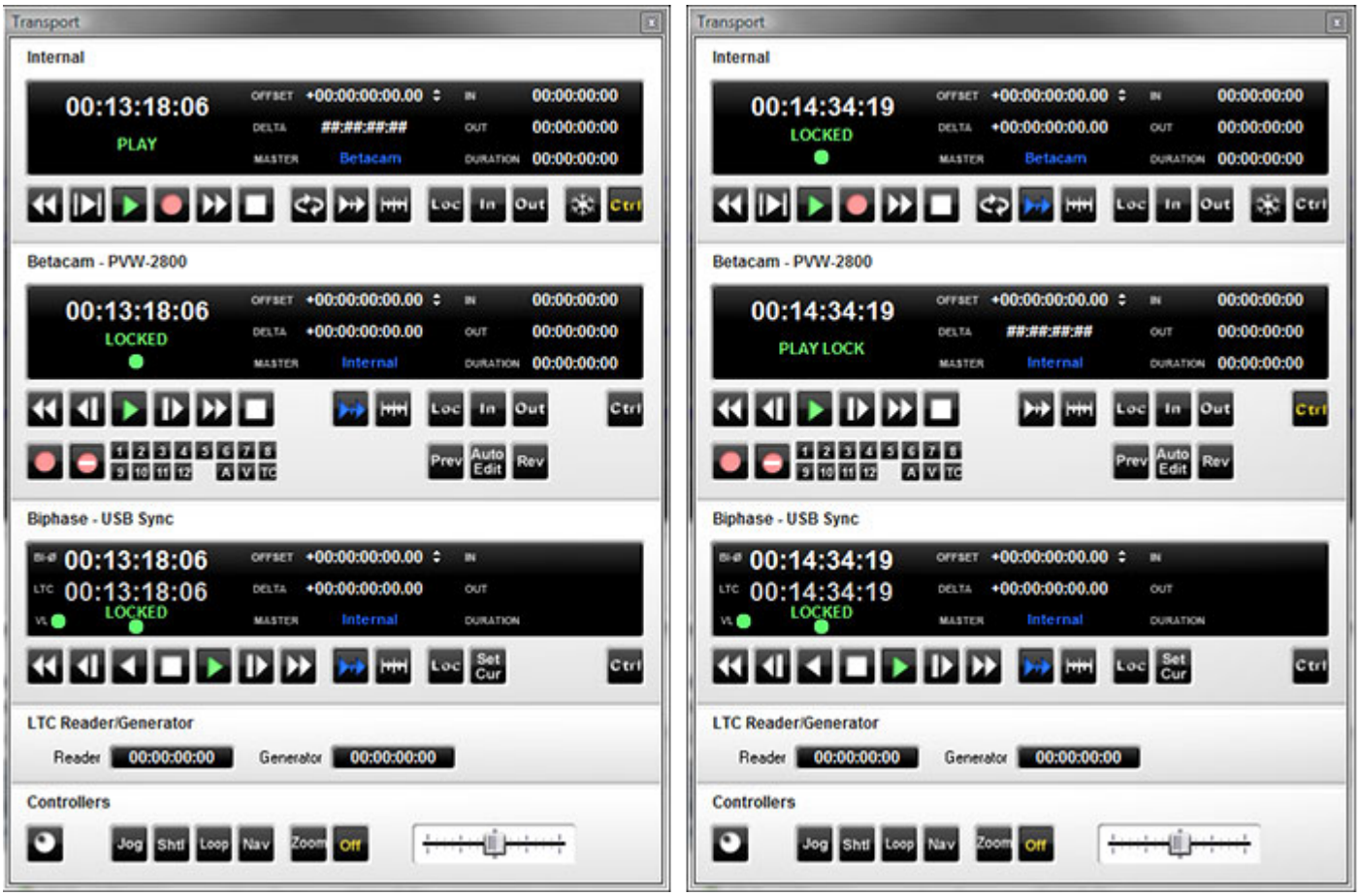
Note: Further Jog Wheel Modes are available in **Machines > Controllers**.

The selected function is lit in yellow. (**Off** in the images above.)

The **Shuttle** slider is provided for convenience when using the Transport Control Panel.

Examples:

In the following examples there are three machines. At the top of each window is the host Pyramix Internal Machine. Below this is a BETACAM - PVW-2800 and the third machine is a BiPhase transport or transports. (Via the MTUsbSync Board) Both External Machines are controlled via the Sony 9-pin P2 protocol.



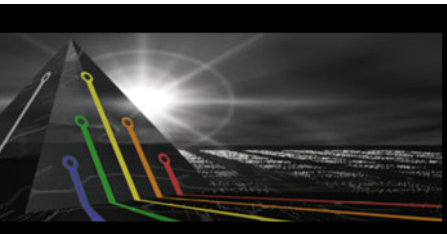
Transport Control Examples

In the left-hand example the Host Pyramix is **Master** and both External Machines are in **Chase** and **Locked**.

In the right-hand example the Betacam is now the Master and both the Internal Pyramix and External BiPhase Machines are in **Chase** and **Locked**.

> **Note:** Machines **NOT** in chase can be used independently of the Master while the Master is in use by using their individual controls. So you can locate on a machine whilst continuing to mix using the Master and slaves.

24 Remote Control



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Scope

Pyramix can control and be controlled by a wide variety of external hardware. This chapter, **Remote Control** deals with situations where Pyramix is controlled by an external device such as a control surface or machine controller.

Generic Control

The Pyramix transport can be controlled by devices capable of issuing standard Sony 9-Pin (P2 Protocol) commands and by MMC (MIDI MACHINE CONTROL) commands.

The Pyramix Mixer can be controlled by devices capable of issuing suitable MIDI data. The Mixer can be "taught" which commands relate to which function.

Hardware Control Surfaces

Hardware remote control is accomplished via the Merging Technologies **Oasis** protocol, Proprietary protocols, Merging Technologies **EMC** (**E**nhanced **M**IDI **C**ontrol) MIDI or the 9-pin (Sony P2 protocol). Templates are supplied for some popular controllers or you can map your own MIDI control surface to Pyramix.

ISIS

The Merging Technologies **ISIS** and **ISIS** Expander are purpose designed for Pyramix and offer comprehensive control for many applications. Notably, in conjunction with the Pyramix **Fade Editor**, editing is extremely quick. For full details please contact your Merging Technologies Sales Partner.

Supported Controllers Table

Pyramix Virtual Studio supports controllers from many different manufacturers, as seen in the table below, in several control modes. While **JL Cooper** products work with a proprietary protocol, **Yamaha**, **Radikal Technologies**, and **Mackie** units need to be set to **HUI** mode to communicate with Pyramix. Finally the **Sony DMX-R100** communicates via standard MIDI control and Sony 9-pin P-2 protocol commands.

Auto-mapping

Wherever auto-mapping is supported, our controller driver will automatically link active Pyramix parameters to all available control surface items. With manual mapping, a drag & drop or menu dialog, depending on the driver, will allow for any specific Pyramix parameter to be linked to any available control surface item.

Strip Cloning

Strip cloning will duplicate all parameter assignment for a dedicated strip to adjacent channel(s). Finally, MIDI mapping will create links between Pyramix parameters and control surface items with a select and learn method.

Controllers Table

For the latest version of the **Supported Controllers** table, please follow this link:

https://confluence.merging.com/pages/viewpage.action?pageId=17203276

For the **EMC User Guide** and other downloadable **User Guide** documents about supported controllers/consoles please go to:

www.merging.com

Choose the document(s) you wish to download.

Control by External Device

If Pyramix is to be controlled by another device or devices, these are installed via **Settings > All Settings Remote Control > Controller** (See: **Controller on page 808**) and, where applicable, Pyramix functions are mapped to the controller via the **Settings > All Settings > Project > Controller Mapping** page. (See: **Controller Mapping on page 777**)

9-pin Configuration (Pyramix controlled by external device)

Please see: **Sony 9 - Pin Protocol Configuration (Pyramix controlled by external device) on page 810**

Control by Another Pyramix

This can be achieved either by using Virtual Transport 2 and Sony P2 over IP, or by conventional 9-pin RS422 serial. The former is a convenient, cost effective and robust solution.

Configuring Pyramix for Control by another Pyramix using P2 over IP / VT2

- In Pyramix select the **Settings > All Settings > Remote Control > Controller** page.
- Click the **Add** button. The **Controller Properties** dialog opens.
- Enter a suitable name for the Pyramix in the **Name** field.
- Choose the **Driver** for the machine from the drop-down list. I.e. **Sony 9-pin**
- Click on the **Properties** button to open the **Sony 9-Pin Configuration** dialog.
- In the **Port** section click on the **IP (Ethernet)** radio button
- Make any other changes you need in the **Sony 9-Pin Protocol Configuration (Please see: Sony 9-Pin Protocol Configuration (Machine) on page 805** for a detailed description of the options.)
- Click on **OK** to close the **Sony 9-Pin Configuration** dialog.
- Check that **Enable** is ticked in the **Controller Properties** dialog.
- Click on **OK** to close the **Controller Properties** dialog.

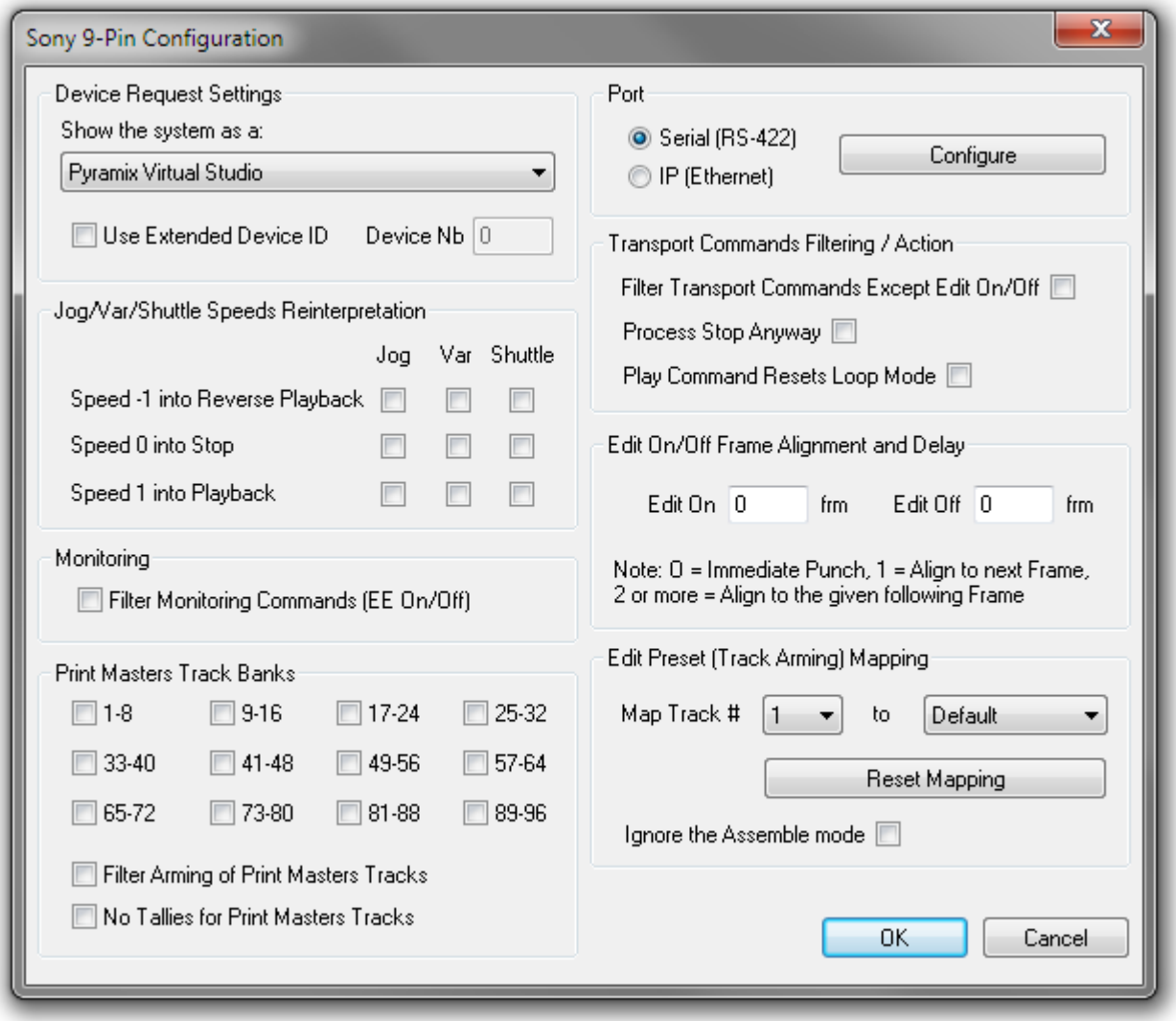
Note: The slave machine will show up on other Pyramix machines in the **Settings > All Settings > Remote Control > Virtual Transport 2** page. (This may take a while until the network map is refreshed) Once showing as **Available** simply click on the name in the list to highlight it and click on **Connect**.

Configuring Pyramix for Control by another Pyramix using Sony P2 protocol over RS422

- In Pyramix select the **Settings > All Settings > Remote Control > Controller** page.
- Click the **Add** button. The **Controller Properties** dialog opens.
- Enter a suitable name for the Pyramix in the **Name** field.
- Choose the **Driver** for the machine from the drop-down list. I.e. **Sony 9-pin**
- Click on the **Properties** button to open the **Sony 9-Pin Configuration** dialog.

- In the **Port** section click on the **Serial (RS-422)** radio button
- Click on **Configure** to open the
- Make any other changes you need in the **Sony 9-Pin Configuration**. Please see subsequent pages for a detailed description of the options.)
- Click on **OK** to close the **Sony 9-Pin Configuration** dialog.
- Check that **Enable** is ticked in the **Controller Properties** dialog.
- Click on **OK** to close the **Controller Properties** dialog.

Sony 9 - Pin Protocol Configuration (Pyramix controlled by external device)



Sony 9-Pin Configuration dialog

Device Request Settings

The Sony 9-pin P2 protocol transmits a code to identify the machine. Some machine controllers will do nothing or exhibit aberrant behavior if they do not recognize the identifier code. Therefore, Pyramix can masquerade as another device. The device identifier can be selected from a long list in the **Show the system as a:** combo box.

Jog/Var/Shuttle Speeds Reinterpretation

The radio buttons determine Pyramix behavior when specific Jog/Var or Shuttle commands are received.

- **Speed -1 into Reverse Playback**
- **Speed 0 into Stop**

- **Speed 1 into Playback**

Note: When using a controller with a jog wheel please set **Jog/Var/Shuttle ... Speed = 0**.

Note: Interpreting a Sony reverse varispeed command as Reverse Playback is sometimes necessary to achieve proper (locked to video) reverse playback.

Monitoring

Filter Monitoring Commands (EE On/Off) when ticked, E to E On and off commands are filtered out.

Print Masters Track Banks

The selected banks of **8 tracks** are armed for recording when any OTHER track is armed. This is primarily useful when recording a Print Master or Masters at the same time as stems. E.g. if you are recording Dialogue, Music and Effects stems it is common practice to update an element on one stem only. However, the final mix Print Master, which is the sum of all the stems must be updated at the same time. Print Masters Track banks allow the user to forget about arming the Print Master Tracks and concentrate on the stems.

Filter Arming of Print Masters Tracks

When ticked, arming a Print Master Track will not arm the other Print Master Tracks.

No Tallies for Print Masters Tracks

When ticked, record tally commands are filtered out for the Print Masters Tracks.

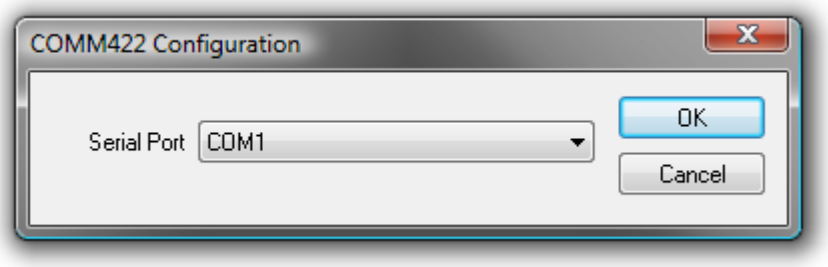
Port

- **Serial (RS422)** Select this option if the connection uses conventional 9-pin cabling
- **IP (Ethernet)** Select this option if connecting to Pyramix or VCube machine(s) using Sony P2 over IP. Configuration is automatic when the **OK** button is pressed to close the dialog.

Configure

Clicking the **Configure** button opens the respective configuration dialog.

COMM422 Configuration:



COMM422 Configuration dialog

Serial Port

Shows the current **Serial Port** selected from the drop-down list. If not already highlighted, select the desired serial COM port. Standard choices are either COM1 or COM2.

Click **OK** to confirm the choice. This automatically sets the selected COM port with the proper parameters of the Sony 9-pin communication protocol.

Transport Commands Filtering

- **Filter Transport Commands Except Edit On/Off** When ticked all transport commands apart from Edit On or Edit Off are filtered out.
- **Always Process Stop** Some controllers send a **Chase Off** command for Stop. If you need this command when filtering Transport Commands, checking the box will allow it through.
- **Play Command Resets Loop Mode** (I.e. the transport Loop)

Note: These filter settings are mainly relevant where multiple controllers are in use. E.g. where a Mixing console controls monitoring and recording.

Edit On/Off Frame Alignment and Delay

Edit On and **Edit Off** boxes enable delays (in ms) to be entered.

Note: 0 = Immediate Punch, 1 = Align to next Frame boundary, 2 or more = Align to the given following Frame boundary.

Edit Preset (Track Arming) Mapping

The **Map Track #** combo box allows you to select a Track between **1** and **96** to be mapped to a choice made in the second combo box from:

- **Default**
- **No change**
- **Always Off**
- **Always On**

or any Track between **1** and **96**

This function is useful if more than one Pyramix is to be controlled by the same controller. E.g. with two machines set up to record 32 Tracks each, Pyramix one is mapped **1 - 1** to **32 - 32** and Pyramix two is mapped **1 - 33** to **32 - 64**

EMC

Scope

EMC includes HUI and Mackie Control Support.

The following controllers are supported and validated:

- Mackie MCU in HUI and MackieControl modes
- Yamaha DM1000 in HUI mode
- Yamaha DM2000 in HUI mode
- Raditec SAC2-k in HUI mode (MackieControl is not working properly)
- Tascam US-2400 in HUI mode (US-2400 MackieControl mode is specifically configured for other DAWs than Pyramix)

Note: Please see also: **Controllers Table on page 613**

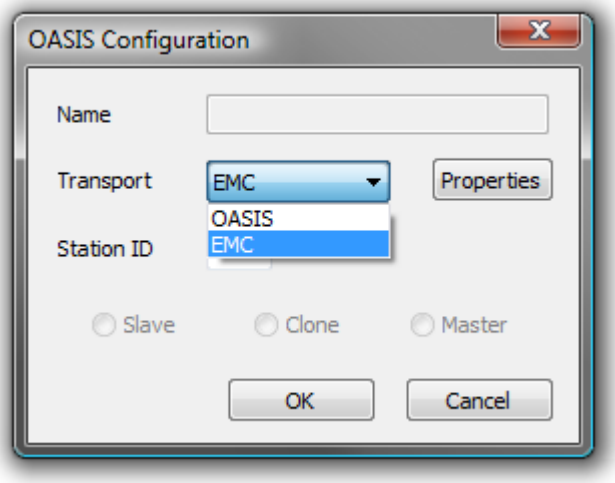
Key

Valid Remote Control Support and Remote Control – Midi Enhanced Midi protocol keys are required to use EMC.

Configuration

Configuring a Remote EMC Connection

Since EMC is implemented as a subset of OASIS, to configure a remote connection, an OASIS controller must be added in **Settings > All Settings > Remote Control** and then **EMC** must be chosen by clicking the **Properties** button which opens the **OASIS Configuration** dialog:



OASIS Configuration Dialog

Faders, Solo, Mute, Pan, Surround Panning, Auxes, Vu-Meter, Advance channel display, Strip tools,

transport (Internal and Externals machines), Bank switching and Jog are all fully supported. Please see the **EMC User Guide** for full configuration details.

OASIS Protocol

OASIS is a generic TCP/IP based protocol for integrating disparate digital audio consoles and controllers with Merging's Pyramix digital audio workstation. Although Pyramix supports several other protocols **OASIS** is in a different league.

The Oasis Advantage

- Allows control surface mapping to faders, rotary encoders, keys, machine control functions etc.
- TCP/IP Network based
- High bandwidth
- Flexible connectivity from any unit to any other unit on a LAN/WAN
- Low delay transmission performance (provided there is adequate Network topology.)
- No additional hardware needed for a console/controller that has an Ethernet (IEEE 802.3) connection.
- Low cost and upgradeability of the Ethernet technologies

Overview of Pyramix Controls

Mixing:

The virtual Pyramix mixing console is fully exported over OASIS with a high degree of control precision.

Editing:

Everything that is available in the Pyramix menu is remote controllable

Machine Transport Control:

Internal Pyramix machine control and all connected machines (Sony P2, MMC) can be remote controlled over OASIS in a unified protocol.

Multiple DAW Control:

- The virtual mixer power can be distributed on multiple mix engines
- The number of available Play/Record Tracks may be expanded seamlessly without limits over any number of Pyramix engines

Export of useful information to the console:

- "Units of" parameters (%, dB, ms...)
- The range of each specific control
- The default value of controls
- Mixer strips/bus names
- Floating point number based (32 bits)
- Possibility of choosing between the DAW and/or the Console Automation engine

OASIS In Practice

OASIS allows:

- 384 channel I/O multi-track player/recorder and dubber (Pyramix V6.1)
- Access to all the editing and processing functionality of Pyramix

- The internal mixer can be configured as a 384 input into several buses types.
- Up to 16 surround simultaneous stems can be sent to the console as part of the main mix.
- Multi-layer mixing - switch between the DAW mixing layer and the main mix on the console retaining discrete control over pre-mixed channels.
- With two or three Pyramix systems connected, as in a film dubbing environment, this allows for virtual, non-destructive, pre-mixes and any changes to the pre-mix can be made instantly by simply switching to the relevant layer.

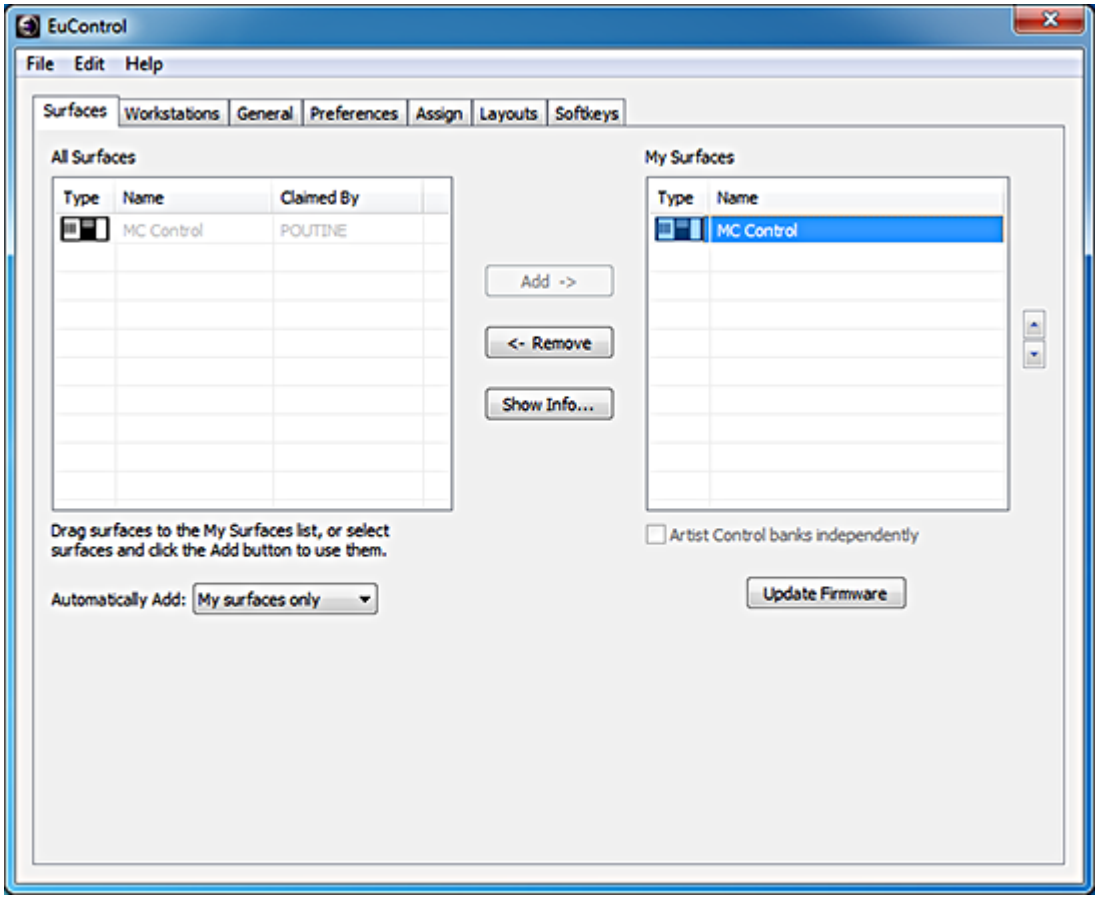
Comparison with MIDI based Solutions

- MIDI vs. Ethernet… No comment!
- Peak-meter refresh rates of 25-30 times per seconds
- Pyramix evolution will enable the protocol to develop still further.
- All third party (VST, DirectX) plug-ins can be fully described and parameters can be exported over OASIS.

EUCON Control Surfaces

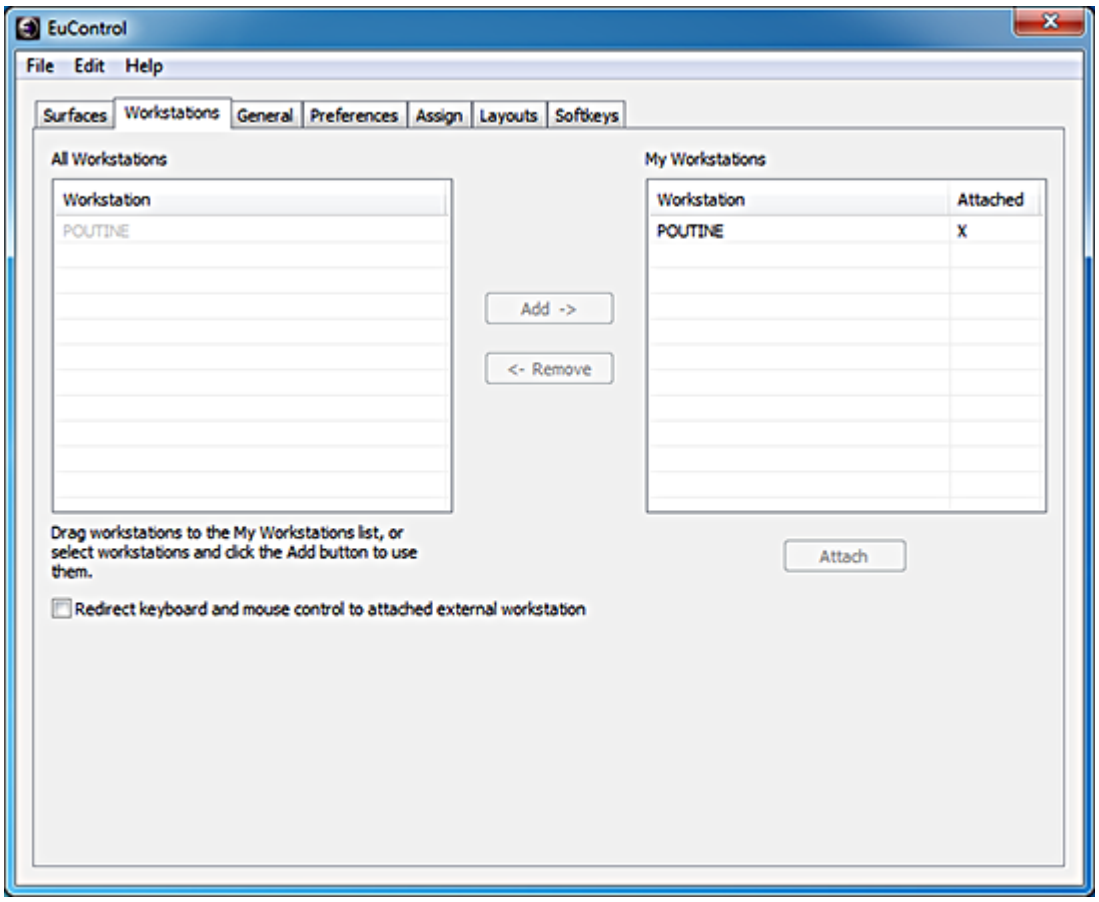
Avid control surfaces supporting the EUCON protocol require the following setup to work with Pyramix.

1. Open the EUCON **EUCONtrol** application and in the **Surfaces** tab add **MC Control Surface** to **My Surface**:



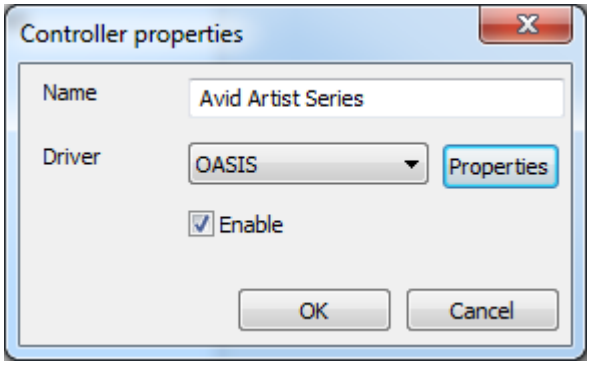
EUCONtrol application Surfaces tab

2. In the **Workstation tab**. Make sure the Pyramix PC is attached:



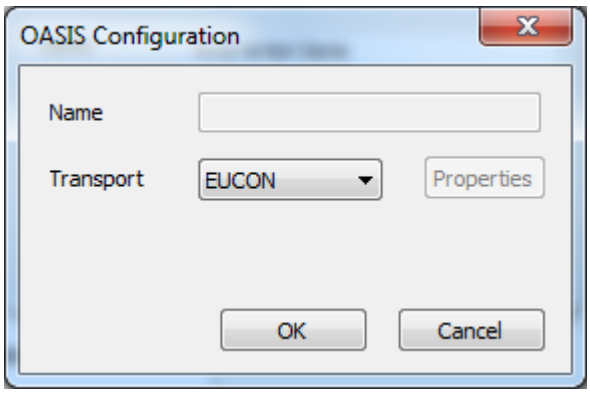
EUCONtrol application Workstations tab

3. Launch Pyramix and go to **Settings > Remote Control > Controllers**.



Pyramix Controller Properties dialog

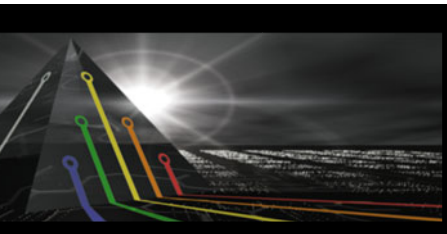
4. Add controller and select **OASIS**.
5. Click on **OASIS Properties** to open the **OASIS Configuration** dialog:



OASIS Configuration Dialog

6. In the **Transport** drop-down list select **EUCON**.

25 GPI / GPO Control



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GPI / GPO Support

GPI/O support is available as a Remote Controller module.

> **Note:** For the present the only supported GPI/O interfaces are the following models manufactured by **Sealevel:**

- SeaPORT PLC-16** 8 in 8 out
- SeaI/O-410U 16 in 16 out
- SeaI/O-420U* 16 in 8 out
- SeaI/O-430U* 32 in 0 out
- SeaI/O-440U* 0 in 32 out
- SeaI/O-450U* 0 in 16 out
- SeaDAC P/N 8221* 16 in 16 out
- SeaDAC P/N 8222 16 in 8 out
- SeaDAC P/N 8223* 32 in 0 out
- SeaDAC P/N 8224* 0 in 32 out
- SeaDAC P/N 8225* 0 in 16 out

* Obtainable on special order.

** No longer available.

> **Note:** Note: USB drivers are included in the Pyramix Installer. There is no need to download the driver from the supplier's website. For more information about the specification of the GPIO hardware device please see:

http://www.sealevel.com

Using the GPI/O controller

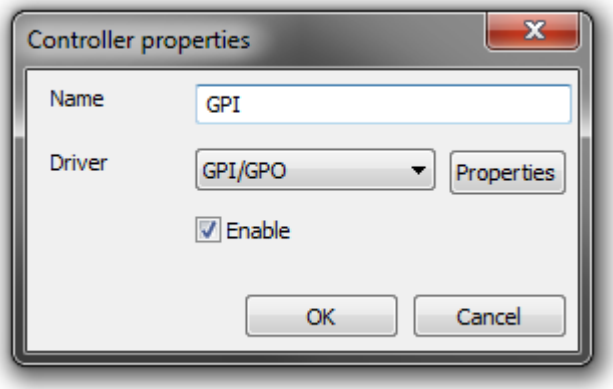
Add a GPI/O Controller

Before Pyramix can use the adaptor, it must be set up.

Select the **Settings > All Settings > Remote Control > Controller** page

Click the **Add** button. The **Controller Properties** dialog opens. Type a name for the Controller and select **GPI/GPO** from the **Driver** drop down list. Click **OK** to close the dialog and click **OK** to close the Pyramix Settings window.

> **Note:** Do not do this more than once. Only one GPI/GPO controller is allowed. However this can control more than one physical GPI/GPO USB Module



GPIO Controller Properties dialog

Enable/Disable

The GPI/GPO controller may be disabled by unchecking the **Enable** box in the **Controller Properties** Dialog. Some GPI/GPO USB Modules can be individually enabled or disabled by clicking on the **Properties** button to the right of the **Driver** combo box.

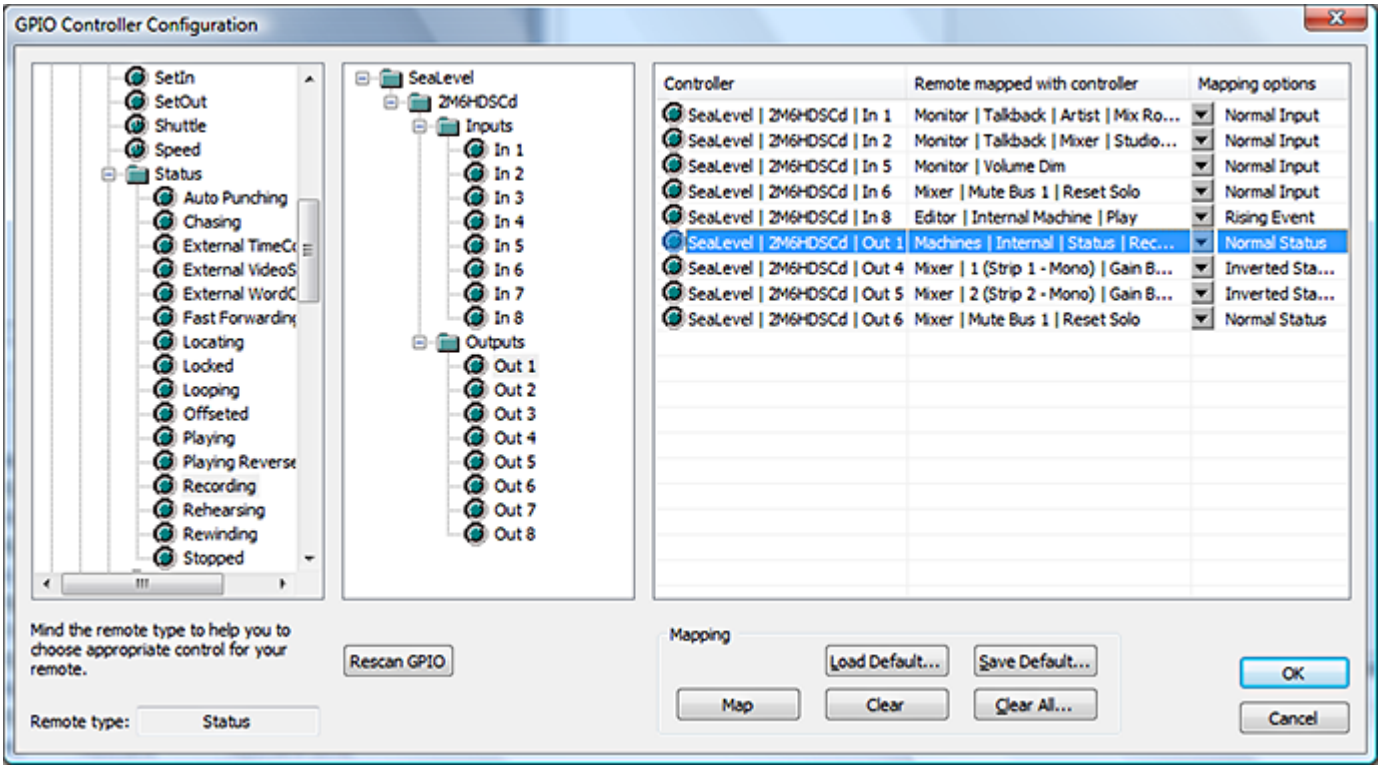
Configuring the GPI/O controller for a specific project

Open the **Settings > All Settings > Project > Controller Mapping** page.

Select your GPI/O controller and click **Properties**. The GPI/O Controller Configuration Window will appear; On the left you can browse the **Remotes** list. Next to this is the GPI/O Controllers list. To map a Remote to a GPI/O Input or Output pin just drag the Remote onto the Controller pin; The right-hand pane is a list of all currently mapped Controller pins. By clicking in the **Mapping Options** column you can configure how the pin works.

Click **OK** to accept the changes to the GPI/O configuration, or **Cancel** to abort.

Mapping Example



GPIO Controller Configuration dialog

Mapping Description of Example Shown Above

Input triggering:

In 1 : **Monitor | Talkback | Artist | Mix Room | On**

The Artist opens the talkback circuit to the Mix Room

In 2 : **Monitor | Talkback | Mixer | Studio | On**

The Mixer (Engineer) opens the talkback circuit to the Studio

In 5 : **Monitor | Volume Dim**

Dim the Monitor output section

In 6 : **Mixer | Mute Bus 1 | Reset Solo**

Reset the solo in the Mixer

In 8 : **Machines | Internal Machine | Play**

Put Pyramix in playback. I.e when the Artist is ready.

Output are triggered by:

Out 1 : **Machines | Internal | Status | Recording**

Control of the Record Red light.

Out 4 : **Mixer | 1 (Strip 1 - Mono) | Gain Bus 1 | Gain**

Fader start of the first mixer fader. For dB value the threshold is -90 dB

Out 5 : **Mixer | 2 (Strip 2 - Mono) | Gain Bus 1 | Gain**

Fader start of the second mixer fader. For dB value the threshold is -90 dB

Out 6 : **Mixer | Mute Bus 1 | Reset Solo**

Control of an additional indicator in the mixer room when a mixer strip is soloed.

GPI/O Remote types

There are 5 different types of **Remote** that can be used with GPI/O Input and/or Output pin:

- **Toggle** can be associated with both input and output pins.
- **Range** can be associated with both input and output pins and acts like a toggle 0 =off, other = on
- **Event** can only be associated with input pins.
- **Event-Status** can be associated with input and/or output pins;
- **Status** can be only associated with output pins.

The other **Remotes** cannot be mapped to GPI/O pins.

GPI/O Input and Output Pin Configuration

- Input pins mapped to Toggle or Range remotes can be configured as:
- **Normal Input**
- **Inverted Input**
- **Rising Event**
- **Falling Event**

Input pins mapped to Event or Event-Status remotes can be configured as:

- **Rising Event**
- **Falling Event**

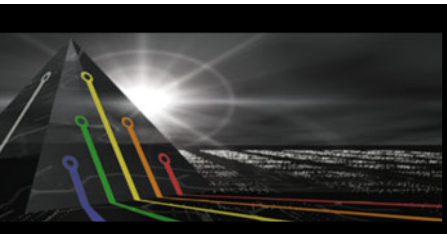
Output pins mapped to Toggle or Range remotes can be configured as:

- **Normal Status**
- **Inverted Status**

Output pins mapped to Status or Event-Status remotes can be configured as:

- **Normal Status**
- **Inverted Status**

26 CD/SACD Mastering and Album Publishing



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Overview

Pyramix has comprehensive mastering features for CD, Album production for digital delivery and SACD mastering as an option.

> **Note:** Regardless of whether you wish to produce a CD an SACD or a Digital Delivery the first steps are to make a new "**Disc**" in the **CD/SACD** Tab Window then add CD markers to the Timeline.

Mastering a Composition to CD-R

Pyramix is used to set CD Track **Start**, **Stop**, and **Index** Markers for CD-R Mastering, and a separate application called **DiscWrite** is provided to actually burn a CD-R or make a DDP.

One of the advantages to this way of working is that multiple 'virtual discs' can exist. This makes it simple to produce several different versions using the same material.

> **Note:** For a step-by-step guide to producing a simple CD please see the Pyramix Quick Start Guide, Page 70 **Quick CD**

IMPORTANT! - First Steps

Open the **CD/SACD** Tab Window and Double-click **<New Disc>** in the Album tab. Type a name for the CD then proceed to add **CD Markers**.

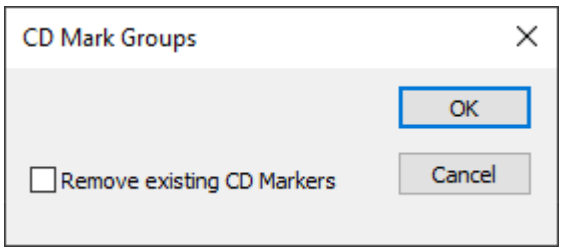
CD Markers

CD Markers are much like other User Flags or Markers.

To set a **CD Start Marker** (which indicates the beginning of a CD track), place the Play Head at an appropriate CD track Start location and choose **Cursors & Marks > Add CD Start Marker to Cursor**; similarly, to set the **CD Stop Marker** (which indicates the ending of a CD track), place the Play Head at the appropriate CD track End location and choose **Cursors & Marks > Add CD Stop Marker to Cursor**. A named **CD Index Marker** can also be added using **Cursors & Marks > Add CD Index Marker to Cursor**. These CD Markers can be examined, named and changed in the **CD/SACD** Tab window.

Add CD Markers Automatically

CD Track Start Markers and Stop Markers can be added automatically to Grouped Clips in a Composition. To accomplish this, first create a CD in the CD/SACD Tab window and select it. Make an appropriate Group of Clips which correspond to CD tracks. Then choose **Cursors & Marks** > **CD Mark Group**s from the **CD/SACD** Tab window **Markers** menu or from the main **Cursor and Marks** menu to open the **CD Mark Groups** dialog:



CD Mark Groups dialog

The only option is a check box to **Remove existing CD Markers**. Click on **OK** to automatically create CD markers for all grouped Clips.

> **Note:** If the gap between Clips in the Pyramix TimeLine is less than one second only **Start Markers** are placed or required. (There will always be a **Stop Marker** after the last Clip). **Stop Markers**

can be useful where there is applause after a piece which may not be wanted when broadcasting from a CD. Suitably equipped CD Players can be set to stop when they find a **Stop Marker**.

Convert Text Markers to CD

Text Markers can be converted into a CD.

Simply right-click on a selection of Text Markers in the **Markers** Tab pane and choose **Create CD Disc**.

This will create a new CD disc and select it. A final Stop marker will be added at the end of the next Clip found (if any) after the TimeCode of the last Start marker. (So it only creates CD Start Markers on the first and intermediate Cues, but also creates a Stop Marker after the Cue that has the last Start Marker, in order for the CD to be valid).

CD Text Import/Export

Import

CD Text has a separate file in the DDP folder, usually named **CDTEXT.BIN**, which carries the raw CD-Text data ready as it would be written on a CD. It is now possible for users import This data can be imported by selecting **Import** in the in the **CD Text Menu** which opens a File Browser window to locate a suitable file (**CDTEXT.BIN**). CD text is retrieved for a CD currently loaded in Pyramix.

Only the CD Text will be re-imported (no markers or timestamp) and will fill the existing CD tracks to the current CD and will not create new tracks.

If no Tracks are present in the current CD, only the Disc info in relation to CD text will be imported.

Export

CD-Text data can be exported by selecting **Export** in the in the **CD Text Menu** which opens a File Browser window to name the export file and choose a suitable location.

SACD Notes

For more comprehensive information about DSD and SACD please see this document:

http://betadownload.merging.com/ExternalLinks/Various/MergingTechnologies_DSD-DXD_ProductionGuide.pdf

D.4 High Frequency DSD Signal + Noise Level

The accumulated RMS signal + noise level of the DSD signal, measured after a 40 kHz Butterworth 30dB/Oct high pass filter and a 100 kHz Butterworth 30dB/Oct low pass filter, is maximally equal to the RMS level of an input sine-wave with a peak amplitude of -20 dB SA-CD (see D.2).

The averaging filter used to calculate the RMS level must be a first order unity gain IIR filter with a coefficient of 1/524288 (2-19), corresponding to an IIR filter with a cutoff frequency of about 0.85 Hz.

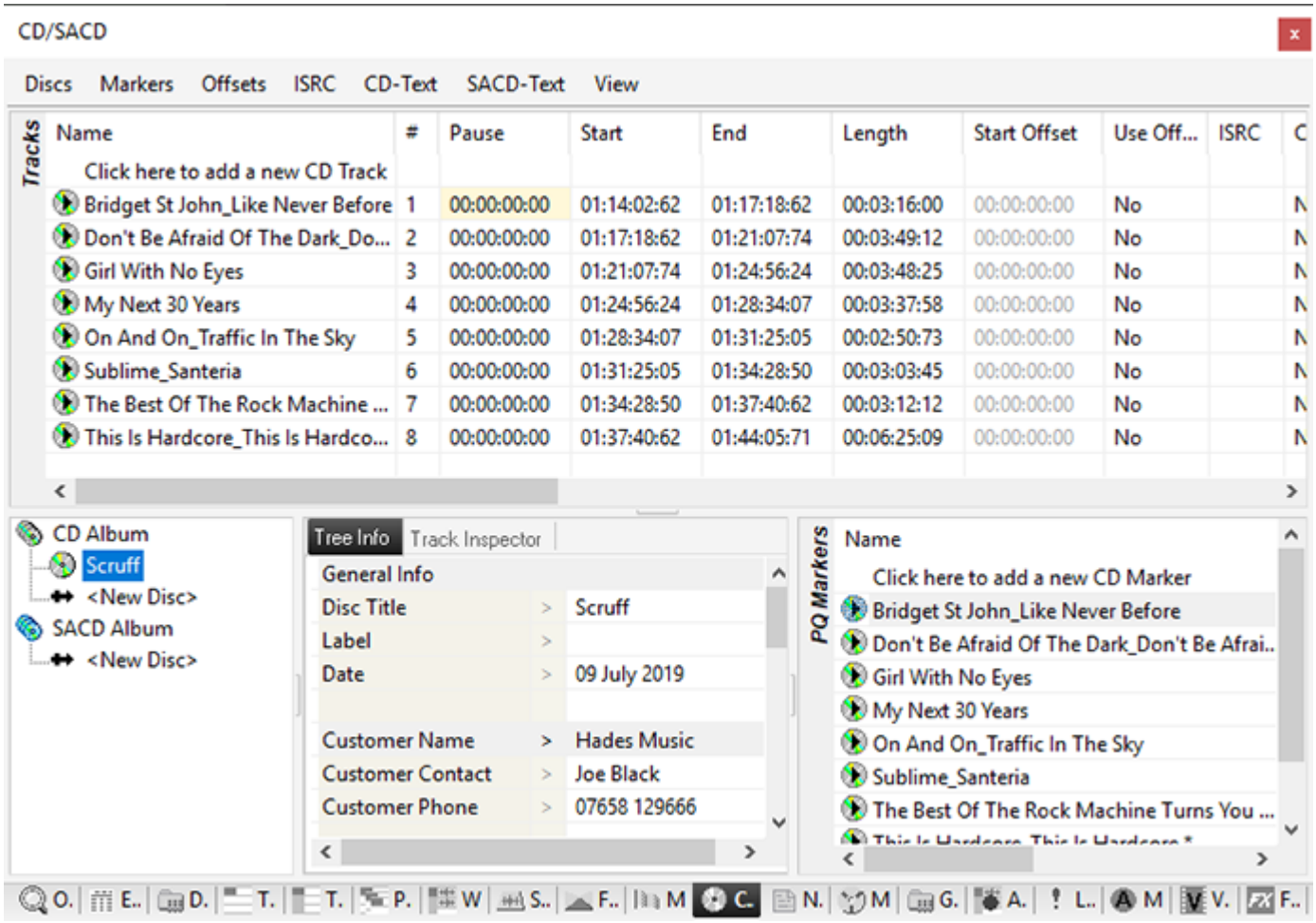
and annex E.2 of the same:

E.2 Analog Post-filter

To protect analog amplifiers and loudspeakers, it is recommended that a Super Audio CD player contain at its output an analog low pass filter with a cut-off frequency of maximum 50 kHz and a slope of minimum 30 dB/Oct. For use with wide-band audio equipment, filters with a cut-off frequency of over 50 kHz can be used.

Note: When releasing material at higher than 44.1 or 48 kHz sampling rate, Merging recommends adding a gentle low pass filter (typically 6 to 12 dB/octave) in the range from 30 to 50 kHz for all recordings made originally in DSD 64. The corner frequency of such low pass filters can be doubled whenever converting from DSD 128 and even quadrupled when converting from sources originally recorded in DSD 256 (which essentially means that even when converting from DSD 256 to PCM at 192 kHz, there is no need to add such a filter).

CD/SACD Tab Window



CD/SACD Tab window

All the mastering features are grouped in the CD View; in three sections.

The **Top Pane** is the **Tracks** list for the current CD/SACD Project.

The lower half of the window is divided into three, the **Album** area, the **Tree Info**/**Track Inspector** section and the **PQ Markers** list.

Album, All Markers and Track Inspector

The **Right** pane shows the track list fields. (see below)

Album Section:

The bottom left-hand pane shows a tree view of CD and SACD Albums and Discs with **<New Disc>** entries to create new Discs. The middle pane **Tree info** default Tab enables properties and default parameters to be set for the selected Disc.

Tree Info/Track Inspector Section

Tree Info Tab

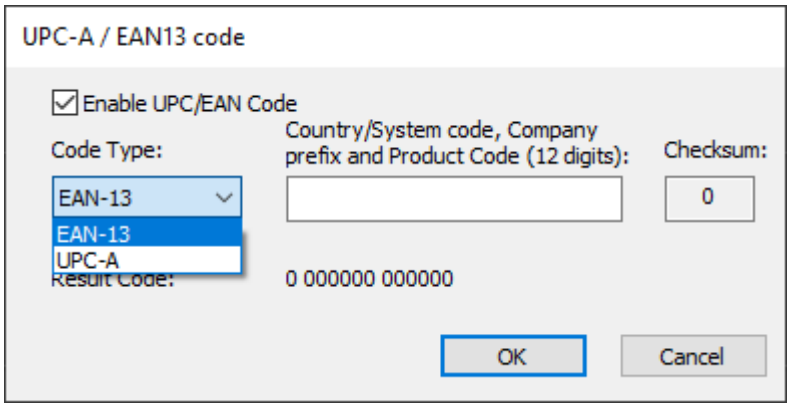
(Global – CD Header). In addition, there are similar fields for each track in the CD Track grid.

General Info

- **Disc Title** CD Title
- **Label** CD Production Label
- **Date** CD Date

- **Customer Name** The company the Disc is being made for.
- **Customer Contact** Customer Contact (name).
- **Customer Phone** Customer contact phone number.

- **Master ID Code** CD Identifying code (if one is required)
- **Ref Code** CD Reference Code (if one is required)
- **UPCEAN Code** Clicking in this field opens the **UPC-A / EAN13 code** dialog box.



UPC-A / EAN-13 code dialog

UPC/EAN capture for CD/SACD Albums, Discs and Areas is handled via this dialog box.
Enable UPC/EAN Code: When ticked **UPC/EAN Code** is enabled.
Code Type: offers a choice of UPC-A or EAN-13 barcode formats. Enter the 11 or 12 digit **Company prefix and Product Code**. The **Checksum** is calculated automatically and the resulting code displayed. Click **OK** to enter the result in the field.
The number of digits is checked according the type of code and the **CheckSum:** digit (the last one) is automatically calculated (to ensure its validity).
Moreover, the **TOC** information part of a Pyramix generated CDImage file (PMI) will always contain a 13 digits UPCEAN code (left 0-padded if UPC-A type code) or no UPCEAN code at all if the field is left blank.

- **Catalog Number** Free text field.
- **Artwork** Section heading
- **Front Cover** Click in the field to open a browser window to select a picture (PNG or JPEG) for Cover Art.

Note: Recommended size is 300 x300. (iTunes up to 600 x 600) High resolution (e.g. 1600 x1200) pictures may fail to display on some media players and are not recommended.

- **CD Disk info**
- **CD Text Character Set**
- **CD Text Genre**
- **CD Text Title**
- **CD Text Performer** CD General Performer
- **CD Text SongWriter** CD General Song Writer
- **CD Text Composer** CD General Composer
- **CD Text Arranger** CD General Arranger

Markers/Tracks Relation

- **Markers are linked to** Clicking in the field shows a list of choices. These are the same as the **Markers** Tab window choices: **<Independent>**, **Any Track** or **any Track without Group**

Track Inspector Tab

The second Tab in the bottom middle pane shows, and allows editing of, data pertaining to the track selected in the top **Tracks** pane.

- **Name** Track Name.The "*" suffix tells you that this name was auto generated.
- **# (Number)** The track number in ascending order from the beginning of the Disc.
- **Pause**
- **Start**
- **End**
- **Length**
- **Start Offset**. The Offset between the Start of the Track and the Marker. Click in the field to type a new value
- **Use Offset** Clicking in the field toggles between Yes and No
- **ISRC** Clicking in the field allows an ISRC code to be entered
- **Copy** Clicking in the field toggles the copy protect flag for the track between **Yes** and **No**
- **Comment** Free text field for authoring comments

CD Text Info

- **Genre**
- **Title**
- **Performer**
- **Song Writer**
- **Composer**
- **Arranger**

Clicking in any of these fields enables text to be entered which will appear in the relevant CD Text fields on the disc.

PQ Markers Section

In the lower right-hand pane **PQ Markers** shows and allows editing of all the PQ markers. Here only the PQ is modified, not the audio edit. CD Markers can be Cut / Copied / Pasted like standard Markers by right clicking an entry.

The CD Marker List is linked to the Disc (in the case of CD) and Area (in the case of SACD). There is no longer a CD Marker List in the Track Group tab window or a Global CD Marker List. If necessary the CD Marker List in Disc/Area can be linked to a Track Group to associate Audio content to a CD Marker List.

At the top of the list, the first entry is **Click here to add a new CD Marker** does what it says. Clicking on it places a text cursor in the **Name** field of a new PQ Marker entry. You can type a name for the Marker and fill in the other fields to suit.

Fields

Name

Name of the PQ Marker. When the markers are automatically created with the function "CD Mark Group", the stop marker gets the same name as the start marker + a **Stop** suffix at the end. The "*" tells you that this marker was auto generated.

(Number)

(Read only) Number of the PQ Marker. The stop marker has the same number as the start. The index markers begin at 2 then Inc… This is a Read only property; it depends on the position of the marker in relation to the others.

Type

Type of the Marker.

Time

Time position of the Marker.

Offset

Offset of the Marker. Grayed out when offset is disabled.

Use Offset

Enable or disable the Offset of a marker.

Tracks List Section

The top pane is the CD Tracks List which enables viewing and editing the content of the CD; by track. **All modifications applied here automatically affect your edit.** For example, if you modify a track pause from 4 to 6 seconds, all the Clips (from the first one in the selected track to the last Clip of the last track), markers and automation will be rippled to the right to add 2 seconds to the pause.

All operations can be undone.

The fields are:

Name

Name of the CD Track

(Number)

Number of the Track. Click on the Value to display a drop-down list with all available track position numbers, then you can select a new location for the track (E.g. Send track 9 to 2).

Pause

Pause of the CD Track: Time between the start of the track and the stop of the previous one. The pause of the first track is always 0 (the 2 second pause required by the RED Book standard are automatically added for you in the final TOC) except in the case of a Ghost track (see the Ghost Track section for more detail).

Start

Start of the CD Track in the Timeline. Modify this value to ripple the track and all the tracks after.

End

Stop of the CD Track in the Timeline. Modify this value to ripple all the tracks after (performs a similar function to **Length**).

Length

Length of the CD Track. Modify this value to increase or decrease the length of the track and ripple all the tracks after.

Start Offset

Negative Offset for the start marker of the track.

Use Offset Click in the field to toggle **No** or **Yes**.

Enable or disable the offsets of the track (start, stop, and index). To individually apply offset to start, stop and index, go the **All Markers** page in the left-hand panel.

ISRC

International Standard Recording Code. See the **CD Properties** section in the left-hand panel to get a complete description of this code. See the **Extra Functions** section to see how to automatically create this code. This field has a validation routine. The code may be entered as you wish and will automatically be validated. (E.g. "(FR) W01 - 02 / 1" gives "FRW010200001").

Copy

Toggles the Copy Protection bit. **No** or **Yes**

Comment

General purpose comment. For 'in house notes'.

Genre

CD Text fields

All the remaining fields can be copied from the **CD Properties** page, see the **Extra functions** section, after this:

CD Text Title

CD Text Performer

CD Text Song Writer

CD Text Composer

CD Text Arranger

CD/SACD Tab Window Menus

Discs

Create SACD Disc From CD Disc Does what it says. Only available when current Disc is a CD.

Create CD Disc From SACD Disc Does what it says. Only available when current Disc is an SACD

Markers

CD Mark Groups	Generate PQ markers automatically from Clips or Clip groups.
Add Start Marker	Add a Start Marker to the cursor position.
Add Stop Marker	Add a Stop Marker to the cursor position.
Add Index Marker	Add a Index Marker to the cursor position.
Delete Selected Marker(s)	Deletes selected Markers
Delete Selected Track(s)	Deletes selected Track(s) complete with Clip, Markers, Automation etc.
Clear All Markers	Clear all the PQ markers.
Validate name	For a Track selected in the Tracks pane: Removes the "*", which is included in the name of an auto-generated marker and copy the name of the Start Marker to the Stop marker (if it is the last track in a disc), with a "**stop**" suffix added at the end of the Stop Marker name.
Validate PQ	Validates the **PQ** for the disc. (**Please see Red-Book Validation on page 638**)

Offsets

Show Offset	Move the PQ marker to reflect the final position of the markers with offset. The **Table of Content** page always displays the final PQ code with offset; so this function is useful to show the real position of the marker on the Timeline or when you want simulate the final CD with the CD player.
Copy First Start	Apply the **Offset before first Track** value.
Copy Last Stop	Apply the **Offset after last Stop** value.
Copy Start	Apply the **Offset before start** value.
Copy Stop	Apply the **Offset after stop value**.

ISRC

Create	Create ISRC for the selected track(s) using the ISRC default parameters in the CD Properties page. If there is more than one selected track, the ISRCs are first created on the first selected track then incremented for the other(s).
Inc. Selection	Increment the designation code part of the ISRC for the selected track(s).

Validate ISRC Check if the ISRC code is correct and correct it if it's bad.

CD Text

Import>

Raw CD-Text File (CDTEXT.BIN)

Export>

CD-Text File (.TXT)

Set All Track CD-Text form Disc info Copy all the CD Disc information to the selected track(s) CD Text fields.

Set Track Performer from Disc Info Copy the CD **Performer** to the selected track(s) CD Text **Performer** field.

Set Track Song Writer from Disc info Copy the CD **Song Writer** to the selected track(s) CD Text **Song Writer** field.

Set Track Composer from Disc info Copy the CD **Composer** to the selected track(s) CD Text **Composer** field.

Set Track Arranger from Disc info Copy the CD **Arranger** to the selected track(s) CD Text **Arranger** field.

Set Track Title from Track Name Copy the **Track Name** to the CD Text **Title** for the selected track(s).

SACD Text

Import>

Philips Album file (.lbm)

Sony STT Disc file (.mts)

Export>

CD-Text File (.TXT)

Copy Album Info to selected Disc Info

Set Track Performer from Disc Artist

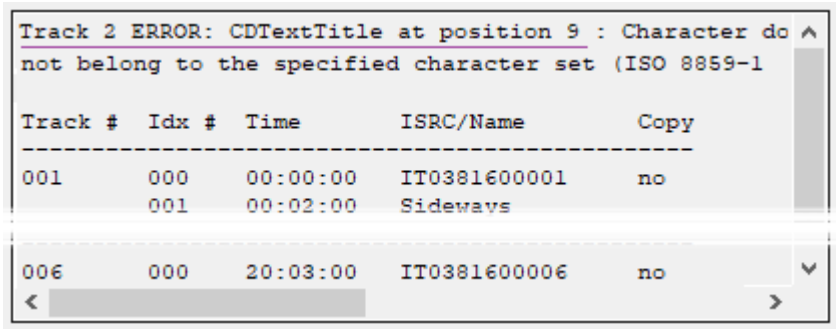
Set Track Title from Track Name

View

Show CD Player Opens the **CD Player** floating window **Please see: Show CD Player on page 637**

Display TOC... Opens the **XToc** dialog. The left hand pane shows all **Discs** in **CD Album**s and **SACD Album**s associated with the current project. Click on a **Disc** to select it, then click on the **Display XTOC** button to display the complete TOC for the Disc in the right-hand pane.

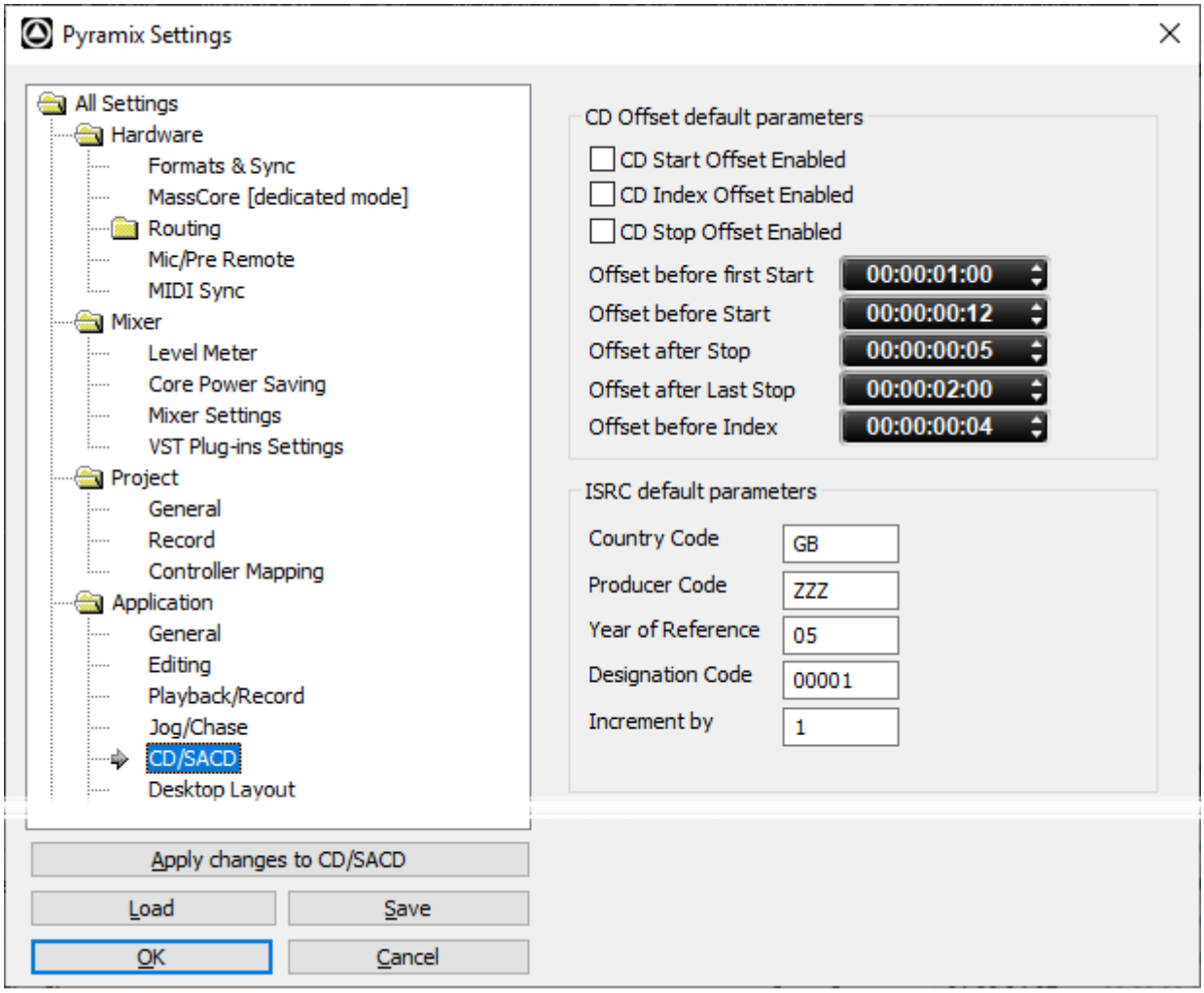
Note: Text validation is carried out when **Display TOC...** is selected. The validation supports CD and SACD XTOC formats and will ensure that the character sets and characters used respect the Final Master specification.
If errors are found they are displayed at the top of the TOC view. Error information and character position is indicated in the error line report.



CD/SACD Tab - TOC pane with Error

Default Settings

CD Offset default parameters and ISRC default parameters are set in the **Settings > All Settings > Application > CD/SACD** page.



All Settings Application CD/SACD Page

CD Offset default parameters

These parameters are used when the offset of a PQ marker is set to zero and you enable them by ticking the boxes.

CD Start Offset Enabled

CD Index Offset Enabled

CD Stop Offset Enabled

Offset values can be typed and/or adjusted using the increment decrement buttons.

Offset before first Start

Negative offset applied to the first PQ start marker only.

Offset before Start

Negative offset applied to all PQ Start markers except the first one.

Offset after stop

Positive offset applied to PQ Stop marker except the last one.

Offset after last stop

Positive offset applied to the last PQ stop marker.

Offset before Index

Negative offset applied to PQ index marker.

ISRC default parameters

These parameters are used to automatically create or increment ISRC with the function **ISRC > Create** & **ISRC > Inc Selection** are invoked from the **Offsets** and **ISRC** menus. (Right-click anywhere in the right-hand pane)

All these parameters are stored in the project. If you want to define the value as Default value, right click on the value and select "Set as Default".

Country Code

2 characters (GB, SW, FR etc…)

Producer

3 characters (W01).

Year of Reference

2 digits (02).

Designation Code

5 digits (00012, 80010).

Increment by

Used to auto increment the designation code part of the ISRC. The default value is "1".

Show CD Player

CD Player floating Window

View > Show CDPlayer in the **CD/SACD** Tab window displays an "always on top" small CD Player which enables simulation of the CD playback (like a "real" CD player). The CD can be simulated with or without the markers offset. Choose **Show Offset** in the Track list pane pop-up menu to take care of the offset The player has standard playback functions (play, stop, next, previous, scan etc…) and some special functions:

Preroll

Clicking in the number box allows a value (in seconds) to be entered.

Postroll

Clicking in the number box allows a value (in seconds) to be entered.

Skip Track Backwards

Skip Track Forwards

Stop

Play

Rewind

Fast Forward

Play Transition Play the current track from the previous **Stop marker** minus **pre-roll** to the current **Start marker** plus **post-roll**. Pre and Post roll can be edited directly on the CD player interface.

Play All Transitions Has the same functionality as Play Transition but plays all transitions between CD tracks.

Track Clicking on the third from the right button cycles through four different time display options. Elapsed time from start of CD, Time remaining from the End of the CD. Elapsed time of Track and Time remaining from end of Track

Frame Shows/hides the CD frames display

Rnd

Ghost Track

Normally a CD begins from the first track which has a 2 second pause. Pyramix allows you to modify this and create a ghost track; a track before the first track. To accomplish this simply add a CD Index Marker at the beginning of your ghost track, before the first start marker. You can also edit the pause of the first track then this will create or move the ghost marker index for you.

Multiple CDs or versions in one Project

All CD Information and CD Markers can be either "global" or per Track Group. Each Track Group that has the Destination type and Free Markers enabled has its own CD Information and CD Markers. This enables multiple versions of PQ editing for an album to be handled and for multiple CD albums in the same document. The CD Info and Markers displayed in the CD Tab Window follow the currently selected Track Group.

Red-Book Validation

Validate PQ: This function ensures that the PQ conforms to the Red Book specifications by carrying out the following checks and corrections.

- When a pause is less than 1 second, the pause is removed. (The offset is automatically dealt with).
- Track Length is set to 4 second if it is less. (The offset is automatically dealt with).
- Track count is reduced to 99 if greater
- ISRC is removed if it is incorrect
- UPC/EAN is removed if it is incorrect

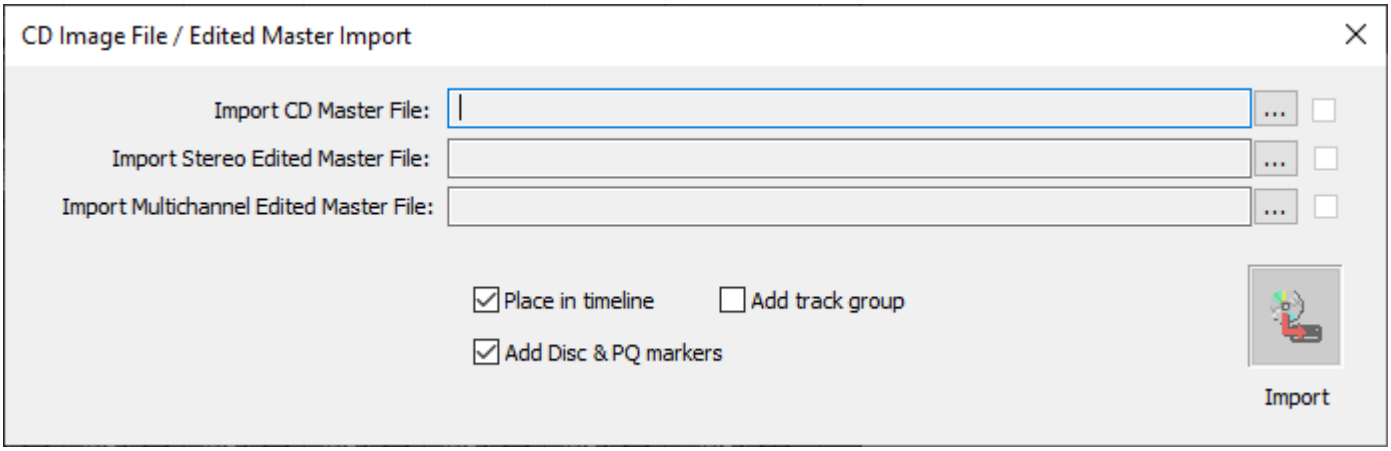
This function an be undone if necessary.

DDP Import

You can use the DDP import function **Project > Import > DDP Import** to import a DDP tape or file and generate a new CD image file. From this CD image file you can burn a CD or generate a new DDP tape.

CD Image File / SACD Edited Master Import

Import audio and **PQ** Markers from a CD Image file or SACD Edited Master. **Project > Import > CD Image File / SACD Edited Master Import**.



CD Image File / Edited master Import dialog

Each **...** button opens a File Browser Window to locate the desired file(s).

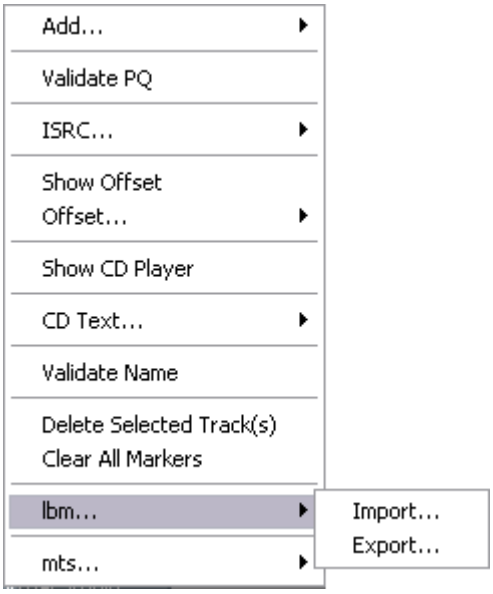
The boxes at the bottom of the screen determine how the data will be processed on import.

Place in Timeline	When ticked the audio will be placed in the Timeline on an appropriate number of Tracks.
Add Track Group	When ticked a Track Group will be created containing all the relevant audio tracks.
Add Disc & PQ markers	When ticked Disc and PQ markers will be added to the Marker bar.

SACD Functions

Accessed from the right-click context menu:

lbm...



lbm... sub-menu

Import... / Export...

Opens a Windows browser window to save or load SACD text .**lbm** files.

mts...

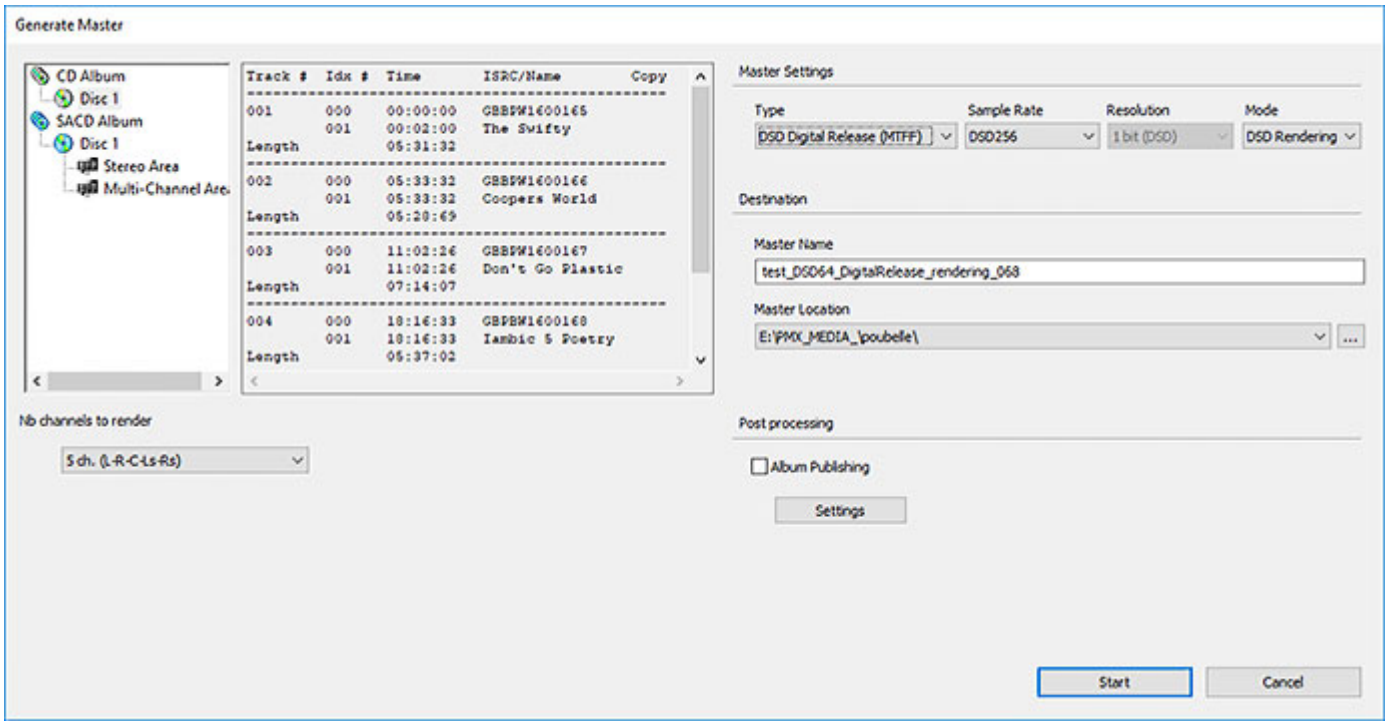
Opens a Windows browser window to save or load SACD text .**mts** files.

Generating Masters

Once a Project has been prepared (Marked etc.) for mastering choose **Project > Generate Master**.

This replaces the previous **Generate CD Image / SACD Edited Master** function.

Note: The **Generate Master** dialog is modal. I.e. the settings available change depending on the **Type** setting.



General Master dialog

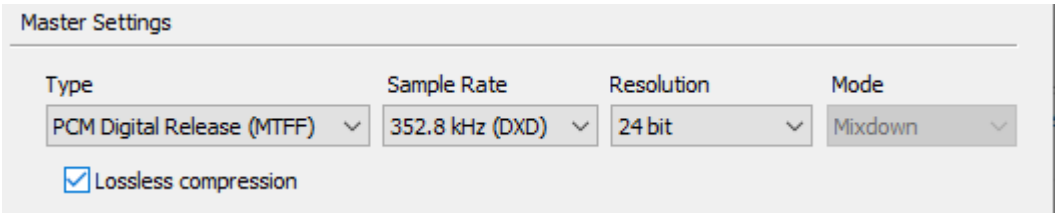
When the **Generate Master** dialog is initiated the most recent previous parameters are retrieved. However, for avoidance of manipulation errors the **Master Settings : Type** are initialized in accordance with the default Project values, for example:

- Project 44.1k = Red book CD Image (44.1k 16 bit).
- Project PCM 48k/176.4k/192k/352.8k/384k = MTFF PCM Digital Release 24 bit set to the project sampling rate.
- Project DXD = MTFF PCM Digital Release 32bit float 352.8k.
- Project DSD64/128/256 = MTFF DSD Digital Release en DSD Rendering set to the project sampling rate.

Note: DSD128 and DSD256 Edited Masters may be generated for Digital Release in DSD rendering or Mixdown modes, this also allows DSD128 and DSD256 input formats to be used for Album Publishing.
The DSD Rendering mode requires that the number of channels to render is selected first:

General Master dialog - Nb channels to render section

MTFF (Merging Technologies File Format) DSD Digital Release files can be imported into Album Publishing or Discwrite. MTFF loss-less compression option is available in **Generate Master : Master Settings**:



General Master dialog - Master Settings section

Note: MTFF Lossless compression is available for linear PCM resolutions only and not for floating point PCM.

Mixdown Processing

Real Time When checked Mixdown will be carried out in real time. Option is grayed out if not applicable to the selected **Master Type**.

Offline Controllers When checked any hardware control surfaces will be set off-line during mixdown.

DSD - Sigma Delta Modulator

SDM Settings are available in **Mixdown** mode

For appropriate formats the drop-down offers the choice of:

SDM D

SDM Trellis E (8paths)

SDM Trellis E (16paths)

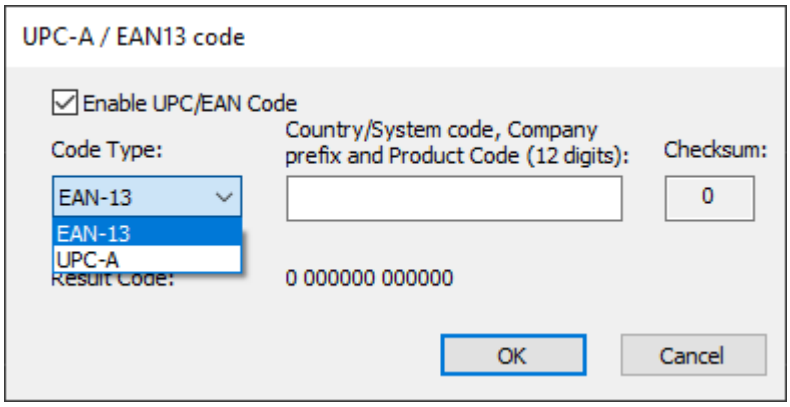
SDM Trellis E (24paths)

SDM Trellis E (32paths)

Exporting Projects to CD Image Files

To export a previously Marked Composition to a CD-R image file and Cue Sheet text file:

Open the **CD/SACD** Tab window. Fill in CD information as appropriate. Clicking in the **UPC/EAN Code** field opens the UPC-A / EAN13 code dialog:



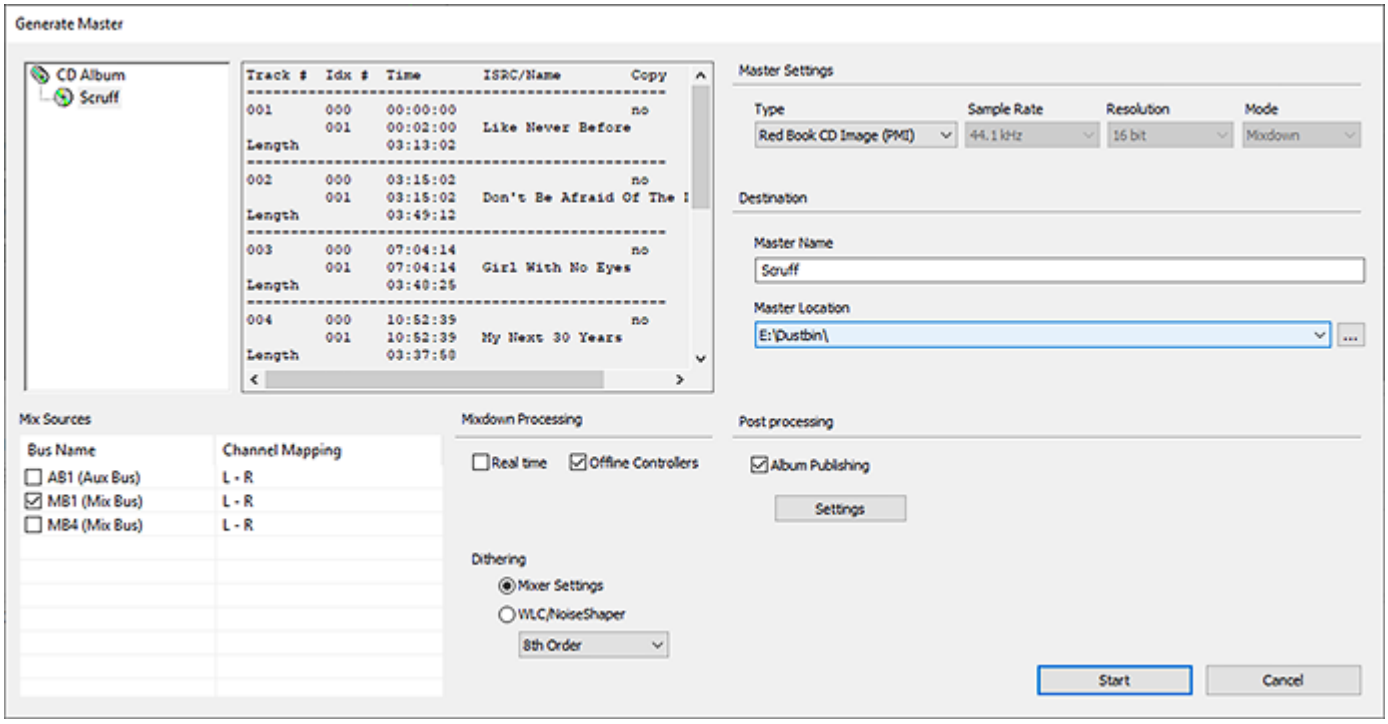
UPC-A / EAN-13 code dialog

UPC/EAN capture for CD/SACD Albums, Discs and Areas is handled via this dialog box.

Enable UPC/EAN Code: When ticked, **UPC/EAN Code** is enabled.
Code Type: offers a choice of **UPC-A** or **EAN-13** barcode formats. Enter the 11 or 12 digit Company prefix and Product Code. The checksum is calculated automatically and the resulting code displayed. Click OK to enter the result in the field.

The number of digits is checked according the type of code and the CheckSum: digit (the last one) is automatically calculated (to ensure its validity).

Moreover, the **TOC** information part of a Pyramix generated CDImage file (PMI) will always contain a 13 digits UPCEAN code (left 0-padded if UPC-A type code) or no UPCEAN code at all if the field is left blank.Choose **Project > Generate CD Image / SACD Edited Master**. This opens the **Generate CD Image** dialog.



Generate CD Image / SACD Edited Master

Select a **CD-Disc** from the left-hand pane.

Target Settings

Image Format

Choose the required format from the drop-down list. Options available are:

Red Book CD Image (PMI) Produces a disk image compliant with the CD 'Red Book' standard.

DSD Edited Master (DSDIFF)

PCM Digital Release (MTFF)

DSD Digital Release (MTFF)

Master Name

Type a suitable name for the image.

Master Location

The combo box has a list of all mounted media folders or you can use the ... button to open the **Choose a media folder to mount** dialog.

Mix Sources

Clicking the box on a Mix Source toggles it active or inactive.

> **Note:** Only one bus can be selected. Inappropriate choices are hidden. E.g. a multichannel bus when Red Book CD is selected as the Image Format.

Mixdown Processing

Real Time

Tick the box if you want to generate in real time or if you wish to listen to the CD while the image is being generated.

Offline Controllers

Untick the box if you want to use a Hardware Controller while generating the image in realtime for e.g. changing Monitor volume etc. or to fade out.

SRC Filter Type

If Sample Rate Conversion is necessary this option will be available. It uses the Merging technologies **HeptaCon** technology. Choose the desired Filter Type from the drop-down list :

- **Lin. Phase**, Linear Phase, features constant group delay, thanks to the linear phase, and has a symmetric impulse response, but also longer rings. This offers the best preservation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.
- **Min. Phase**, Minimum Phase, features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spectrum and allows slightly better results for transient sounds.
- **Apodizing** offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between linear and minimum phase types.

Dithering

Note: There is no necessity to manually disable dither in the Mixer.

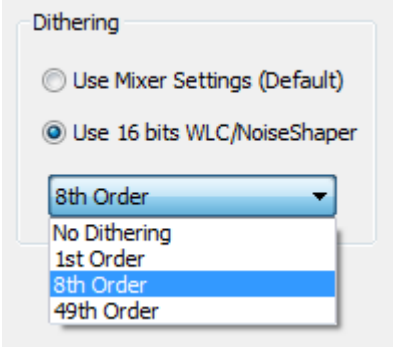
There is a choice between two dither processing units:

Use Mixer Settings (default)

Applies the same treatment as the Mixer's Dither (parameters are those selected in the Mixer) or

Use 16 bits WLC/Noise Shaper

This is the same as the dither in v4.2, available even if no SRC is applied. The combo box offers a choice of settings:



Generate CD/SACD dialog - Dither options

Select the required quality of Noise Shaping from the drop-down list.

1st Order is simple single order shaping with

8th Order and

49th Order offering improved quality.

A higher quality setting will produce better results, but the processing time will also increase.

Post processing

Album Publishing

Tick the box to produce an album for digital delivery in addition to a CD image. **Please see: Album Publishing on page 646**

Settings

Opens the **Album Publishing options Properties** dialog.

Album Publishing

Digital Release

Overview

Online downloadable album publishing is tending to supersede classic Audio CD production and Pyramix includes features intended to make the process of generating suitable files easier.

Formats supported currently:

File Format	Max no. of channels	Max sampling rate	Available pre-encoding bit rates
Wave	8 (and 5.1.4)	352.8	16/24/32FP
AIFF	8 (and 5.1.4)	352.8	16/24/32FP
MTFF	6 (and 5.1.4)	352.8	16/24/32FP
PMI CD Image	2	44.1	16
Flac	8 (and 5.1.4)	352.8	16/24
Ogg Vorbis	128	192	16/24/32FP
MP3	2	48	16/24/32FP
AAC	48	96	16/24/32FP
DSDIFF	2/5/6	DSD64 to DSD256	NA (1 bit)
DSF	6	DSD64 to DSD256	NA (1 bit)

- **WAVE** (uncompressed)
- **AIFF** (uncompressed)
- **MTFF** (uncompressed or lossless compression)
- **PMI CD Image**
- **FLAC** (lossless compression)
- **Ogg Vorbis** (lossy compression),
- **MP3-ABR** (lossy compression)
- **LC-AAC** (lossy compression)
- **DSDIFF Edited Master**
- **DSF** (uncompressed) DSD64, DSD128, DSD256

Note: Warning: 3rd party applications may not be able to read these files since the native formats have their default limitations.

Multiple formats and multiple versions of each format with different settings can be generated simultaneously.

Album Publishing is available in four ways:.

In the **Generate CD Image** dialog :

- As an additional output or outputs when generating a PMI CD Image from a Pyramix Timeline.
- As a stand alone Digital Release from a Pyramix Timeline.

In the separate application **DiscWrite**

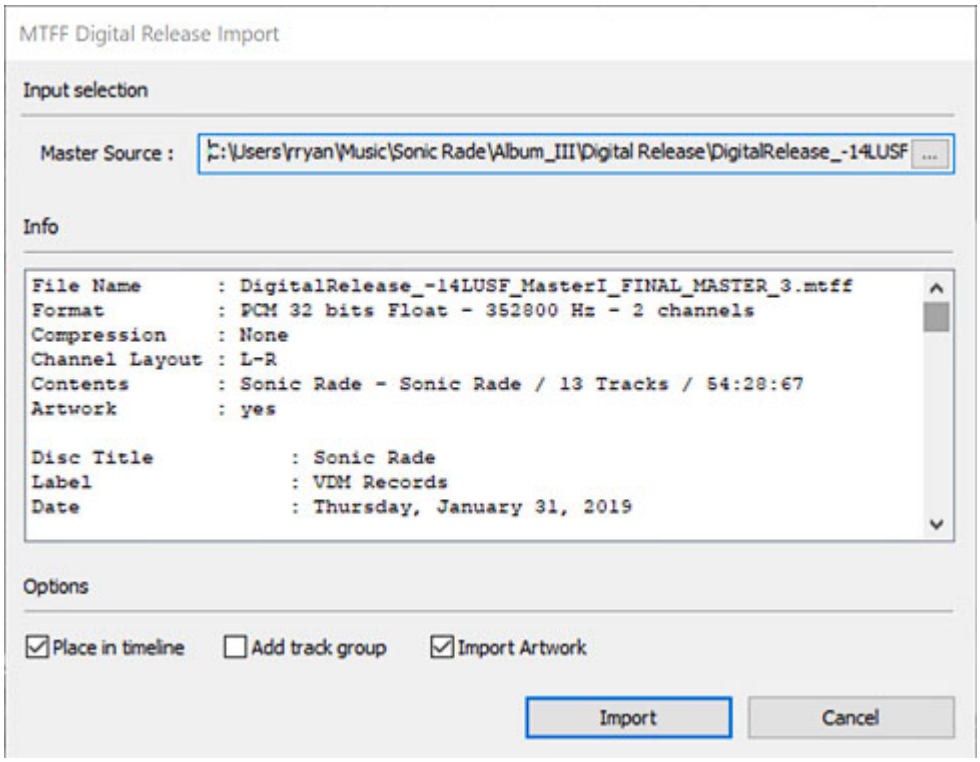
- As an additional output or outputs when making a disk from a PMI CD Image or DDP file.

- As a stand-alone Digital Release from a PMI CD Image or DDP file.

For users wishing to deliver high resolution files without generating a PMI CD Image (e.g. 96k, 192k-24bits FLAC/OGG/WAV/AIFF/MTFF) from a higher than 44.1k project, the **Digital Release** Target format will ensure optimal quality throughout the processing workflow by creating a stereo mixdown (same sampling rate as project, 24 bit resolution in MTFF format) and using this audio file as input for Album Publishing processing.

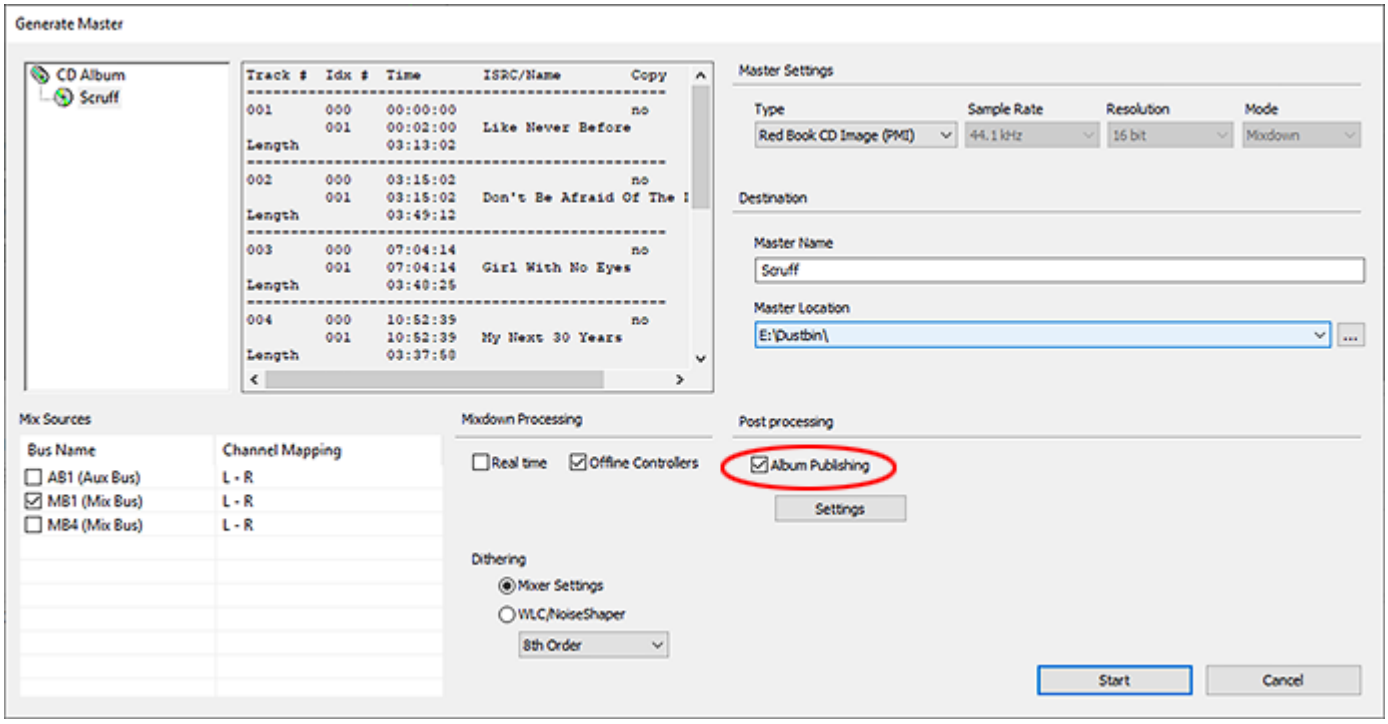
Import MTFF Digital Release

As of Pyramix v12 Beta2 MTFF Digital Release files can be imported into the Pyramix Timeline to edit the CD tags if corrections are needed, the workflow is similar to PMI CD Image / SACD Edited Master / SACD Cutting Master Import and includes artwork. The import dialog window is resizable. Select under **Project > Import > MTFF Digital Release**.



MTFF Digital Release Import

Album Publishing Settings



Generate Master : Album Publishing check box

Generate CD Image and Publish Album

Proceed exactly as you would when making a CD Image. In the **Generate Master** window ensure that the **Album Publishing** checkbox in the **Post Processing** section is ticked. Click on the adjacent **Settings** button to open the **Album Publishing options Properties** dialog, make the appropriate settings and click **Generate Image** to commence the process.

Target Settings

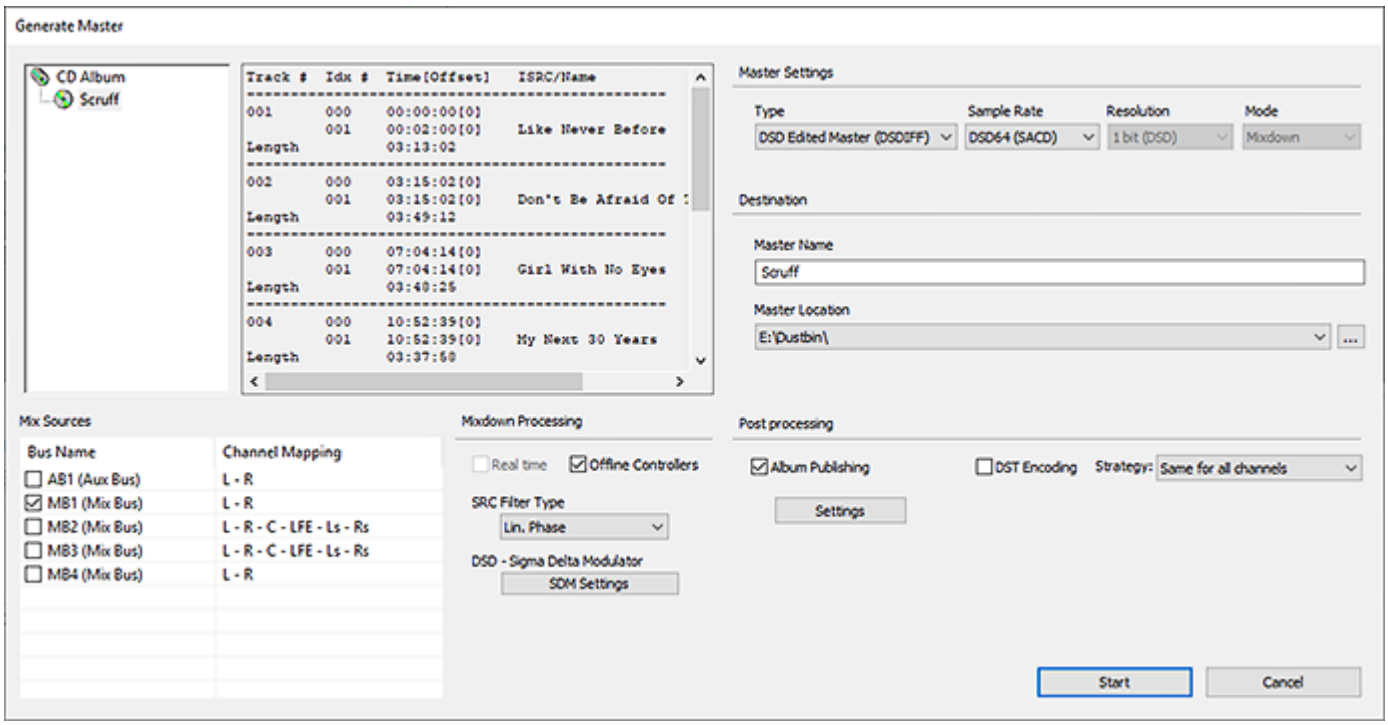
Digital Release

If the release is purely for download/streaming proceed as you would when making a CD Image. In the **Generate Master** dialog select one of the **Digital Release** formats in the **Master Settings : Type** dropdown.

> **Note:** Rather than ticking the **Album Publishing** checkbox when **CD Image (Red Book)** is the target, using **Digital Release** as the target instead will avoid an unnecessary intermediate conversion to 44.1kHz 16 bits. This is obviously desirable when the original material is at a higher sampling rate and or bit depth.

> **Note:** As of Pyramix v12 DSD128 and DSD256 Edited Masters may be generated when Album Publishing from a DSDx Digital Release Master. No PCM step will be processed if when delivering DSDx media tracks from it (e.g. DSD256 Master generation to DSD256 media tracks).

Various items in the **Generate Master** dialog change to reflect the **Digital Release** selection:



Generate Master : Digital Release (Stereo or Mch)

Master Settings

Type

Red Book CD Image (PMI)

DSD Edited Master (DSDIFF)

PCM Digital Release (MTFF)

DSD Digital Release (MTFF)

> **Note:** Multichannel only possible when supported by the target format.

> **Note: DSD Digital Release (MTFF)** creates a DSD Digital Release in 32bit MTFF to allow for the transmission of +0dBFS information for DSD delivery. This enables DSD files to be published while taking advantage of the extra [0, +3] dB DSD dynamic range allowed by the DSD domain.

Master Name

The file has the same name as the CD Album by default. Type an alternative in the field if required.

Master Location

Click on the down arrow to choose a folder (mounted currently) where the file will be written. Or click on the **...** button to open the **Choose a media folder to mount** dialog.

> **Note:** The Image file is retained. If you wish to delete it, use a Windows file browser to navigate to the location chosen and delete the file.

Mix Sources

Bus Name

Clicking the box on a Mix Source toggles it active or inactive. Only one bus may be selected at a time.

Channel Mapping

The Channel Mapping reflects the mapping of the Mixer Buses. For multi-channel buses clicking on the mapping opens a drop-down menu with the choice of available channel mappings

Mixdown Processing

Real Time

Tick the box if you want to generate in real time or if you wish to listen to the output while the image is being generated. (Only available when **Red Book CD Image (PMI)** is selected under **Type**.

Offline Controllers

Tick the box to turn off any connected controllers during the image generation process. Untick the box if you want to use a Hardware Controller while generating the image in real time for e.g. changing Monitor volume etc. or to fade out.

SRC Filter Type

If Sample Rate Conversion is necessary this option will be available. It uses the Merging technologies **HeptaCon** technology. Choose the desired Filter Type from the drop-down list :

- **Lin Phase**, Linear Phase features constant group delay, thanks to the linear phase, and has a symmetric impulse response, but also longer rings. This offers the best preservation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.
- **Min Phase**, Minimum Phase features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spectrum and allows slightly better results for transient sounds.
- **Apodizing** offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between linear and minimum phase types.

Dithering

Only available when **Red Book CD Image (PMI)** is selected under **Type**.

> **Note:** There is no necessity to manually disable dither in the Mixer.

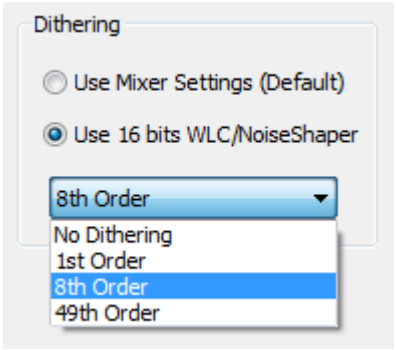
There is a choice between two dither processing units:

Use Mixer Settings (default)

Applies the same treatment as the Mixer's Dither (parameters are those selected in the Mixer) or

Use 16 bits WLC/Noise Shaper

This is available even if no SRC is applied. The combo box offers a choice of settings:



Generate CD/SACD dialog - Dither options

Select the required quality of Noise Shaping from the drop-down list.

1st Order is simple single order shaping with

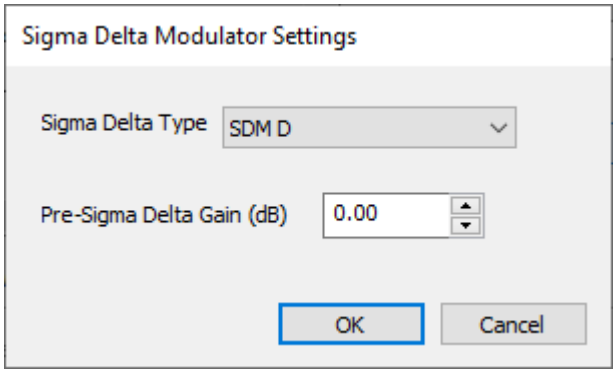
8th Order and

49th Order offering improved quality.

A higher quality setting will produce better results, but the processing time will also increase.

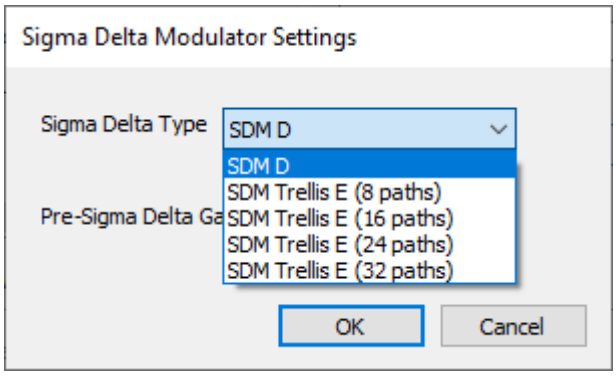
DSD -Sigma Delta Modulator

Only available when **DSD Edited Master (DSFDIFF)** or **DSD Digital Release (MTFF)** is selected under **Type**.



Sigma Delta Modulator Settings

Sigma Delta Type The drop-down list offers the choice of type:



Sigma Delta Modulator Settings

SDM Trellis E (8paths)

SDM Trellis E (16 paths)

SDM Trellis E (24 paths

SDM Trellis E (32 paths

Pre-Sigma Delta Gain (dB)

To add or subtract Gain before the Sigma Delta process either use the up and down arrows to set Gain or type directly in the box.

> **Note:** Meco SDM allows high sample rate (64 and 128 Fs) intermediate multibit stage when going from one DSD format to another (e.g. DSD256 to DSD128).

Post Processing

Album Publishing

Check the **Album Publishing box** to generate files in one or more formats.

Click on the **Settings** button in the **Album Publishing** section to open the **Album Publishing options Properties** dialog, make the appropriate settings and click **Generate Image** to commence the process.

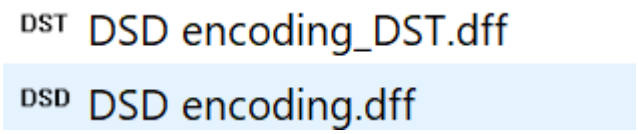
DST Encoding

Only available when **DSD Edited Master** is selected in the **Type** drop-down list menu.

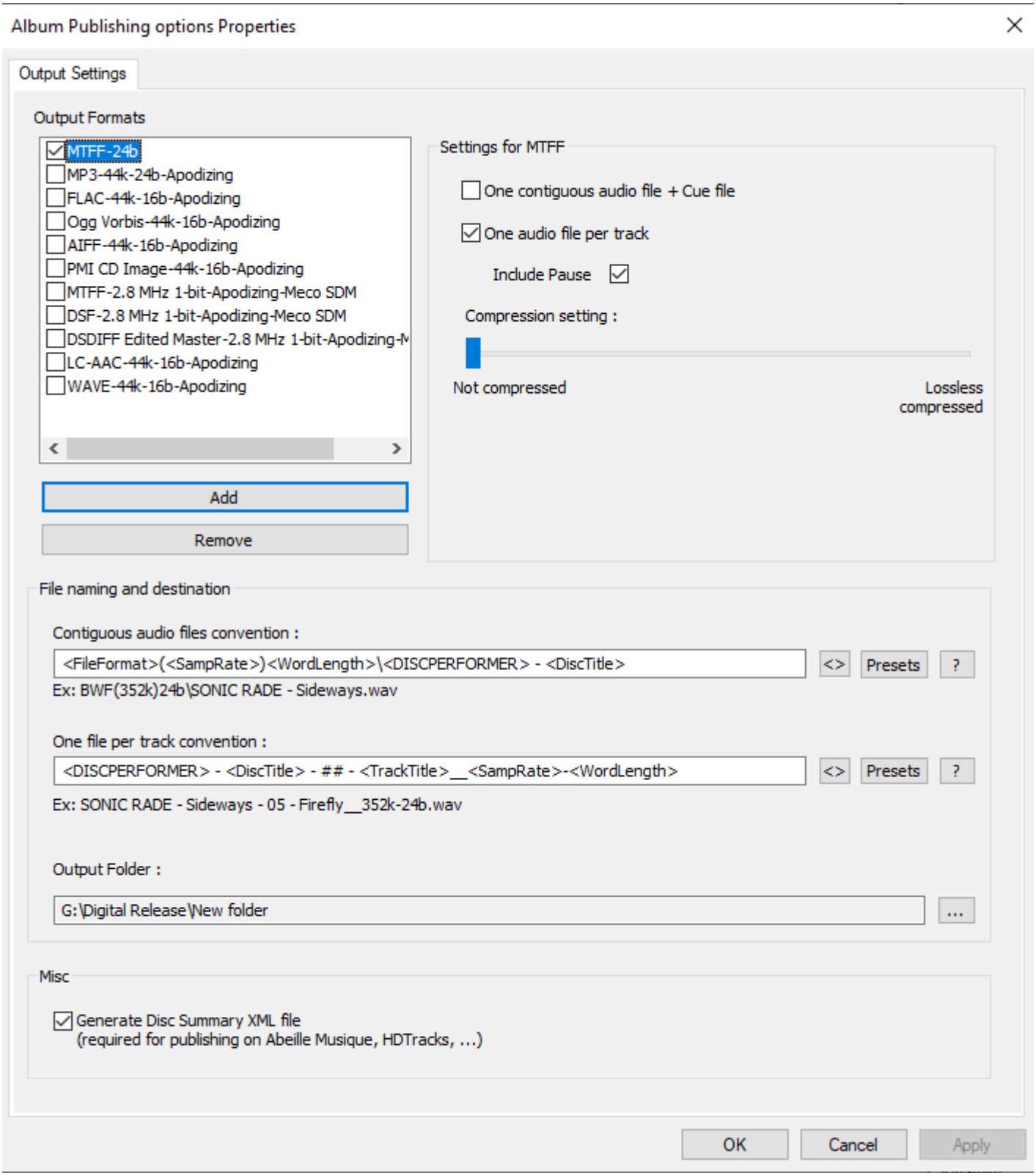
When ticked **DST** encoding will be made during the processing pass.

After processing you can view the result in Windows Explorer:
Right-click on a DSD/DST DSDIFF file and choose **Properties**.. Click on the **DSD/DST** info tab.

In Windows Explorer the DST and DSD media files have different icons:



Album Publishing Settings



Album Publishing options Properties dialog

Output Formats

All output formats currently added are listed here. Tick the check-box next to the name to generate an album in this format. Multiple formats may be selected. Multiple instances of the same format with different settings can be produced simultaneously. For example, you could produce two FLAC and three WAV versions, with different settings at the same time.

The settings on the right of the dialog are specific to each instance of each format and reflect the format instance highlighted in the **Output Formats** list. (In the above screenshot **FLAC** is highlighted and the settings are specific to this.

> **Note:** Double-clicking an entry in the **Outputs Formats** list opens the **Modify Output Format** dialog which is functionally identical to the **Add Output Format** dialog.

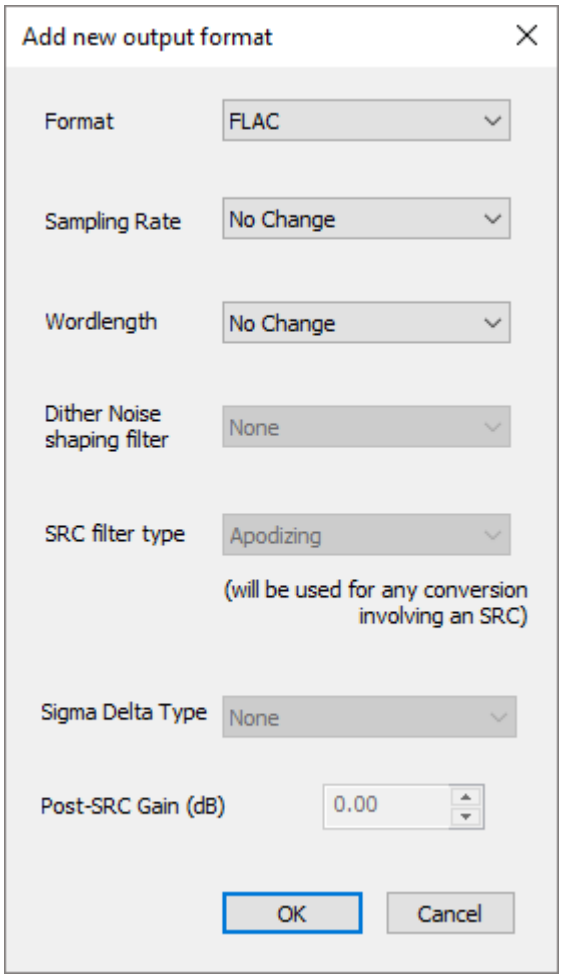
Add - Adding Output Formats

Clicking on **Add** opens the **Add new output format** dialog. (See below)

The formats available currently are:

- **FLAC** (lossless compression),
- **Ogg Vorbis** (lossy compression),
- **WAVE** (uncompressed)
- **AIFF** (uncompressed)
- **PMI CD Image**
- **MTFF** (uncompressed or lossless compression. Merging Technologies File Format)
- **DSF**
- **DSDIFF Edited Master** DSD64, DSD128 or DSD256 Enables DSD Edited Masters to be produced for e.g. future SACD delivery.
- **LC-AAC** (lossy compression. Low Complexity Advanced Audio Coding.)
- **MP3** (lossy compression. MP3 Average Bit-Rate compression or the more aggressive VBR)

Click on the **Add** button to open the **Add New Output Format** dialog.



Add new output format dialog

Format Choose the format required from the drop-down list.

Sampling Rate The default is **No Change** in which case the Project sampling rate will be used. Otherwise, choose the required sampling rate from the drop-down list. Only the Sampling Rates available for the chose format will be available.

Wordlength The default is **No Change** in which case the Project Wordlength will be used. Other wise choose the required Wordlength from the drop-down list. Only the Word-lengths available for the chose format will be available.

Dither Noise Shaping Filter This is based on MT-r Dither using **Triangular Noise** with the choice of **None, High Pass** or **Equal Loudness**

SRC filter type For appropriate formats the drop-down offers the choice of :

- **Linear Phase** Features constant group delay, thanks to the linear phase, and has a sym-metric impulse response, but also longer rings. This offers the best preser-vation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.
- **Minimum Phase** Features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spec-trum and allows slightly better results for transient sounds.
- **Apodizing** Offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between lin-ear and minimum phase types.

Sigma Delta Type For appropriate formats the drop-down offers the choice of:

SDM D

SDM Trellis E (8paths)

SDM Trellis E (16paths)

SDM Trellis E (24paths)

SDM Trellis E (32paths)

Post-SRC Gain (dB) Only available for PCM output formats. To add or subtract Gain after SRC. To add or subtract Gain after SRC either use the up and down arrows to set Gain or type directly in the box.

Pre Sigma Delta Gain Only available for certain formats. To add or subtract Gain before the Sigma Delta process either use the up and down arrows to set Gain or type directly in the box.

Click on **OK** to add the format to the Output list and close the dialog.
Click on **Cancel** to close the dialog without adding a new format to the output list.

Settings for (format name) export

One contiguous audio file + Cue File When ticked a single contiguous audio file and a Cue file will be generated.

Unicode (UTF8) encoded CUE Sheet When ticked a Unicode CUE Sheet is also generated. (CDEx generates CUE files this way while ExactAudioCopy uses ASCII/multibyte coding.)

One audio file per track When ticked an audio file is produced for each track in the Album.

Include Pause When ticked (default) CD pauses are included. Untick to produce CD Pause free exports.

Compression Setting :

The slider varies the compression settings.

For **FLAC** the choice is on a scale between **0** - **Fast Encoding** and **8 - Best compression**.

For **Ogg Vorbis** the choice is on a scale between **~64kbps** - **Lower quality - smaller files** and **~500kbps** - **Higher quality - bigger files**.

For **MTFF** the choice is between **Not Compressed** and **Lossless compressed**.

For **LC-AAC** the choice is on a scale between **8kbps** - **Lower quality - smaller files** and **320kbps** - **Higher quality - bigger files**.

For **MP3** the choice is on a scale between **32kbps** - **Lower quality - smaller files** and **320kbps** - **Higher quality - bigger files**.

File Naming and Destination

Contiguous audio files convention :

For a Single contiguous file the file naming can be specified by typing in the field and tags (e.g. **<TagName>**) can be used (information will be retrieved from the Disc info. Use upper/lower case for tag names to change the default capitalization :

- <FileFormat> When substituted by the name of the output format a subfolder is created for that format.
- <DiscTitle> Album title
- <DiscPerformer> Album artist
- <DiscSongwriter> Album songwiter
- <DiscComposer> Album Composer
- <DiscArranger> Album Arranger
- <UPCEAN> Album UPC/CEAN code
- <SampRate> Target Sampling Rate
- <Wordlength> Target Resolution
- <DiscNum> Disc Number

One file per track convention :

For One file per CD Track, the file naming can be specified by typing in the field and tags (e.g. <**TagName**>) can be used (information will be retrieved from the Disc/Track CD-Text info and Track number). Use upper/lower case for tag names to change the default capitalization :

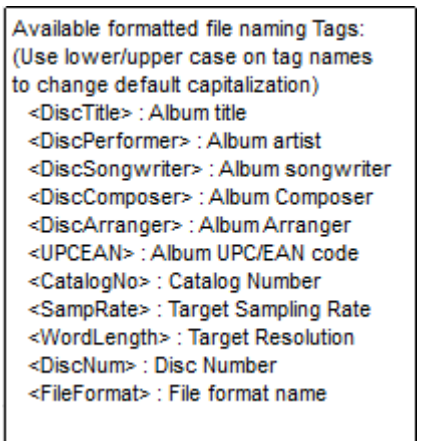
- <FileFormat> When substituted by the name of the output format a subfolder is created for that format.
- <DiscTitle> Album title
- <DiscPerformer> Album artist
- <DiscSongwriter> Album songwiter
- <DiscComposer> Album Composer
- <DiscArranger> Album Arranger
- <UPCEAN> Album UPC/CEAN code
- <TrackTitle> (only for one file per CD Track)
- <TrackPerformer> (only for one file per CD Track)
- <TrackSongwriter> (only for one file per CD Track)
- <TrackComposer> (only for one file per CD Track)
- <TrackArranger> (only for one file per CD Track)
- <SampRate> Target Sampling Rate
- <Wordlength> Target Resolution
- <DiscNum> Disc Number
- #,## or ### (only for one file per CD Track) : Track number, with eventual leading 0(s).

For both Contiguous and One File Per Track the buttons on the right have these functions:

The **<>** button shows a list of tags which, when selected are added to the field.

The **Presets** button shows the list of available factory presets and offers the option **New** to create a new User preset from the present contents of the field. User Presets are stored in a separate file.

The **?** button pops up a list of available tags e.g. :



? List of available tags

Creating Sub-folders

Subfolders are created by adding a **/** or **** in the naming convention field.

To create a subfolder per File Format, enter :

<FileFormat>/ (e.g. **<FileFormat>/<TrackTitle> - <TrackPerfomer> => WAV/Transmission - Sonic Rade**)

To create a subfolder per File Format and Sampling Rate, enter :

<FileFormat><SampRate>/ (e.g. **<FileFormat><SampRate>/<TrackTitle> - <TrackPerfomer> => WAV96k/Transmission - Sonic Rade**)

To create a subfolder per File Format, and inside this subfolder, other subfolders per Sampling Rate, enter :

<FileFormat>/<SampRate>/ (e.g. **<FileFormat>/<SampRate>/<TrackTitle> - <TrackPerfomer> => WAV/96k/Transmission - Sonic Rade**)

Published files which could not be written to a specific destination folder will be written by default to **C:\User\<login name>\My Music\<filename(s)>**

Output Folder :

The current output path is shown (if any). Clicking on the **...** button opens a File Browser window where a suitable path may be selected and a destination folder selected or created.

Misc

Generate Disc Summary XML file (required for publishing on Abeille Musique, HDTracks, ...) Tick the box to generate an additional XML file summarizing the disc information as specified by a few online music stores like Abeille Musique and HDTracks.

The resulting file will be placed and named according to the specified Output Folder and Contiguous Filenaming convention.

OK

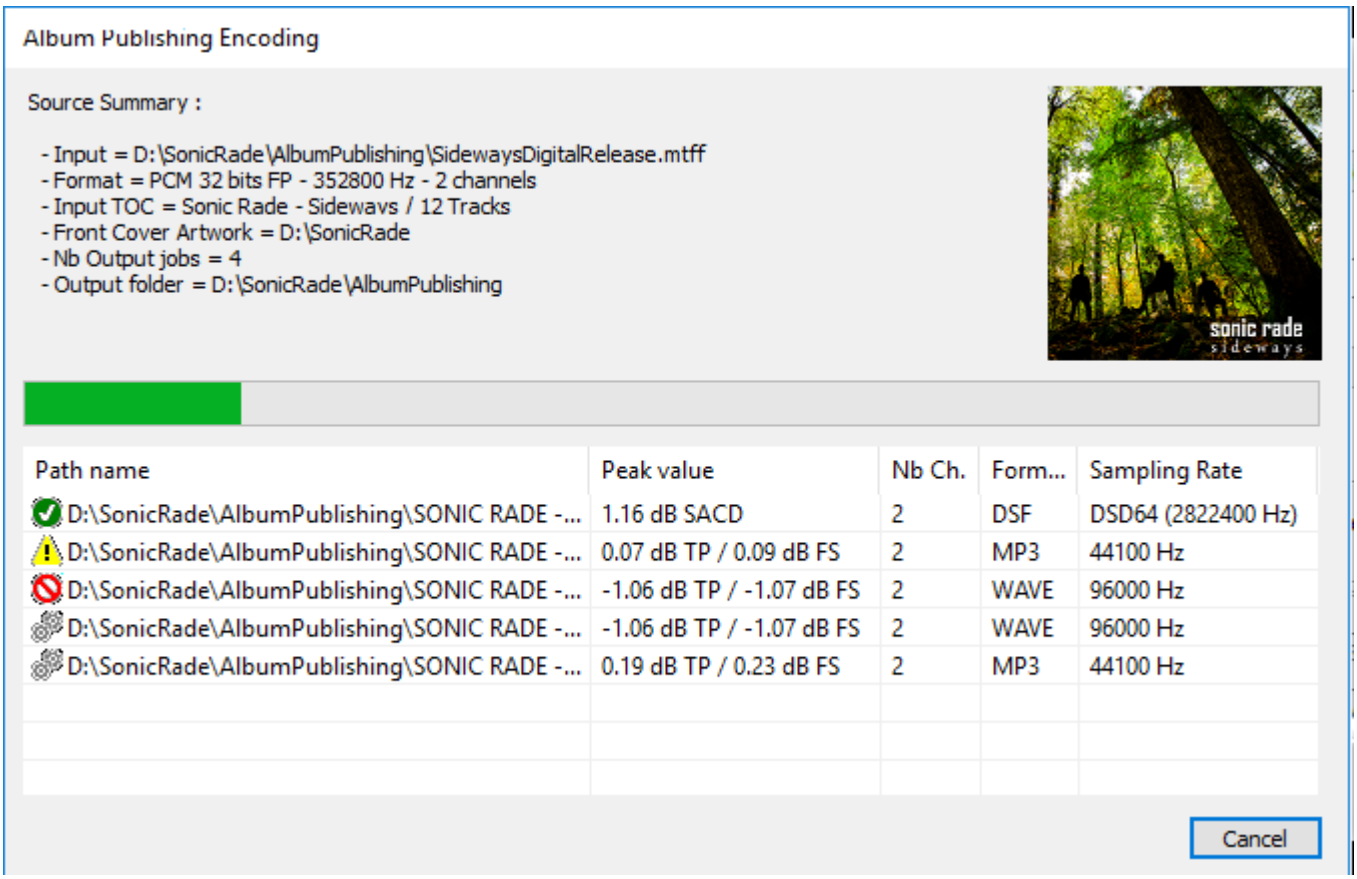
Click on **OK** to accept the settings and close the dialog.

Cancel

Click on **Cancel** to reject any changes made to settings and close the dialog.

Encoding Process

When all the relevant settings have been made click on the **Start** button in the main **Generate Master** dialog. When the initial pass completes the encoding process begins and the **Album Publishing Encoding** dialog appears:



Album Publishing Encoding dialog

Source Summary

Shows a digest of the job parameters. Cover Art is shown at top right. (If present)

The green bar shows progress.

The table shows information about each generated file.

The icon on the left indicates:

Processing underway

Processing could not start

Processing Successful Process was successfully completed and verified. Peak value is below the maximum value (Max 0 dB Fs for PCM Files - max 3.1 dB SACD)

Warning This icon appears if the processed file contains peaks exceeding the following:

- Full scale: Above 0 dB
- True Peak: Above 0.1 dB

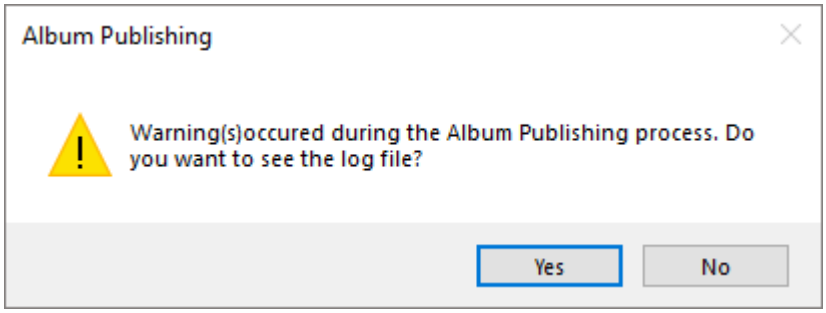
- DSD: From and above 3.9 dB

Note: Note: a warning will occur if you cancel the publishing process

The rest of the fields show:

Peak value	In dB True Peak and dBFS
Nb Ch.	The number of channels
Format	The format of the generated file
Sampling Rate	Sampling Rate of the generated file

At the conclusion of the encoding process, if any errors have occurred the warning dialog appears:



Album Publishing Warning dialog

Yes opens the log file in Notepad. **No** closes the dialog.

The log file is located in the destination folder of the published files

Cover Artwork

A picture file can be embedded, PNG or JPEG. Recommended size is 300x300. High resolution (e.g. 1600x1200) pictures may fail to display on some media players and are not recommended.

Output formats supported: Ogg/Vorbis, FLAC, MP3, MP4-M4A, AIFF and MTFF

In Pyramix clicking on the **Front Cover** field in the **Tree Info** section of the CD-SACD Tab Window opens a browser window to select a picture file.

In DiscWrite: the **Settings** button has a **Select Cover Artwork** option when **Target** is set to **Album Publishing**.

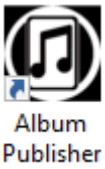
Note: Recommended size is 300 x300 for MP3/ID3 tag. (iTunes may be up to 600 x 600 separate to Wave files). High resolution (e.g. 1600 x1200) pictures may fail to display on some media players and are not recommended.

Note: The Cover artwork is embedded in a MTFF Digital Release when generated from Pyramix Generate CD/SACD Image. The Cover artwork embedded into an MTFF can be utilized within DiscWrite for Album Publishing without the necessity to specify a file.

Standalone Album Publishing Application

An Album Publishing standalone application is installed with Pyramix v12.x

An Album Publisher Short-cut Icon will appear on the desktop after installing Pyramix v12.x:



Album Publisher can also be installed in standalone mode from the **Pyramix Custom Install** option.

Standalone Album Publisher includes the MT Security Settings that may require the necessary keys depending on the selected Output Media Formats.

Several instances of standalone Album Publishing can be running concurrently with independent Settings for each instance (upon initial Settings changes)

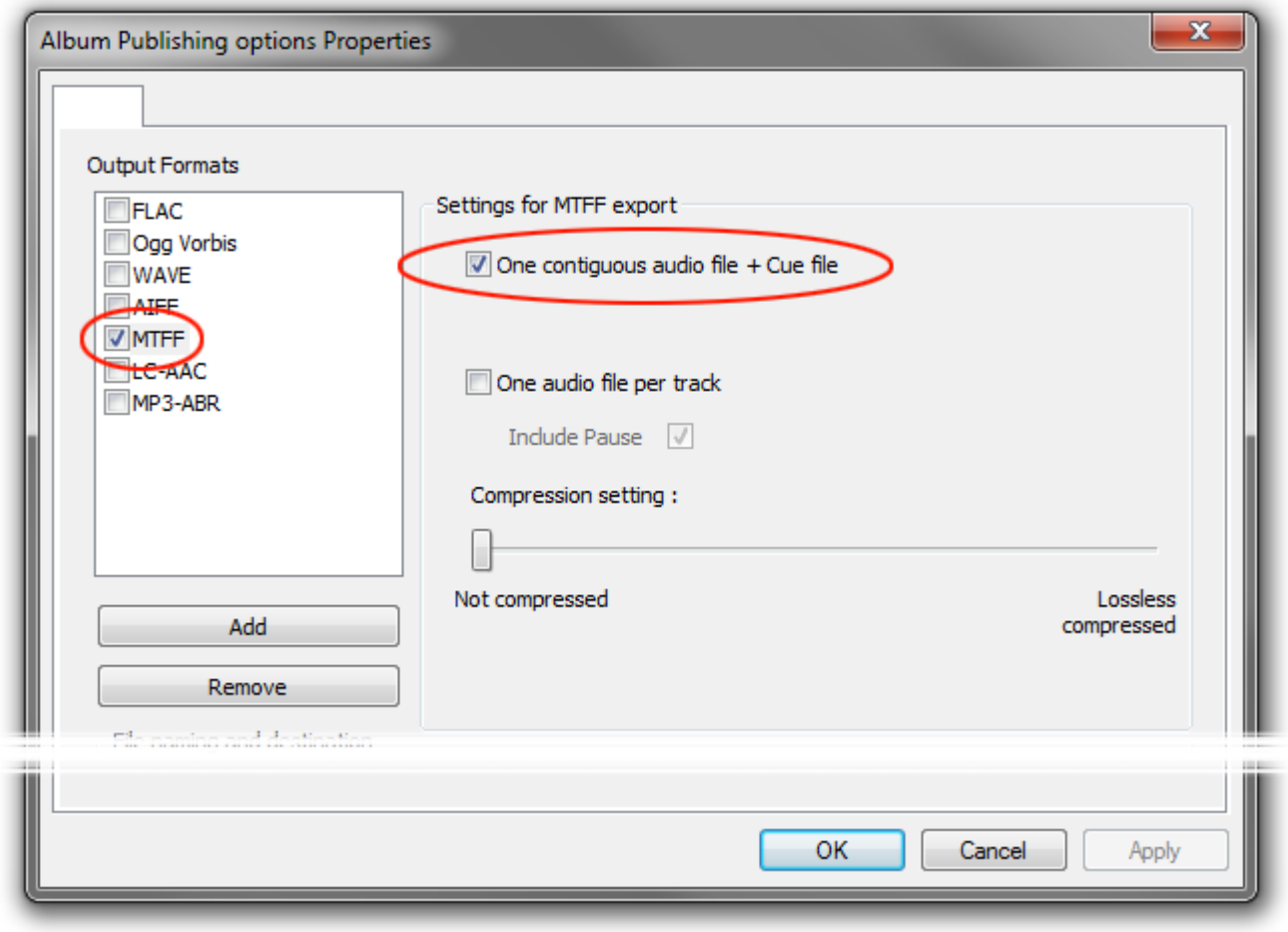
Cue Sheets

The Cue Sheet file is a metadata file which describes how the tracks of an album are laid out. Cue sheets are stored as plain text files and commonly have a **.cue** filename extension. CDRWIN first introduced cue sheets, which are now supported by many optical disc authoring applications and media players.

For an Audio CD, a Cue Sheet specifies titles and performers for the disc and its tracks as well as the names of one or more audio files to be used. MP3, WAV and MTFF files are often used, although some programs support other formats. Cue sheets are especially useful when burning or listening to live sets where all tracks are recorded in one file

Generating Cue Sheet Files

A Cue Sheet file is only generated when Album Publishing is active, one or more Output Formats for export are selected and **One contiguous audio file + Cue file** mode is active.



Album Publishing options Properties dialog - section

Cue Sheet file Contents

The Cue Sheet file will display information in this form when opened in a text editor the exact fields present will depend on which fields are populated in the **Tree Info** section of the **CD/SACD** Tab :

```
REM Customer Name: “Ricardo Ryan”
REM Origination date: 8-18-2011
REM DATE 2011
REM DISCID 9507880a
PERFORMER "U2"
SONGWRITER "Bono"
FILE "G:\Digital Release\Test\Album.mp3" WAVE
  TRACK 01 AUDIO
    TITLE "Pride"
```

```
  INDEX 01 00:00:00
TRACK 02 AUDIO
  TITLE "Unforgettable Fire"
  INDEX 00 00:59:17
  INDEX 01 01:56:57
TRACK 03 AUDIO
  TITLE "Sweetest thing"
  INDEX 00 03:08:5
  INDEX 01 03:40:19
```

Audio Cue Sheet Compatibility

CD Burning application / Tested Features	ImgBurn v2.4.2.0 (freeware)	Ahead Nero v6.3.1.15	Ahead Nero v7.2.3.2 to Nero v9.0.9.4	CDRDAO (multi platform command line app.
Open CUE file	OK	OK	Crash	OK
CD Text Disc Title	OK	OK	-	OK
CD Text Disc Performer	OK	OK	-	OK
CD Text Disc Songwriter	-	-	-	?
Catalog Number (UPC/EAN)	OK	-	-	OK
CD Text Track Title	OK	OK	-	OK
CD Text Track Performer	OK	OK	-	OK
CD Text Songwriter	-	-	-	?
Track ISRC	OK	OK	-	OK
PreGap / Pauses	OK	OK	-	OK
Index markers	OK	OK	-	OK

Generating Album(s)

Clicking on **Generate Image** in the **Generate Master** window initiates the process.

The generated files will be placed in the specified paths (folders will be created if necessary) and metadata will be written based on the CD Image TOC + CD Text information.

Album Publishing Exported Metadata

The file exported will contain metadata sourced from the CD Authoring/CD Text fields.

Exported Fields:

- Encoding Tool
- Track title
- Artist (per track)
- Album artist (disc artist)
- Composer
- Album name
- Track number/Total number of tracks
- Disc number / Total number of discs
- ISRC code
- UPC/EAN code (as Barcode and Catalog Number)
- Label code (also as comment)
- Year
- Genre
- Comments

Tagging Formats:

- ID3v2: for AIFF, MP3
- Xiph Comments: for Ogg Vorbis and FLAC
- Quicktime metadata atoms: M4A

The field mapping between various Tagging formats (ID3v2, Xiph Comments, Quicktime metadata atoms) follows the same convention as MusicBrainz Picard. Please see

http://wiki.musicbrainz.org/PicardTagMapping

Example of Exported File

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <upc>774355158623</upc>
  <artist>Brad Shepik Quartet</artist>
  <album>Across the Way</album>
  <label>Songlines Recordings</label>
  <year>2010</year>
  <genre>Jazz</genre>
  <disc>
    <discnum>1</discnum>
    <track>
      <tracknumber>1</tracknumber>
      <trackname>Across the Way</trackname>
      <trackisrc>CAS231000023</trackisrc>
      <trackartist>Brad Shepik Quartet</trackartist>
    </track>
    <track>
      <tracknumber>2</tracknumber>
      <trackname>Down the Hill</trackname>
      <trackisrc>CAS231000024</trackisrc>
      <trackartist>Brad Shepik Quartet</trackartist>
    </track>
    <track>
      <tracknumber>3</tracknumber>
      <trackname>Xylo</trackname>
      <trackisrc>CAS231000025</trackisrc>
      <trackartist>Brad Shepik Quartet</trackartist>
    </track>
    <track>
      <tracknumber>4</tracknumber>
      <trackname>Garden</trackname>
      <trackisrc>CAS231000026</trackisrc>
      <trackartist>Brad Shepik Quartet</trackartist>
    </track>
[...]
  </disc>
</root>
```

Example of Disc Summary XML file

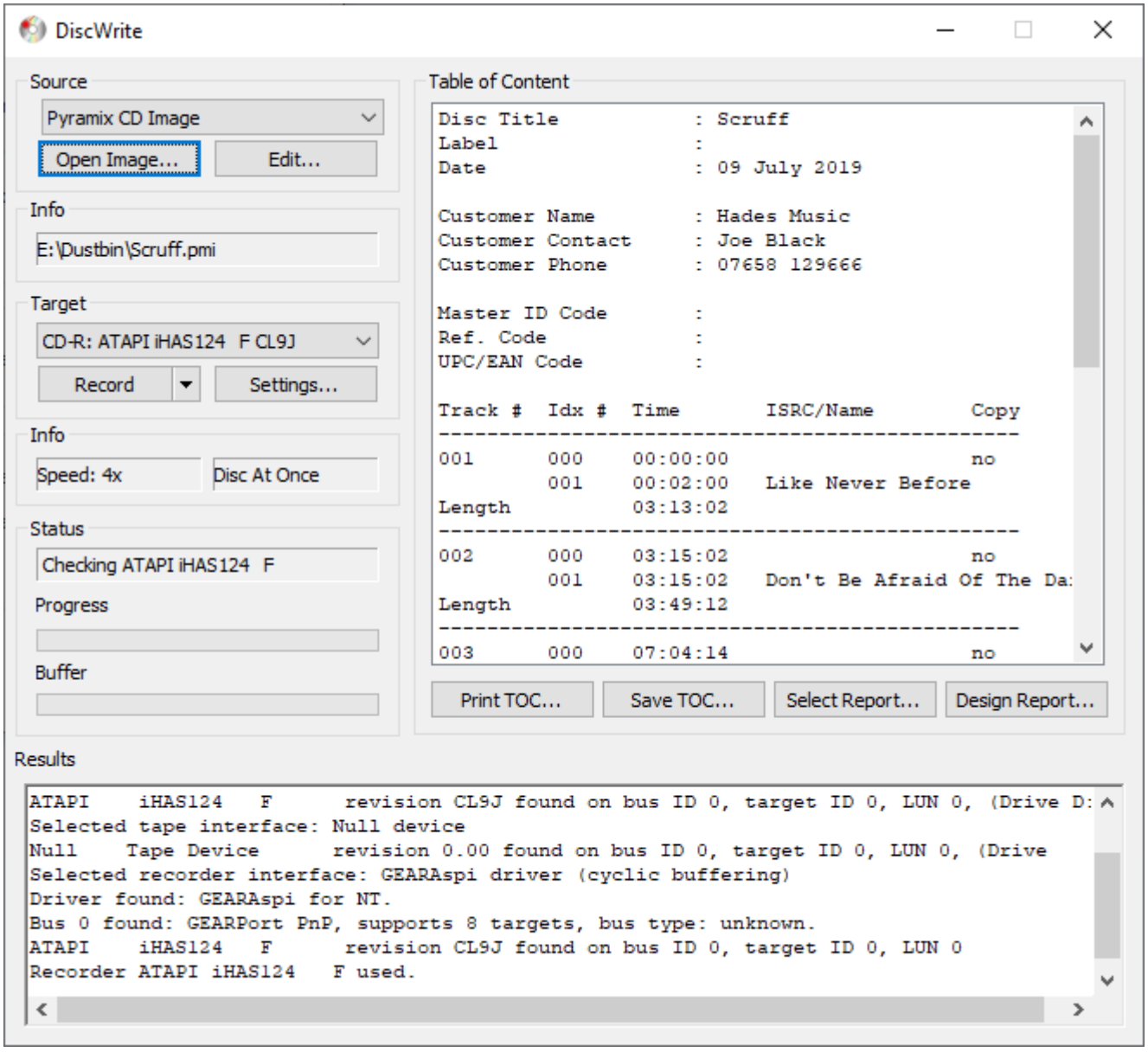
Album Publishing Log File

A **Log File** is created in the selected Main Output Folder.

A notification will appear if an error occurred during the publishing process. Look in the **Log File** to help identify the source of the error.

DiscWrite

DiscWrite is a separate application bundled with Pyramix Virtual Studio that is used to write the CD image out to a CD-R disc or a DDP image file to a folder or DDP tape drive.

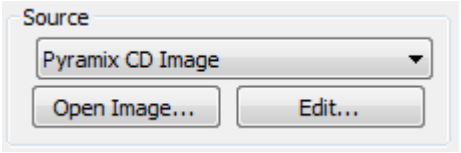


DiscWrite application window

Source

The drop-down list enables the user to choose between a **Pyramix CD Image**, **MTFF Digital Release**, an existing **DDP** master file, all installed optical drives, or a **U-Matic Tape** as the source for the new CD-R or DDP file.

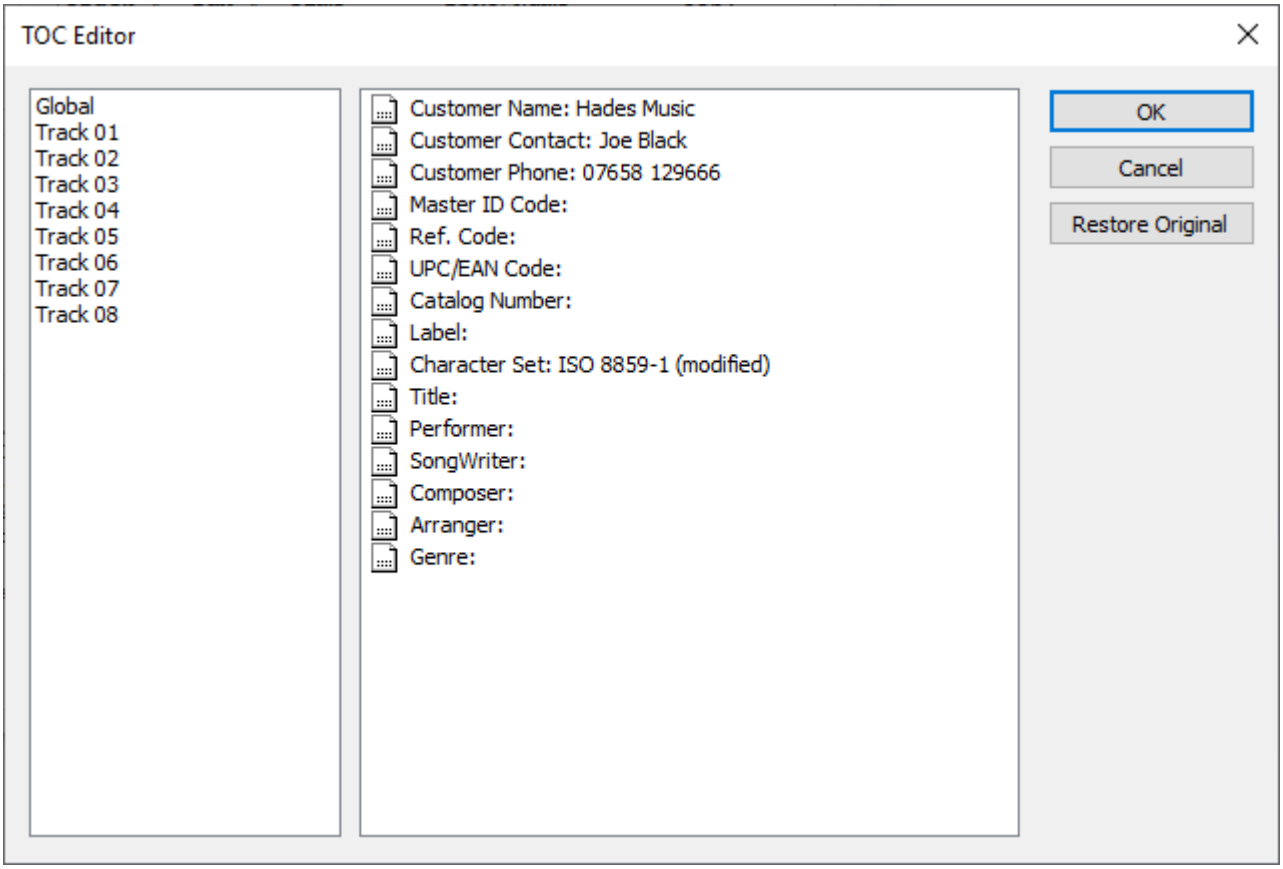
Source - Pyramix CD Image



DiscWrite Source - CD Image

When the chosen **Source** is **Pyramix CD Image**, the left-hand button below the **Source** drop-down list will be **Open Image...** Clicking on **Open Image...** leads to a file browser window where you can navigate to the desired image file. The right-hand button will be **Edit...**

Clicking on the **Edit...** button opens the **TOC Editor** dialog:



DiscWrite TOC Editor dialog

CD-Text can be edited freely by clicking on an entry in theright-hand pane and typing in the field.

> **Note:** Opening a pmi image with Discwrite may display the following warning: **CD text has been truncated**:

> **CD Text Notes:**

A CD-Text **Block** may be made up of a maximum of **256** so-called **Packs**.

4 packs are used for internal purposes.

The other **252** packs can be used for CD-Text information.

Each pack contains **12** characters.

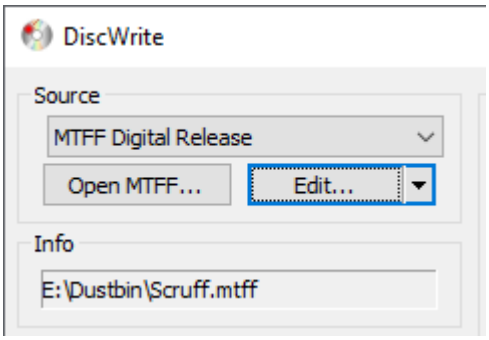
Thus a total of **3024** characters of CD-Text can be saved.

One character is needed as a separation character per Track, thus with the maximum number of **99** Tracks (+ 1 pseudo-track for the CD Title), **2924** characters remain. If Artist and Title are entered for every Track, **2 * 100** characters have to be subtracted, since Artist and Title are saved separately (so **2** separation characters per Track are required), i.e. **2824** characters still remain - there are still **28** characters per Track (for Artist and Title, i.e. **19** characters each for Artist and Title or any other distribution)!

Restore Original

Undoes any changes made since the dialog was opened.

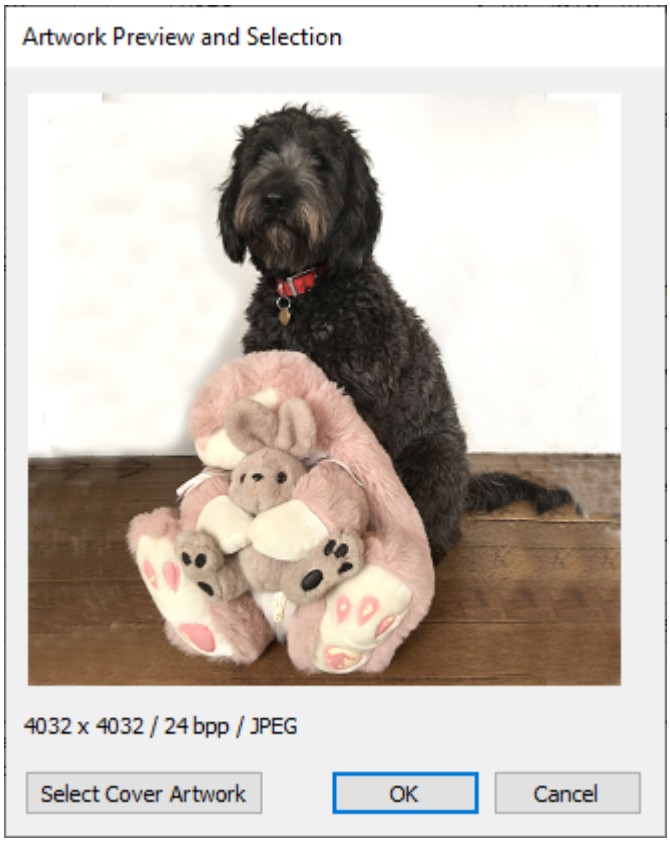
Source - MTFF Digital Release



DiscWrite Source - CD Eject Drop-Down

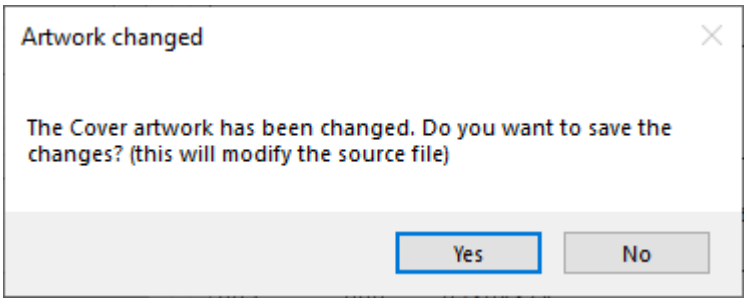
Note: Where a DSD MTFF Digital Release file is the Source it can be used to create DSDIFF Edited masters.

When the chosen **Source** is **MTFF Digital Release**, the left-hand button below the **Source** drop-down list will be **Open MTFF...** which opens a File Browser to locate and open the desired file and the right-hand one **Edit...** Clicking on **Edit** opens the **TOC Editor**. (see above)The drop-down also offers the option of **Edit Cover Artwork**. Selecting this opens the **Artwork Preview and Selection** dialog loaded with the image in the file, if present and the option of opening a suitable image file if none is present.



DiscWrite - Artwork Preview and Selection dialog

Select Cover Artwork opens a File Browser to locate an alternative image if one is already present or a suitable image if not. If new artwork is chosen this dialog appears:

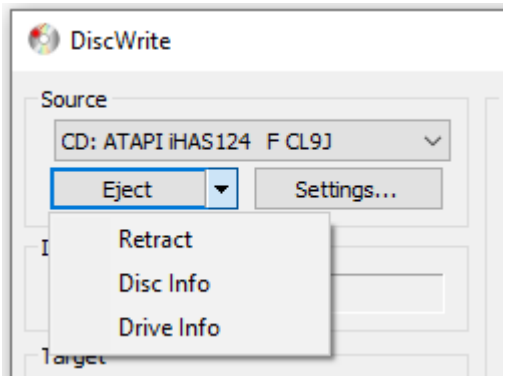


DiscWrite - Artwork changed dialog

Source - DDP Folder

Select Folder... Clicking on this opens a File Browser to locate and open the desired **DDP Folder**.

Source - CD Drive



DiscWrite Source - CD Eject Drop-Down

When the chosen **Source** is **CD: ....**, the left-hand button below the **Source** drop-down list will be **Eject** and the right-hand one **Settings...**

Eject

opens the loading tray of the selected optical disk drive (or ejects the disk if the drive is a slot-loader). Clicking on the down arrow next to the Eject button drops down a list of other optical disk drive commands.

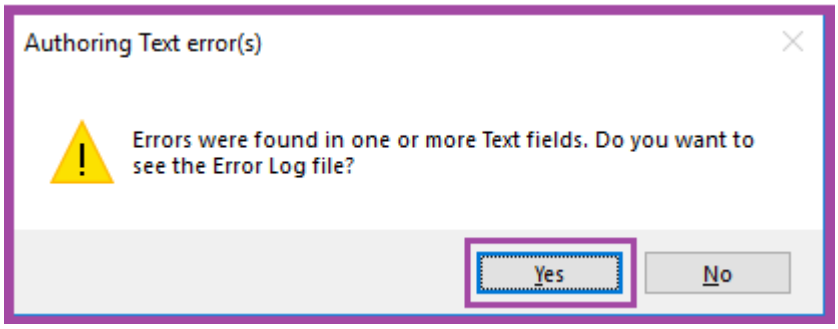
Retract	Closes the loading tray on the source drive
Disk Info	Reads the disc information and displays it in the **Results** box
Drive Info	Interrogates the optical drive firmware and displays information about the drive in the **Results** box

Info

The **Info** box shows either the read speed of the optical drive or the path to the image file.

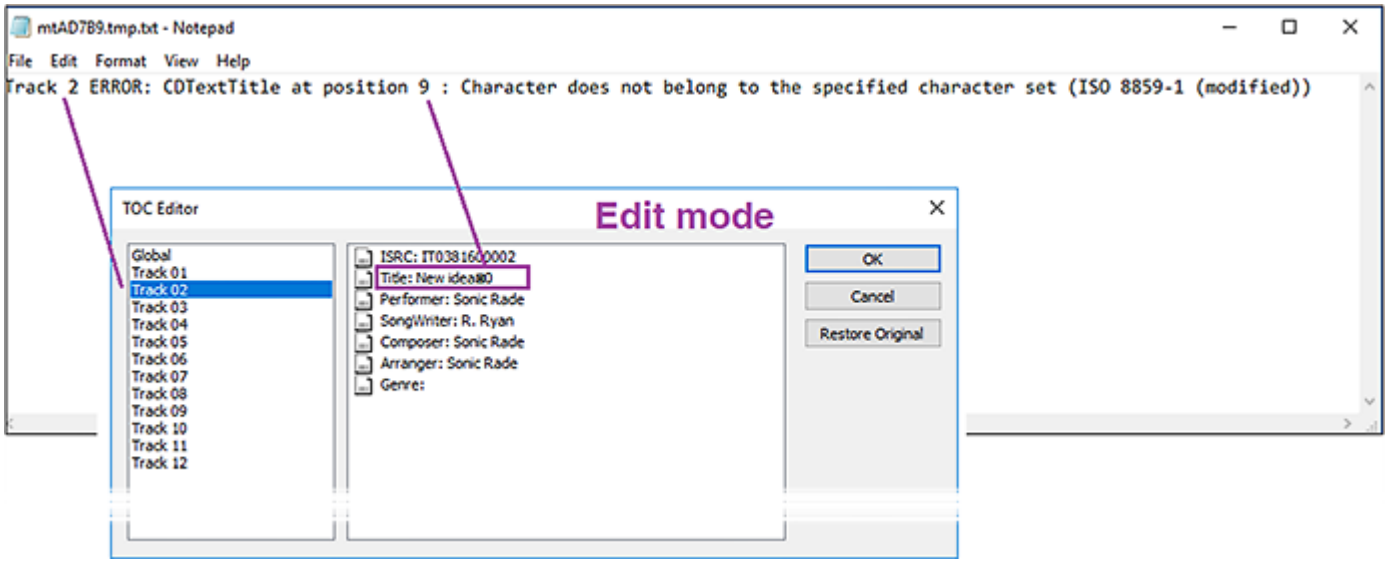
Text Validation

- Text validation is done whenever an Image or Digital Release is opened.
- If an error is found a dialog opens inviting you to open the Error Log file (**.txt**).



DiscWrite - Authoring Text error(s)dialog

- The faulty character set and error position will be indicated in the error report.



DiscWrite - Error Report and TOC Editor

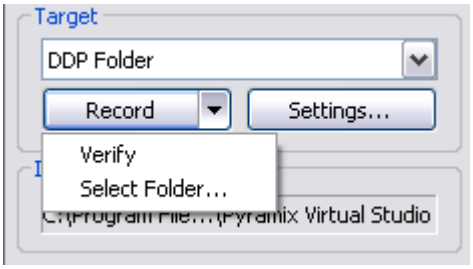
- The reported error can be corrected in DiscWrite for PMI or MTFF imports by opening the **TOC Editor** dialog with the **Edit** button.

Target

The drop-down list enables the user to choose between any installed CD-R or DDP drives, a **DDP Folder** or **Album Publishing**.

DDP Folder

When **DDP folder** is the selected target the button beside the **Record** button drops-down a list of options:

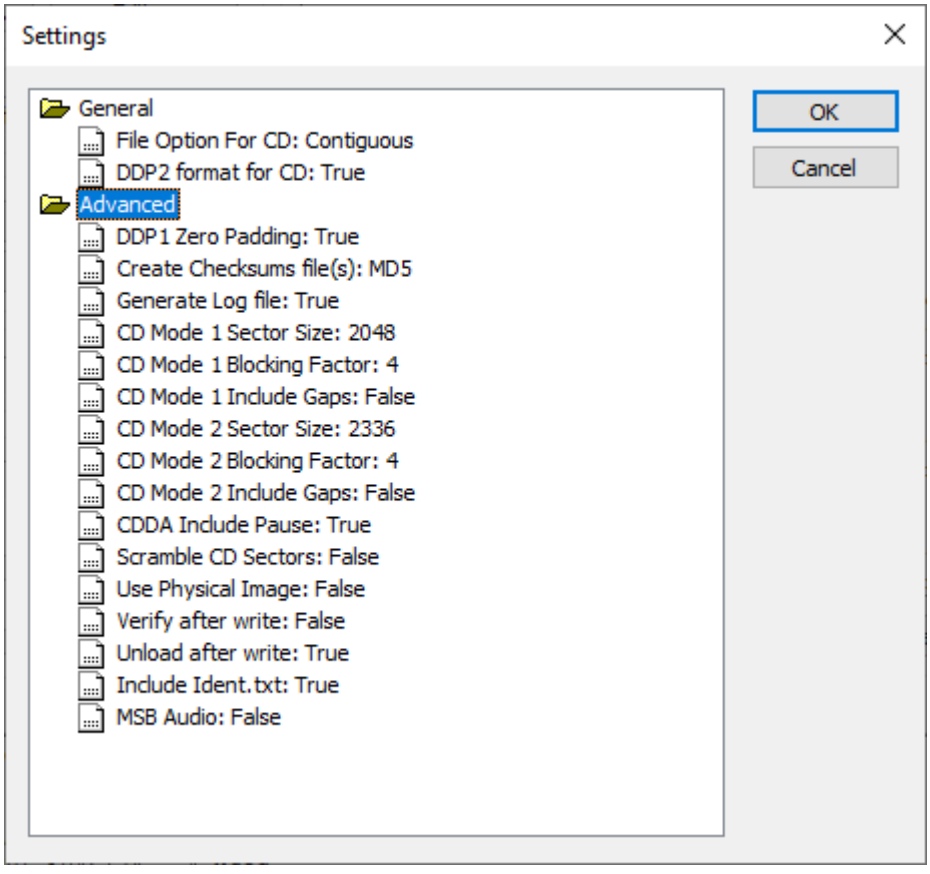


DiscWrite Target - CD Record Drop-Down

Verify	Verifies the recording
Select Folder...	Opens a Browser to enable a suitable folder to be chosen

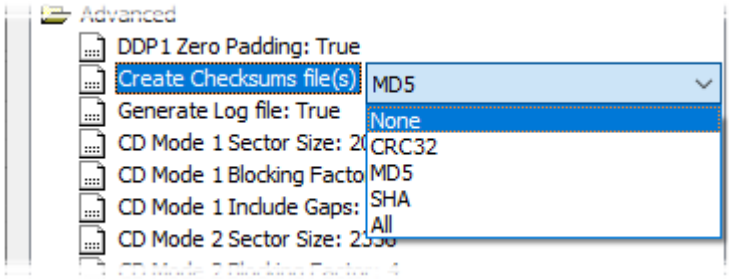
Settings...

This button opens a **Settings** window with DDP settings information and options.



DiscWrite DDP General and Advanced Settings

Clicking on an entry reveals a drop-down with a list of available options for example **Create Checksums file(s)**



DiscWrite DDP CreateChecksums file(s) Settings

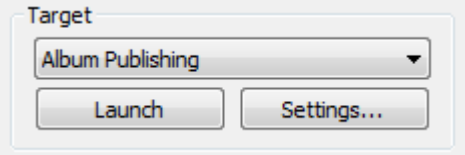
This drop-down offers the choice between:

- **None**
- **CRC32**
- **MD5**
- **SHA**
- **All**

The other entries in the list offer appropriate choices.

Album Publishing

When **Album Publishing** is the selected target the **Record** button changes to **Launch** :



DiscWrite Target - Album Publishing

Settings... opens the **Album Publishing options Properties** window. Please see: **Album Publishing Settings on page 653**. When suitable settings have been made the **Launch** button initiates the Album export.

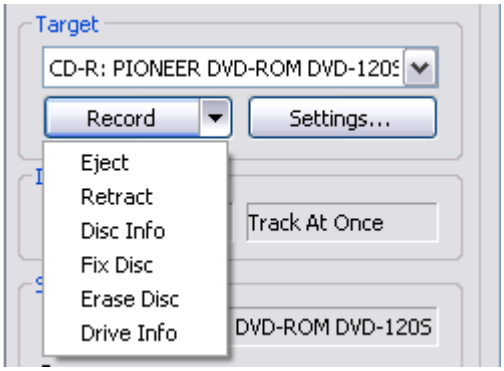
Cover Art

When **Album Publishing** is the selected target the down arrow to the right of the **Settings** button has a **Select Cover Artwork** option.

> **Note:** Recommended size is 300 x300. (iTunes up to 600 x 600) High resolution (e.g. 1600 x1200) pictures may fail to display on some media players and are not recommended.

CD-R/CD-RW

When a CD-R(RW) is the selected target, the arrow beside the **Record** button drops-down a list of options:.



DiscWrite Target - CD-R Record drop-down

Eject	Opens the loading tray on the target drive
Retract	Closes the loading tray on the target drive
Disk Info	Reads the target disc's information and displays it in the **Results** box
Fix Disc	Writes the information necessary to allow a Track at Once disc to be read by a CD player.
Erase Disc	Erases a re-writable disc
Drive Info	Interrogates the optical drive firmware and displays information about the drive in the **Results** box

Settings...

The **Settings...** button is grayed out unless a suitable optical drive or image file has been selected. When available, clicking on **Settings...** opens a dialogue with access to all relevant settings. In particular, this is where you can choose between **Disc-at-Once** and **Track-at Once** modes. Use **Disc-at-Once** for maximum compatibility.

Record

Clicking on the **Record** button initiates the recording process.

Detailed reporting about the progress of the process is shown in the **Results** box as the recording is made.

Info

Shows the Write speed of the target drive or the path if you are writing a DDP file to a folder. Also shows the chosen record mode, e.g. Track At Once or Disk At Once.

Status

Shows the status of the recording device/process

Progress

A 'thermometer' bar graphically shows the progress of the recording.

Buffer

Another 'thermometer' showing the state of the record buffer.

Results

This box displays detailed information about various aspects of the process depending on what you are doing at the time.

Table Of Content

Displays the TOC in detail.

Print TOC...

Opens a **Print Options** dialog. The actual options available will depend on the printer you have selected.

Save TOC...

Opens a File Browser dialog. Here, you can type a name for the TOC file and choose a suitable folder to save it in.

Select Report...

Opens a File Browser dialog where you can select a report style for the TOC

Design Report

Opens the Report Designer application. With this you can design your own report formats for TOCs.
Please see the Design Report **List and Label Designer** documentation, which is installed with Pyramix and can be found here:

C:\Program Files\Common Files\Merging Technologies\LL\Docs\ListAndLabelDesigner.pdf

Optical Drives - Important Note:

Most, if not all the issues you might encounter when working with optical drives, Windows and DiscWrite can be solved by installing the latest firmware for your drive. This, together with installation instructions, should be available from the drive manufacturer's website. This is true for CD-Text writing, write speed & buffer issues, as well as for CD-Import.

CD Text

CD-Text has been successfully tested with several high quality DVD-R and CD-R drives. However, DiscWrite and its CD-text functionality should work with most of the writers available on the market, provided care has been taken to install the latest available firmware for the unit.

A warning will appear when a non CD-Text writer is intended to be used to write a Disc Image containing CD-Text.

Compatibility with CD-Text can be confirmed in the **Target** area by making sure the desired drive is selected and choosing Drive Info from the **Record** drop down menu.

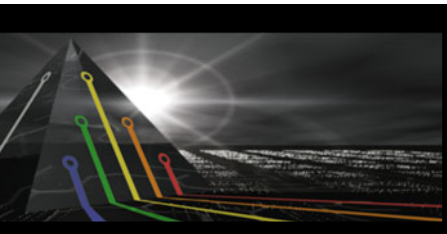
Writing CD-Text (audio, disc at once): Yes. Should be found in the **Supported write methods:** section of the list in the **Results** window. (You will have to scroll the list to find this)

Burning a CD-R

Launch **DiscWrite**. (A normal Pyramix installation places a **DiscWrite** icon on the desktop) To burn a CD-R from a previously created CD image file:

1. In the **Source** section, click the **Open Image...** button, then navigate to and select a previously created CD Image file (an **.img** or **.pmi** file).
2. In the **Target** section, click in the drop-down menu to select a CD-R device. **DiscWrite** should recognize a previously configured CD-R device which is also recognized by the OS itself.

27 Productivity



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

www.merging.com/Pyramix

Locating Clips

In projects containing a large number of Clips it can be very helpful to be able to find where a particular Media file or files are being used. For example if you wish to replace all instances of a particular sound effect.

The **Media Manager** Tab Window **Edit Menu** has two commands to assist:

Locate	Locates the Playhead Cursor to the start of the first (or only instance) of a single item selected in the Media Manager list and Selects it in the Timeline
Show Usage	Selects all instances in the Timeline of the item(s) selected in the Media Manager list and zooms the Timeline to show them.

Playlists

Overview

Playlists in Pyramix are a way in which multiple takes of a recording can be held on a single timeline, in essence keeping them in layers. Each layer is called a playlist and it contains its own EDL containing audio file, Clip Gain and Envelope information.

The purpose of this is to be able to access multiple versions of a recording from the same place on the timeline (cursor position) by switching the Playlist (layer) that the user is looking at.

Playlists can be managed and changed on a Track by Track basis, by Track Group, or the entire Timeline can be affected at once if required. All of this is managed from the Playlist Tab, which allows views to be filtered and controls, with a simple overview, which Playlist(s) is(are) affecting which Tracks on the Timeline.

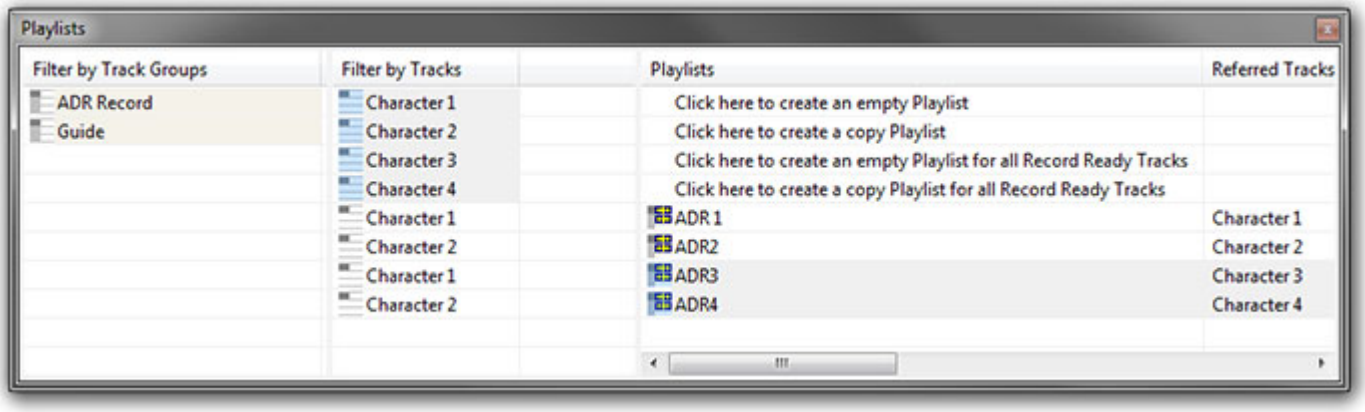
New Playlists can either be Copy Playlists or Empty playlists. An empty playlist is a new layer on the Track containing no clips. A Copy Playlist makes a new layer but places into it the Clip information from the last layer used. The Copy Playlist is a perfect tool when a record pass will not necessarily be recording the exact same thing over and over again, and when it may be a requirement to hear previous recordings on either side of the latest drop in.

Application

Comp a Vocal Recording:

A vocalist comes in to do a Lead vocal overdub on a multitrack session recorded previously. The intention is to record take after take of the vocalist singing in time with the rest of the music in as efficient a manner as possible. By using a separate Playlist for each take, when the record in finished, the operator can then cycle quickly through the layers to find the sections of the vocal they want, placing them in a final "destination" Playlist layer.

Playlists Tab Window



Playlists Tab Window - floating

By selecting a Track Group or one or more Tracks in the **Playlist Tab Window**, you can:

- Create a new empty Playlist for these Tracks
- Create a new Playlist for these Tracks containing a copy of their current content

You can also:

- Create a new empty Playlist for all Tracks in Record Ready mode
- Create a new Playlist for all Tracks in Record Ready containing a copy of their current content

Double-clicking on a Playlist icon replaces the content of the Tracks it references with the version it contains.

Modifications made on the Tracks referenced by a Playlist are updated in the last recalled Playlist when another one is recalled. A new Playlist can be automatically created for each recording for every recorded Track by checking this option in **Playlists** section of **Settings > All Settings > Project > Record**.

Playlist Button

Clicking the Playlist button in the Track Header pops up a menu with the following choices:

Create New Playlist

for all Record Ready Tracks

for all Tracks in Group/Strip

for this Track

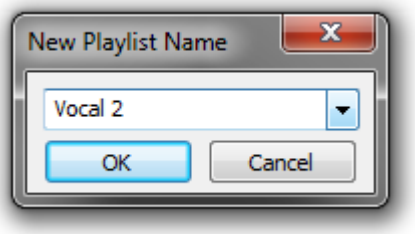
Create Copy Playlist

for all Record Ready Tracks

for all Tracks in Group/Strip

for this Track

Each of these options opens the **New Playlist Name** dialog. However, **for all Record Ready Tracks** will only do so when one or more Tracks is/are armed for recording.



New Playlist Name dialog

Recall Playlist>

All the existing **Playlists** for the **Track/Track Group** are listed. Selecting one brings it to the top layer.

Merge Playlist

All the existing **Playlists** for the **Track/Track Group** are listed. Selecting one merges it with the current top layer.

Note: If you create a new Playlist on a Track with existing Cues these will be deleted from the Track. If you wish to retain the existing material use **Create Copy Playlist** first and then create a new Playlist or Playlists.

Bars & Beats

Overview

Bars & Beats mode is the method by which a recording or edit can be managed easily to ensure that the timing within a song follows a rigid structure. The various tools within the module enable the user to record, edit and manage the media coherently.

Activating Bar and Beats Mode

Simply click on **Main** in the Main Timescale Ruler and choose **Bars & Beats**. (Or **View > Scales / Toolbars > Bars & Beats**.)

Once activated, this will show the Bars & Beats Timescale Ruler and grid on the Timeline, enable use of the Tempo Map and open up the Bars & Beats Control Toolbar in the toolbar area at the top of the edit window.

Bars & Beats Toolbar

If you like working with toolbar buttons you may wish to turn on any or all of the Bars & Beats Toolbar buttons.

Settings > All Settings > Desktop Layout : View

In the **Commands** list change **Toolbar Status** to **Present** for:

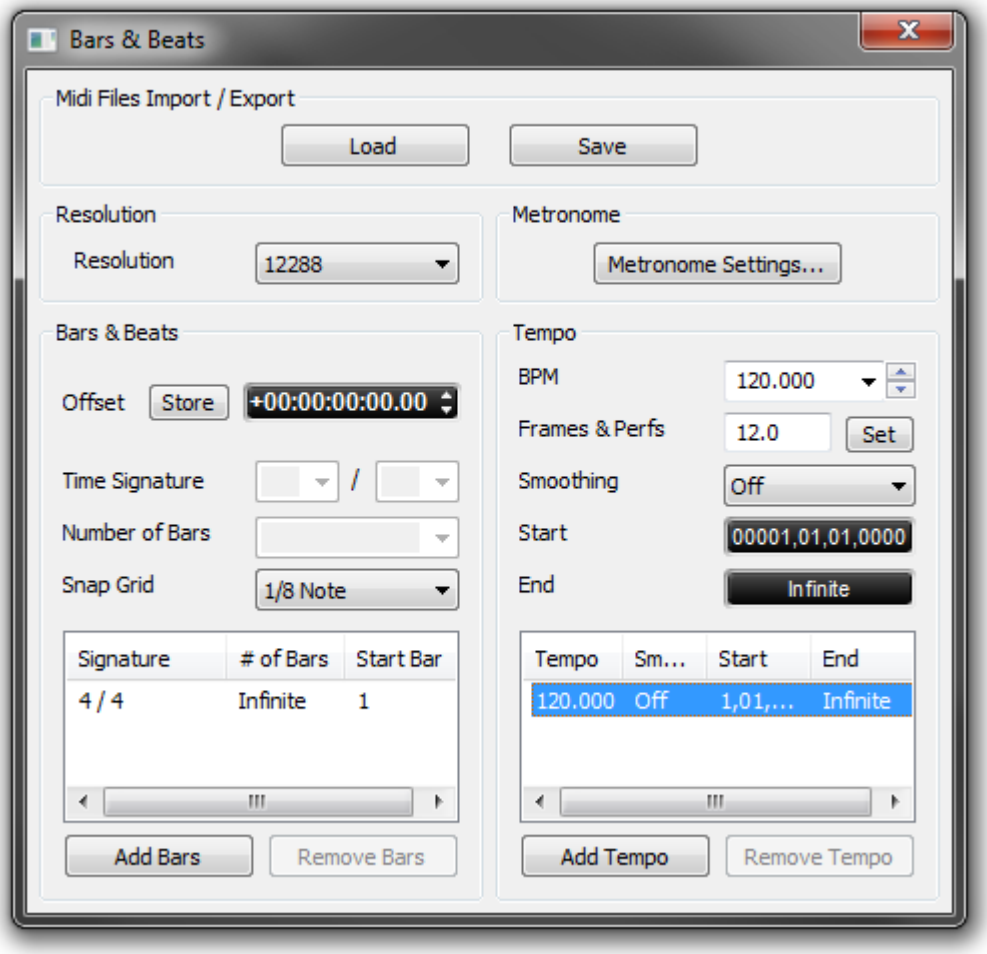
Bars & Beats	Toggles the **Bars & Beats Timescale Ruler** and **Ruler Control Bar** visible / hidden
Bars & Beats Settings	Toggles the **Bars & Beats Settings** window visible / hidden
Bars & Beats Grid	Toggles the **Bars & Beats Grid** visible / hidden
Tempo Map	Toggles the **Tempo Map** visible / hidden

Scale : Settings : Grid : Tempo Map

Note: When the **Bars & Beats Timescale Ruler** is not visible the other buttons are grayed out and unavailable.

Bars & Beats Settings

The Bars and Beats Settings window can be accessed by clicking on the Bars and Beats label in the ruler and selecting **Bars & Beats Settings** or **View > Scales / Toolbars > Bars & Beats Settings**.



Bars & Beats Settings Window

Here, you can set the grid **Resolution**, **Metronome Settings** including the sound, the **Time Signature** and manually edit the **Tempo** map to change between certain bars. Once made, these settings are saved with the project.

Midi Files Import / Export

Load

Save

Both buttons open a Browser Window to enable navigation to a file to load or a location to save to.

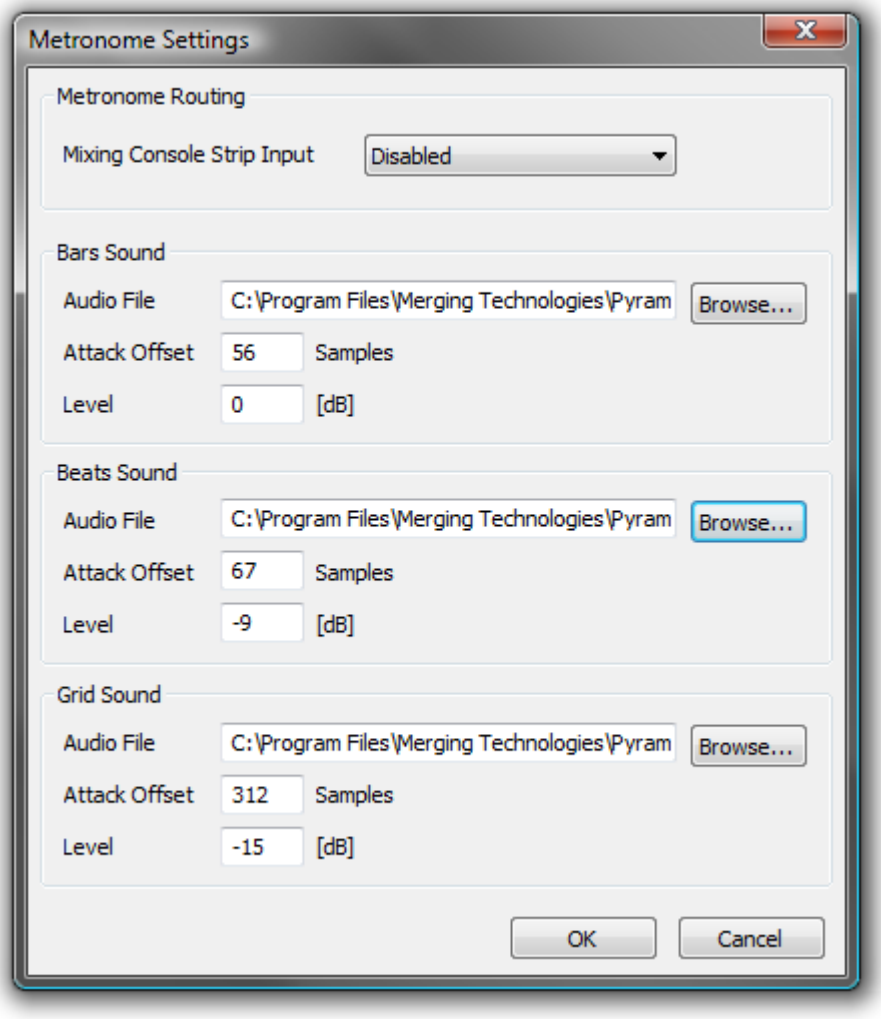
Currently, when type 2 Midi files are imported, only the Track 1 Tempo Map and Time Signature are imported.

Resolution

Resolution Choose the required grid resolution from the drop-down list.

Metronome

Metronome Settings... Opens the **Metronome Settings** dialog:



Metronome Settings dialog

Note: The Metronome Settings can also be accessed by clicking on **Metro** on the Bars & Beats Ruler Toolbar. See below.

Metronome Routing

Mixing Console Strip Input Choose a console strip for the Metronome sound from the drop-down list.

Bars Sound

Audio File Shows the audio file currently selected. **Browse...** opens a Browser window to locate and select audio files.

Attack Offset Enter a value in **Samples** to adjust the exact timing.

Level Enter a value in **[dB]** to set the **Bars Sound** playback level.

The **Beats Sound** and **Grid Sound** settings are the same as for **Bars Sound**.

Any audio file can be used, for the **Bars**, **Beats** and **Grid** sounds. By default, some suitable WAV files are installed with Pyramix in the same location where you installed the Pyramix software. By default. this will be:

C:\Program Files\Merging Technologies\Pyramix Virtual Studio\Metronome Bars.wav etc.

Bars & Beats

Offset Offsets the **Bars & Beats** scale start from the main Time Scale. Value can be typed in the TimeCode register and or nudged up or down with the increment, decrement buttons.

Store Offsets the **Bars & Beats** scale start to the current Playhead Cursor position.

Note: Offsets can be negative or positive.

Time Signature	Set the **Time Signature** by selecting from the drop-down lists.
Number of Bars	Type the **Number of Bars** required or choose **Infinite** from the drop-down list.
Snap Grid	Select the required resolution from the drop-down list

The Information pane shows all currently defined Time Signatures. The **Time Signature**, **Number of Bars** and **Snap Grid** fields reflect the values for the highlighted (selected) Bars & Beats section.

Tempo

BPM	Choose a tempo from the common values in the drop-down list, increment or decrement in 1bpm steps with the up and down buttons or type a value in the box.
Frames & Perfs	Another way of expressing BPM. The value entered here will be reflected in the **BPM** field.
Smoothing	Smoothing is a ramp, used mainly when a tempo changes at some point in a project. For example you could smooth up gradually the passing from a 120 bpm to a 80 bpm tempo. Values can be selected between **Note** and **1/64 .** (or **OFF**)
Start	Enter a **Start** value
End	Enter an **End** value or choose **Infinite** from the drop-down list.

Time Signature and Bars

The bottom left panel displays a list of blocks of bars in the order they appear in the 'song'. The following settings apply to the currently selected entry in the list.

Time Signature	Use the combo boxes to set the **Time Signature**
Number of Bars	Type a value or choose **Infinite** from the combo box dropdown list.
Snap Grid	Combo box offers a choice of **Off** or values between **Note** and **1/64 Note .**

Add Bars

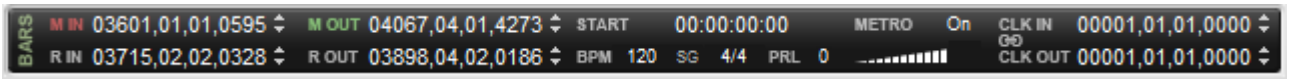
Click to add a new block of bars to the list above.

Remove Bars

Deletes the selected entry from the list above.

Bars & Beats Ruler Toolbar

From within the Bars and Beats Control Toolbar, the following can be accomplished:



Bars & Beats Ruler Toolbar

M IN	Centers the Timeline on the **In** Marker.
M Out	Centers the Timeline on the **Out** marker.
R In	Centers the Timeline on the beginning of the current Selection or **Range**.
R Out	Centers the Timeline on the end of the current Selection or **Range**.

Start	The **Start** register enables an **Offset** to be entered for the first Bar, counting from **00.00.00.00**, independent of the Playhead Cursor position.

Note: in the **Bars & Beats Settings** dialog, the **Offset** field will reflect the value entered in **Start.**

However, pressing the **Store** button, will default the offset value to the difference between **00.00.00.00** and the present Playhead Cursor position.

Metro	Clicking on **Metro** opens the **Metronome Settings** dialog. Clicking on the label to the right toggles through **On**, **Pre-Roll** only and **Off**.
Volume	Below **Metro** the volume slider sets the metronome click level.

BPM — Clicking **BPM** enables an alternative value to be entered.The **BPM** counter displays and allows modification of the tempo map section where the Cursor is currently.

Note: To display the **Tempo Map**, click on the **Bars & Beats** label on the corresponding **Timescale Ruler** and enable **Tempo Map** from the drop-down menu.

SG — Toggles Time Signature

4/4 — Click on the Time Signature displayed currently to enter and alternative.

PRL — Click on the number adjacent to **PRL** to enter a Pre-Roll value. The **PRL** values are entered in **Beats**. The **PRL** tempo defaults to the tempo of the **Bar** that follows immediately after the end of the Pre-Roll count.

Note: When the **PRL** is set to a value other than **0** and the **Click In** is set (to a value other than 1,1,1) the Pre-Roll pre-counts to Click In Bar/Beat, otherwise it pre-counts to the first Bar.

CLK IN — When **Click IN** is set (to a value other than 1,1,1) the Metronome will start playing at the entered Bar/Beat value.

CLK OUT — When **Click Out** is set (to a value other than 1,1,1) the Metronome will mute automatically at the entered Bar/Beat value..

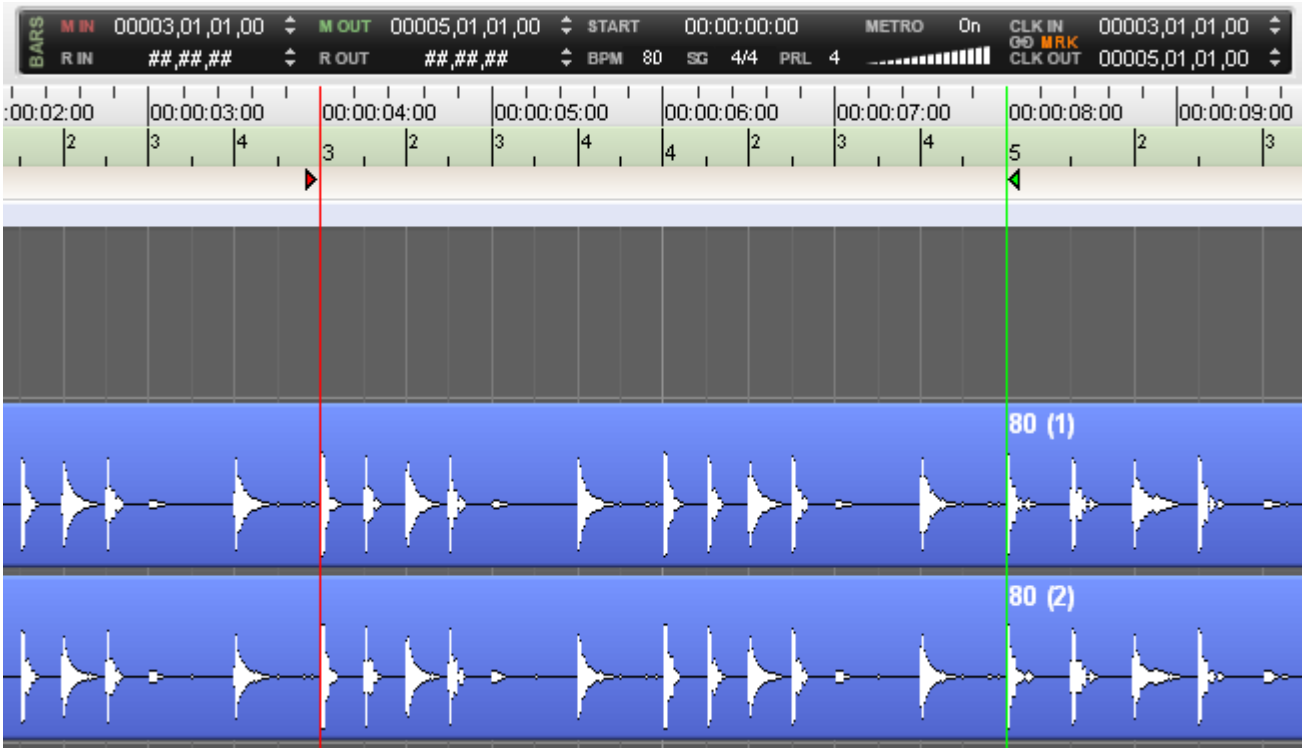
Lock (chain) S ymbol — Toggles between **blank** (off), **MRK** (**In/Out** Markers) and **RGN** (Region). Click **In/Out** time is then linked to either **Between Marks** section or selected **Region** length automatically.

This is very useful for quick setting of pre-determined Metronome In and Out times, saving the user the trouble of switching the Metronome on and off repeatedly at different parts of a song when this is required. When used along with the Pre Roll (**PRL**) function it becomes a really handy tool.

Setting the **Click In** and **Click Out** values is easy:

Using MRK

Simply select **MRK** next to the chain symbol and then set your Mark In and Mark Out at the desired Timeline positions to define the Metronome active (playing) section. When the Playhead Cursor arrives at the **Mark In** position, the Metronome starts playing, when it reaches the **Mark Out** position, it mutes. You can of course define a **Pre-Roll** value and use the two functions at the same time :



Metronome set to start and end at Mark In/Mark Out time, using a 4 beat Pre Roll

Using RGN (Region)

Simply select **RGN** next to the **chain** symbol and then select/draw a region at the desired Timeline positions to define the Metronome active (playing) section. When the Playhead Cursor arrives at the Region selection Start position, the Metronome starts playing, when it reaches the Region selection End position, it mutes. You can of course define a **Pre-Roll** value and use the two functions at the same time.

Metronome set at Region Selection Start and End time, using a 4 beat Pre Roll value.

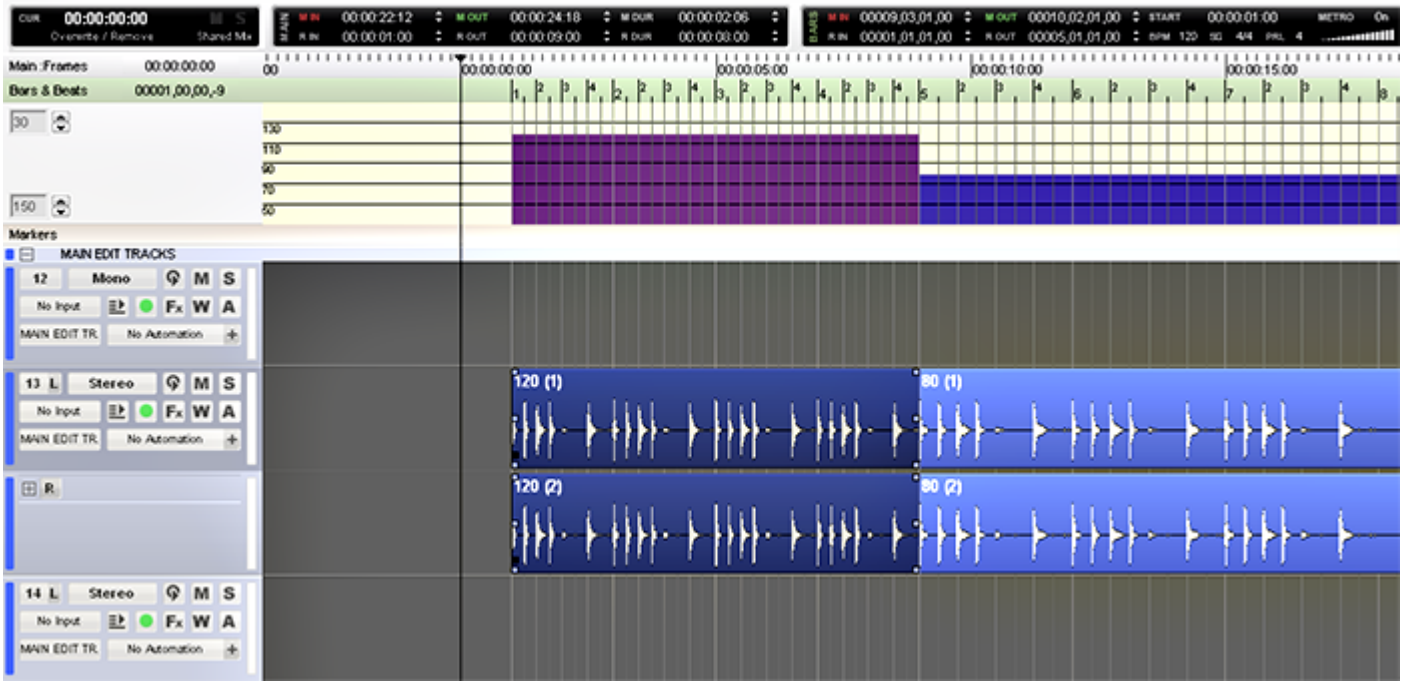
Another useful combination of a pre-defined Metronome section and a Pre-Roll value is to quickly select a part of a song (other than the start) prior to which the Pre Roll should count. To achieve this, set the Metronome to Pre-Roll and set the **Click In** and **Click Out** to a determined value, using one of the examples above. For instance draw a Region with the mouse with Snap Region Selection enabled.The Pre Roll will start counting by the amount defined in PRL but the Metronome will switch off at the start of the pre defined Click In position.

Metronome set to a Pre-Roll of 4 beats before a given section

This is useful for those situations in which you might want a Pre-Roll count to a given section in a song, but don´t want the Metronome playing after that section starts. If you also want the Metronome to play the first beat after the Pre Roll countdown, just reduce the Region to the first beat of the first bar at which your Click In starts. Easy.

Tempo Map

The Tempo Map is accessed by clicking on the **Bars & Beats** label in the Ruler Bar and selecting **Tempo Map**.



Tempo Map showing tempo variation and grid offset start of 1 second

From within this window, it is possible to be able to adjust the length of each Bar and Beat to match that of an initial recording, via keyboard modifiers.

Shift + Left-click, hold and drag in the ruler bar:

When the mouse cursor is over a grid line it changes to a double-headed arrow with a clock. Dragging left or right then modifies, up or down, the BPM of the area following the mouse cursor position.

If there is only one tempo section in the timeline, then it effectively changes the BPM for the entire project.

So, operationally, the user would make the initial recording, then, using a reference waveform (like a Kick Drum) would go through and adjust the tempo at each point the grid moves away from the transients in the waveform denoting the kickdrum pattern.

Ctrl + Left-click, hold and drag in the ruler bar:

When the mouse cursor is over a grid line it changes to a double-headed arrow with a clock and knife. Dragging left or right then modifies, up or down, the BPM of the previous tempo change (By Bar) in the tempo map.

Ctrl + Shift + Left-click, hold and drag in the ruler bar:

When the mouse cursor is over a grid line it changes to a double-headed arrow with boundaried arrows below. Dragging left or right then adjusts, up or down, the previous Beat.

Snap

When Bars & Beats mode is active, it is possible to have edits snap to the Bars & Beats Grid.

Edit > Snap > Snap to bars & Beats Grid

This will help speed up the syncing process.

Note: that if **Auto Crossfade by default** is enabled in **Settings > All Settings >Application >Editing : Drag & Drop**, you´ll need to hold down the **Ctrl** key to achieve Clip snapping to the Bars & Beats grid while dragging on the Timeline.

In addition, to draw regions quickly on the Timeline, which also snap to the Bars & Beats grid, enable:

Edit > Snap >Snap Region Selection

This allows easy drawing of regions on the Timeline for the Click In and Out for instance.

Tab Windows

Tab Windows have long been a powerful aid to productivity in Pyramix. You can still use Tab Windows in the same way as version 5 and earlier but you will miss out on some major 'Power User' features if that is all you do.

Just as before, clicking on a Tab opens the associated Window in the space below the Project Editing Panel and double-clicking a Tab opens the associated Window floating. Double-clicking the title-bar of a floating Tab Window restores it to the space below the Project Editing panel.

Tab Behavior

Tabs can be 'torn away' to open as floating Windows in blank screen space by simply clicking on the Tab and dragging. clicking the **X** closes a floating Window and the Tab is removed from the Tab pool. This means that the interface can be streamlined by removing Tabs you never use or which are inappropriate for the specific task in hand. Tabs removed in this way can be restored by choosing **View > Editor Tabs** and clicking on the required Tab or **Show all Tabs** to restore all closed Tabs.

Apart from this last feature, the ability to remove Tabs from the user interface, simple Tab behavior is almost identical to previous versions. However, there are many other things you can do with Tabs to enhance productivity.

Tab Arrangement

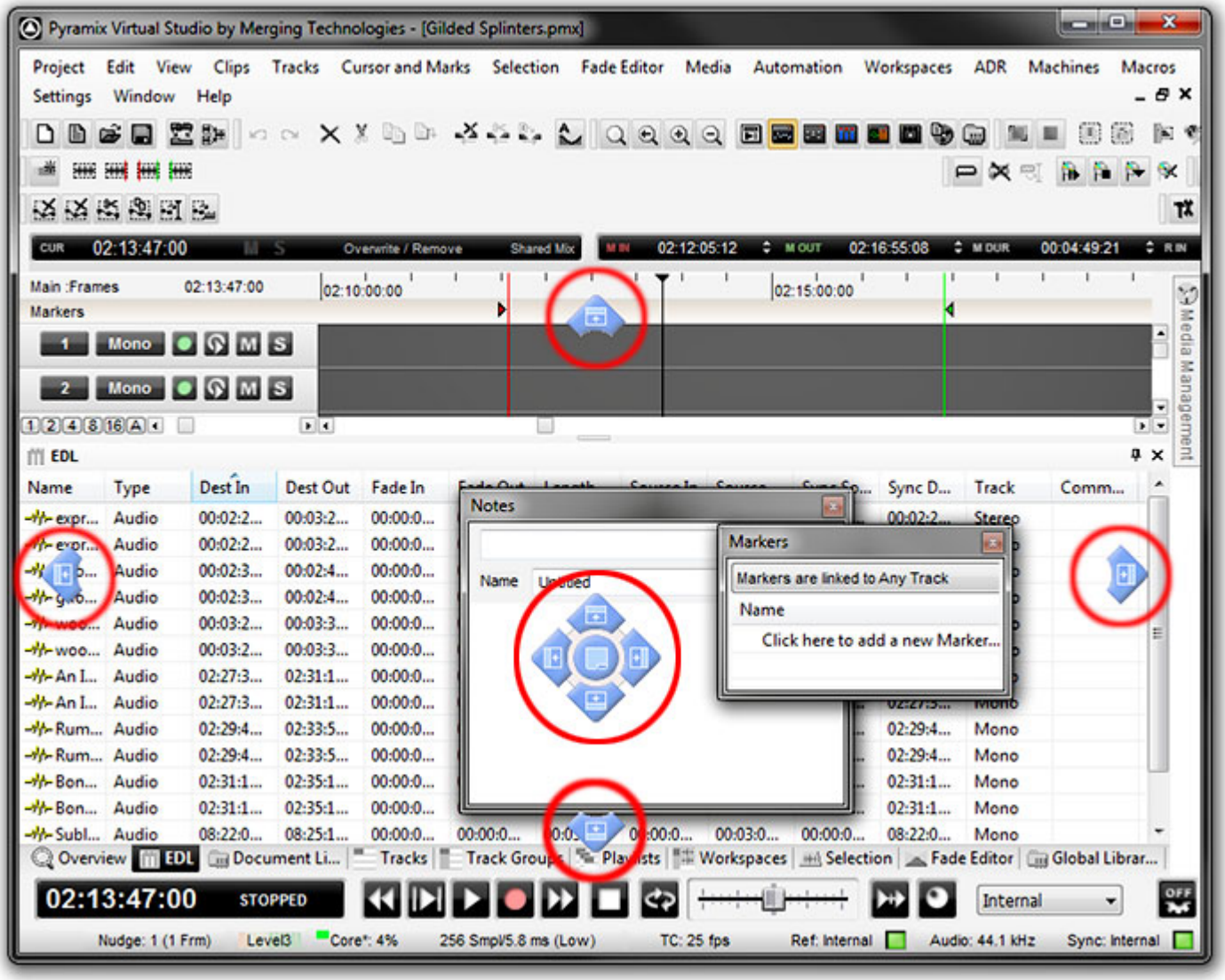
Hiding and Showing All Tabs

To quickly **Close all Tabs**, **Show all Tabs**, or **Toggle Show/Close all Tabs** and to find the other Tab display options go to the menu **View > Editor Tabs**.

In the Project Editing pane, clicking on the **Magnify/Maximize Timeline** box at the junction of the vertical and horizontal scroll bars also actuates **Toggle Show/Close all Tabs**.

Tab Docking and Nesting

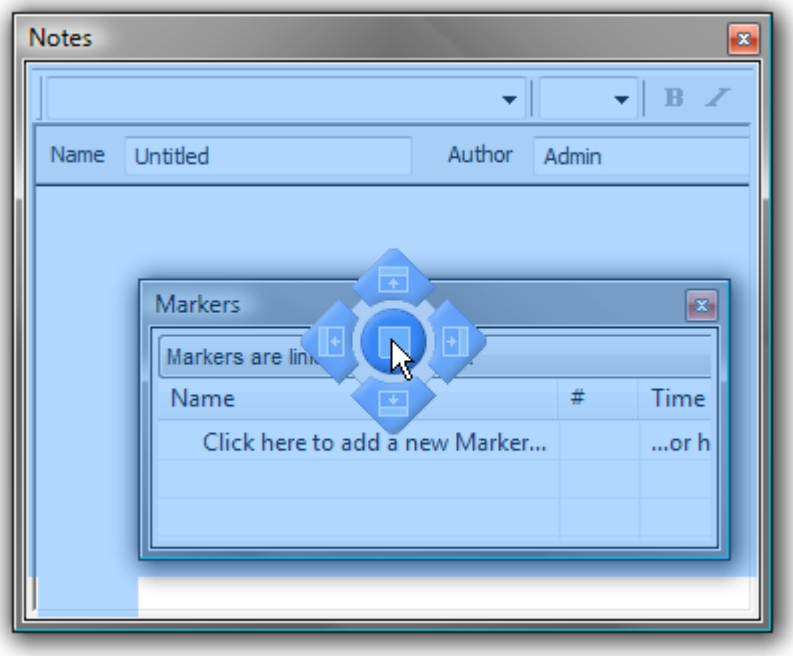
Floating Tab Windows can be nested or docked together in the Program Window or in floating Windows by simply clicking and dragging. When a Tab Window or group of Windows is clicked and dragged, small blue "landing lights" appear indicating where the Tab can be docked in the main Program Window with a center block of five indicating where the Tab can be docked in the Window or panel it is currently being dragged over.



Tab Window "Landing Lights"

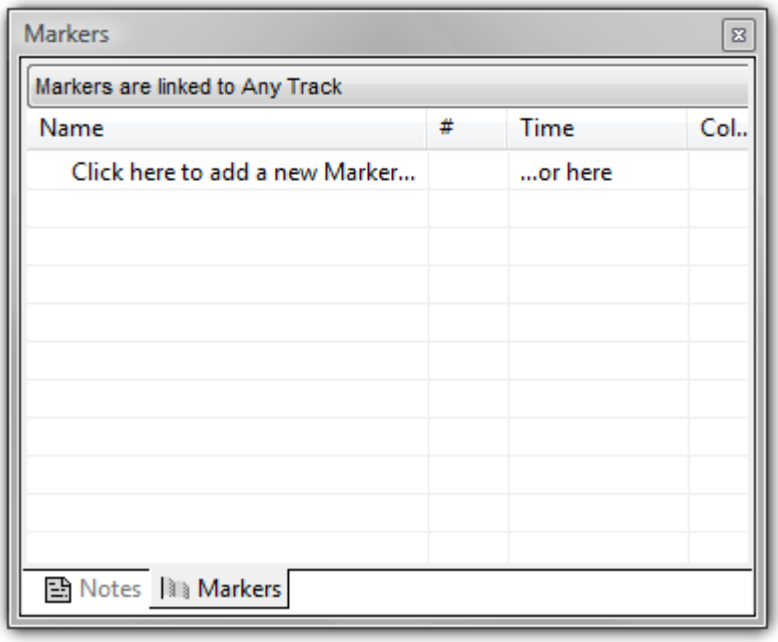
Thus, in the highly artificial screenshot above, it is the **Markers** Tab Window that has been clicked and dragged. The peripheral blue landing lights indicate where in the main programme window it can be docked and the centre landing lights indicate where in the **Notes** Tab Window it can be docked.

Note: The centre button is only available when the Tab can be docked as a Tab in another Tab Window.



Tab Window "Landing Lights" and "Ghost Image"

Placing the mouse cursor over a specific Landing Light determines what will happen when the mouse button is released. In order to help avoid confusion blue "ghost images" appear showing where the Tab Window will land. In the screenshot above, if the mouse button is released the **Markers** Tab Window will become nested with the **Notes** floating Tab Window thus:

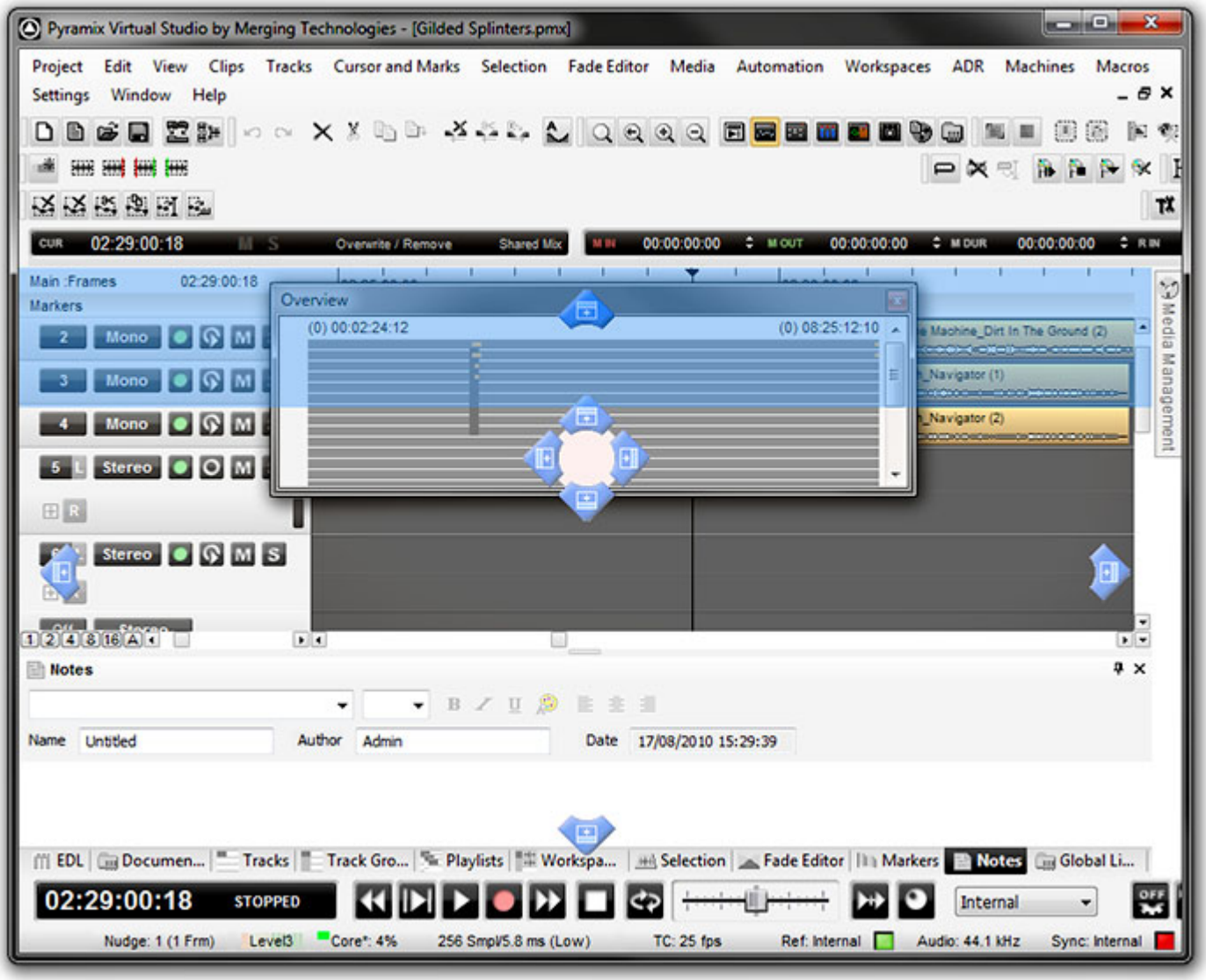


Nested Tab Windows

If a nested, floating Tab's title bar is double-clicked all the nested Tabs are returned to the main Tab dock.

Layout Example

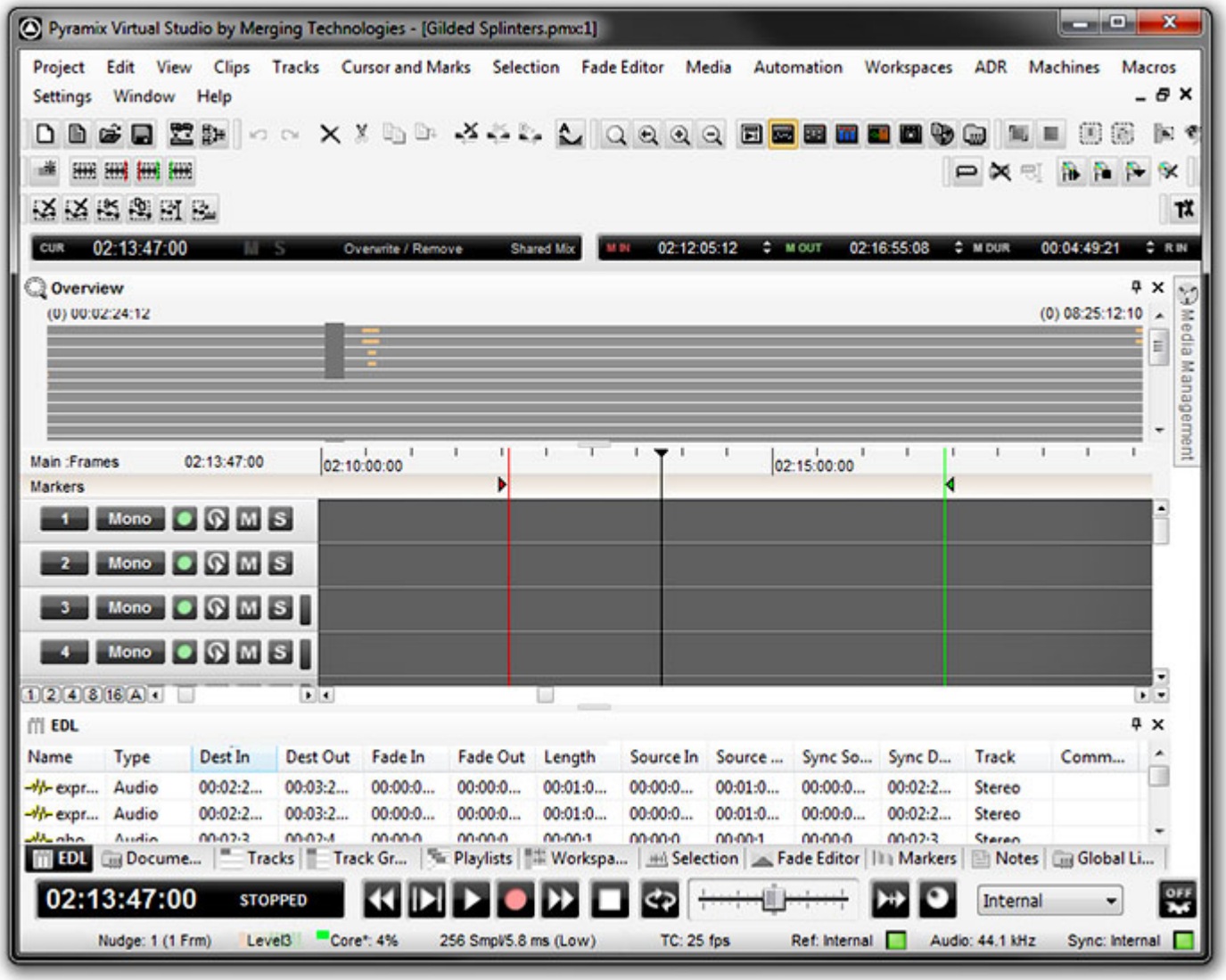
Here, the **Overview** Tab has been 'torn off' by clicking and dragging.



Main Project Window Tab Window with "Landing Lights" and "Ghost Image"

It is often useful to have the **Overview** above the **Timeline** and so that is the landing light used here.

When the mouse button is released, the **Overview** will be positioned above the Timeline and can then be re-sized as required.



Overview Tab Window in place above Timeline

Pinned and Unpinned Tab Windows

By now you've probably noticed the small 'pin' icon next to the close box on the title bar of each Tab window:

Pinned

With the Pin in the vertical position the Tab Window behaves as normal. Clicking on the Pin toggles between the default 'Pinned' state and 'Unpinned' - **Auto-Hide** mode:

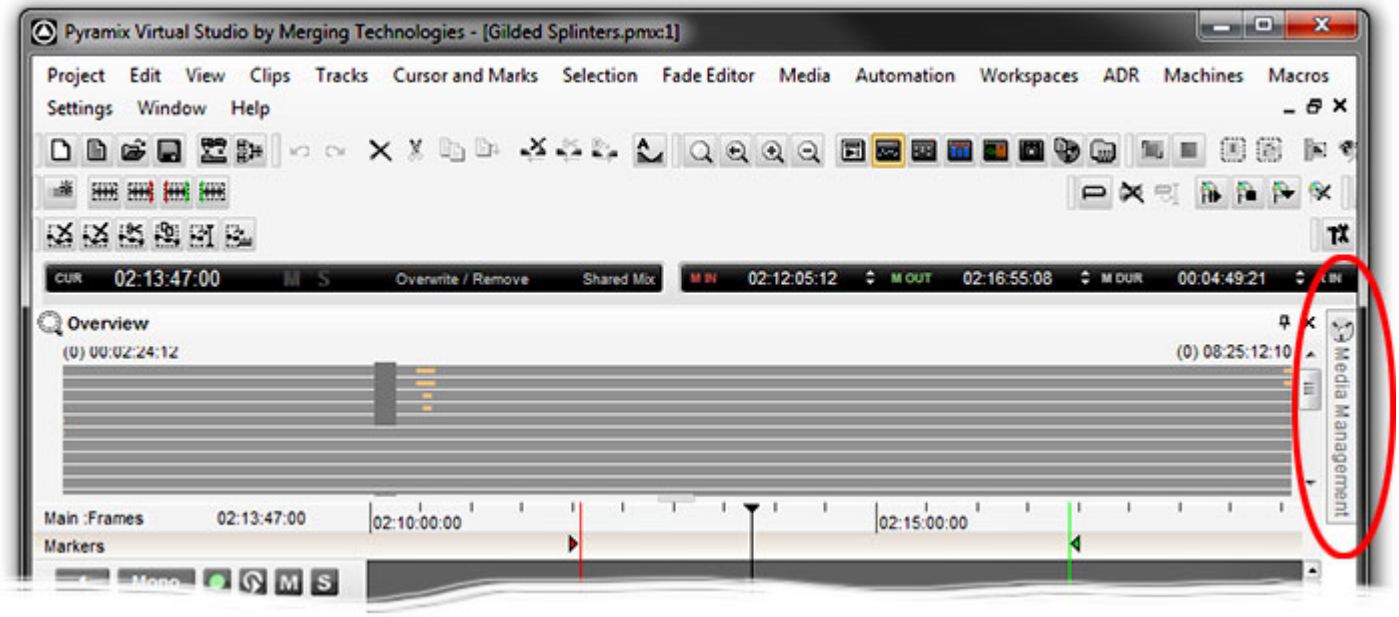
Unpinned

Note: The Pin is only present where the unpinned, **Auto-Hide** mode is available.

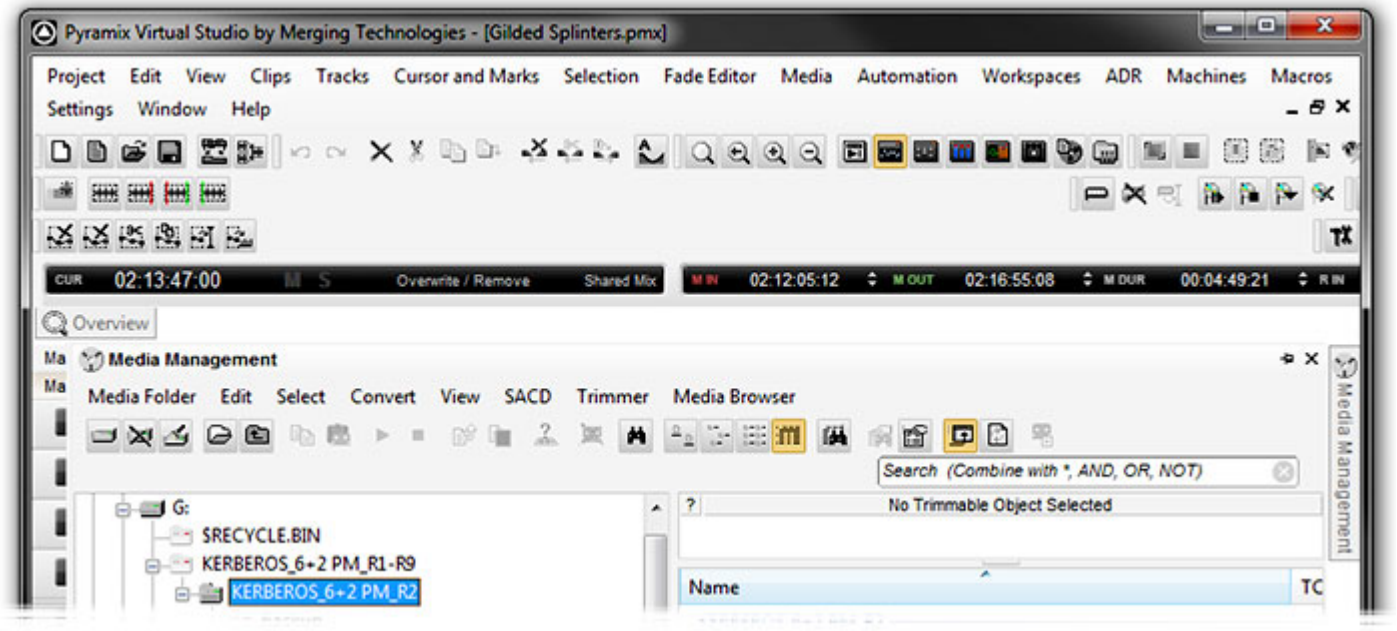
IMPORTANT: If there is only one Tab Window at the bottom of the main screen and you unpin it you will lose access to all other Tabs until you open the Tab and unpin it.

Once a Tab Window is Unpinned it collapses down to a Tab a second or so after the mouse cursor leaves the Tab Window. Hovering the mouse cursor over an Unpinned Tab opens the Tab Window which can then be used as normal until the mouse cursor leaves the Tab Window again. Clicking in the title bar 'locks' the Tab Window open as if it were pinned. Alternatively, clicking on the Tab to open it does the same thing.

An unpinned Tab can be extremely useful, for example, to give near instant access to the Media Management Tab Window without disturbing the layout. It is shown here first as a Tab and then with the Tab Window open (both screenshots cut down to save space):



Media Management Tab Unpinned with Mouse Cursor elsewhere



Media Management Tab Unpinned with Mouse Cursor in Tab Window

Note: Unpinned Tab Windows cannot be moved by clicking and dragging until they are pinned once again.

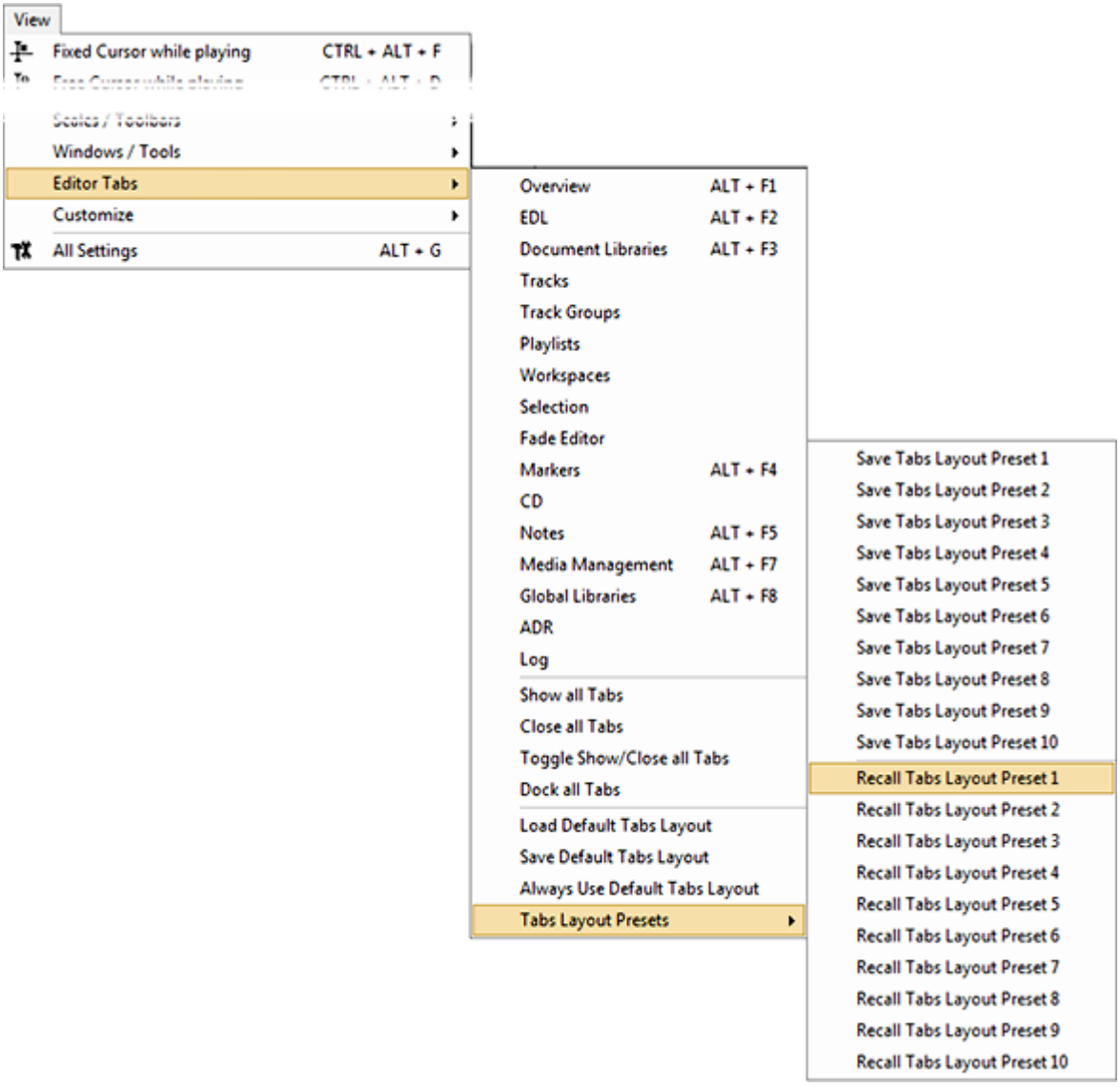
Note: Once a Tab Window has been unpinned, double clicking on the title bar will pin it, a second double-click will open it as a floating Tab Window. A subsequent double-click will now return it to the place it was unpinned from until it is manually returned to the main Tab Dock.

Managing Tab Windows

The button at the bottom-right of the main timeline (at the conjunction of both scroll bars) Toggles **Show/Close** all Tabs. This is extremely useful with big projects when screen space is at a premium.

The **All Settings > Timeline Layout > General : Display Timeline on Top/Left of Tab Windows** setting is rendered obsolete by the Tab enhancements, but can still be used for brand new projects to initially place Tabs as before in the screen (to the right or at the bottom). But the following considerations demonstrate that employing **Project Templates** makes for a more streamlined way of working.

The **Default Tabs layout** and up to ten **Tab Layout Presets** can be stored and recalled from the **View > Editor Tabs** menu :



View Menu - Editor Tabs >Tab Layout Presets sub-menu

Binding Tabs Layouts to Shortcut Keys

These presets can be bound to short-cut keys by using the **Keyboard Shortcuts Editor** (**Settings > Keyboard Shortcut Editor : View** Tab

- The **Default Tabs Layout** and **Tab Layout Presets** are saved with the application. I.e. available in all projects.
- **View > Editor Tabs > Load Default Tabs Layout** and **Save Default Tabs Layout** enable the complete Tabs layouts to be saved and loaded. If you open a Project that does not have a suitable layout simply call

one of your **Tab Layout Presets** or you can **Load Default Tabs Layout** to invoke the Tabs Settings previously saved as your Default.

- If **Always Use Default Tabs Layout** mode is engaged (**View > Editor Tabs > Always Use Default Tabs Layout** ticked), then the default layout is always used when loading any project, bypassing the layout stored in the project, so your own familiar environment will always be properly displayed no matter what layout has been saved in the project.
- **Workspaces** include a column called **Tabs Layout**. If ticked the Workspace stores and recalls a complete **Tabs Layout**. Since the 10 first workspaces can have an associated keyboard shortcut, this is very useful method for switch rapidly from one Tab Layout to another For example, Editing, Recording, Browsing Media, etc. etc.

Please see also: Workspaces on page 695

Workspaces

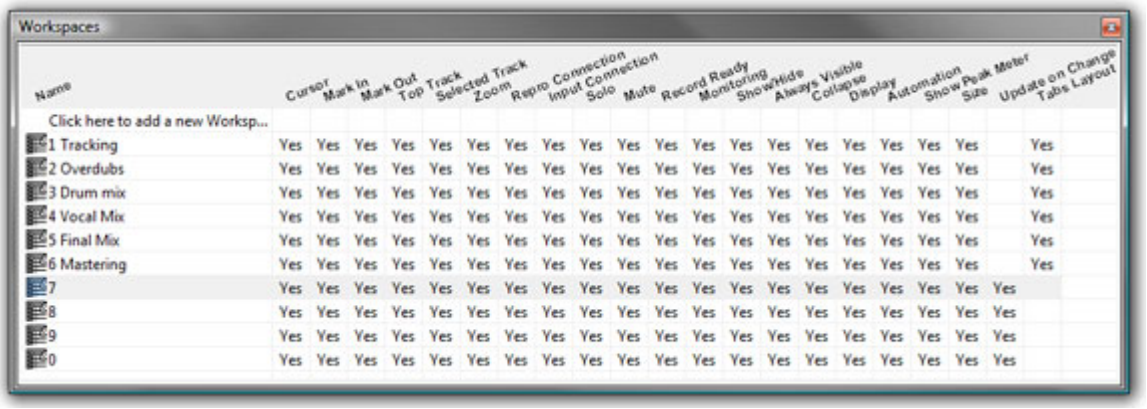
Overview

Workspaces are a method of creating presets of Timeline views and setups. A whole range of parameters including Track Header switches can be saved into a Workspace and recalled via the **Workspaces** Tab window or assignable short-cut keys.

The object of the exercise with Workspaces is to be able to change a large number of Timeline parameters simultaneously and quickly. Anything from Zoom level and Visible Tracks to Input Connections and Record Ready Status, Monitoring mode etc. can be saved together in a Workspace for later recall with a single key press.

Workspaces can be accessed via the pull-down menu on the Pyramix Virtual Studio Window Toolbar or via the Project Management Panel Tab.

Workspaces Tab Window



Workspaces Tab Window - floating

The Workspaces Tab window is a Row and Column based area, where the rows correspond to the Workspace being configured and the column refers to the parameter within the Workspace itself.

To create a new workspace, simply click on the **Click here to add a new Workspace** row at the top of the list, type in a suitable name and press **Enter/Return** to add the new Workspace to the top of the list.

Once created the Workspace can be saved into a slot by selecting **Workspaces > Save > Save Workspace 1 ... Save Workspace 10**.

When a Workspace is saved, every parameter column enabled **YES** will have that parameter saved as part of the Workspace.

Workspaces may be re-named by clicking the name.

Workspaces can be deleted by selecting them and pressing the 'Delete' key.

Recalling a Workspace can be achieved by double-clicking on the Workspace icon to the left of the name.or select the menu item **Workspaces > Recall > Recall Workspace (X)**. However, the quickest method is to use keyboard shortcuts. By default, Workspaces 1 to 10 are mapped to **Shift + 1** to **Shift + 0**.

Parameters remembered by Workspaces are selectable per Workspace by clicking in the appropriate columns.

Update on change

If the **Update on change** column is set to **Yes**. The current state of all selected parameters is saved to the current Workspace when another Workspace is selected.

> **Note:** Before using the **Update on change** feature it is strongly advised that you save the Workspace using **Workspaces > Save > Save Workspace {name of workspace}** to avoid undesired behavior.

Update on change in practice:

It is often useful to have a quick way to view the entire Timeline, with as many Tracks as possible in view, from time to time whilst in the middle of an edit.

This would require the creation of two workspaces. The first would be the view of the entire Timeline including the Track Size, Zoom Level, Hidden and top track parameters. This Workspace would then be saved with the Zoom level fitting the entire Composition into the Timeline window and the Tracks all reduced in height to fit all or as many as possible in the window.

The second workspace would be saved with the same parameters except, it would also have **Update on Change** enabled.

Thus, whenever you leave the 2nd Workspace (in progress edit) and go to the 1st Workspace to see the entire Timeline, the edit Workspace will be exactly the same as when you left it when you return.

Optimizing Pyramix

PC/OS Setup

For optimal performance:

- Disable Windows File Indexing
  - Open **My computer**
  - Right-click on each drive and select
  - Un-Check the Indexing check box
- Verify the Power Management:
  - Look in the Windows Control Panel and open **Power** options.
  - XP Users: Set **Power Scheme** to **Always On** and set **Turn off Hard disks** to **Never** and **System Standby** to **Never**.
  - MassCore users Under Vista & 7: **Power plan** should be **RTX – recommended**B.
  - Native Users: Make sure you select the **High Performance** power plan.

Recommended (not mandatory)

- Set your Antivirus to **Off** while running Pyramix.
- Set **Windows Automatic-Update** to **notify me**.
- Avoid having an active internet connection while running Pyramix.

Housekeeping

Database Location

For optimum housekeeping perfomance Merging recommend strongly that the **Default Database Location** should be set to point to the fastest drive on your system. **SSDs** or **SATA2 - 7200 rpm Disks** are recommended and, where possible, not the **C:\OS defaultdrive** (since a drive with less activity and higher speed should perform better).

Saving

Project Save times will be faster if Saves are made to a high-performance Disk (e.g. SSD or SATA2 7200rpm). Saving to older Disks (e.g. IDE, 5400 rpm etc.) or saving to the Disk where the OS is located (this disk is often very busy with other tasks) could slow down Saves times.

Keep Mounted Folders

Keeping Mounted Folders when closing and restarting Pyramix can speed up workflow: Set the option under:

Settings > All Settings > Application > General : Mount all Media folders that were Mounted at previous Application Exit.

Media Manager History

In order to reduce Database size and improve performance the Media Manager History can be cleared: Media Manager **Media Manager > Media Folder > Clear Media Manager History**.

Use Templates

The supplied Templates have settings appropriate to their purpose and are the fastest way of optimizing Pyramix. However, the following information should help when deciding what settings to use when creating your own projects and templates.

Pyramix File Format .PMF

We strongly recommend the use of the native .PMF format for a number of reasons.

The first issue is the size limitation of the WAV and BWF formats. These are LIMITED TO 2 GB in size by design (they use 32 bit signed, which gives a total of 2 to the power of 31 Bytes addressable = 2'147'483'648 Bytes precisely).

2GB may sound a lot but a little elementary arithmetic will show it is easy to exceed this limit when using higher sample rates and bit depths for multi-track recordings of real-world durations.

AIFF is slightly better in the sense that it is "only" LIMITED TO 4 GB (it uses 32 bit unsigned, which gives a total of 2 to the power of 32 Bytes addressable = 4'294'967'296 Bytes precisely.

PMF uses 64 bit addressing which would probably allow 128 tracks to be recorded for about 10,000 years (If you can afford the disks!), which should be more than enough for any practical applications.

The second advantage of the Pyramix File Format for large multitrack projects is that it is not "sample-interleaved" but "block-interleaved". Which means that instead of (as with WAV, BWF and AIFF) recording on disk one sample of channel 1, then 1 sample of channel 2, and so on to 1 sample of channel n, **.pmf** was designed from day one to optimize disk access by recording a quite large block of samples for each channel in a sequence. Typically 64 kB of channel 1, then 64 kB of channel 2, etc, finally 64 kB of channel n.

This setting (default 64 kB) can be changed by the user to one of four alternative values in the **Record Block Size** section of the **Playback/Record** page of **All Settings > Settings > Application**. However, the alternatives are really only applicable to certain RAID and Network-Attached-Storage set-ups and, unless you have considerable knowledge and experience, the default setting should be used.

Note: PMF is optimized for interleaved multi-channel as opposed to single.

One File Per Track option

For non PMF formats

Found in the **All Settings > Settings > Project > Record** page, The **One file per track** option should always be chosen (checked) whenever more than 2 tracks of recording are contemplated as there is a rather high potential performance penalty that can occur with all the (non PMF) sample-interleaved file formats (E.g.WAV and AIFF) on playback, when not all tracks of a multi-channel recording are used or played in their original sync relationship on the Timeline. This is because with other, interleaved, formats the hard disk head will still have to go through all the bits of all the channels, even if only 1 or 2 tracks of that file are used at a given point in time.

For maximum performance with **One File Per Track** choose **BWF** in preference to **PMF**.

Reducing Unnecessary Disk Access

Track and Mixer Muting

There is a subtle difference between muting a Track Output (with the button in the Track Header) and muting the same signal in it's associated mixer input strip. Muting a Track stops disk access for the Track (There is a delay before the sound stops while the replay buffer is emptied). Muting a mixer strip doesn't affect disk access but simply mutes the strip (Therefore muting is immediate). Muting Track outputs enables multi-track recordings with many Tracks (E.g. 48 Track music recordings) to be edited on hardware which cannot support this number of Tracks. (E.g. a laptop) Providing the Clips are grouped across all Tracks, then any editing changes made on the Tracks used for the editing guide will also be reflected in the muted Tracks. **Track Grouping** can be used to make operation simpler and more convenient.

Core Power Saving

Although **MassCore** automatically optimizes **Core** allocation certain large configurations may still benefit from the following **Core** husbandry strategies.

Core Power Saving

Core Power saving modes can be found in the **All Settings > Settings > Hardware > Mixer > Core Power Saving** page:

Player/Recorder mode

Transforms the mixer's full nodal matrix topology into a "diagonal" topology where only the direct paths are computed (i.e. Input 1 to Output 1, Input 2 to Output 2, Input n to Output n)

This allows Pyramix to accommodate very large player/recorder Track counts (up to 128. It **MUST** be used with Multiple Mono Mix buses.

Disable Punch in / Punch Out

is another DSP processing saving function that, as it name indicates, disables concurrent record stream management whenever no Punch recordings are required during certain phases of a project's life. This might save another couple of % of DSP load.

Disable Mixdown

is similar to the above. Disables concurrent Master outputs possible extra paths used for recording as mixdowns.

MassCore & VST Core Allocation

CPU Core Allocation

MassCore

MassCore can be allocated one or more cores for its exclusive use. If it is desired to allocate more than one core to MassCore, the optional SMP Key is required.

MassCore SMP

Without the **MassCore SMP** key the engine dedicates one core to MassCore. (Two cores will be hidden in hyper-threaded configurations.)
With the **MassCore SMP** key multiple dedicated processor cores may be allocated to MassCore. This makes it easier to manage lower latency and massive mixers.
SMP provides more real-time power and also benefits users requiring multiple RAVENNA I/O connections in their workflow.

Remaining Cores

By default Pyramix allocates all but one of the remaining cores to Windows as VST cores.

Example: Intel **i7** 4 core CPU (with Hyperthreading switched off) where MassCore is installed and running.

- 1 core is allocated at boot-up for RTX/MassCore. This separation of MassCore audio processing and non-real-time Windows environment functions is absolute.
- The remaining 3 cores are available to Windows as seen in the Task Manager.
- Of the remaining 3 cores, Pyramix allocates 2 cores for use by VST plug-ins by default thus leaving one core totally free for Windows.

- The 2 cores allocated for use by Pyramix for VST threads are still solicited by Windows and in essence are simply multi-tasking both Pyramix VST tasks and anything else Windows needs to process, so the separation of audio processing and non-real-time Windows functions is not absolute, contrary to the case with MassCore and Windows.
- The VST core allocation slider in **Settings > All Settings > Hardware > MassCore** enables the user to allocate the remaining 3rd core, in exceptional circumstances, for extended VST processing power. The evident trade-off cost is a possible reduction in Windows performance and (in the extreme) rendering the entire system sluggish and even unstable.

VST Core Allocation

VST threads are one of the highest priority threads (godlike) in relation to the overall Pyramix priority scheme because we try to keep the latency of VST plug-ins as low as (humanly) possible. Pyramix treats every instance of a real-time VST plug-in in the mixer's strips and buses as a separate thread of processing.

Each group of VST plug-in threads in a single Strip or Bus will receive that Strip's or Buses' audio stream of data to be processed, one plug-in after the next, so they cannot be dissociated and become a single "thread process group" in themselves.

When Pyramix has only one core allocated for VST use then all VST thread process groups are sent to that single core (logical enough). The more VST threads are added and the more those threads are CPU intensive, the more that core will peak. However, when two or more cores are made available for dynamic VST thread distribution, Pyramix divides the mixer as per it's "best guess" of which combination of groups of strips and busses will consume as equal amount of CPU resources as predictably possible and distributes the VST process threads between the number of available cores allocated for VST plug-ins.

This means that if you had, for example, a mixer with 8 strips of which each strip has an evenly distributed array of identical VST plug-ins and Pyramix has two cores allocated for VST plug-ins then Pyramix assigns strips one through four to the first core and strips five through eight to the second core at the moment of mixer allocation. This helps to keep the chances of peaking on one VST core through unevenly distributed VSTs.

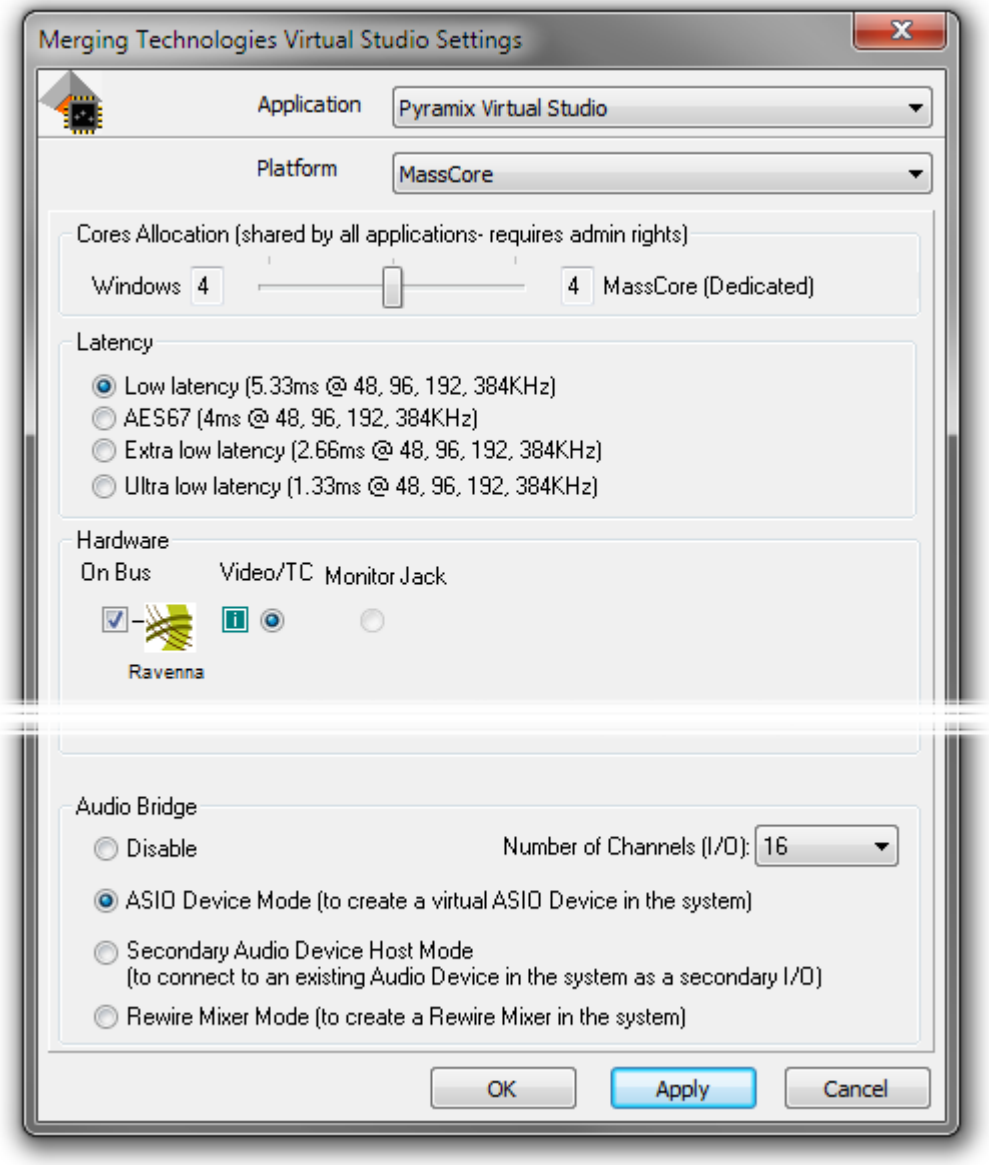
Another more complex example would be to illustrate an uneven distribution of plug-ins on a system with three cores allocated for VST plug-ins. Picture a mixer of eight strips with two instances of a huge VST reverb on strips one and two with strips three through eight only having low-consumption VST instances of an equalizer plug-in. Pyramix would find that the big reverb on strip one consumes nearly half of the resources required to process all VST threads for that mixer and assign it to one core on its own. It would then assign the second instance of the reverb on strip two to the second core. The remaining EQ plug-ins on strips three through eight would then be allocated to the third core basically cutting the mixer in three VST processing zones. Zone 1= Strip 1, Zone 2= Strip 2, Zone 3= Strips 3-8 (and buses).

With this understanding of the distribution by Strips and Buses of VST plug-ins over the allocated cores, you can analyze more clearly the consumption of CPU resources displayed in the VST core meters at the bottom of the GUI and better understand when you need to widen the core allocation to compensate for VST core peaks.

> **Note:** As a general rule of thumb it should be considered that the allocation of every available core for VST plug-ins be an exceptional event and not a recipe for a normal Pyramix setup. This is much the same as pushing audio buffers to extremes for a demanding Project and resetting them to their default values for smaller Projects and day-to-day use whenever possible. Pyramix was designed to work at optimum efficiency with the default values and should be "tweaked" only when demanding Project circumstances call for it.
>
> **Note: MassCore** Core Allocation is automatic unless the optional **SMP** key is present.

SMP

The optional **SMP** key enables more cores to be allocated to MassCore.



VS3 Control Panel Settings Window

In the screen shot above, the SMP key is present, the processor has four cores with Hyperthreading switched on in the BIOS hence the 8 cores shown.

Use Workspaces

Workspaces provide a powerful means of storing and recalling the state of a number of parameters of the Project Editing Panel, especially Track Header Panel switches. In effect a Workspace is a snapshot which enables the operator to quickly switch between set-ups for a variety of common tasks.

- New Workspaces can be added by clicking on the first line of the Tab Window and typing a name.
- Workspaces can be deleted by selecting them and pressing the **Del**ete key.
- Applying a Workspace is achieved by double-clicking on the Workspace icon.
- Parameters remembered by Workspaces are selectable per Workspace by clicking in the appropriate columns.

The penultimate column **Update on Change** allows a stored Workspace to be automatically updated to the current values before switching to another one and the last one, **Tabs Layout** stores the physical positions and sizes etc. of all Tab Windows.

Creating Tracks via paste

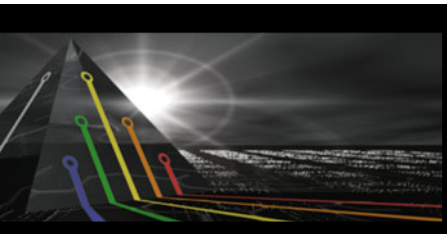
This is a fast way of creating Tracks.

If a Clip is dragged and dropped or copied and pasted from Media Management or a Library onto a blank area of the TimeLine where no Tracks exist, sufficient Tracks will be created below the last existing Track to accommodate the number of channels in the Clip.

Disable Skin

This option can be found on the **All Settings > Application > Desktop layout** page. It may improve performance on certain older systems.

28 Menus



Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

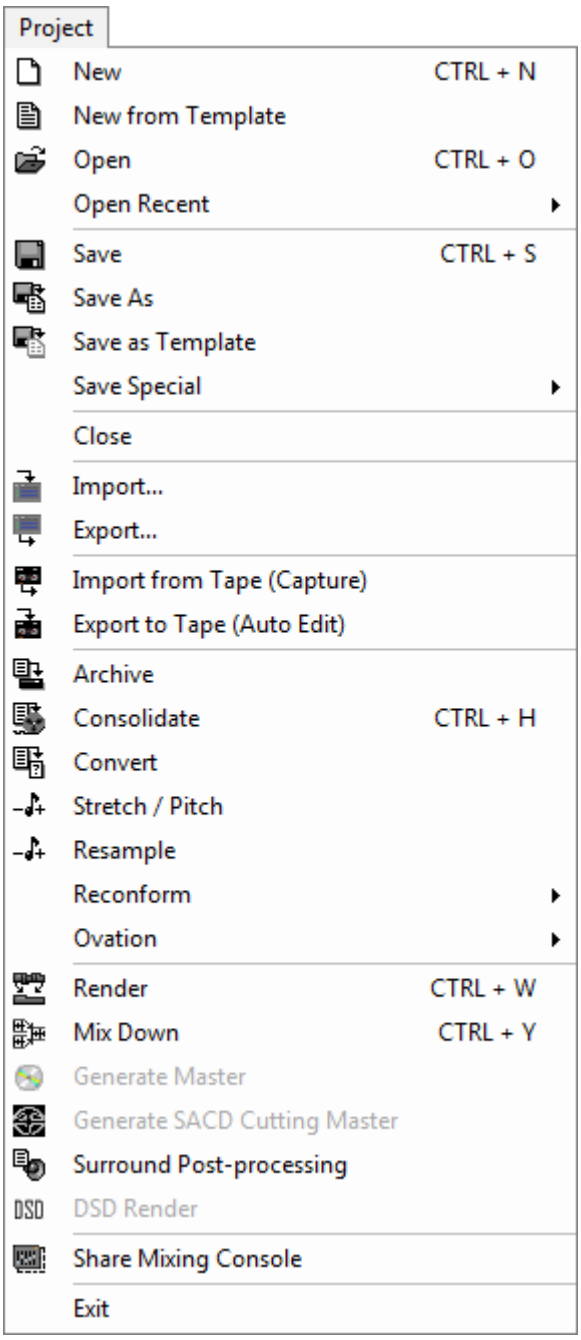
www.merging.com/Pyramix

Pyramix Default Menus

Menus are highly configurable in Pyramix. Commands can be hidden or added and entire menus shown or hidden. If a command cannot be found check if it is currently hidden in the relevant tab page of **Settings > All Settings > Application > Desktop Layout**. Please see also **Toolbars and Menus on page 537**

Many Pyramix menu entries are self-explanatory. These are simply listed. Other menu entries are either described here or elsewhere in this manual. Wherever menu options have Toolbar Icon alternatives, these are shown in the menu screenshots.

Project



Project menu

New Create a new Editing Project or Digitizing session

New from Template Create a new Project based on an existing factory or user Template

Open	Open an existing Editing Project or Digitizing session
Open Recent	The sub-menu shows the 9 most recent Projects opened. Click on a Project to open it.
Save	Save current Project. If the project has never been saved, the **Save As** dialog box will appear
Save As	Save current Project with a new name
Save as Template	Save current Project as a Template
Save Special>	

For compatibility

- **Save as Version 12.0**
- **Save as Version 11.1**
- **Save as Version 11.0**
- **Save as Version 10.0**
- **Save as Version 9.0**
- **Save as Version 8.1**
- **Save as Version 8.0**
- **Save as Version7.1**
- **Save as Version 7.0**
- **Save as Version 6.2**
- **Save as Version 6.1.7 MR1 / 6.1.8 MR2**
- **Save as Version 6.016 SP2**
- **Save as Version 6.015 SP1**
- **Save as Version 6.08**
- **Save as Version 5.1**
- **Save as Version 5.0**
- **Save as Version 4.3**

Note: v10 and later Projects can only be saved as earlier Versions if **Legacy Buses** only are instantiated.

Close	Close the current Project. If the file has changed since last saved, the **Save** dialog box will appeart
Import...	Opens the InterChange Import Manager
Export...	Opens the InterChange Export Manager
Import from Tape (Capture)	Allows media on external devices to be captured into the current Project
Export to Tape (Auto Edit)	Allows the current composition to be exported to an external device
Archive	Creates a copy of the current project with all associated media to another location
Consolidate	Create an optimized set of media for the current project
Convert	Convert the whole project to an other sampling rate
Stretch / Pitch	Stretch or Pitch the whole project from 24fps to 25fps (4% time compression or pitch reduction) or 25fps to 24fps (4.17% time expansion or pitch rise)
Resample	Opens the resampler
Reconform >	

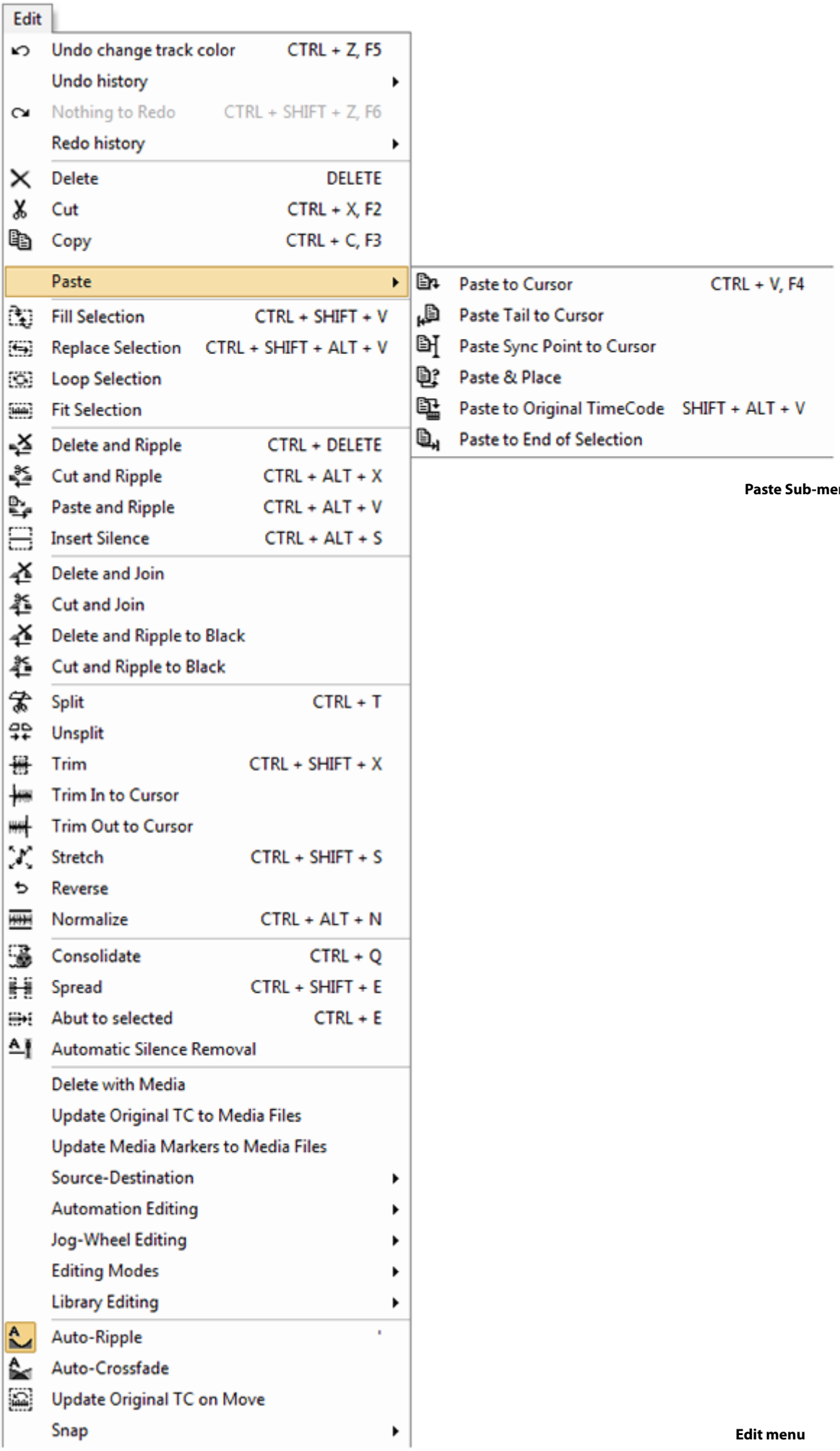
Relink to New Media	Opens a dialog offering various options similar to the CMX Import function. This allows relinking all or a selection of Clips to new media. Typically. this is used for replacement of 16 bit versions of audio files with 24 bit versions based on the Clip name, media name, Scene & Take information or original TimeCode.
Load Change EDL & Reconform	Allows a so-called "Change EDL" generated from a "State 1 EDL" and a "State 2 EDL" to be loaded. Cues are rearranged within the current project to reflect the change from State 1 to State 2
Detect Picture Change & Reconform	You can use Pyramix to perform a Reconform from two Video Projects. After loading the Video Projects select this option to begin the Reconform process.
Ovation	Only Applicable to Ovation Systems. Please see the Ovation User Guide for details.
Render	Render the project or current selection to a new Media File
Mix Down	Opens the **Mix Down** dialog to Mix the Project or current Selection down to a new Media File or files through the Mixer
Generate Master	Opens the Generate CD Image / SACD Edited Master Dialog: DSD options are only available for DSD Projects
Generate SACD Cutting Master	Only applicable to SACD systems. Please see the SACD User Guide.
Surround Post-processing	Enables the current composition to be encoded in different Surround format such as AC3 or DTS (if the appropriate optional encoder plug-in is installed)
DSD Render	Enables Timeline edits (Fades/Gain/Cuts) to be processed. Applies to DSD64, DSD128, DSD256 and DXD Projects. Also applies to 352.8 kHz PCM projects containing only DSD material. For DXD the sampling rate must be specified. With DSD projects the sampling rate is forced to the Project rate. Media Phase Invert is supported.

Note: The **DSD Render** function does **NOT** apply any Envelope changes. Gain changes, fades and Phase invert are applied.

Share Mixing Console	Activates or terminates Sharing the current Mixing Console with other Projects.
Exit	To quit the application, choose Exit from the File menu. If there have been changes since the last time you saved the project, the system will prompt you to save your changes

Note: The **Stretch / Pitch** menu selection requires the optional Prosoniq MPEX.

Edit



Paste Sub-menu

Edit menu

The Edit menu in Pyramix contains the conventional **Delete**, **Cut** and **Copy** commands, and a **Paste** sub-menu, also options for **Undo** and **Redo** of previous edit operations and special edit commands for placing Clips in the Pyramix Composition Editor.

Undo clip(s) move	Undo command changes to show the last edit action and cancels it when selected
Undo history >	leads to a sub-menu with a list of all previous editing actions which can be undone
Redo clip(s) move	Redo command changes to show the last action undone and cancels it when selected
Redo history >	leads to a sub-menu with a list of all editing actions which have been undone and can be redone

Delete	Deletes the currently selected Clip/selection
Cut	Cuts the current selection from the project and saves it on the Clipboard
Copy	Copies the current selection from the project and saves it on the Clipboard
Paste >	

Paste to Cursor	Inserts the object on the Clipboard at the current Cursor position
Paste Tail to Cursor	Inserts the object on the Clipboard with the end at the current Cursor position
Paste Sync Point to Cursor	For a single Clip Pastes the Clip with the Sync Point at the current Cursor position
Paste & Place	This command opens the Placement Tool to allow for more extensive placement options
Paste to Original TimeCode	Inserts the object on the Clipboard to the pasted Clip's original source TimeCode position
Paste to End of Selection	Inserts the object on the Clipboard to the end point of the current selection

Fill Selection	This command will substitute the Clipboard contents for the selected Clip or Region for the duration of the Clipboard contents. No Ripple of following Clips will occur.
Replace Selection	This command will substitute the Clipboard contents for the selected Clip or Region and will ripple all subsequent Clips if the duration of the clipboard contents is greater or shorter than the selected Clip or Region.
Loop Selection	This command will substitute a loop of the Clipboard contents within the selected Clip or Region boundaries, creating a 10ms cross-fade between the inserted iterations of the Clipboard contents. No ripple will occur. **Note**: all Clips within a region's boundaries will be replaced.
Fit Selection	This command allows a Clip on the Clipboard to be fitted into a user defined Region on the Timeline by stretching or squeezing it. (to maxima of 50% and 200%) This requires one of the optional Time compression/Expansion plug-ins to be present.

Delete and Ripple	Deletes the currently selected Clip/selection, forcing a ripple to occur
Cut and Ripple	Cuts the current selection from the project and saves it on the Clipboard, forcing a ripple to occur
Paste and Ripple	Inserts what's on the Clipboard to the current cursor position, forcing a ripple
Insert Silence	This command will insert blank space (silence) into to the current selection

Delete and Join	Deletes the currently selected Clip/selection and ripples the end of the Clip.
Cut and Join	Cuts and saves to the clipboard the currently selected Clip/selection and ripples the end of the Clip.
Delete and Ripple to Black	Deletes the currently selected Clip/selection and ripples all following butted or cross-faded Clips.
Cut and Ripple to Black	Cuts and saves to the clipboard the currently selected Clip/selection and ripples all following butted or crossfaded Clips.

Split	This command uses the play cursor as a razor blade to split selected Clips into two Clips at the point where the play cursor crosses the selected Clips

Unsplit Clips that have been **Split**, **Cut** or **Crossfaded** can now be joined back together providing they are still in sync and referencing the same media

Trim When a Region is selected, Trims the Clip(s) In and Out points to the region boundaries.

Trim In to Cursor Trims the Clip In point to the current Cursor position.

Trim Out to Cursor Trims the Clip Out point to the current Cursor position.

Stretch Opens the **Stretch** dialog. The selected Clip can be stretched or squeezed by maxima of 50% and 200%. Requires one of the optional Time Stretch plug-ins.

Reverse Reverses the Clip in the Timeline so it plays backwards.

Normalize Apply the normalize process to the selected Clip

Consolidate The Consolidate function will make a selective backup of the media segments in the Composition

Spread Opens the **Enter gap time** dialog which enables a space (silence) to be inserted between selected Clips

Abut to selected This command abuts all Clips between the Mark In and Mark Out on a Track to a selected Clip between the marks on the same Track

Automatic Silence Removal This command opens the Automatic Silence Removal dialog box

---

Delete with Media Removes the current selected Clip from the composition, and delete the associated media file

Update Original TC to Media Files Updates the Media Original TC for all selected Clips with their TimeCode position in the composition. This operation modifies the Media and is not reversible

Update Media Markers to Media Files Updates the original Media Markers for all selected Clips with the Media Marker positions in the composition. This operation modifies the Media and is not reversible

Source-Destination >

Auto-Edit Source to Destination

Executes the appropriate Source/Destination 2, 3 or points editing operation depending on the Gates status

Overwrite Source to Destination

Overwrites the content between the Destination Track Group Gates with the content between the Source Track Group Gates

Insert Source to Destination Inserts the content between the Source Track Group Gates to the Destination Track Group Gates

Replace Source to Destination

Replaces the content between the Destination Track Group Gates with the content between the Source Track Group Gates by rippling the Destination

Fit Source to Destination Replaces the content between the Destination Track Group Gates with the content between the Source Track Group Gates by stretching the Source

---

Auto Set Destination Gate In after Edit

When this option is checked (enabled), the Destination Gate In point is automatically set to the current Gate Out point after any Source-Destination operation

Auto Select Destination after Edit

When this option is checked (enabled), the Destination Track Group is automatically selected after any Source-Destination operation

---

Limit 1 Gate Sources to End/Beginning of Clip

When this option is checked (enabled), then the Source material between the Source Gate and the end of the Clip under the Gate instead of the whole Track is copied to the Destination

---

3 Gates Auto-Edit does Overwrite

When this option is checked (enabled), then when 2 Gates are set in a Source and 1 is set in the Destination then AutoEdit performs an Overwrite operation.

3 Gates Auto-Edit does Insert

When this option is checked (enabled), then when 2 Gates are set in a Source and 1 is set in the Destination then AutoEdit performs an Insert operation

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Automation Unchanged for Source Track Groups

Automation Off for Source Track Groups

Automation Play for Source Track Groups

Note: For the above options: If the main Automation Mode is **Write**, then this mode is automatically changed to **Unchanged**, **Off** or **Play** when a **Source Track Group** is selected, and changed back to **Write** when any other **Track Group** is selected (typically the **Destination** one).

Note: When the following modes are enabled:

- **Automation Off for Source Track Groups**
- **Automation Play for Source Track Groups**

Then this also affects the **Enable Cut/Copy/Paste Automation mode** (set to **Off** for Source Tracks).

Automation Editing

Enable Automation Editing Enabled By Default**.** Enables Timeline Automation Editing. Mode is determined by the next three entries:

Link to Media Content When enabled automation data is linked to the content so that if the Media Content is slipped the Automation data moves with it.

Cut/Copy/Delete Displayed Automation Will only affect Automation Curves visible in the Timeline when Editing

Cut/Copy/Delete Whole Strip Automation Enabled By Default. Will affect ALL Automation, even the curves not visible currently in timeline Track(s) when editing.

Erase Points on Cut/Delete Erases all points contained within the selection. Does not add Automation points to the selection boundaries.

Delete and Interpolate on Cut/Delete Enabled By Default. Interpolates a curve from the start of the selection to end of the selection.

Delete and Maintain on Cut/Delete Does not interpolate the curve from start to end of the selection. Therefore maintains a flat curve on Cut or Delete.

Jog-Wheel Editing>

A number of editing actions may be undertaken on a selected Clip or group of Clips using a jog-wheel on an external hardware controller.

First select the Clip or group of Clips, then select the desired Jog-Wheel Editing Mode from the choice of:

Move

Move And XFade

Lock XFade Trim

Force XFade Trim Lock

Force XFade Trim Unlock

Trim In

Trim Out

Trim Fade In

Trim Fade Out

Trim Fade In X (Symmetrically)

Trim Fade Out X (Symmetrically)

Trim Source In

Trim Source Out

Trim Sync Point

Slide Media

Previous Clip Trim Out

Previous Clip Trim Fade Out

Previous Clip Trim Fade Out X (symmetrically)

Previous Clip Trim Source Out

Now simply move the jog wheel to **Move**, **Trim**, or **Slide Media** of the selected Clip(s)

Pressing the **Spacebar** or **Enter** confirms the change(s), **Esc** cancels.

Editing Modes > Insert Mode >

Overwrite When checked, any Clip placed so that it overlaps an existing Clip will overwrite the part of that Clip where the two overlap.

Insert Track When checked, any Clip placed on a Track will be inserted into the Track and will ripple all other material on the Track later in time (to the right) by the length of the Clip being inserted.

Editing Modes > Remove Mode >

Remove When checked any selected material will simply be removed from the Timeline. Everything else will be left intact and in the same place.

Remove and Ripple When checked any selected material will be removed from the Timeline. Everything else to the right (after) the removed material will be Rippled (moved) to the left (earlier) to take up the space left by the removed material.

Editing Modes > Snap Mode >

Don't Snap No snap mode set. This mode doesn't affect the behavior of objects placed on a Track. Behavior follows the existing Insert and Remove modes.

Head to End This mode will cause the beginning of any Clip placed on a Track to snap to the end of the last Clip on the Track, abutting the head of the new Clip to the end (tail) of the last Clip.

Tail to Beginning This mode will cause any Clip placed on a Track to snap to the beginning of the first Clip on the Track, abutting the tail of the new Clip to the head of the first Clip.

Head to Nearest This mode will cause any Clip placed on a Track to snap the head of the Clip to the nearest edit point or mark on the Track. This includes the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Tail to Nearest This mode will cause any Clip placed on a Track to snap the tail of the Clip to the nearest edit point or mark on the Track. This include the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Snap to Original TimeCode This mode will cause any Clip placed on a Track to snap the head of the Clip to the time location represented by the Clips original TimeCode. The Clip will interact with existing Clips according to the Insert Mode setting.

Library Editing

Library Cut

Library Copy

Library Copy Trimmer Selection

Library Paste

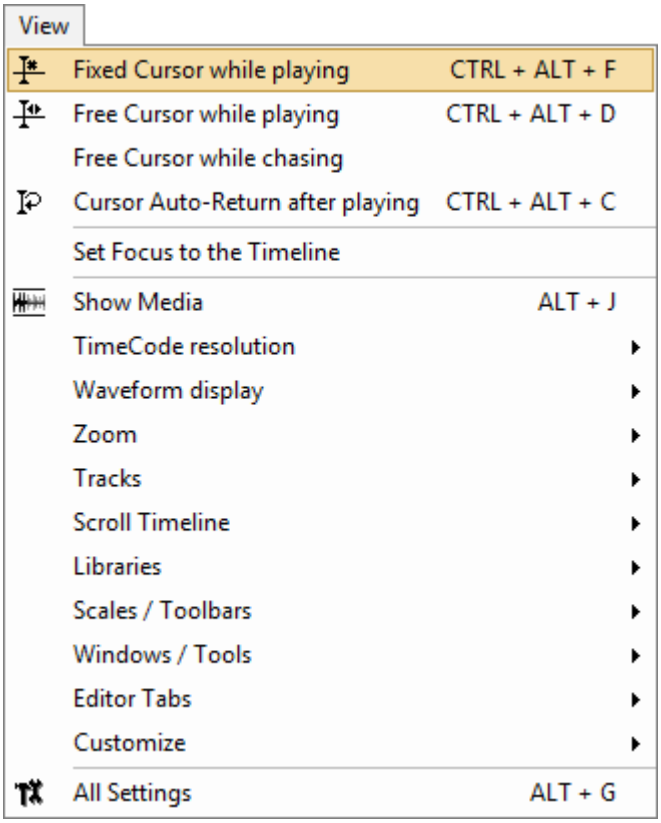
Library Paste with Media

Auto-Ripple	When this option is checked (enabled) all **Insert** or **Remove** operations ripple the rest of the Track
Auto-Crossfade	When this option is checked (enabled) the default cross-fade (defined in the Fade Editor Tab Window is applied to any Paste or Source-Destination operation
Update Original TC on Move	When this option is checked (enabled) the original TimeCode stamp of any copied/move selection is updated to the position it was in before the current move

Snap >

Snap Off	When this option is checked (enabled), Snap mode is disabled
Snap to Edits	When this option is checked (enabled), Snap mode is set to Edits
Snap to Scale	When this option is checked (enabled), Snap mode is set to Scale
Snap to Feet Scale	When this option is checked (enabled), Snap mode is set to Feet Scale
Snap to Bars & Beats Grid	When this option is checked (enabled), Snap mode is set to Bars & Beats Grid
Snap Cursor	When this option is checked (enabled), the Cursor is also snapped following the current mode
Snap Region Selection	When this option is checked (enabled), the Selection is also snapped following the current mode
Snap Selection Head	When this option is checked (enabled), Snap mode is set to Head of selection
Snap Selection Tail	When this option is checked (enabled), Snap mode is set to Tail of selection
Snap Selection Sync Point	When this option is checked (enabled), Snap mode is set to Sync Point of Selection

View Menu



View menu

Fixed Cursor while playing — When checked (enabled) **Playhead Cursor** remains stationary while playing at the position set in the **Settings > All Settings > Playback/Record** page and the Tracks scroll from right to left.

Free Cursor while playing — When checked (enabled) **Playhead Cursor** disappears when the screen boundary is reached. I.e. the Timeline is not redrawn.

Free Cursor while chasing — When checked (enabled) in conjunction with either of the above options the Playhead Cursor and Timeline position can be freely manipulated from the workstation whenever the TimeCode Master machine is in Stop, Rew, FF, Play, Locate, etc. as well as while chasing, but as soon as Pyramix has locked to incoming TimeCode, the cursor will "jump" to current TC. This used to be the default behavior. When disabled, the Cursor will always be locked to TimeCode when Pyramix is set to chase, whether in Stop, Rew, FF, Play, Locate, etc. as well as while chasing.

Cursor Auto-Return after playing

When checked (enabled) **Playhead Cursor** returns to its starting position when playback stops

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Set Focus to the Timeline — Most useful when mapped to a keyboard shortcut. When a floating Tab or other window has been opened that keeps the focus and monopolizes some commands, typically the Space Bar and Cursor buttons invoking this command is the direct equivalent of clicking in the Timeline to restore the focus, but avoids having to grab the mouse and loosing any selections.

Show Media — When checked (enabled) shows the full extent of the underlying digital media for a selected Clip as a red line on the Track above and below the selected Clip with a grayed out image of the waveform when this is on

TimeCode Resolution >

Frames — Sets the < 1 second Cursor TimeCode display resolution to frames

Samples	Sets the < 1 second Cursor TimeCode display to samples
[ms]	Sets the < 1 second Cursor TimeCode display to display milliseconds
CD frames	Sets the < 1 second Cursor TimeCode display to display CD frames
Display as CD time	Sets the TimeCode display to CD Track elapsed time (only available when CD Markers are present)

Alternate TimeCode Scale - Frames

Alternate TimeCode Scale - Samples

Alternate TimeCode Scale - [ms]

Alternate TimeCode Scale - CD Frames

Alternate TimeCode Scale Settings

Waveform Display >

Larger	Increase the size of the current waveform display
Smaller	Decrease the size of the current waveform display
x1	Sets the magnification factor of the current waveform display to 1x
x2	Sets the magnification factor of the current waveform display to 2x
x4	Sets the magnification factor of the current waveform display to 4x
x8	Sets the magnification factor of the current waveform display to 8x
x16	Sets the magnification factor of the current waveform display to 16x
x32	Sets the magnification factor of the current waveform display to 32x
x64	Sets the magnification factor of the current waveform display to 64x
dB	Sets the current waveform display to decibels
Auto-Scale Individual Waveform	Sets the current waveform display to automatically display an optimal waveform for the Clip(s) selected currently.
Auto-Scale Visible Waveform	Auto-scales the Waveform for the Track selected currently, based on what is currently seen on screen
Show Full Waveform	Sets the current waveform display to display a symmetrical waveform
Show Half Waveform / Origin	Sets the current waveform display to display a half waveform from the bottom up which also shows the 0dB origin
Show Dynamic Waveform	Sets the current waveform display to display a waveform that shows the dynamic range from the minimum to maximum excursion within the media file. I.e the lowest and highest Peak values

Hide Clip Name when Waveform Shown

Hides the Clip names when the waveform is displayed

Zoom >

Fit in window	Adjusts the horizontal magnification (zoom level) of the Project Editor panel to fit the selected Clip or Region
Previous zoom	Restores the Project Editor Panel view to the previous zoom resolution and location
Zoom In	Zooms in by a factor of 2x, centered around the middle of the Project Editor Panel
Zoom Out	Zooms out by a factor of 2x, centered around the middle of the Project Editor Panel

Recall Preset >

Zoom 1	Recall Preset Zoom 1
Zoom 2	Recall Preset Zoom 2
Zoom 3	Recall Preset Zoom 3
Zoom 4	Recall Preset Zoom 4

Zoom 5 Recall Preset Zoom 5

Set Preset >

Zoom 1 Set Preset Zoom 1

Zoom 2 Set Preset Zoom 2

Zoom 3 Set Preset Zoom 3

Zoom 4 Set Preset Zoom 4

Zoom 5 Set Preset Zoom 5

Auto Zoom Selection Project Editor Panel display automatically zooms-in to any selection made on the Timeline

Tracks >

Show all Tracks Show (Unhide) all Tracks and Expand (Uncollapse) all Track Groups

Hide Tracks without selection Hide all Tracks that have nothing selected

Fit View to >

Fit View to 1 Track Fit current View to 1 Track

Fit View to 2 Tracks Fit current View to 2 Tracks

Fit View to 4 Tracks Fit current View to 4 Tracks

Fit View to 8 Tracks Fit current View to 8 Tracks

Fit View to 16 Tracks Fit current View to 16 Tracks

Fit View to All Tracks Fit current View to All Tracks

Enlarge Track Size Enlarge current Track Size

Reduce Track Size Reduce current Track Size

Track Size Mini Shows the Track at the height of one row of Track header

Track Size Medium Shows the Track at the height of two rows of Track header

Track Size Large Shows the Track at the height of three row of Track header

Track Size Extra Large Shows the Track at the height of 8 rows of Track header

Scroll Timeline

Scroll Timeline Left Scroll the whole Timeline to the left

Scroll Timeline Right Scroll the whole Timeline to the right

Scroll Timeline Up Scroll the whole Timeline up

Scroll Timeline Down Scroll the whole Timeline down

Libraries

Folders

Library Folders Up

Library Folders Down

Library Folders Collapse

Library Folders Expand / Focus on List

List

Library List Up

Library List Down

Library List Focus On Folders

Library List Focus On Trimmer

Trimmer

Library Trimmer Focus On List

Library Trimmer Play From In

Library Trimmer Play From Start

Library Trimmer Stop

Library Trimmer Set In Point

Library Trimmer Set Out Point

Library Trimmer Set Sync Point

Scales / Toolbars >

Hide All Toolbars	Hides all Toolbars visible currently. A second click restores
TimeCode Toolbar	Shows/Hides the main **TimeCode** Toolbar
Alternate TimeCode Scale	
Alternate TimeCode Scale Settings	Opens the **Alternate TimeCode Scale Settings** dialog box. (Only available when Alternate TimeCode Scale ruler is present.)
Feet	Adds a ruler calibrated in Feet below the Time ruler (if present)
Feet Settings	Opens the **Feet Settings** dialog box (Only available when Feet Time Scale ruler is present.)
Bars&Beats	Adds a ruler calibrated in Bars&Beats below the Time ruler (if present)
Bars&Beats Settings	Opens the **Bars&Beats Settings** dialog box. (Only available when Bars&Beats Scale ruler is present.)
Bars&Beats Grid	Shows/Hides the **Bars&Beats Grid**. (Only available when Bars&Beats Scale ruler is present.)
Tempo Map	Adds a Tempo map below the Main Timescale ruler. (Only available when Bars&Beats Time Scale ruler is present.)
Source - Destination	Shows / Hides the **Source - Destination** Timescale Ruler(s) and Toolbar
Transport Toolbar	Shows/Hides the **Transport** Toolbar
Automation Toolbar	Shows/Hides the **Automation** Toolbar

Windows / Tools >

Transport	Displays/Hides the **Transport** Large Control
Mixer	Displays/Hides the **Mixer**
Monitor	Displays/Hides the **Monitor**
Meter Bridge	Displays/Hides the **Meter Bridge**
Final Check Metering	Displays/Hides the optional **Final Check Metering** Window
Media Management	Displays/Hides the **Media** Management folders
Global libraries	Displays/Hides the **Global Libraries**
Fade Library	Displays/Hides the **Fade library**
RAVENNA Easy Connect	Opens the **RAVENNA Easy Connect** application
Information	Displays/Hides the **Information** Window
Take Logger	Opens the **Take Logger** Window
Recording Status	Displays/Hides the **Recording Status** Window
I/O Status	Displays/Hides the **I/O Status** Window

Editor Tabs >

Overview	Open **Overview** Tab window
EDL	Open **EDL Tab** window
Document Libraries	Open **Document Libraries Tab** window
Tracks	Open **Tracks Tab** window
Track Groups	Open **Track Groups Tab** window

Playlists	Open **Playlists Tab** window
Workspaces	Open **Workspaces Tab** window
Selection	Open **Selection Tab** window
Fade Editor	Open **Fade Editor Tab** window
Markers	Open **Markers Tab** window
CD	Open **CD Tab** window
Notes	Open **Notes Tab** window
Media Management	Open **Media Management Tab** window
Global Libraries	Open **Global Libraries Tab** window
ADR	Open **ADR Tab** window (Only when the optional ADR key is present.)
Log	Open **Log Tab** window

Show all Tabs	Shows all **Tabs** in docking area
Close all Tabs	Hides all **Tabs**
Toggle Show/Close all Tabs	As it says. Mainly useful when bound to keyboard shortcut.
Dock all Tabs	Return all floating Tabs to the Tab dock

Load Default Tabs Layout	As it says
Save Default Tabs Layout	Saves the current **Tabs** Layout as the default
Always Use Default Tabs Layout	Default Tabs Layout is used regardless of Tab layout saved with Project

Tabs layout Presets

Save Tabs Layout Preset 1

to

Save Tabs Layout Preset 10

Load Tabs Layout Preset 1

to

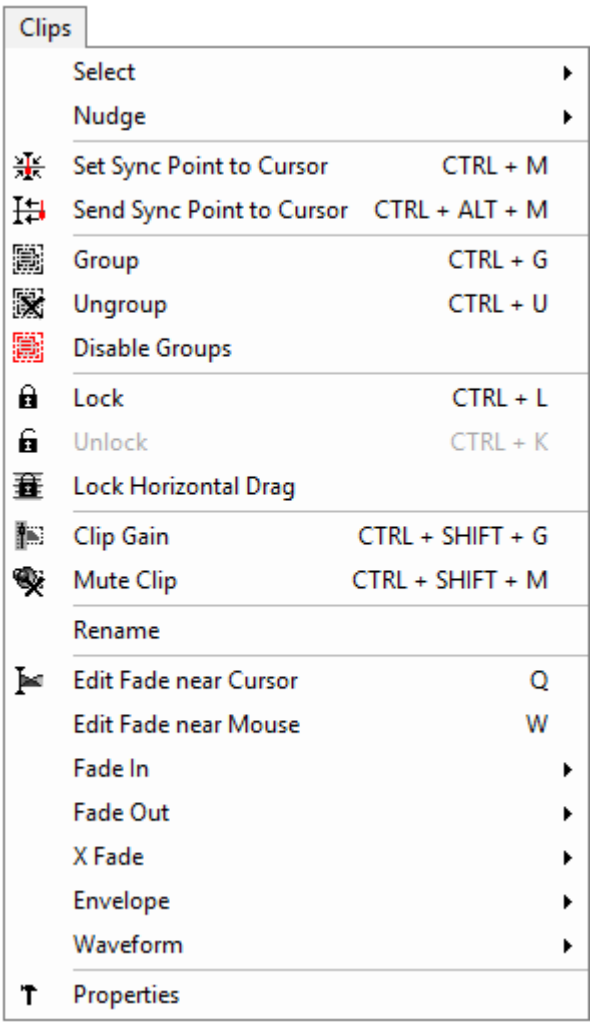
Load Tabs Layout Preset 10

Customize>

Keyboard Shortcut Editor	Opens the **Keyboard Shortcut Editor**
Macro Editor	Opens the **Macros** Window

All Settings	Opens the **Pyramix Settings** Window

Clips



Clips menu

Select >

Select All	Select all Clips on Timeline
Select All to Mark In	Select all Clips on Timeline, to the current **Mark In** Point
Select All between Marks	Select all Clips on Timeline, between current **In/Out** Marks
Select All from Mark Out	Select all Clips on Timeline, from the current **Mark Out** Point
Select Source	Select all Clips on current audio Track
Select Online Clips	Selects all Clips on the Timeline which are **On-line** currently
Select offline Clips	Selects all Clips on the Timeline which are **Offline** currently
Deselect All	Deselect all currently selected Clips
Select Previous Clip	Select Clip to left of currently selected Clip
Select Next Clip	Select Clip to right of currently selected Clip
Add Previous Clip to Selection	Apply selection to Clip to left of currently selected Clip
Add Next Clip to Selection	Apply selection to Clip to right of currently selected Clip
Add all Preceding Clips to Selection	Apply selection to all Clips preceding the currently selected Clip
Add all Following Clips to Selection	

Apply selection to all Clips following the currently selected Clip

Select Next Clip Crossfade Selects the **Next Crossfade**

Select Previous Clip Crossfade Selects the **Previous Crossfade**

Nudge >

Nudge to Previous Edit Nudges the selected Clip to the left (earlier in time) to the previous edit points in the Track or marks in the editor

Nudge to Next Edit Nudges the selected Clip to the right (later in time) to the next edit points in the Track or marks in the editor

Nudge to Left Nudges the selected Clip to the left (earlier in time) by an amount equal to the current Nudge setting

Nudge to Right Nudges the selected Clip to the right (later in time) by an amount equal to the current Nudge setting

Nudge to Left Custom Nudges the selected Clip to the left (earlier in time) by an amount that can be entered with the keyboard

Nudge to Right Custom Nudges the selected Clip to the right (later in time) by an amount that can be entered with the keyboard

Nudge to Left Custom in Bars/Beats

Nudges the selected Clip to the left (earlier in time) by an amount that can be entered in Bars/Beats with the keyboard

Nudge to Right Custom in Bars/Beats

Nudges the selected Clip to the right (later in time) by an amount that can be entered in Bars/Beats with the keyboard

Nudge In to Left Moves selected Clip's In point to the Left by an increment of the current Nudge value

Nudge In to Right Moves selected Clip's In point to the Right by an increment of the current Nudge value

Nudge Out to Left Moves selected Clip's Out point to the Left by an increment of the current Nudge value

Nudge Out to Right Moves selected Clip's Out point to the Right by an increment of the current Nudge value

Nudge Media to Left Moves selected Clip's Media to the Left by an increment of the current Nudge value

Nudge Media to Right Moves selected Clip's Media to the Right by an increment of the current Nudge value

Move Up Moves the selected Clip or Region up to the adjacent Track above it

Move Down Moves the selected Clip or Region up to the adjacent Track below it

Move Up with Fade Moves the selected Clip or Region up to the adjacent Track above it. If there is another Clip on the adjacent Track at that location, it will interact with it by cross-fading

Move Down with Fade Moves the selected Clip or Region up to the adjacent Track below it. If there is another Clip on the adjacent Track at that location, it will interact with it by cross-fading

Current Setting >

Nudge Setting 1 Apply Nudge Setting 1

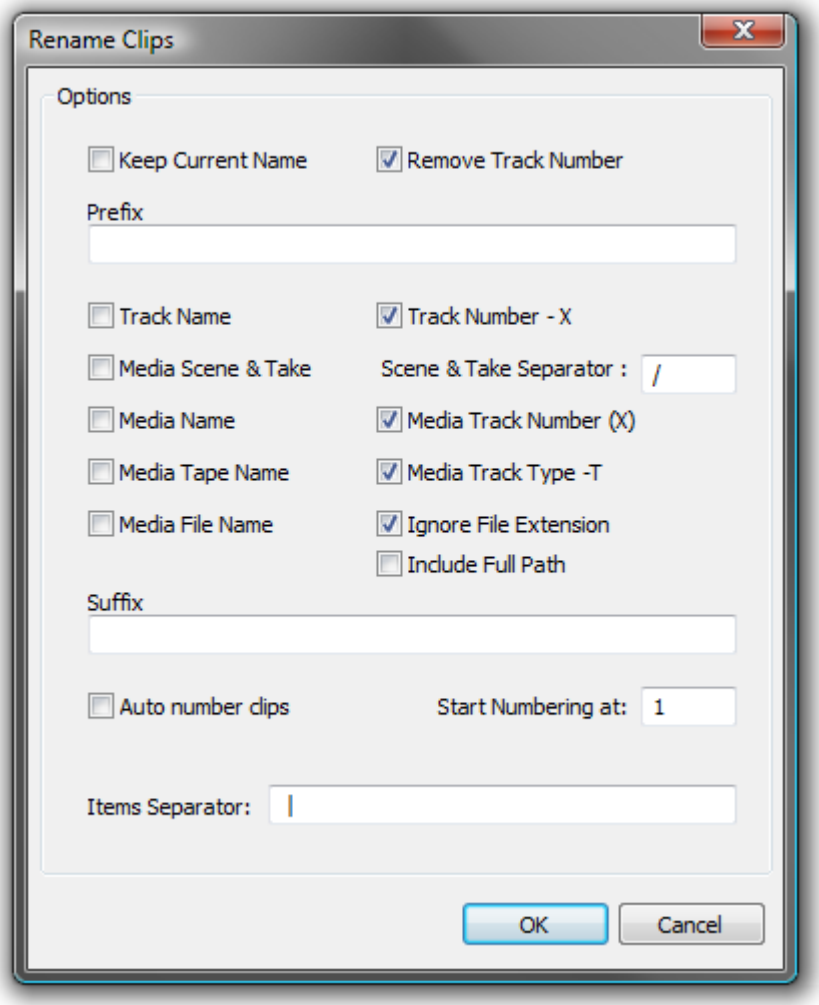
Nudge Setting 2 Apply Nudge Setting 2

Nudge Setting 3 Apply Nudge Setting 3

Nudge Setting 4 Apply Nudge Setting 4

Nudge Setting 5 Apply Nudge Setting 5

Set Sync Point to Cursor	Sets the selected Clip's Sync Point at the current cursor position
Send Sync Point to Cursor	Sends (moves) the currently selected Clip so that its Sync Point is aligned with the current position of the Play Cursor
Group	Groups together all selected Clips in the Timeline
Ungroup	Ungroups members of a selected group Clip in the Timeline
Disable Groups	Disables existing Clip Groups temporarily to facilitate selecting a single clip in a group
Lock	Locks selected Clips so that they can no longer be edited or moved in the Timeline
Unlock	Unlocks selected locked Clips so that they can be edited again
Lock Horizontal Drag	When enabled, Clips cannot be dragged horizontally (left to right)
Clip Gain	Displays an audio fader to set the audio level for the selected Clips
Mute Clip	Mutes all selected Clips
Rename	Enables a selection of Clips to be renamed with various combinable options chosen in the **Rename Clips** dialog



Rename Clips dialog

Options

Keep Current Name	When checked the current name is retained but with the choice of keeping or removing the current Track number in parenthesis
Remove Track Number	Removes Track Number from the Clip Name

Prefix	Text entry box where a new custom Prefix may be added **adding a custom prefix and suffix text to the automatic renaming and automatically renumbering all Clips.**
Track Name	
Track Number - X	
Media Scene & Take (if available)	
Media Name	
Media Track Number (X)	
Media Tape Name	
Media File Name	
Ignore File Extension	
Include Full Path	
Suffix	Text entry box where a new custom Suffix may be added
Auto number clips	When checked Clips are numbered starting with the value in:
Starting Numbering at:	
Items Separator	Text entry box where a new custom Separator may be added

Edit Fade near Cursor	Opens the **Fade Editor** with the audio fade located near the current Playhead cursor position ready to be edited
Edit Fade near Mouse	Opens the **Fade Editor** with the audio fade located near the current mouse cursor position ready to be edited

Fade In >

Fade Out >

X Fade >

Note: Sub-menu options for **Fade In**, **Fade Out**, and **X Fade** are the same. For brevity, only the **Fade In** sub-menu options are listed.

Fade In New	Apply new Fade In
Fade In Edit	
Default >	Edit Fade In
Fade In Default	Apply Fade In Default
Fade In Default Curve	Apply Fade In Default Curve
Fade In Standard >	
Fade In Power Linear	Apply Fade In Power Linear
Fade In Tension Linear	Apply Fade In Tension Linear
Fade In dB Linear	Apply Fade In dB Linear
Fade In Cosine	Apply Fade In Cosine
Fade In Root Cosine	Apply Fade In Root Cosine

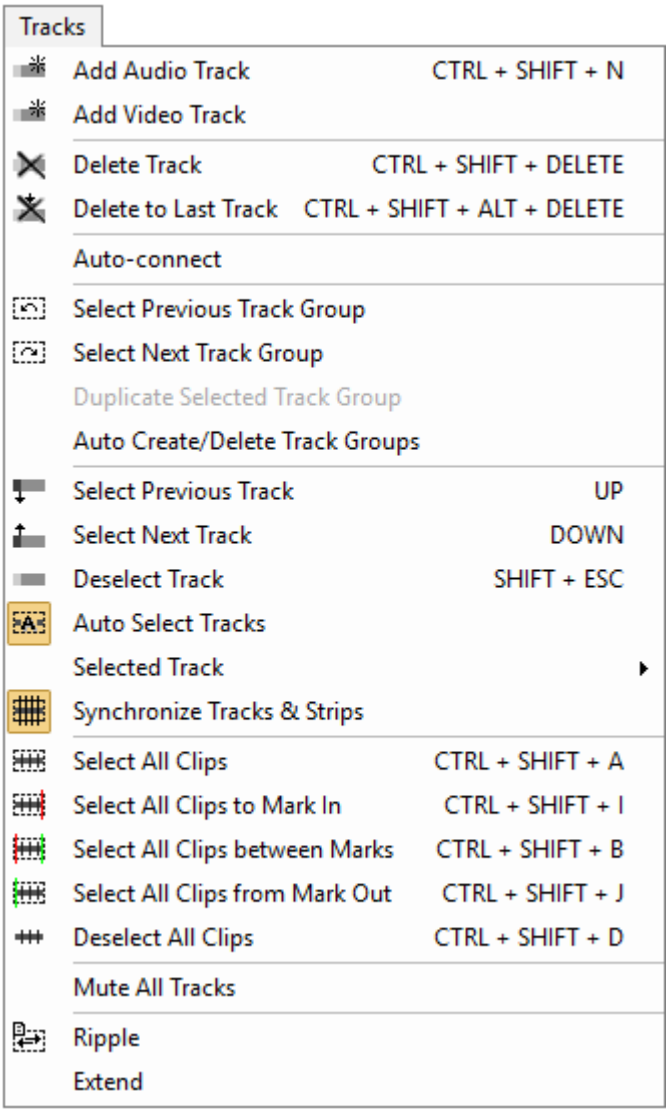
Envelope >

Envelope Reset	Reset the gain envelope for the whole selection by deleting all envelope nodes within the selection only on the Track under the mouse cursor when Reset is chosen.
Envelope Reset Selection	Reset the gain envelope for the whole selection by deleting all envelope nodes within the selection.
Envelope Copy to Selection	Copies the values of all envelope nodes within the selection from the Track under the mouse cursor when Copy to Selection is chosen to all other Tracks in the selection

	Envelope Punch	Places four new envelope nodes at the bounds of the selection on the Track under the mouse cursor when Punch is chosen and opens the Punch Envelope dialog box
	Envelope Punch Selection	Carries out the same operation as Punch but to all Tracks in the current Selection.
Waveform >		
	Waveform follow Track	Waveform display of the Clip will always correspond to the setting for the entire Track in the **Track information and Settings panel**
	Waveform force Waveform	Clip will always show the waveform display regardless of the waveform display settings for the Track
	Waveform force Name	Clip will always show the Clip name regardless of the waveform display settings for the Track
	Generate Waveform	Generate the waveform data in the background for the selected Clip

Properties Opens the **Selection Properties** display window, which shows details concerning the currently selected Clip

Tracks



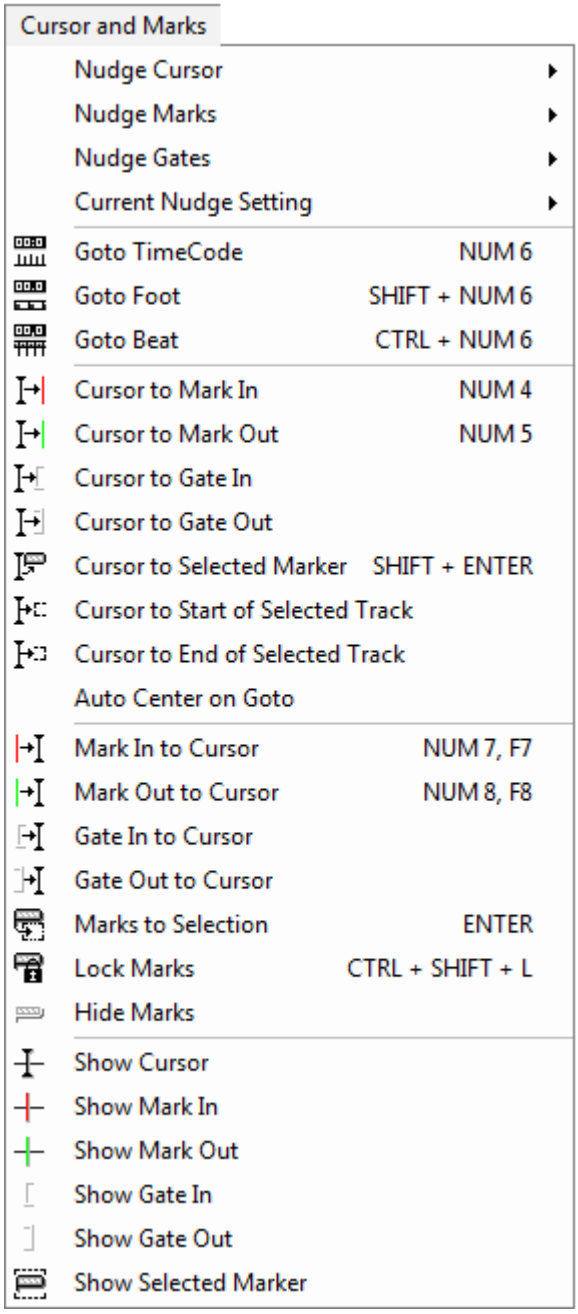
Tracks Menu

Add Audio Track Opens the Create Tracks dialog to enable new Audio Tracks / Mixer Strips to be created in the Timeline and Mixer

Add Video Track	Adds a Video Track above the Track selected currently. If no Track is selected adds a Video Track at the top of the Timeline.
Delete Track	Removes the currently selected Track from the composition editor
Delete to Last Track	Deletes all Tracks between the currently selected Tracks to the last Track on the Composition Editor
Auto-connect	Automatically connect all Tracks sequentially to any available Mixer Strip inputs
Select Previous Track Group	Selects the Track group above the currently selected Track group
Select Next Track Group	Selects the Track group below the currently selected Track group
Duplicate Selected Track Group	Duplicates the currently selected Track group
Auto Create/Delete Track Groups	When enabled allows Track Groups to be automatically created when Clips insertion requires creation of new Tracks
Select Previous Track	Selects the audio Track above the currently selected Track
Select Next Track	Selects the audio Track below the currently selected Track
Deselect Track	Deselects the currently selected audio Track
Auto Select Tracks	The audio Track is automatically selected on any Click / Move in its content
Selected Track >	
Mute	
Solo	
Monitoring Mode	
Record Ready	
Display Mode	
Show/Hide Automation	
Show/Hide Automation Sub-Tracks	
Automation Init	
Automation Snapshot	
Automation Snapshot Region	
Automation Delete	
Automation Erase	
Automation Trim	
Synchronize Tracks & Strips	The audio Track and its associated mixing console strip are always selected together. Also, When Strips are Created Deleted or Moved in the Mixer Configuration page (or with the right mouse button context menus) the connected Tracks are also Created/Destroyed or moved accordingly. When Strips are Created or Moved the Tracks are Created or Moved seamlessly. On Deleting a Strip or Strips, only empty Tracks are destroyed. Tracks containing Clips are preserved, disconnected and set to minimum size.
Select All Clips	This command selects and highlights all Clips on the selected Track
Select All Clips to Mark In	Selects all Clips on the Track from the beginning of the composition up to the mark in
Select All Clips between Marks	Selects all Clips on the Track between the Mark In and Mark Out
Select All Clips from Mark Out	Selects all Clips on the Track from the Mark Out to the end of the composition
Deselect All Clips	Deselects all Clips on the selected Track
Mute All Tracks	Mutes all Tracks in the current Project.

Ripple	Launches the Ripple Tracks dialog box
Extend	Automatically extends the number of Tracks to accommodate all the Media channels of each of the Clips of one or more timeline Track(s)

Cursor & Marks



Cursor & Marks menu

Nudge Cursor >

Nudge Cursor to Previous Edit	Nudge Cursor to Previous Edit
Nudge Cursor to Next Edit	Nudge Cursor to Next Edit
Nudge Cursor to Previous Clip	Nudge Cursor to Previous Clips
Nudge Cursor to Next Clip	Nudge Cursor to Next Clip
Nudge Cursor to Previous Clip Fade	Nudge Cursor to Previous Clip Fade

Nudge Cursor to Next Clip Fade	Nudge Cursor to Next Clip Fade
Nudge Cursor to Left	Nudge Cursor to Left
Nudge Cursor to Right	Nudge Cursor to Right
Nudge Cursor to Left with Region	Nudge Cursor to Left and update the nearest selection boundary to this location
Nudge Cursor to Right with Region	Nudge Cursor to Right and update the nearest selection boundary to this location
Nudge Cursor to Left Custom	Nudge Cursor to Left by an amount entered with the Keyboard
Nudge Cursor to Right Custom	Nudge Cursor to Right by an amount entered with the Keyboard
Nudge Cursor to Left Custom in Bars/Beats	Nudge Cursor to Left by an amount entered in Bars/Beats with the Keyboard
Nudge Cursor to Right Custom in Bars/Beats	Nudge Cursor to Right by an amount entered in Bars/Beats with the Keyboard
Nudge Cursor to Previous Foot	Nudge Cursor to the Previous Foot
Nudge Cursor to Next Foot	Nudge Cursor to the Next Foot
Nudge Cursor to Previous Foot Frame	Nudge Cursor to the Previous Foot Frame
Nudge Cursor to Next Foot Frame	Nudge Cursor to the Next Foot Frame
Nudge Cursor to Previous Bar	Nudge Cursor to the Previous Bar
Nudge Cursor to Next Bar	Nudge Cursor to the Next Bar
Nudge Cursor to Previous Beat	Nudge Cursor to the Previous Beat
Nudge Cursor to Next Beat	Nudge Cursor to the Next Beat
Nudge Cursor to Previous Grid Step	Nudge Cursor to the Previous Grid Step
Nudge Cursor to Next Beat Grid Step	Nudge Cursor to the Next Grid Step

Nudge Marks >

Nudge Mark In to Left	Nudge Mark In to Left
Nudge Mark In to Right	Nudge Mark In to Right
Nudge Mark In to Left Custom	Nudge Mark In to Left by an amount entered with the Keyboard
Nudge Mark In to Right Custom	Nudge Mark In to Right by an amount entered with the Keyboard
Nudge Mark In to Left Custom in Bars/Beats	Nudge Mark In to Left by an amount entered in Bars/Beats with the Keyboard
Nudge Mark In to Right Custom in Bars/Beats	Nudge Mark In to Right by an amount entered in Bars/Beats with the Keyboard
Nudge Mark Out to Left	Nudge Mark Out to Left
Nudge Mark Out to Right	Nudge Mark Out to Right
Nudge Mark Out to Left Custom	Nudge Mark Out to Left by an amount entered with the Keyboard
Nudge Mark Out to Right Custom	Nudge Mark Out to Right by an amount entered with the Keyboard
Nudge Mark Out to Left Custom in Bars/Beats	Nudge Mark Out to Left by an amount entered in Bars/Beats with the Keyboard
Nudge Mark Out to Right Custom in Bars/Beats	Nudge Mark Out to Right by an amount entered in Bars/Beats with the Keyboard

Nudge Gates > (Use with Source Destination Editing Projects)

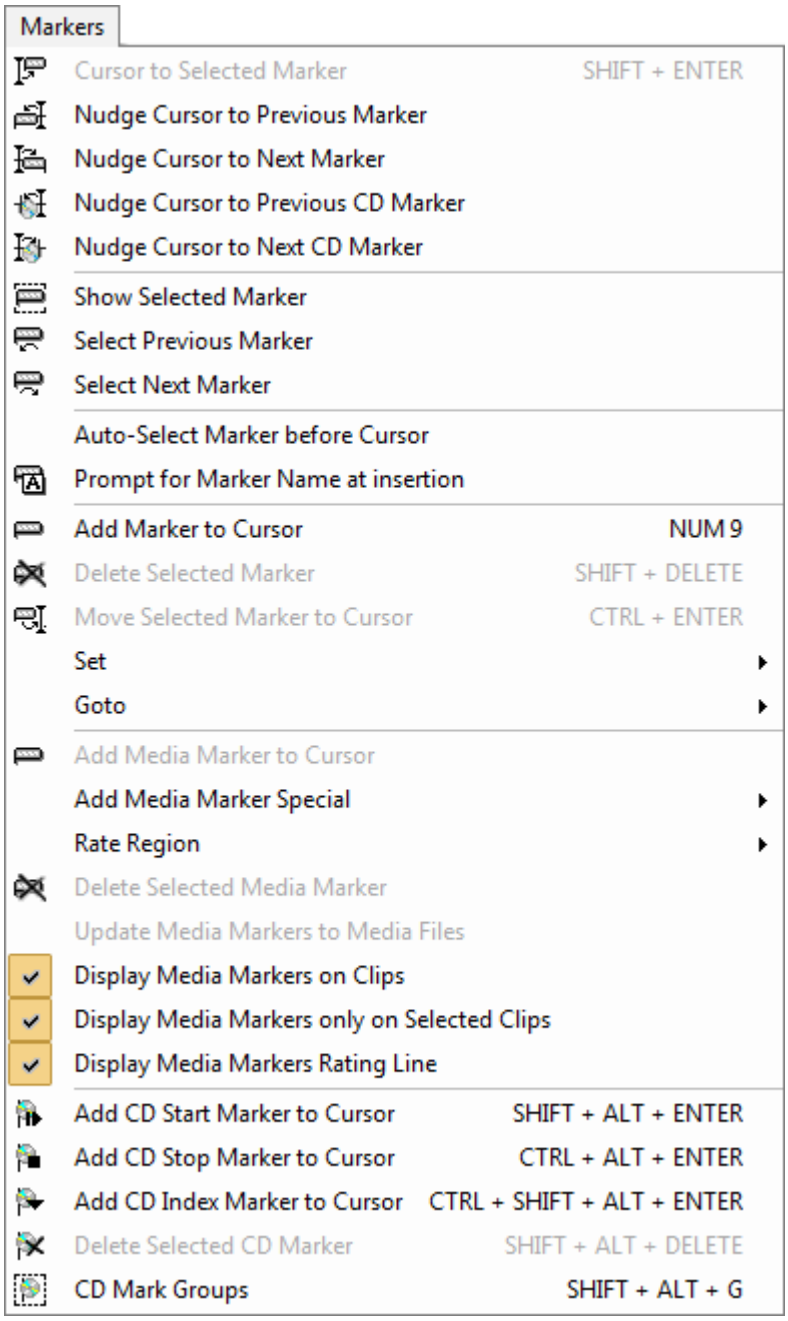
Nudge Gate In to Left	Nudge Gate In to Left
Nudge Gate In to Right	Nudge Gate In to Right
Nudge Gate Out to Left	Nudge Gate Out to Left
Nudge Gate Out to Right	Nudge Gate Out to Right

Current Nudge Setting>

- **Nudge Setting 1**
- **Nudge Setting 2**
- **Nudge Setting 3**
- **Nudge Setting 4**
- **Nudge Setting 5**

Goto TimeCode	Opens the Goto TimeCode dialog box, which allows the Play Cursor to be positioned to a specific TimeCode position
Goto Foot	Allows the Play Cursor to be positioned to a specific Footage
Goto Beat	Allows the Play Cursor to be positioned to a specific Beat
Cursor to Mark In	Moves the Play Cursor to the Mark In
Cursor to Mark Out	Moves the Play Cursor to the Mark Out
Cursor to Gate In	Moves the Play Cursor to the selected Track Group Gate In
Cursor to Gate Out	Moves the Play Cursor to the selected Track Group Gate Out
Cursor to Start of Selected Track	Moves the Play Cursor to the start position of the first Clip on the selected Track
Cursor to End of Selected Track	Moves the Play Cursor to the end position of the first Clip on the selected Track
Auto Center on Goto	When enabled, the Project Editor will automatically center the display to the new Play Cursor position when the Goto TimeCode command is used .
Mark In to Cursor	Moves the Mark In to the Play Cursor
Mark Out to Cursor	Moves the Mark Out to the Play Cursor
Gate In to Cursor	Moves the selected Track Group Gate In to the Play Cursor
Gate Out to Cursor	Moves the selected Track Group Gate Out to the Play Cursor
Marks to Selection	Moves the Mark Out to the current selection
Lock Marks	Prevents the Mark In/Out points from being changed
Hide Marks	Removes the Mark In/Out cursors
Show Cursor	Automatically centers the display of the Project Editor to the Play Cursor
Show Mark In	Automatically centers the display of the Project Editor to Mark In current position
Show Mark Out	Automatically centers the display of the Project Editor to Mark Out current position
Show Gate In	Automatically centers the display of the Project Editor to the selected Track Group Gate In
Show Gate Out	Automatically centers the display of the Project Editor to the selected Track Group Gate Out

Markers



Markers menu

Cursor to Selected Marker **[Shift + Enter]**Moves the Play Cursor to the Selected Marker

Nudge Cursor to Previous Marker Nudge Cursor to Previous Marker

Nudge Cursor to Next Marker Nudge Cursor to Next Marker

Nudge Cursor to Previous CD Marker Nudge Cursor to Previous CD Marker

Nudge Cursor to Next CD Marker Nudge Cursor to Next CD Marker

---

Show Selected Marker Automatically centers the display of the Project Editor to the currently selected Marker

Select Previous Marker Selects the Previous Marker (left) of the currently selected Marker

Select Next Marker Selects the Next Marker (right) of the currently selected Marker

---

Auto-Select Marker Before Cursor When enabled the Marker immediately before the Cursor will be selected. As the Cursor is moved the selection will change as the next Marker is passed

Prompt for Marker Name at insertion When ticked the **Add New Marker** dialog opens when a new marker is inserted

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Add Marker to Cursor **[NUM 9]** Adds a new Marker to the current Play Cursor Position

Delete Selected Marker **[SHIFT + DELETE]** Deletes the currently selected Marker

Move Selected Marker to Cursor **[CTRL + ENTER]** Moves the selected Marker to the current Play Cursor Position

Set >

Set Marker 1 Set the Marker #1 to the current Play Cursor Position

Note: Set Markers 2 - 10 not shown

Goto>

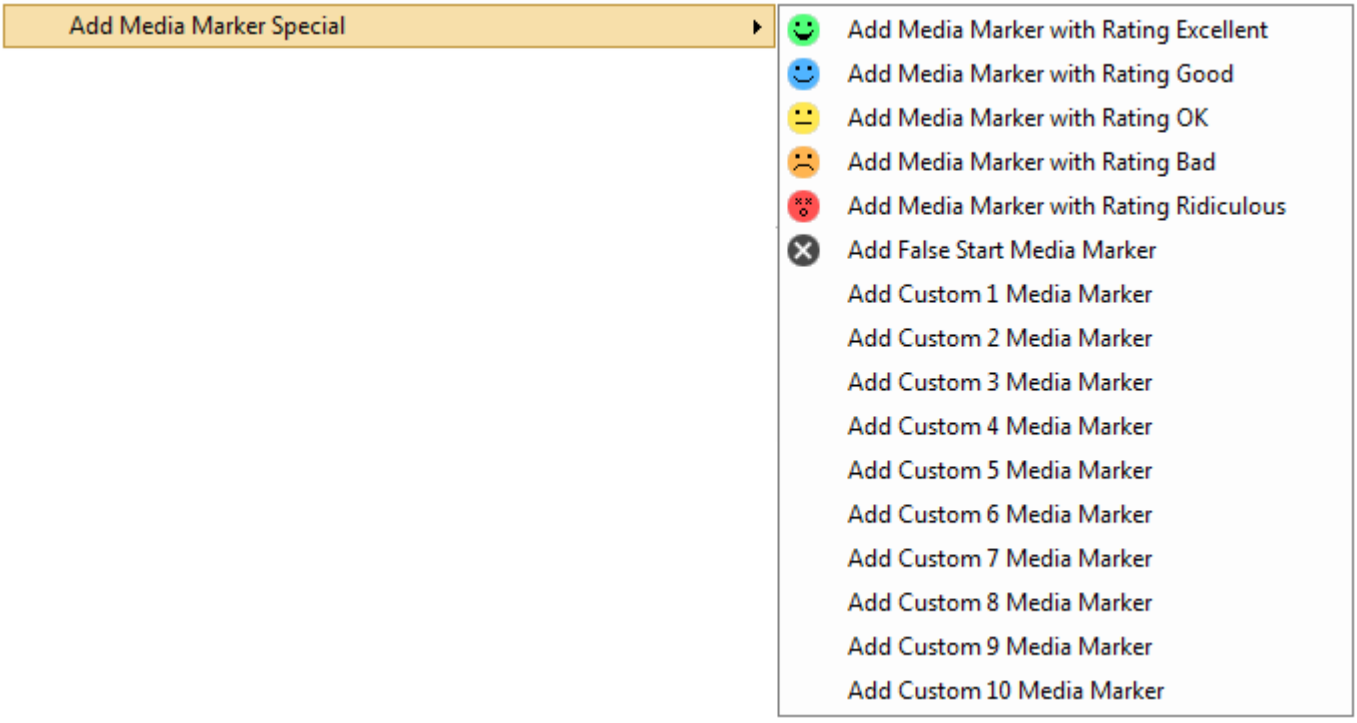
Goto Marker 1 Set the Play Cursor position to Marker #1

Note: Goto Markers 2 - 10 not shown

Add Media Marker to Cursor

Add Media Marker to Cursor The Clip to be marked must first be selected. Adds a Media Marker at the current Cursor position.

Add Media Marker Special > When **Display Media Marker Line** is on the line to the right of the Media Marker will be colored according to the rating selected when a Media Marker is added from this sub-menu until the next Media Marker. Default, in the absence of a Media Marker is yellow i.e. **OK**.



Markers > Add Media Markers Special sub-menu

Add Media Marker with Rating Excellent

Add Media Marker with Rating Good

Add Media Marker with Rating OK

Add Media Marker with Rating Bad

Add Media Marker with Rating Ridiculous

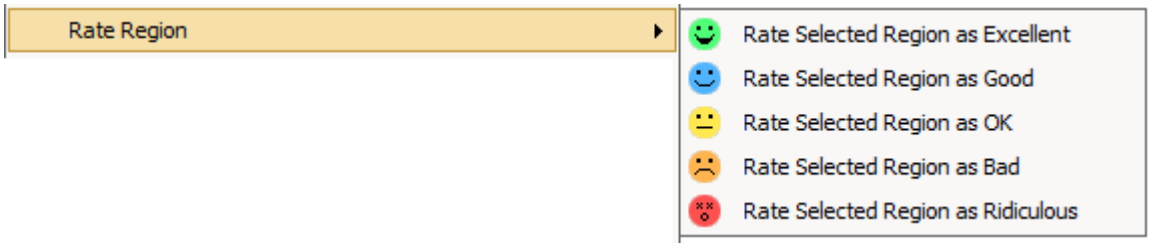
Add False Start Media Marker

Add Custom 1 Media Marker to:

Add Custom 10 Media Marker

Note: Media Markers are added to the current recording ONLY when no other Clip or Clips is/are selected in the Timeline.

Rate Region The Sub-menu offers a choice of Ratings for the Region Currently selected:



Markers > Rate Region sub-menu

Rate Selected Region as Excellent

Rate Selected Region as Good

Rate Selected Region as OK

Rate Selected Region as Bad

Rate Selected Region as Ridiculous

Delete Selected Media Marker Deletes the selected Media Marker.

Display Media Markers Rating Line When active a colored line is shown reflecting the color of the most recent Media Marker. Default in the absence of a Media Marker is yellow i.e. **OK**

Update Media Markers to Media Files

Add CD Start Marker to Cursor **[SHIFT + ALT + ENTER]** Adds a CD Start marker at the Play Cursor position

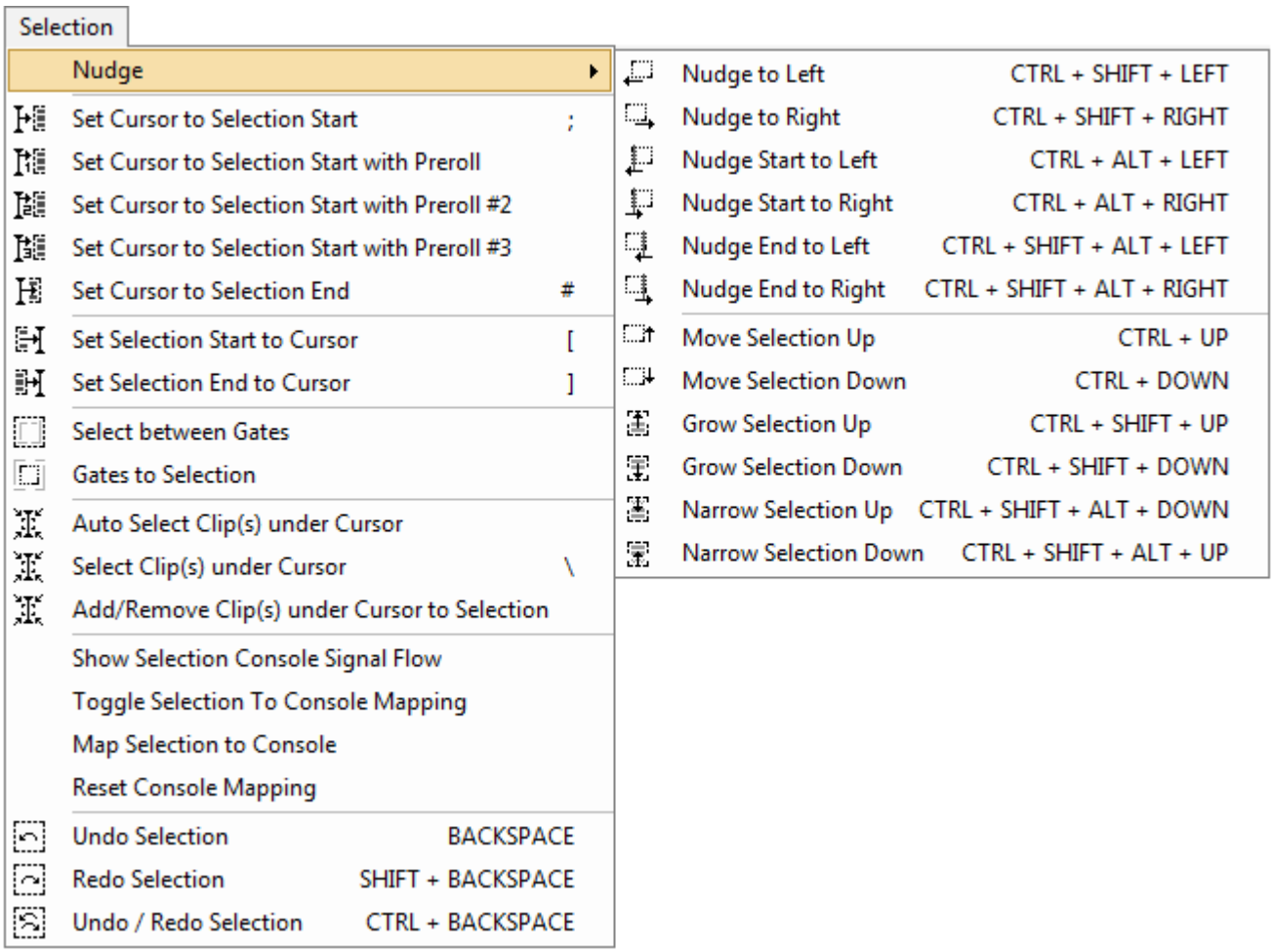
Add CD Stop Marker to Cursor **[CTRL + ALT + ENTER]** Adds a CD Stop marker at the Play Cursor position

Add CD Index Marker to Cursor **[CTRL + SHIFT + ALT + ENTER]** Adds a CD Index marker at the Play Cursor position

Delete Selected CD Marker **[SHIFT + ALT + DELETE]** Deletes the currently selected CD Marker

CD Mark Groups **[SHIFT + ALT + G]** Enables automatic creation of CD Markers Groups in the Project Editor

Selection



Selection menu

Nudge >

Nudge to Left	Nudges the selection to the left
Nudge to Right	Nudges the selection to the right
Nudge Start to Left	Nudges the selection start to the right
Nudge Start to Right	Nudges the selection start to the left
Nudge End to Left	Nudges the selection end to the right
Nudge End to Right	Nudges the selection end to the left
Move Selection Up	Moves the current selection to the Track above its current position
Move Selection Down	Moves the current selection to the Track below its current position
Grow Selection Up	Applies the current selection to the Track above its current position
Grow Selection Down	Applies the current selection to the Track below its current position
Narrow Selection Up	Removes the current selection from the Track above its current position
Narrow Selection Down	Removes the current selection from the Track below its current position

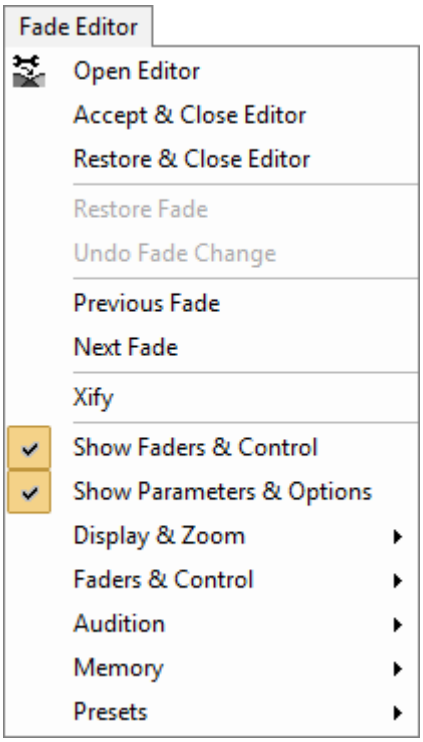
Set Cursor to Selection Start **Positions the Play Cursor to the start point of the current selection**

Set Cursor to Selection Start with Preroll Positions the Play Cursor to the start point of the current selection, adding the defined Preroll value

Set Cursor to Selection Start with Preroll #2 Positions the Play Cursor to the start point of the current selection, adding the defined Preroll #2 value

Set Cursor to Selection Start with Preroll #3	Positions the Play Cursor to the start point of the current selection, adding the defined Preroll #3 value
Set Cursor to Selection End	Positions the Play Cursor to the end point of the current selection
Set Selection Start to Cursor	Positions the start point of the current selection to the Play Cursor position
Set Selection End to Cursor	Positions the end point of the current selection to the Play Cursor position
Select between Gates	Sets the Selection between the selected Track Group Gates
Gates to Selection	Moves the Gates to the extremities of the current selection
Auto Select Clip(s) under Cursor	Automatically Selects the Clip(s) currently in contact with the Playhead Cursor
Select Clip(s) under Cursor	Selects the Clip(s) currently in contact with the Playhead Cursor
Add/Remove Clip(s) under Cursor to Selection	
Show Selection Console Signal Flow	Displays the signal flow on the console of the Clips currently selected on the Timeline
Toggle Selection To Console Mapping	Toggles **Map Selection to Console**. (Enables this to be bound to as ingle keyboard shortcut.)
command/keyboard shortcut	
Map Selection to Console	Shrinks the console UI to display only strips carrying the signal flow of current Timelinese-selection. (Clips or Region)**.**
Reset Console Mapping	Resets the Console UI to normal after **Map Selection to Console**.
Undo Selection	Cancels the last selection command
Redo Selection	Cancels (redoes) the last Undo Selection command
Undo / Redo Selection	Toggles between the last Undo / Redo Selection command

Fade Editor



Fade Editor menu

Open Editor	Opens the Fade Editor window

Accept & Close Editor	Approve changes to the fade and close Fade Editor window
Restore & Close Editor	Restore fade to original state and close Fade Editor window
Restore Fade	Restore fade to original state
Undo Fade Change	Undoes the last parameter change
Previous Fade	Select / Edit previous fade
Next Fade	Select / Edit net fade
Xify	Makes an asymetrical fade symmetrical by using the fade length and curve from the side of the crossfade that is not selected and applying it to the selected side. E.g. to create the mirror image of a fade out select the incoming clip and choose **XIFY**
Show Faders & Control	Show the Faders and Control Section of the Fade Editor
Show Parameters & Options	Show the Parameters and Options section of the Fade Editor

Display & Zoom >

Fit Fade	Zoom around the current Fade (Reset Zoom)
Zoom In	Zoom in on graphic display
Zoom Out	Zoom out on graphic display

Display & Zoom Options >

No Auto-Center	Auto-Centering off
Auto-Center Fade	Auto-Centering on
Auto-Center Reference Point	Auto Center on Reference Point
Free Zoom	Follows only Zoom Reset, In and Out
Auto-Zoom	Automatically Zooms around the current Fade after some operations
Auto-Zoom/Free	Automatically Zooms around the current Fade but only when it enters the Fade Editor, thereafter, the Zoom is Free
Timeline Zoom	Follows the Timeline Zoom factor
Zoom Preset 1	Recall Preset Zoom #1
Zoom Preset 2	Recall Preset Zoom #2
Zoom Preset 3	Recall Preset Zoom #3
Zoom Preset 4	Recall Preset Zoom #4
Zoom Preset 5	Recall Preset Zoom #5

Faders & Control >

Nudge Out Gain Less
Nudge Out Gain More
Nudge In Gain Less
Nudge In Gain More

Nudge Intercept Less
Nudge Intercept More
Nudge Asymmetry Less
Nudge Asymmetry More

Nudge Out Length Less
Nudge Out Length More
Nudge In Length Less

Nudge In Length More

Nudge Out Position Left

Nudge Out Position Right

Nudge In Position Left

Nudge In Position Right

Nudge In Media Left

Nudge In Media Right

Nudge Out Media Left

Nudge Out Media Right

Faders & Control Options >

Link Length	Links length of Fade Out & In
Mirror Length	Length of Fade Out and In will be changed symmetrically (centered)
Link Position	Links position of Fade Out & In
Fade Safe	Ensures all following fades (to the right of the one being edited) are left intact while editing the current fade.
Force Safe	

Audition >

Audition X Fade

Audition X Fade with Ref

Audition Out with Curve

Audition Out without Curve

Audition Out after Fade

Audition Out with Curve with Ref

Audition Out without Curve with Ref

Audition Out after Fade with Ref

Audition Out Original Material

Audition In with Curve

Audition In without Curve

Audition In before Fade

Audition In with Curve with Ref

Audition In without Curve with Ref

Audition In before Fade with Ref

Audition In Original Material

Audition Options >

Audition Pre-Roll 1

Audition Pre-Roll 2

Audition Pre-Roll 3

Audition Post-Roll 1

Audition Post-Roll 2

Audition Post-Roll 3

Audition Speed 100%

Audition Speed 50%

Audition Speed 25%

Audition Solo

Audition Loop

Audition After Nudge

Memory >

Set Memory 1

Set Memory 2

Set Memory 3

Set Memory 4

Set Memory 5

Recall Memory 1

Recall Memory 2

Recall Memory 3

Recall Memory 4

Recall Memory 5

Presets >

Load Default X Curve

Load Default X Preset

Save Default X Preset

Load Default Out Curve

Load Default Out Preset

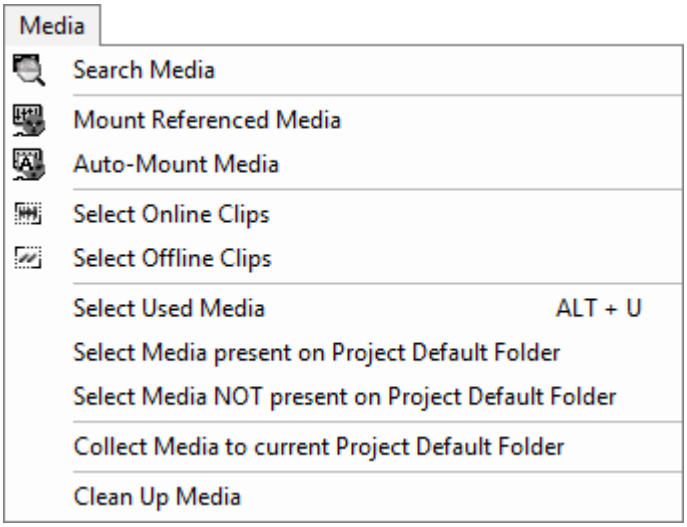
Save Default Out Preset

Load Default In Curve

Load Default In Preset

Save Default In Preset

Media



Media menu

Search Media — Opens the **Search Media** dialog.

Mount Referenced Media — Mounts all media not already mounted and used in the current Project

Auto-Mount Media — When selected, whenever a reference from an Offline library is placed in the current Project, the Media will automatically be mounted.

Select Online Clips — Selects all Clips in the Timeline whose Media files are currently mounted

Select Offline Clips — Selects all Clips in the Timeline whose Media files are not currently mounted

Select Used Media — Opens a floating Media Manager window containing all Media used by the current Project.

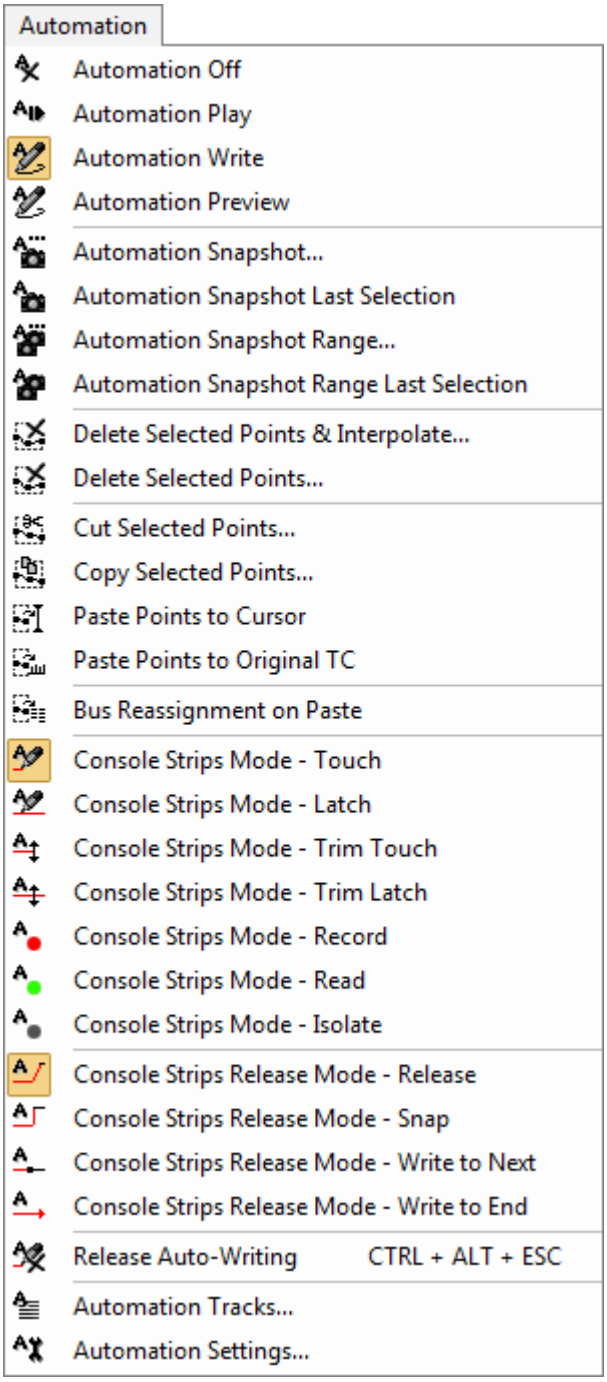
Select Media present on Project Default Folder Opens a floating Composition Library window with all Media present in the Project Default folder selected (highlighted)

Select Media NOT present on Project Default Folder Opens a floating Composition Library window with all Media NOT present in the Project Default folder selected (highlighted)

Collect Media to current Project Default Folder Copies all media files used in the current project (as shown when the previous **Select Media not present ...** is invoked to the current Project Default Folder. This function is especially useful if moving a machine or disk to another studio or where network resources may not be available.

Clean-Up Media — Opens the **Choose a Media Folder to Clean-Up** window. Choose the Media Folder you wish to clean-up and click **OK**. All media not referenced by the current Project will be permanently removed from the selected folder.

Automation



Automation menu

Automation Off Automation system is disabled.

Automation Play Automation system is set to playback any previously recorded automation data.

Automation Write Automation system is set to playback any previously recorded automation data and record new automation data for all enabled controls .

Automation Preview Automation system is set to playback any previously recorded automation data and new automation data is recorded for all enabled controls touched. This new information is retained or discarded as the user wishes.

Automation Snapshot Creates an automation key frame at the current cursor position, for all currently armed automation controls.

Automation Snapshot Last Selection Applies the last Snapshot without the need to open the **Filter automation Tracks to Snapshot** window. **Ctrl + Click** on the single Camera button does the same thing. I.e. the last selection is applied directly thus improving the workflow.

Note: The the last entry is lost after a Mixer rebuild so, if a rebuild occurs between Snapshots the **Filter automation Tracks to Snapshot** Window will open.

Automation Snapshot Range Places automation key frames at the currently defined In / Out cursor positions, for all currently armed automation controls..

Automation Snapshot Range Last Selection Applies the last Snapshot Range without the need to open the **Filter automation Tracks to Snapshot** window. **Ctrl + Click** on the double Camera button does the same thing. I.e. the last selection is applied directly thus improving the workflow.

Note: The the last entry is lost after a Mixer rebuild so, if a rebuild occurs between Snapshots the **Filter automation Tracks to Snapshot** Window will open.

Delete Selected Points & Interpolate Deletes all automation points contained in the selected Region and interpolates between the last existing point before the selection and the first point after the selection.

Delete Selected Points Deletes all automation points contained in the selected Region.

Cut Selected Points Cuts all automation points contained in the selected Region

Copy Selected Points Copies all automation points contained in the selected Region

Paste Points to Cursor Pastes all copied or cut automation points at the cursor on the selected Track

Paste Points to Original TC Pastes all copied or cut automation points at the Original TimeCode on the selected Track

---

Bus Reassignment on Paste When set **on** the **Automation Buses Reassignment** dialog will appear if some automated bus elements of a strip are available in the automation clipboard. When set off the dialog will appear only when at least one bus in the clipboard is not available in the target mixer.

Console Strips Mode - Touch The automation starts writing a new pass when the control is touched and stops writing when the control is released.

Console Strips Mode - Latch The automation starts writing a new pass when the control is touched. The value when the control is released will continue to be written until the transport stops.

Console Strips Mode - Trim Touch The automation starts updating the current pass when the control is touched and stops updating when the control is released.

Console Strips Mode - Trim Latch The automation starts updating when the control is touched but continues when the control is released and stops only when the transport stops.

Console Strips Mode - Record

Console Strips Mode - Read

Console Strips Mode - Isolate

Console Strips Release Mode - Release An interpolation is created from the current value to the value written in the previous pass. I.e. a fade. The length of this is defined in **Automation Settings > Auto-Release Time**.

Console Strips Release Mode - Snap A straight jump is made from the current control value to the value written in the previous pass.

Console Strips Release Mode - Write to Next The same value is kept after the last written point until the next point is found in the previous pass.

Console Strips Release Mode - Write to End Writes the current value to the end, ignoring previously written points. (If any).

Release Auto-Writing Immediately releases all controls currently recording automation.

Automation Tracks Opens the Automation Tracks window. This view allows the automation versions for a specific control to be displayed. Once the desired control has been located in the tree

view, simply double-clicking on the control will update the Automation Track Versions window.

Automation Settings Opens the **Settings > All Settings > Application > Automation** page which allows automation parameters and settings to be defined.

Video

Video menu

New Video Track... Adds a Video Track above the Track selected currently. If no Track is selected adds a Video Track at the top of the Timeline.

New Video Window... Opens a sub-menu with the choice of opening floating windows displaying:

New Video Window Output 1

New Video Window Output 2

New Video Window Output 3

New Video Window Output 4

Toggle Video Window... Opens a sub-menu with the choice of toggling Video windows open/closed:

Toggle Video Window Output 1

Toggle Video Window Output 2

Toggle Video Window Output 3

Toggle Video Window Output 4

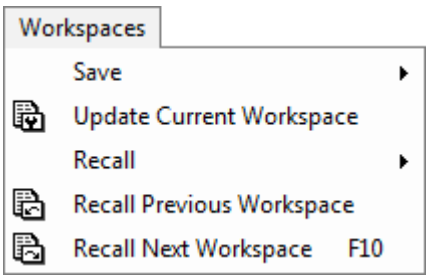
Thumbnails... Opens a sub-menu with the choice of:

Display Video thumbnails

Display Video thumbnails while playing

Wrap Selection Initiates wrapping of selected Audio Clips into a selected Audio Clip. **Please see: Wrapping Timeline Tracks Files into Video Files using Mixdown on page 559**

Workspaces



Workspaces menu

Save >

Save Workspace 1 **Save Workspace 1**

Note: Save Workspace 2 to 10 omitted

Update Current Workspace	Updates (overwrites) the current stored Workspace with current settings
Recall >	
Recall Workspace 1	Recall Workspace 1

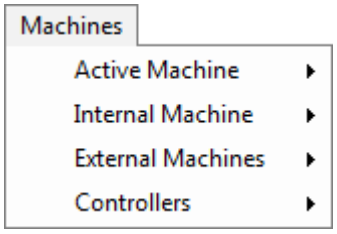
Note: Recall Workspace 2 - 10 omitted

Recall Previous Workspace	Toggles backwards through the list of available Workspaces
Recall Next Workspace	Toggles forwards through the list of available Workspaces

ADR

For details of the ADR Menu please see the **ADR User Guide**

Machines



Machines menu

Active machine >

Note: Active machine Sub-menus will reflect whichever machine is currently chosen as the active machine.

Toggle machines	Toggle between installed machines

Stop	Stop
Pause	Pause
Play	Play
Play Special >	

Play Reverse	Play Reverse
Play 1/2	Play 1/2
Play 1/2 Reverse	Play 1/2 Reverse
Play 1/4	Play 1/4
Play 1/4 Reverse	Play 1/4 Reverse
Play 1/16	Play 1/16
Play 1/16 Reverse	Play 1/16 Reverse
Play 2x	Play 2x
Play 2x Reverse	Play 2x Reverse
Play 4x	Play 4x
Play 4x Reverse	Play 4x Reverse

Toggle Play/Stop	Toggle Play/Stop

Toggle Play/Pause	Toggle Play/Pause
Toggle Play/Record	Toggle Play/Record
Record	Record
Fast Forward	Fast Forward
Fast Rewind	Fast Rewind
Scan Forward	Scan Forward
Scan Rewind	Scan Rewind
Start	Goto Start
End	Goto End
Goto TimeCode	Goto TimeCode
Nudge +1 frame	
Nudge -1 frame	
Nudge to Right	
Nudge to Left	
Set Loop In	At current Playhead Cursor position
Set Loop Out	At current Playhead Cursor position
Goto Loop In	
Goto Loop Out	
Chase	
Store Chase Offset	

Internal Machine>

Stop	Stop
Pause	Pause
Play	Play
Play Special >	
Play Reverse	Play Reverse
Play 1/2	Play 1/2
Play 1/2 Reverse	Play 1/2 Reverse
Play 1/4	Play 1/4
Play 1/4 Reverse	Play 1/4 Reverse
Play 1/16	Play 1/16
Play 1/16 Reverse	Play 1/16 Reverse
Play 2x	Play 2x
Play 2x Reverse	Play 2x Reverse
Play 4x	Play 4x
Play 4x Reverse	Play 4x Reverse
Toggle Play/Stop	Toggle Play/Stop
Toggle Play/Pause	Toggle Play/Pause
Toggle Play/Record	Toggle Play/Record
Toggle Play/Stop Record Safe	

Note: This command toggles between **Play** and **Stop** (or other state) but has no effect when recording. In this case the real **Stop** command has to be issued to stop a recording.

Play with Preroll

Play with Preroll #2

Play with Preroll #3

Record Record

Fast Forward Fast Forward

Fast Rewind Fast Rewind

Scan Forward Scan Forward

Scan Rewind Scan Rewind

Start Start

End End

Punch >

Punch Selection Punch Selection

Punch Selection with Preroll Punch Selection with Preroll

Punch Selection with Preroll #2 Punch Selection with Preroll #2

Punch Selection with Preroll #3 Punch Selection with Preroll #3

Auto-punch with Preroll Auto-punch with Preroll

Auto-punch with Preroll #2 Auto-punch with Preroll #2

Auto-punch with Preroll #3 Auto-punch with Preroll #3

Remake last Punch (In only) Repeat last Punch operation (Punch In only)

Remake last Punch (In - Out) Repeat last Punch operation

Safety Record When this mode is active the only way to stop a recording is to return to this menu and de-activate it. (Or use an assigned keyboard Shortcut)

Play Selection Play Selection

Loop Selection Loop Selection

Play between Marks Play between Marks

Loop between Marks Loop between Marks

Play between Gates Play between selected Track Group Gates

Loop between Gates Loop between selected Track Group Gates

Audition >

Audition Pre Audition Pre

Audition Pre (Preroll #2) Audition Pre (Preroll #2)

Audition Pre (Preroll #3) Audition Pre (Preroll #3)

Audition Audition

Audition (Pre/Postroll #2) Audition (Pre/Postroll #2)

Audition (Pre/Postroll #3) Audition (Pre/Postroll #3)

Audition Post Audition Post

Audition Post (Postroll #2) Audition Post (Postroll #2)

Audition Post (Postroll #3) Audition Post (Postroll #3)

Audition Gate In Pre Audition selected Track Groups Gate In Pre

Audition Gate In Pre (Preroll #2) Audition selected Track Groups Gate In Pre (Preroll #2)
Audition Gate In Pre (Preroll #3) Audition selected Track Groups Gate In Pre (Preroll #3)
Audition Gate In Audition selected Track Groups Gate In
Audition Gate In (Pre/Postroll #2) Audition selected Track Groups Gate In (Pre/Postroll #2)
Audition Gate In (Pre/Postroll #3) Audition selected Track Groups Gate In (Pre/Postroll #3)
Audition Gate In Post Audition selected Track Groups Gate In Post
Audition Gate In Post (Postroll #2) Audition selected Track Groups Gate In Post (Postroll #2)
Audition Gate In Post (Postroll #3) Audition selected Track Groups Gate In Post (Postroll #3)

Audition Gate Out Pre Audition selected Track Groups Gate Out Pre
Audition Gate Out Pre (Preroll #2) Audition selected Track Groups Gate Out Pre (Preroll #2)
Audition Gate Out Pre (Preroll #3) Audition selected Track Groups Gate Out Pre (Preroll #3)
Audition Gate Out Audition selected Track Groups Gate Out
Audition Gate Out (Pre/Postroll #2) Audition selected Track Groups Gate Out (Pre/Postroll #2)
Audition Gate Out (Pre/Postroll #3) Audition selected Track Groups Gate Out (Pre/Postroll #3)
Audition Gate Out Post Audition selected Track Groups Gate Out Post
Audition Gate Out Post (Postroll #2) Audition selected Track Groups Gate Out Post (Postroll #2)
Audition Gate Out Post (Postroll #3) Audition selected Track Groups Gate Out Post (Postroll #3)

Goto TimeCode Goto TimeCode

Nudge +1 frame

Nudge -1 frame

Set Loop In At current Playhead Cursor position

Set Loop Out At current Playhead Cursor position

Goto Loop In

Goto Loop Out

Loop On/Off Loop On/Off

Chase Chase (According to setting in, **Settings > All Settings > Application > Jog/Chase : Chase Settings**)

Store Chase Offset Store Chase Offset

Auto Chase

Freeze External Machines

Cursor Auto-Return after playing Auto Return On/Off

External Machines>

Stop Stop

Pause Pause

Play Play

Play Special >

Play Reverse Play Reverse
Play 1/2 Play 1/2
Play 1/2 Reverse Play 1/2 Reverse
Play 1/4 Play 1/4

	Play 1/4 Reverse	Play 1/4 Reverse
	Play 1/16	Play 1/16
	Play 1/16 Reverse	Play 1/16 Reverse
	Play 2x	Play 2x
	Play 2x Reverse	Play 2x Reverse
	Play 4x	Play 4x
	Play 4x Reverse	Play 4x Reverse
	Toggle Play/Stop	Toggle Play/Stop
	Toggle Play/Pause	Toggle Play/Pause
	Toggle Play/Record	Toggle Play/Record
Record		Record
Fast Forward		Fast Forward
Fast Rewind		Fast Rewind
Scan Forward		Scan Forward
Scan Rewind		Scan Rewind
Start		Goto Start
End		Goto End
Goto TimeCode		Goto TimeCode
Nudge +1 frame		Nudge +1 frame
Nudge -1 frame		Nudge -1 frame
Set Loop In		At current Playhead Cursor position
Set Loop Out		Out At current Playhead Cursor position
Goto Loop In		Goto Loop In
Goto Loop Out		Goto Loop Out
Chase		(According to setting in, **Settings > All Settings > Application > Jog/Chase : Chase Settings**)
Store Chase Offset		
Auto-Chase		
Eject		Eject
Preview		Rehearse the Edit taking into account the current Pre and Post Roll settings.
Auto Edit		Perform the Edit
Review		Review the Edit taking into account the current Pre and Post Roll settings.
Enable Record On/Off		Enable Record On/Off
Record Ready >		
	Record Ready V1	Record Ready V1
	Record Ready A1	Record Ready A1
		Record Ready A2 - A7 omitted
	Record Ready A8	**Record Ready A8**

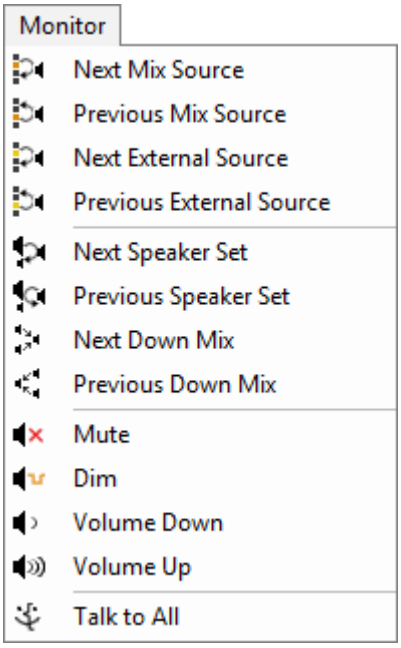
Locator >

Goto Locator 1	**Goto Locator 1**
	Goto Locator 2 to 9 omitted
Goto Locator 10	**Goto Locator 10**
Set Locator 1	**Set Locator 1**
Set locator 2 to 9 omitted	
Set Locator 10	**Set Locator 10**

Controllers>

Offline Controllers	Toggle Controllers On/Off line
Jog-Wheel Mode - Jog	
Jog-Wheel Mode - Shuttle	
Jog-Wheel Mode - Loop	repeats a short loop, starting at the cursor position
Jog-Wheel Mode - Navigate	Navigate is silent jog mode
Jog-Wheel Mode - Zoom	
Jog-Wheel Mode - Track Size	
Jog-Wheel Mode - Volume	
Jog Wheel Mode - Pitch	Varies the pitch in normal speed playback. Clockwise increases, anti-clockwise decreases. Range is limited to -25% to +25%.
Jog-Wheel Mode - Off	
Jog-Wheel Listen - Mix	Listen to mix out when Jog is active
Jog-Wheel Listen - Selection	Listen only to Tracks included in the current Selection
Jog-Wheel Fine	Change jog-wheel 'gearing' to the sensitivity factor set in **Settings > All Settings > Application > Jog/Chase : Fine Jog sensitivity factor** (Default 0.25) I.e. a quarter of nominal sensitivity. E.g. if nominal = 1.00 seconds per revolution then Fine will be a quarter of a second per revolution.
Auto Show Plugins	When selected Plugins parameters windows are automatically opened when selected on the remote controller.

Monitor



Monitor menu

The **Monitor** menu is intended mainly for use with hardware controllers such as the Merging Technologies Ramses. I.e. it makes these functions available for mapping to hardware controls. For full details of the functionality, **please see: Monitor on page 338**

Next Mix Source

Previous Mix Source

Next External Source

Previous External Source

Next Speaker Set

Previous Speaker Set

Next Down Mix

Previous Down Mix

Mute

Dim

Volume Up

Volume Down

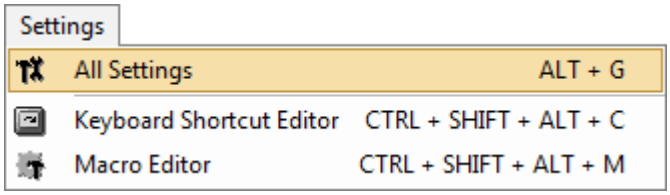
Talk to All

Macros

Macro Editor Opens the **Macros** Window

Please see User Macros on page 540

Settings

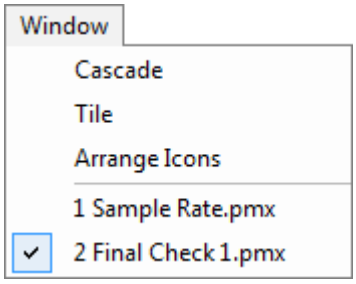


Settings menu

The **Settings** menu brings together access to the main **All Settings** window, the **Keyboard Shortcut Editor** and the **Macro Editor**.

All Settings	Opens the **Pyramix Settings** Window
Keyboard Shortcut Editor	Opens the **Keyboard Shortcuts** Window
Macro Editor	Opens the **Macros** Window

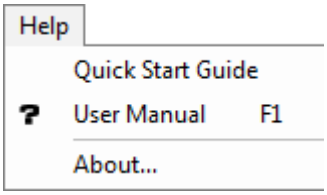
Window



Window menu

The **Window** menu maintains a list of open projects and enables switching between them. It also enables multiple open project windows to be arranged on screen, **Tiled** or **Cascaded**. When there are many Projects open and minimized **Arrange Icons** will tidy up the view.

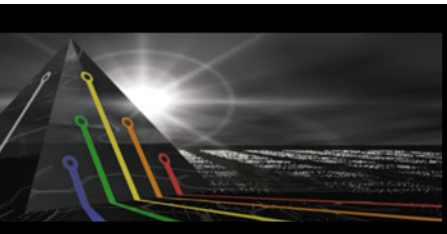
Help



Help menu

The **Help** Menu gives quick on-line access to this manual and others. **About** pops up a Window with the Pyramix logo and details about the registered user and software version.

29 Settings

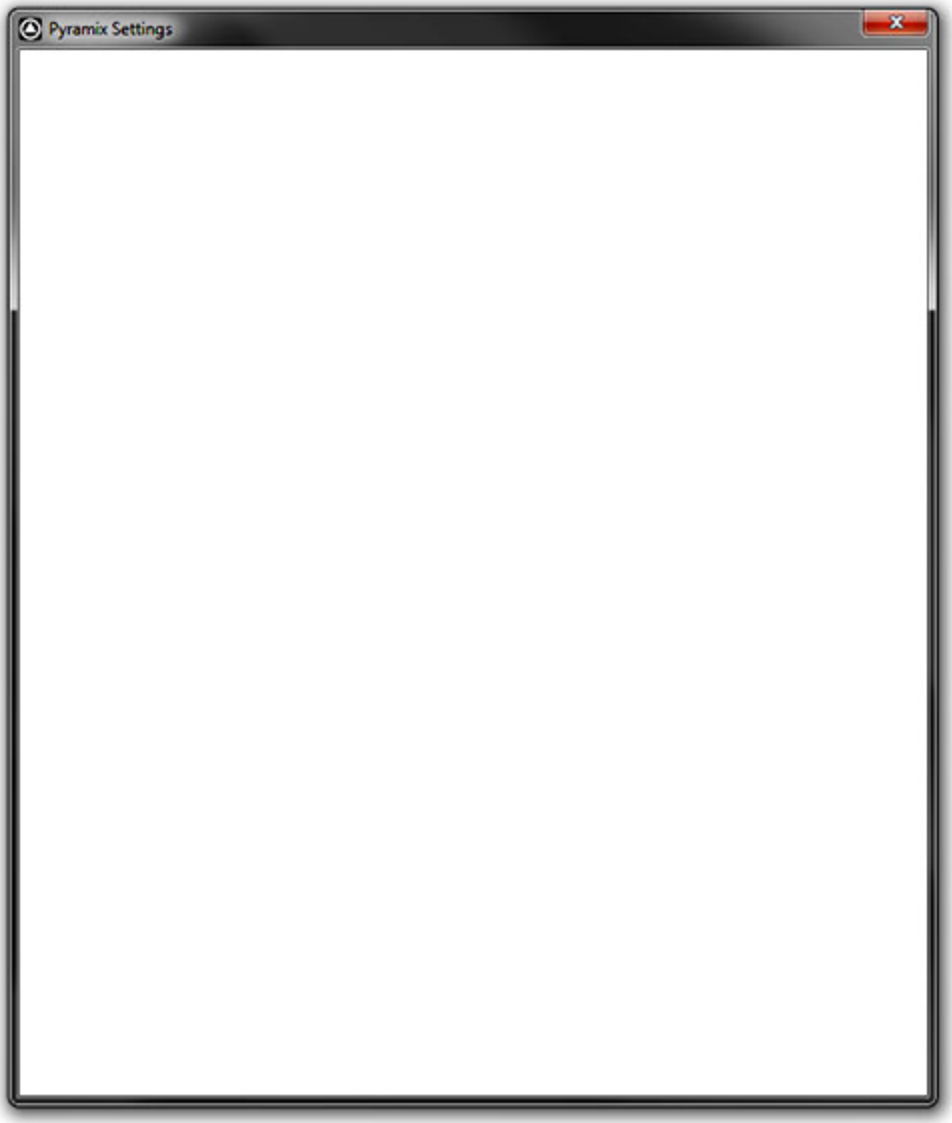


Pyramix
DIGITAL AUDIO WORKSTATION
USER MANUAL

Overview

Pyramix is massively configurable to suit diverse applications and personal preferences. To keep the vast number of parameters manageable, Pyramix has an intuitive **Settings** dialog window. The **Pyramix Settings** dialog window brings together all Pyramix settings apart from the **Keyboard Shortcut Editor** and the **Macro Editor**, both of which can be accessed from the **Settings** menu. Although you will find information about individual pages elsewhere in this document, all the Settings pages are detailed in this chapter.**Settings** can be accessed from a Tool Bar icon, the menu **Settings > All Settings** or **Alt + G**.

Configuration - The Settings Dialog Window



Pyramix Settings Window - No folder open

The left-hand side of the window shows all available settings grouped in folders. Folders can be collapsed or expanded by clicking on the folder icons. By default, all folders are open, displaying the settings pages they contain by name. Clicking on a settings page opens it in the right-hand side of the window for viewing and editing.

Settings Buttons

Apply changes to ...

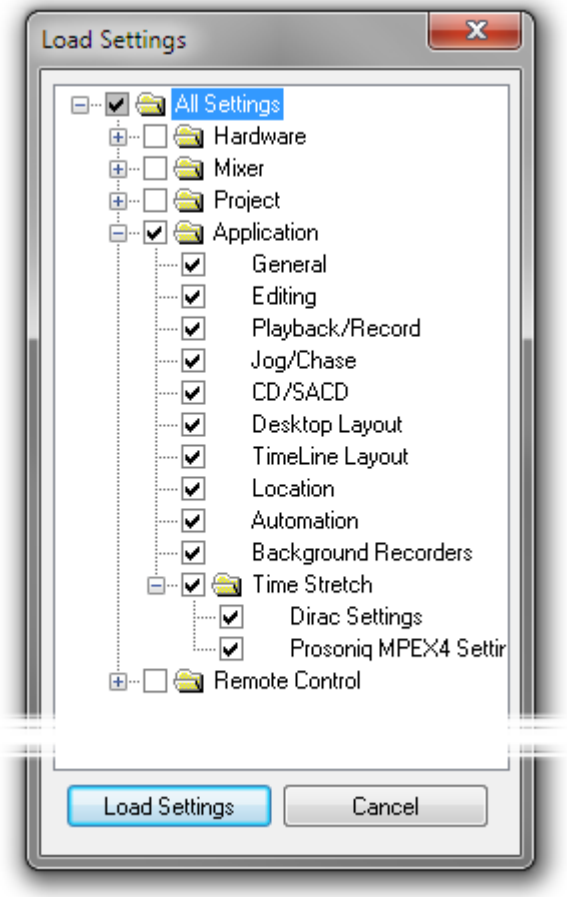
Below the Settings folders tree view the first large button's function and label changes to reflect the currently open settings page (if any). **Apply changes to ...** does as it says without saving the changes to a Settings file. Settings can be saved selectively or in their entirety for future use.

Save

To save all settings, Click on the: **Save** button to open a **Save As** browser window. If necessary, navigate to a suitable location for the file. Type a suitable name in the **File name:** box and click the **Save** button to save the file and close the browser window.

Load

Load opens a Browser window to enable location of settings **Profile** (***.pms**) files. When the required file has been located clicking on the **Open** button loads the file and opens the **Load Settings** dialog.



Load Settings dialog

Loading Settings Selectively

Load Settings loads only the settings with ticked boxes. The **Load Settings** dialog auto selects the currently selected page. Clicking a folder check box checks the boxes of all the sub-folders and pages they contain. Thus, clicking the **All Settings** box checks all the boxes.

OK

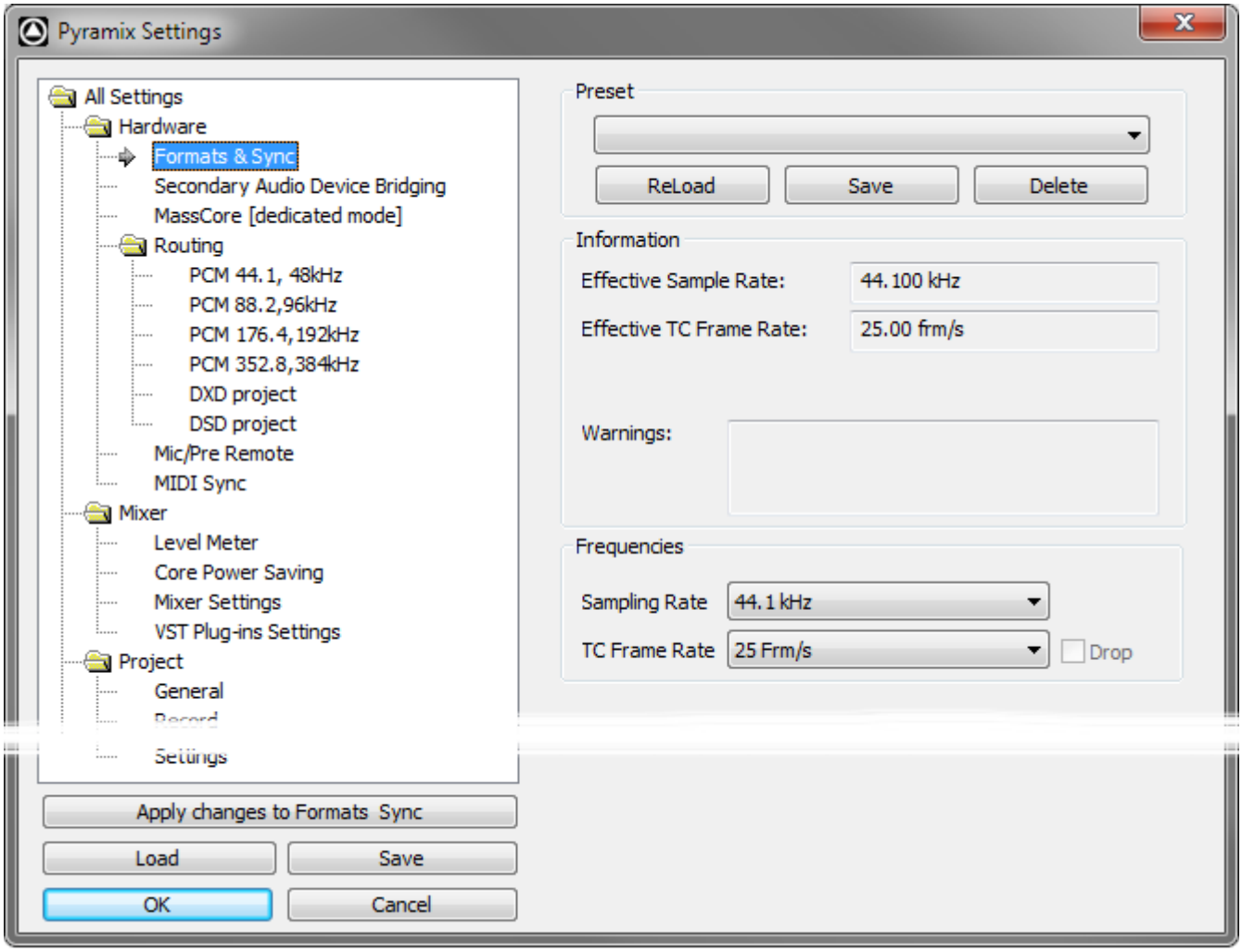
Saves any changes made to settings and exits the **Pyramix Settings** window.

Cancel

Cancels any changes made to settings and exits the **Pyramix Settings** window.

Hardware

Formats and Sync

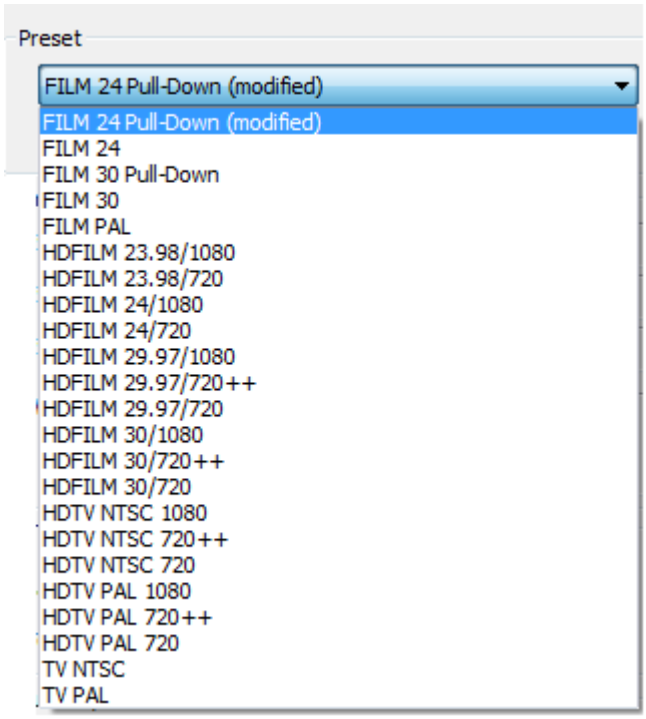


All Settings Hardware Formats & Sync Page

Note: The capabilities of this page vary according to the platform. The screenshot above applies to a MassCore Ravenna system.

Preset

This section allows the user to **Save** and **ReLoad** or **Delete** Presets of all the parameters in this page. A variety of common scenarios are covered in the supplied Presets:



All Settings Hardware Formats & Sync Preset List

Information

Effective Sample Rate

Displays the sampling rate including the effect of any pull-up or down or Varispeed settings.

The sampling rate display in the Status Bar also displays the resulting sampling rate.

Effective TC Frame Rate

Displays the TC Frame Rate including the effect of any pull-up or down or Varispeed settings.

Warnings

Displays any caveats about the selected rates.

Frequencies

Sampling Rate

The drop-down list presents a choice of all available nominal sampling rates.

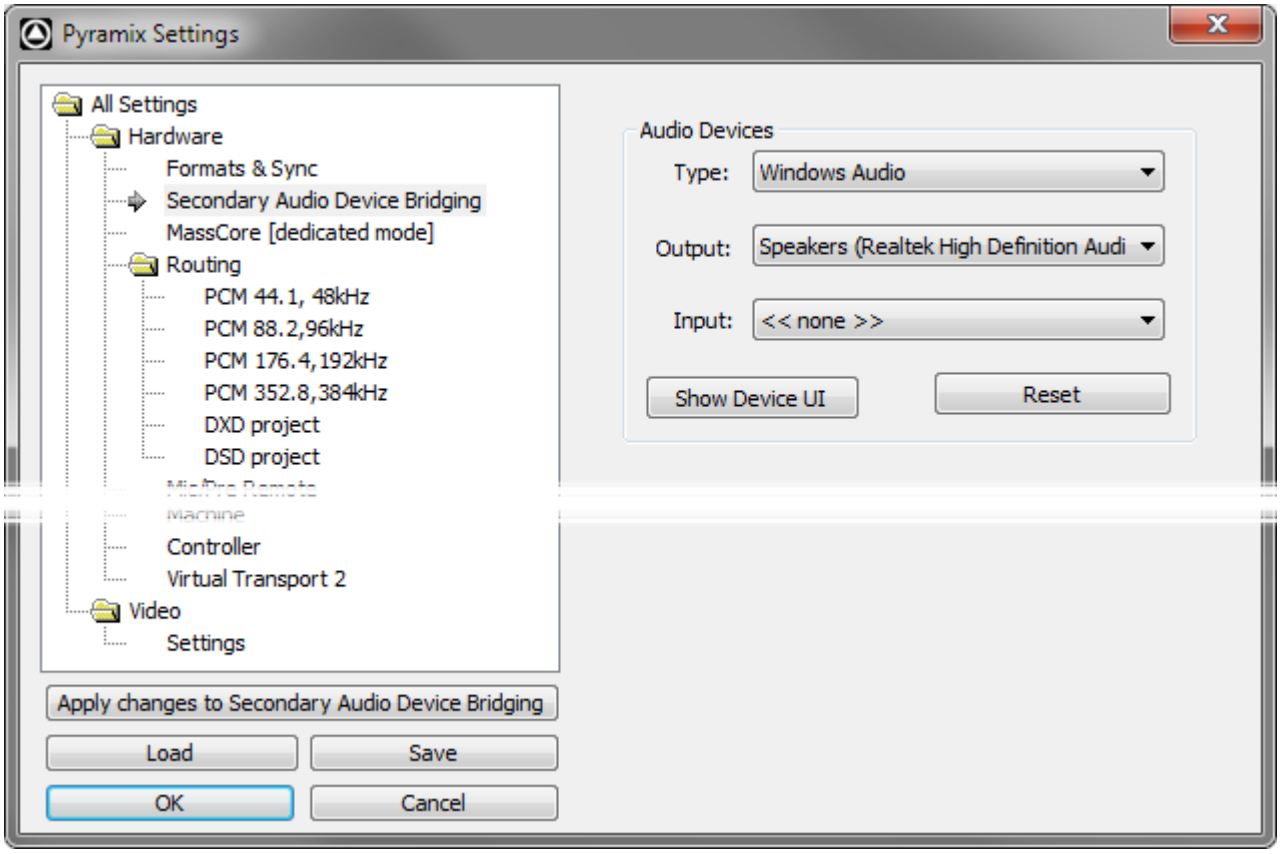
TC Frame Rate

The drop-down list presents a choice of all available TC Frame Rates

Drop

Only available for NTSC Frame Rates I.e. 29.97fps and 30fps. When checked drop-frame counting is applied.

Secondary Audio Device Bridging



All Settings > Hardware > Secondary Audio Device Bridging

Audio Devices

Type: The drop-down list offers the choice of **Windows Audio**, **DirectSound** or **ASIO**.

Note: ASIO only supports Outputs.

Output: The drop-down list offers the choice of all audio devices with drivers of the **Type** selected.

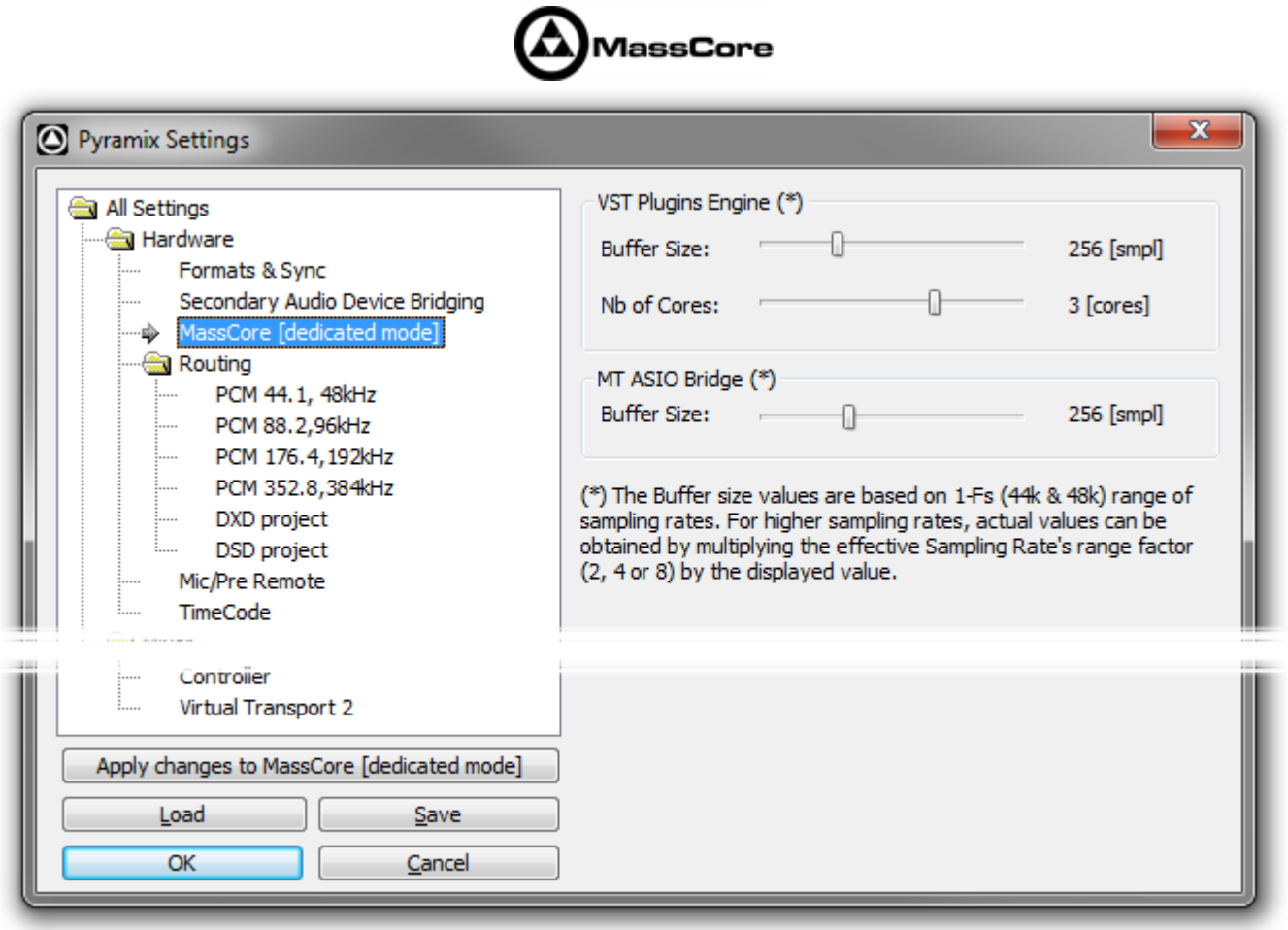
Input: The drop-down list offers the choice of all audio devices with drivers of the **Type** selected. (**Windows Audio** or **DirectSound** only.

Show Device UI Opens the User Interface for the selected Audio Device.

Reset Reinitializes the Secondary Audio Device. Use if you experience Mutes or glitches.

Note: This Settings page is only present when Secondary Audio Device Mode has been selected in the VS3 Control Panel.

MassCore



All Settings Hardware MassCore

Note: The MassCore mode is indicated in brackets but is determined by the hardware present in the PC.

VST Plugins Engine(*)

This sets the **VST** buffer size in samples. The smaller the buffer the lower the latency and vice-versa. Some third-party VST plug-ins require very large buffer sizes. This setting is provided to give the user control over the required value. Increasing the value can prevent clicks at the expense of increased latency.

If you are seeing VST Core Peaks increase the VST Plugins Engine Buffer size.

Values up to 8192 samples may be set.

No of Cores:

On a Quad Core sets the number of VST cores used 1, 2 or 3 for a quad core CPU. (Default is two, one CPU core is already dedicated to MassCore.) This option is useful when dealing with extreme Projects and for a few VST plug-ins which do not like Multithreading processing. For a better understanding of VST and MassCore core allocation **please see: MassCore & VST Core Allocation on page 699**

MT ASIO Bridge (*)

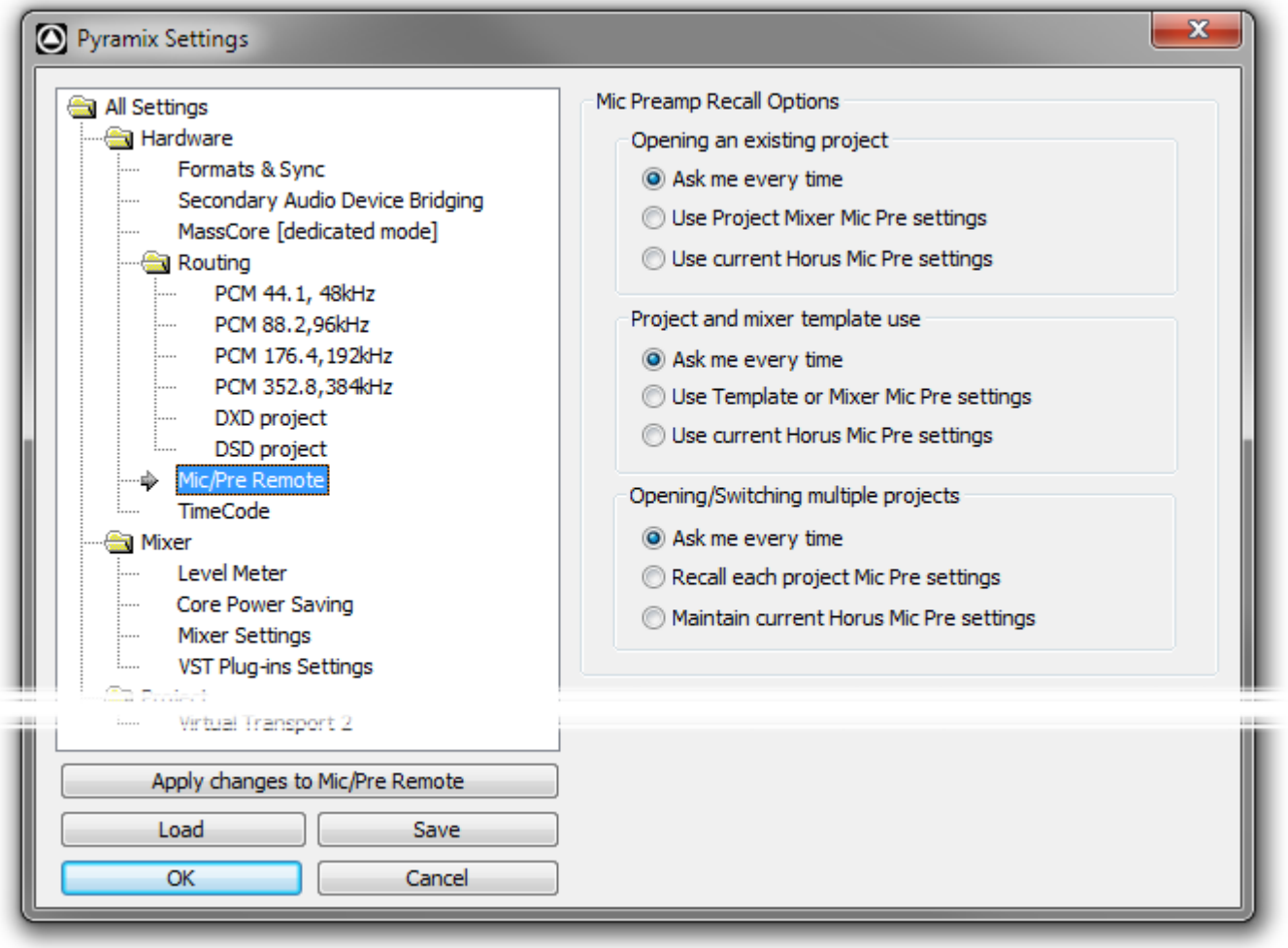
This sets the **Virtual ASIO** buffer size in samples.

Note: (*) The Buffer size values are based on the 1Fs (44.1k and 48k) range of sampling rates. For higher sampling rates, actual values can be obtained by multiplying the effective Sampling Rate's range factor (2,4 or 8) by the value displayed.

Routing

Note: For systems using HORUS or HAPI please see the respective User Guides.

Mic/Pre Remote



All Settings Hardware Mic/Pre Remote page

Mic Preamp Recall Options

Opening an existing project

Ask me every time When selected a dialog opens whenever an existing project is opened asking if you would like to keep the current Mic Pre settings.

Use Project Mixer Mic Pre Settings When selected the Mic Pre Settings saved with the project replace the current settings.

Use Current Horus Mic Pre Settings When selected the current Horus Mic Pre settings are retained.

Project and mixer template use

Ask me every time When selected a dialog opens whenever a new project is created whether from scratch or from a template asking if you would like to keep the current Mic Pre settings.

Use Template or Mixer Mic Pre Settings

Use Current Horus Mic Pre settings

Opening/Switching multiple projects

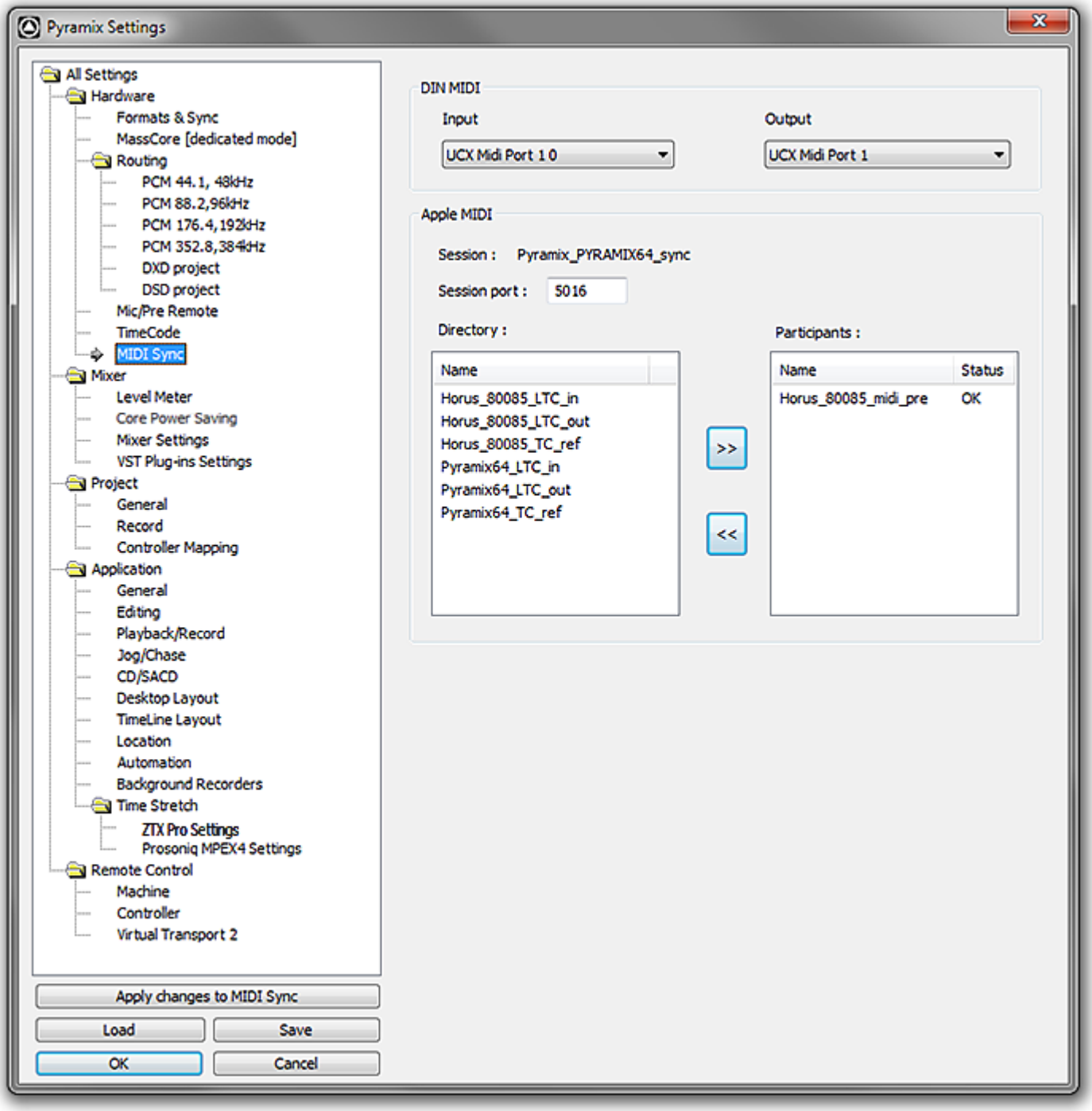
Ask me every time When selected a dialog opens whenever an existing project is opened and when switching between open projects asking if you would like to keep the current Mic Pre settings.

Recall each project Mic Pre settings When selected each project opened or switched to uses the settings save with the project(s).

Maintain current Horus Mic Pre Settings When selected the current Horus Mic Pre settings are retained.

See also: **Horus/Hapi Preamp Remote Controls on page 237**

MIDI Sync



All Settings Hardware MIDI Sync Page

DIN MIDI

Input The drop-down list shows all connections physically present on the system.

Output The drop-down list shows all connections physically present on the system.

Apple MIDI

Session : Shows the local Apple MIDI name of the Pyramix system (What you see on the network.)

Session port : The UDP port used for the local Apple MIDI connection. This defaults to port 5016 but may be changed if required.

Directory :	The list shows a real-time view of the Apple MIDI connections available on the network. E.g. Horus/Hapi, Pyramix system (another v9.1 or later if available on the network, any Apple MIDI port available on the network. Hovering the mouse cursor over an entry in the list displays its IP address and port number.
>> button	Adds a selected directory entry to the Participants list.
<< button	Removes a selected Participant from the list.
Participants :	**OK** will appear to the right of an entry in the list when connected. **NOK** is shown to the right of an entry in the list when not connected.

Note: When a MIDI connection is configured and is providing MTC, the MIDI TimeCode Reader is displayed in the Pyramix Transport panel under **Available Machines**. Pyramix will output the MIDI TimeCode on all the configured MIDI connections.

Note: USB Sync users will find their USB Sync MIDI ports under the **DIN MIDI** section. Please ensure the USB Sync Board is set to **MIDI mode**. Check this in the **USB Sync Control Panel**.

TimeCode Setup

Networked Audio Interface TimeCode Setup

TimeCode connections to Horus/Hapi are handled by Apple Bonjour.

Apple Bonjour MIDI Connection Discovery

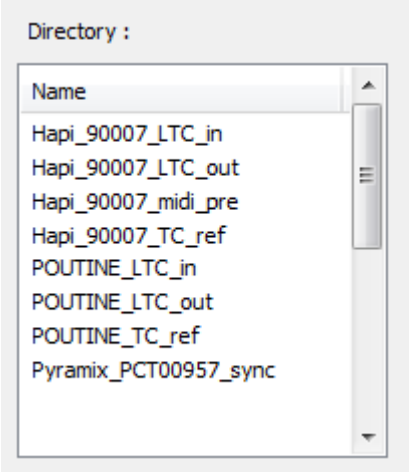
This may be seen in:

Settings > All Settings > Hardware > MIDI Sync

rtp MIDI (Windows third party utility.)

MIDI Network Setup (Mac OSX)

Directory :



MIDI Sync Page - Directory section

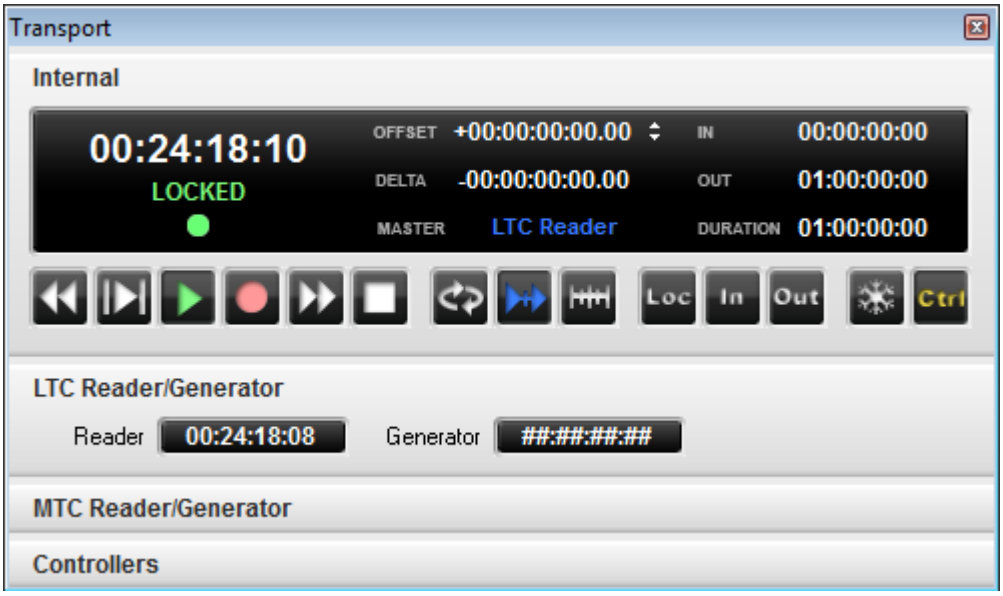
The list shows a real-time view of all the Apple MIDI participants discovered on the network.

Naming/Nomenclature

Horus/Hapi_<SERIAL>_LTC_in	Physical LTC input (seen as MTC) used to receive Timecode to DAW
Horus/Hapi_<SERIAL>_LTC_out	Physical LTC output (seen as MTC) used to send out Timecode to Horus/Hapi
Horus/Hapi_<SERIAL>_midi_pre	Used to remotely access the Horus/Hapi MicPre
Horus/Hapi_<SERIAL>_TC_ref	Internal connection used to synchronize to a Video ref source
<Computer Name>_LTC_in	MassCore virtual LTC input
<Computer Name>_LTC_out	MassCore virtual LTC output
<Computer Name>_LTC_ref	Internal connection used to synchronize to a Video ref source
Pyramix_<Computer Name>_sync	Pyramix shows a MIDI in/out connection for transferring MTC

Networked Audio Interface LTC IN-OUT for MassCore users

MassCore users please refer to the **RAVENNA Network Guide**, use the **Easy Connect** TimeCode connections and set the Pyramix Transport to **LTC Reader** chase mode.

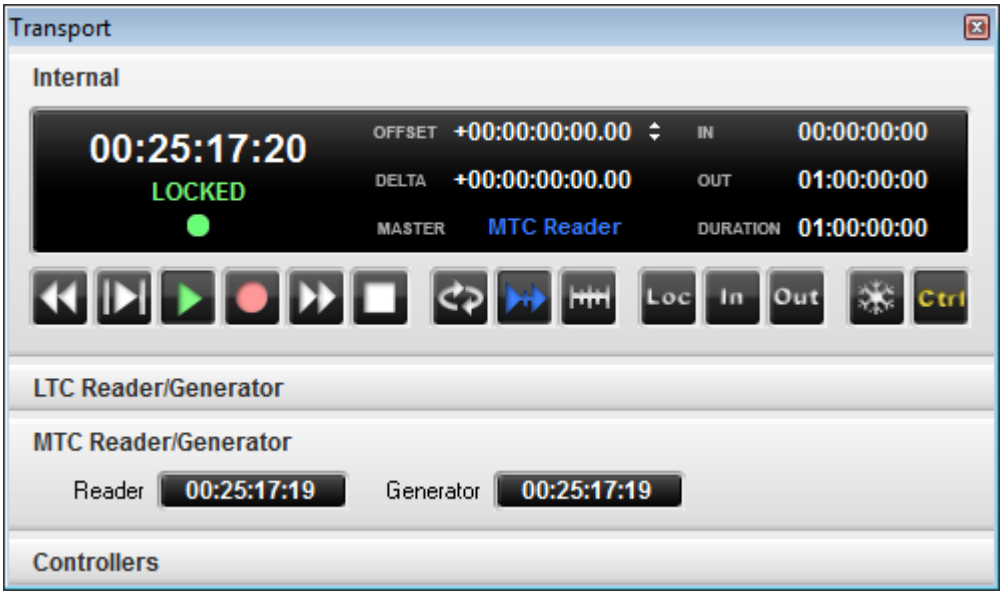


Transport window

Note: We recommend **NOT** using the **Settings > All Settings > MIDI Sync : Participant** entries.

Networked Audio Interface LTC IN-OUT for Pyramix Native users

- Ensure that the Project Frame Rate is set to match the incoming TimeCode.
- Open **Settings > All Settings > Hardware > MIDI Sync**
- Add the **Networked Audio Interface LTC IN** and **Networked Audio Interface LTC Out** entries to the **Participants :** list.
- Click on **OK** to save the settings and close the window.
- Open the Pyramix **Transport** window. **[Alt + T]**.
- Set the **Pyramix** to **Chase** the **MTC Reader**.
- Pyramix will Generate MTC once a MIDI connection is on the **Participants :** list.



Transport window

TimeCode over Physical MIDI (MTC) Horus/Hapi

Horus/Hapi firmware supports of the transport of TimeCode over physical MIDI (MTC) using the DIN connectors on the Sync breakout cable (part code: CON-D15-VTC). Timecode is transmitted to the workstation via the network (RAVENNA connection).

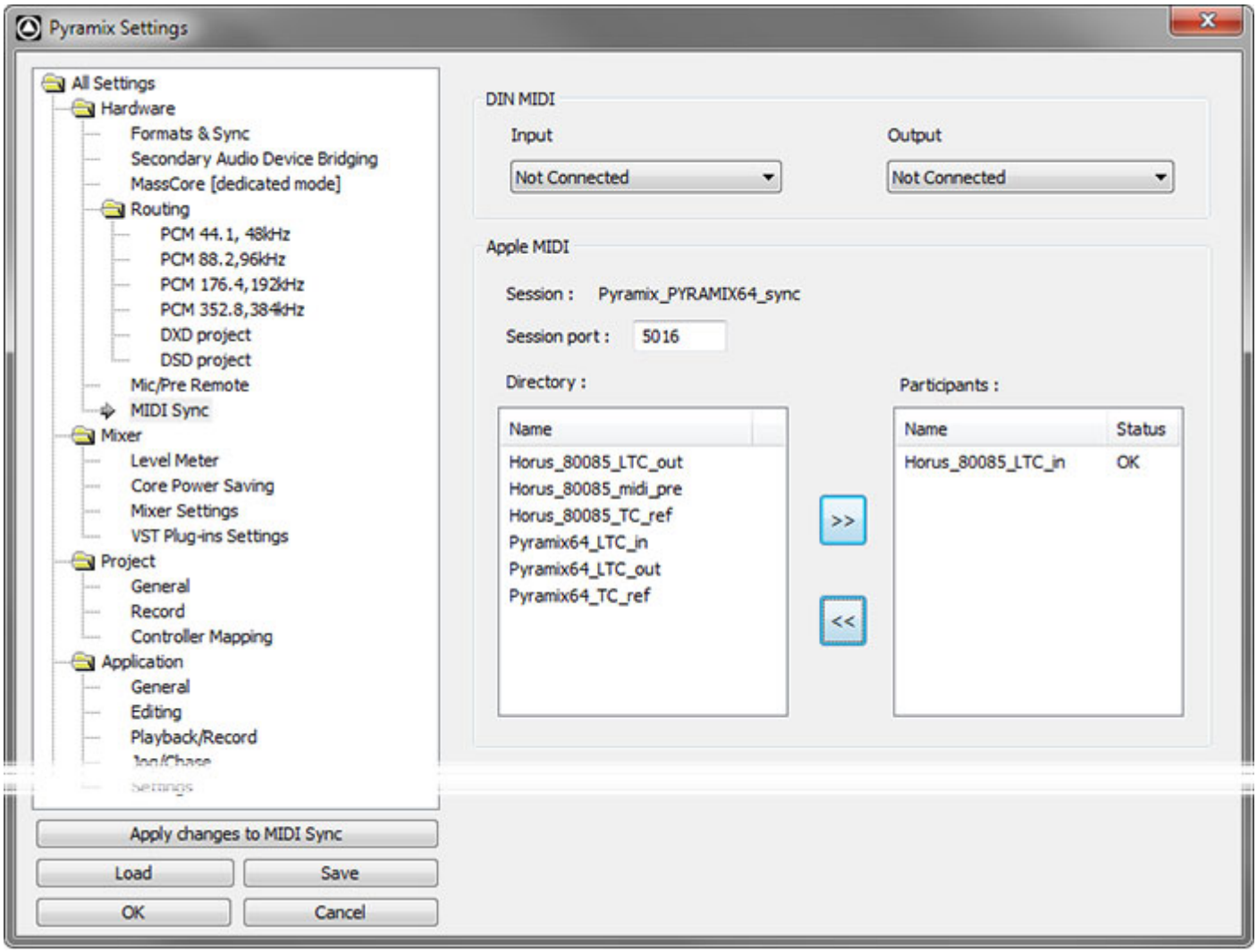
Note: Horus / Hapi firmware version **3.1.0 b28867** or above is required.

Horus/Hapi hardware Prerequisite:

Please refer to the Horus or Hapi User Manuals. The Ethertube dip switches (1 and 2) must be set to **OFF** in order to enable physical MIDI (MTC) support over the Sync breakout cable (part code: CON-D15-VTC).

Pyramix Configuration

Configuration is undertaken in the **Settings > All Settings > Hardware > MIDI Sync** page:



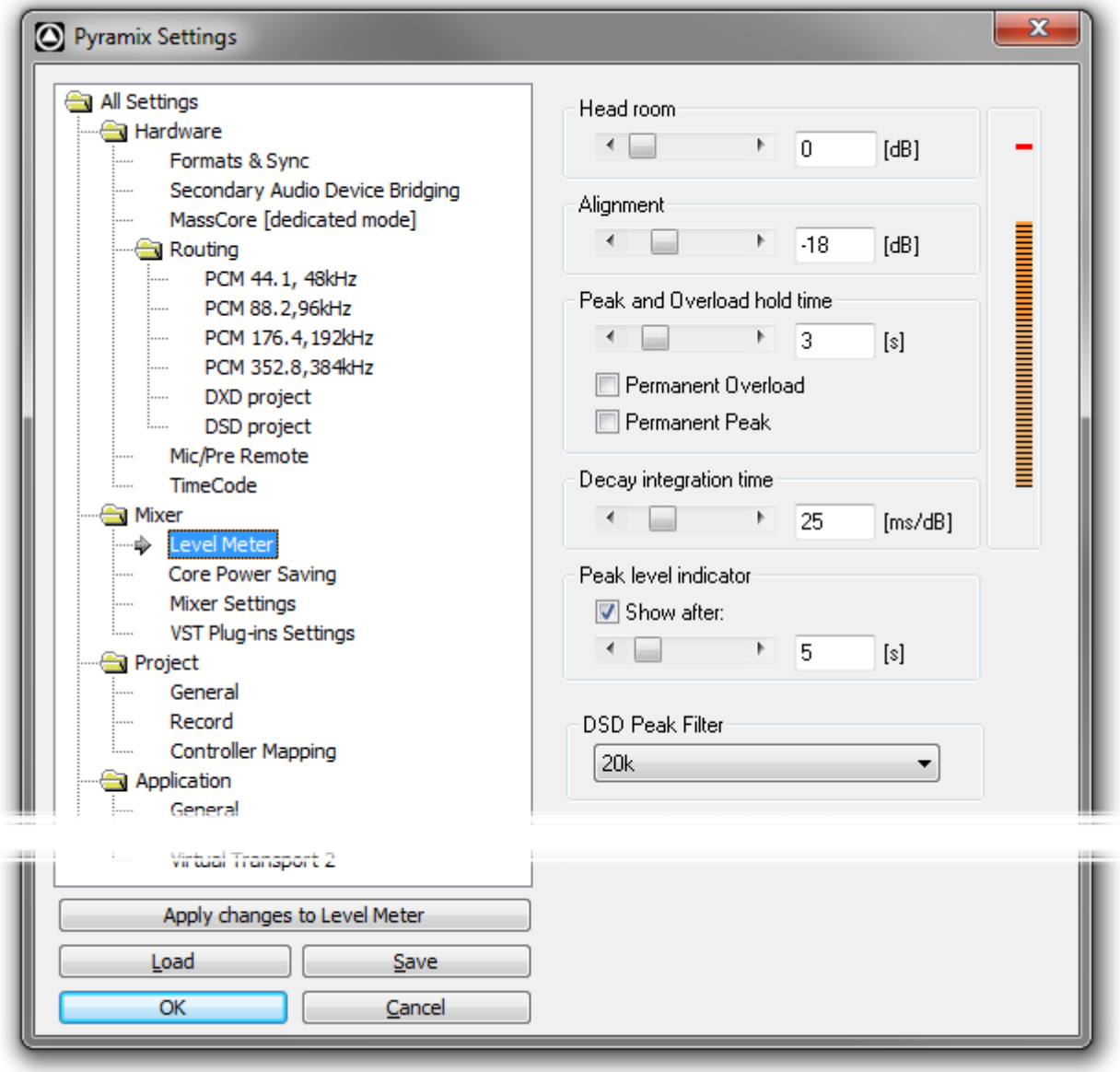
Settings > All Settings > Hardware > MIDI Sync

In the **Directory:** list, choose an Apple MIDI service with a **...midi_din** suffix. This nomenclature corresponds to the Physical MIDI DIN port of a Horus/Hapi.

Mixer

Level Meter

This page determines the appearance and behavior of the level meters in the **Mixer** and **Track Headers**.



All Settings Project Mixer Level Meter Page

These settings only apply to the current **Mixer**. This allows each **Mixer** to have its own custom **General** and **Level Meter** settings.

To change any of the settings, click the left or right buttons or drag the horizontal scroll bar to increment or decrement the selected parameter. Alternatively, type directly into the number field for each parameter (these fields will only accept numbers within the permissible range for each parameter). The color graphic display of the level meter will respond immediately to show the effect of Headroom and Alignment parameter changes.

Headroom

Sets the amount of headroom displayed as red meter segments before clipping. I.e. the number of dB below 0dBFs at which the red meter segments begin.

Note: This headroom value is only for the Mixer meter displays and will not (and cannot) be reported to the Plug-in (VU Meter or Meter Bridge). The VU meter Plug-in has it's own headroom setting.

Note: If the mixer displays an * next to the Level field value it indicates that a custom value was entered in the Headroom settings.

Alignment

Sets the alignment level. Displayed by the point on the scale at which the dark orange segments begin.

Peak and Overload Hold Time

Sets the amount of time in seconds that the peak segment or overload segment (topmost red segment) of the level meter remains illuminated.

Permanent Overload

When the box is checked, the red Overload LED above a Track will remain lit, even after playback is stopped. To clear the LED, double-click it. When not checked, the Overload LED will automatically clear itself after a few seconds and remain off until the next overload occurrence.

Note: The overload LED will go on after one sample with the maximum level.

Permanent Peak

This parameter works in conjunction with the Peak Level Display. When this is on (checked), the Peak Level pop-up display will show the value and location of the highest level reached on a Track up to the time when the mouse was clicked on the meter. The level display will not be updated until the next time playback is stopped and re-started. If it is not on (unchecked), the Peak Level Popup Display will show the highest level reached in that Track from the last time the Popup Display is activated (while playback continues). For example, clicking a channel's meter while playing back will display the Peak Level Popup, which will show the peak level (and its location) reached so far. Click away from the Popup, and it will disappear. Click on that meter again, and the Popup will appear again, this time showing the peak level/location reached since the last time the Popup was displayed.

Decay integration time

This parameter sets the rate at which the level meter display decays after the level falls below the most recent peak. The slope of the decay is given in terms of milliseconds per decibel (ms/dB).

Peak level indicator

Show After

When the box is checked, the **Fader/Input Level** displays located above the faders on each mixer strip display the peak level of the signal running through the corresponding mixer strip. The value are updated at the interval set by the slider below the check box. If the check box **Show After** is off, the **Fader/Input Level** displays always show the setting of their corresponding fader.

DSD Peak Filter

For DSD projects this drop-down list offers the choice between two filtering options which will be applied to the DSD signal before it is measured by the level meter.

This will help enable you to ensure that the DSD signal is compatible with Annex D.4 of the SACD Scarlet Book concerning the high frequency and noise shaping.

20k

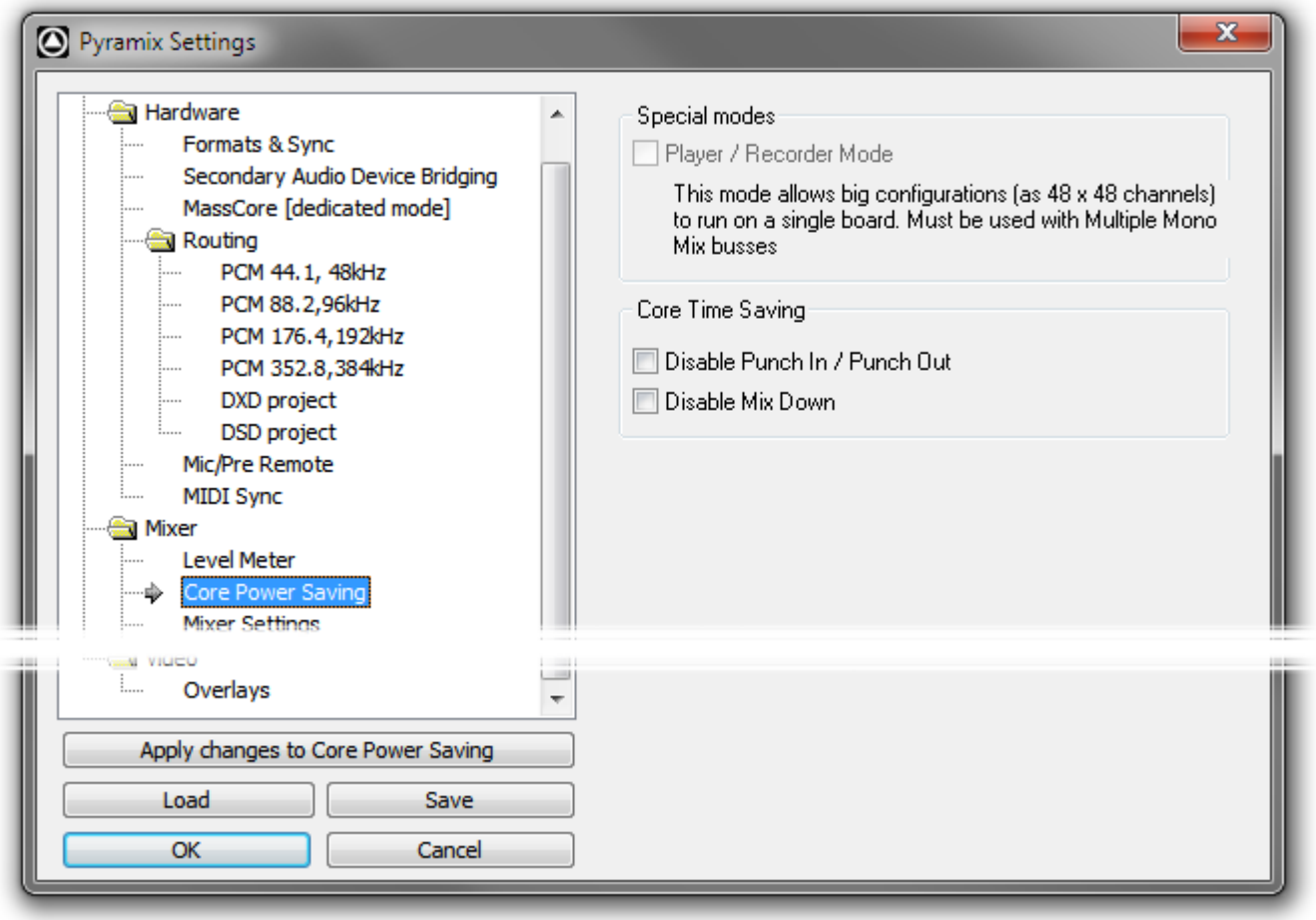
Applies a 20 kHz low pass filter to the signal, thus only the audible audio content is measured.

40k-100k

Applies a band pass filter with a frequency range of 40 kHz to 100kHz to the signal. According to Annex D.4 of the SACD Scarlet Book the signal level in this frequency range should not exceed -20 dB.

> **Note:** Further to Annex D.4 of the SACD Scarlet Book:
> D.4 High Frequency DSD Signal + Noise Level.
> The accumulated RMS signal + noise level of the DSD signal, measured after a 40 kHz Butterworth 30dB/Oct high pass filter and a 100 kHz Butterworth 30dB/Oct low pass filter, is maximally equal to the RMS level of an input sinewave with a peak amplitude of -20 dB SA-CD (see D.2).
> The averaging filter used to calculate the RMS level must be a first order unity gain IIR filter with a coefficient of 1/524288 (2-19), corresponding to an IIR filter with a cutoff frequency of about 0.85 Hz.
>
> **Note:** E.2 Analog Post-filter
> To protect analog amplifiers and loudspeakers, it is recommended that a Super Audio CD player-contain at its output an analog low pass filter with a cut-off frequency of maximum 50 kHz and a slope of minimum 30 dB/Oct. For use with wide-band audio equipment, filters with a cut-off frequency of over 50 kHz can be used.
>
> **Note:** When releasing material at higher than 44.1 or 48 kHz sampling rate, Merging recommends adding a gentle low pass filter (typically 6 to 12 dB/octave) in the range from 30 to 50 kHz for all recordings made originally in DSD 64. The corner frequency of such low pass filters can be doubled whenever converting from DSD 128 and even quadrupled when converting from sources originally recorded in DSD 256 (which essentially means that even when converting from DSD 256 to PCM at 192 kHz, there is no need to add such a filter).

Core Power Saving



All Settings Mixer Core Power Saving Page

Special Modes

DSP Time Saving

Disable the Punch in/out

When the box is checked, Punch-in and out recording capabilities are disabled.

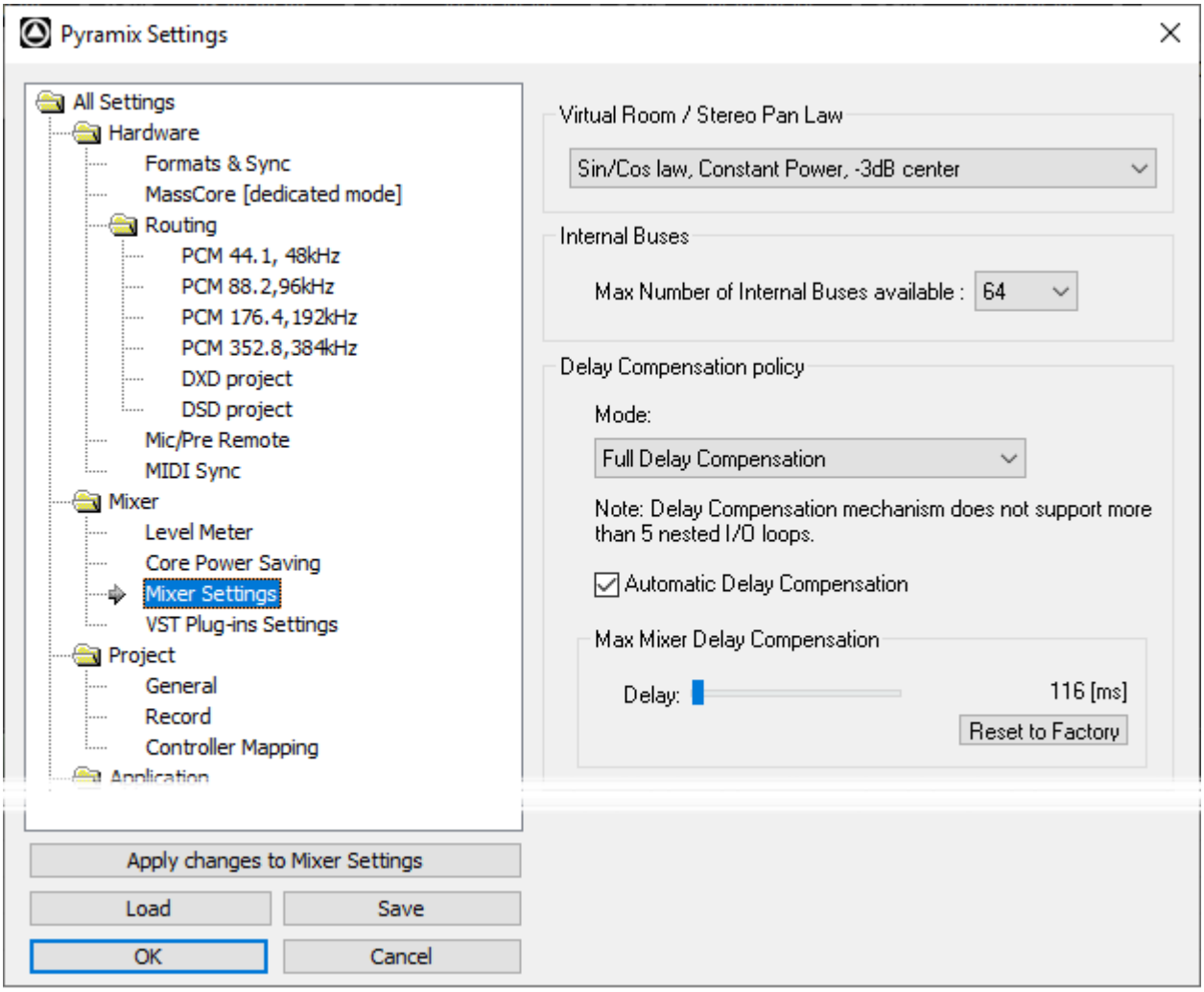
> **Important!** Pyramix still will allow you to arm Tracks and to start the recording process, but the resulting media file will contain digital nulls.

Disable Mix Down

When the box is checked, the digital mixdown function activated with the menu command **Project->Mix Down** is disabled.

> **Important!** Pyramix still will allow you to start the mixdown process, but the resulting media file will contain digital nulls.

Mixer Settings



All Settings Mixer Mixer Settings Page

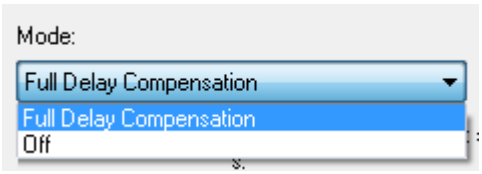
Virtual Room / Stereo Pan Law

The drop-down menu offers a choice between the default **Sin/Cos law, Constant Power, -3dB center** and **Square Root law, Constant Power, -3dB center**.

Delay Compensation Policy

Mode

The drop-down menu offers the choice between:



Full Delay Compensation

Off

Note: Automatic Delay Compensation does not support more than 3 nested I/O loops. When there are more than 5 loops the signal flow continues but will not be delay compensated.

Automatic Delay Compensation

When ticked, turns Automatic Delay Compensation **On**

Note: Any changes to the delay required that occur during playback or recording will only be computed and applied when the Transport is next in **Stop**.

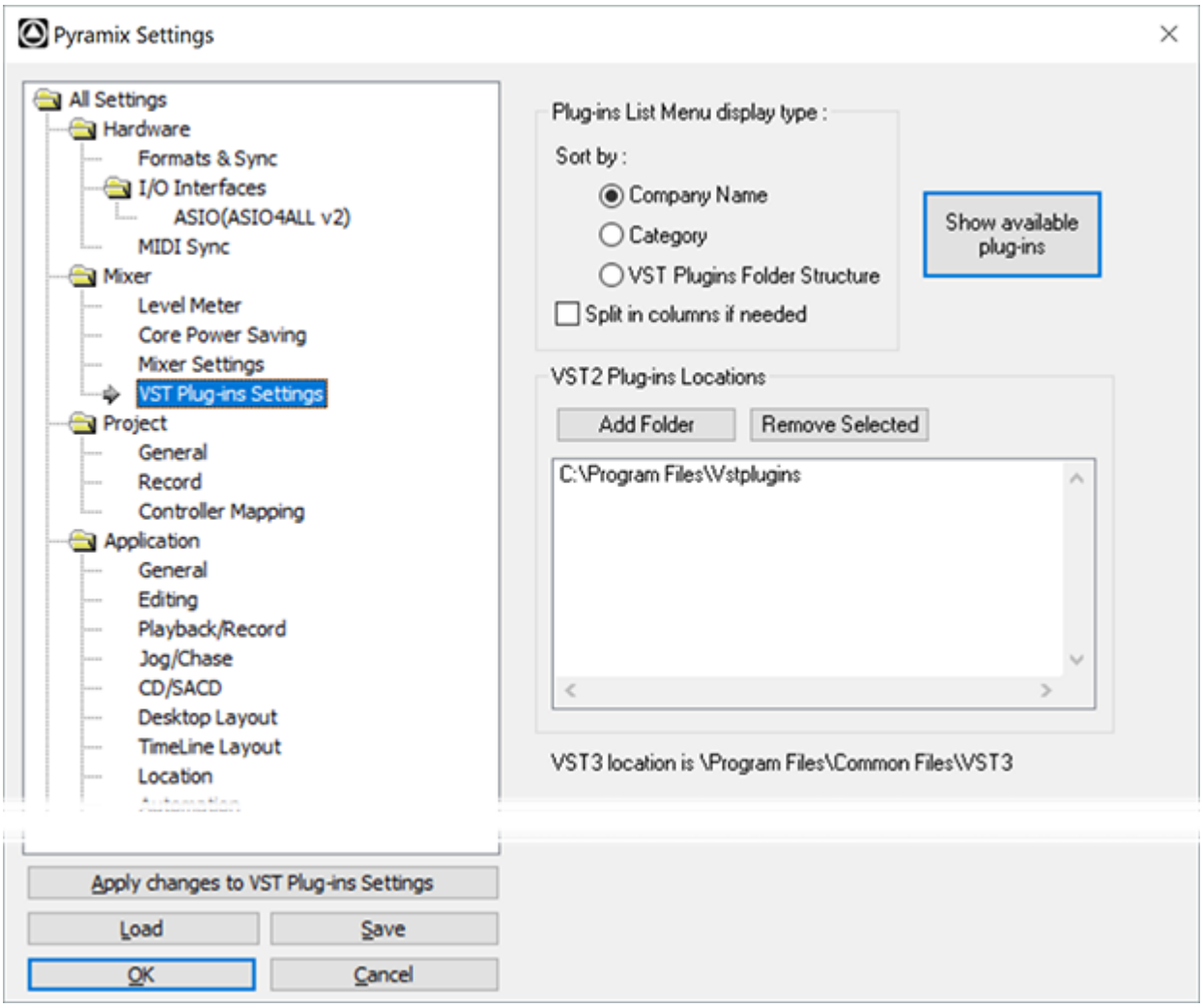
Max Mixer Delay Compensation

When required by the **Mixer error: Delay compensation** dialog the slider should be set to a value just above the delay latency value requested.

Reset to Factory

Click the button to restore the factory computed maximum delay value.

VST Plug-Ins Settings



All Settings MixerVST Plug-ins Settings Page

VST Plug-ins

The **Plug-ins List Menu.display type** buttons offer a choice of how the VST Plug-ins are ordered and grouped.

Company Name The list will be ordered by Company Name.

Category Groups the plug-ins according to function type.

VST Plug-ins Folder Structure Organises the Plug-ins in the same way as they are in the Windows filing system.

Please see also: VST Plug-ins Display Order on page 420

Split in columns if needed Displays all Plug-ins at once instead of cascading dialogs.

Note: Some Plug-ins may not be visible in columns if a very large number of Plug-ins are installed.

Plug-ins locations

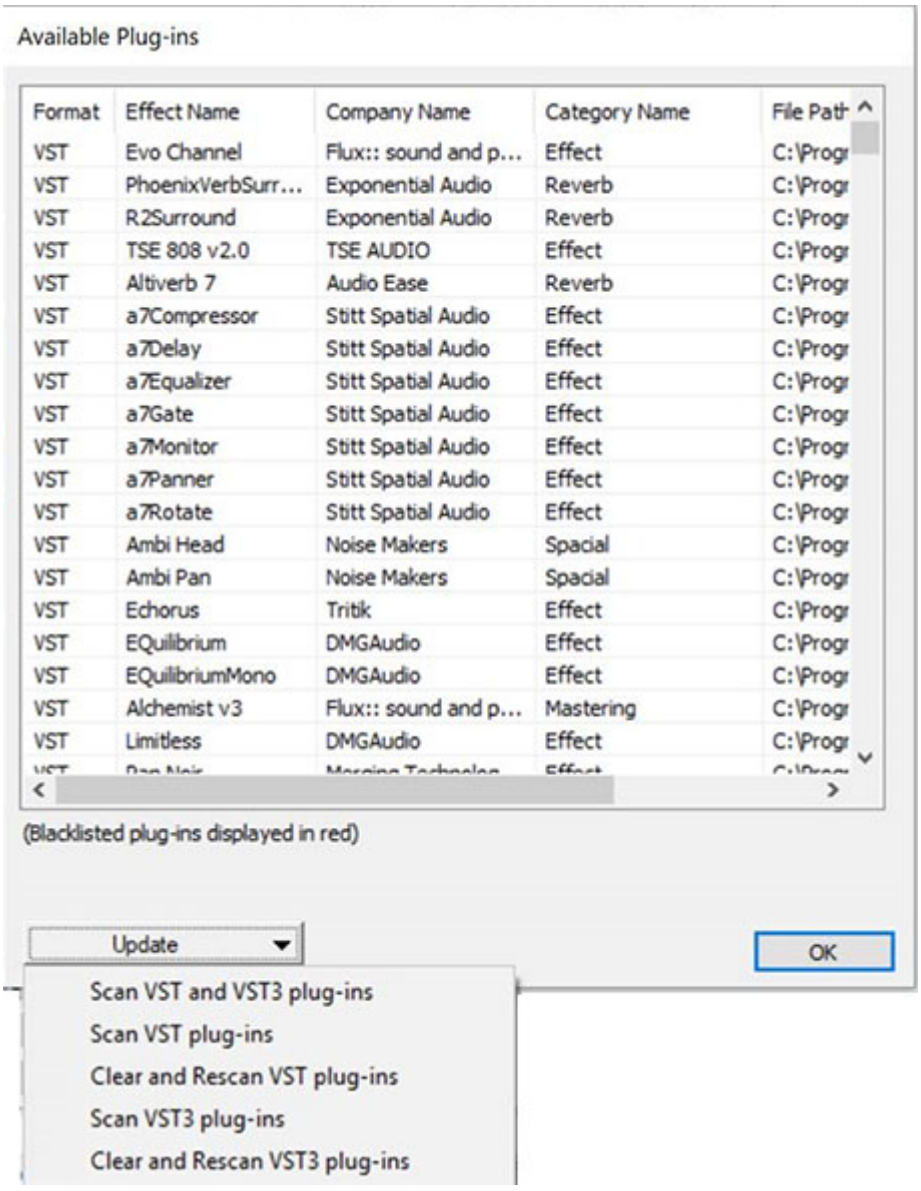
The box shows which folders Pyramix will scan for VST Plug-ins on launch.
By default, **\Program Files\VSTPlugins** and or **\Program Files\Steinberg\VSTPlugins** directories are scanned if they exist. Further directories may be added to the scan list using the **Add Folder** button, which opens a File Browser window. Directories are removed from the list by selecting them in the list and clicking on the **Remove Selected** button.

Available Plug-ins

The **Show** button opens the **Available Plug-ins** list dialog:

Show Available plug-ins

Clicking on the button opens the **Available Plug-ins** dialog:



Available Plug-ins dialog

The list shows all VST Plug-ins which have been scanned and are available to Pyramix. Blacklisted plug-ins are displayed in red.

Update

The **Update** button drops-down a menu with the following options:

Scan VST and VST3 plug-ins	Initiates a scan of any directories added to the **VST Plug-ins Folders** list since Pyramix was launched.
Scan VST plug-ins	As above but restricted to VST2 Plug-ins (VST = VST2)

Clean and scan VST plug-ins (forces a VST2 rescan)

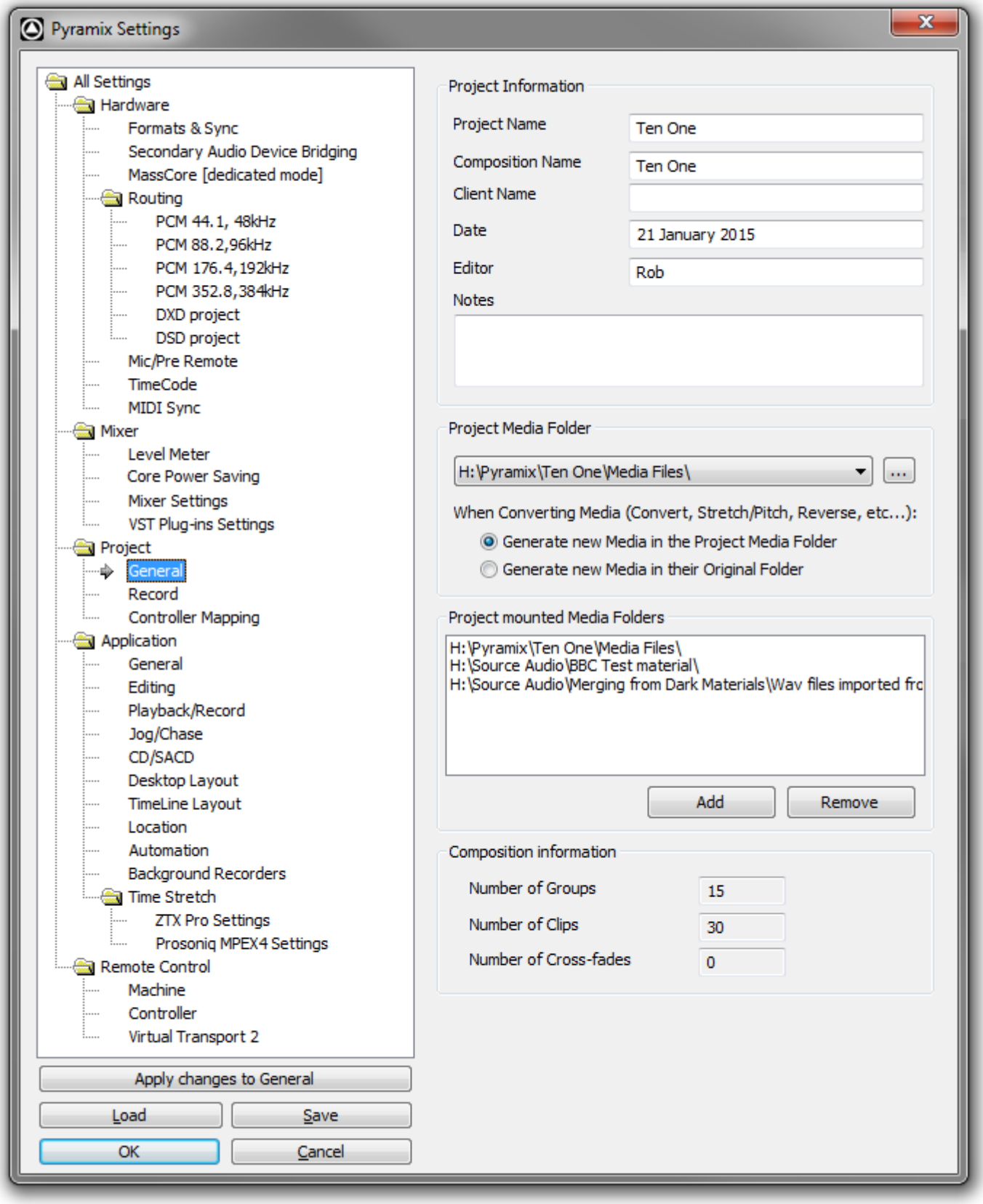
Scan VST3 plug-ins Restricts the scan to VST3 Plug-ins

Clean and scan VST3 plug-ins (forces a VST3 rescan)

OK Closes the dialog.

Project

General



All Settings Project Information Page

The General Page has fields for displaying and entering information concerning the current project. This information is specific to the Project and will always be available in this display.

Project Media Folder

When a Project is created, either with **Project > New** or **Project > New From Template** and a Media Folder is created or selected, the **Project Media Folder**, the **Record : Target settings** Media Folder, the **Project > Render : Target Settings** Media Folder and the **Project > Mix Down : Target Settings** Media Folder all point to the same folder.

The combo box has a list of all mounted Media Folders and the button opens the **Choose a Media Folder to Mount** dialog where you can browse for and mount or create and mount any other Media Folder. **Please See: Housekeeping on page 45**

When a Project operation will generate new Media Files, the radio buttons below the combo box offer the choice of either:

- Generate new Media in the Project Media Folder
- Generate New Media in their Original Folder

Project mounted Media Folders

All folders mounted by the Project are listed here. Further folders may be mounted or existing ones unmounted by using the **Add** and **Remove** buttons.

Composition Information

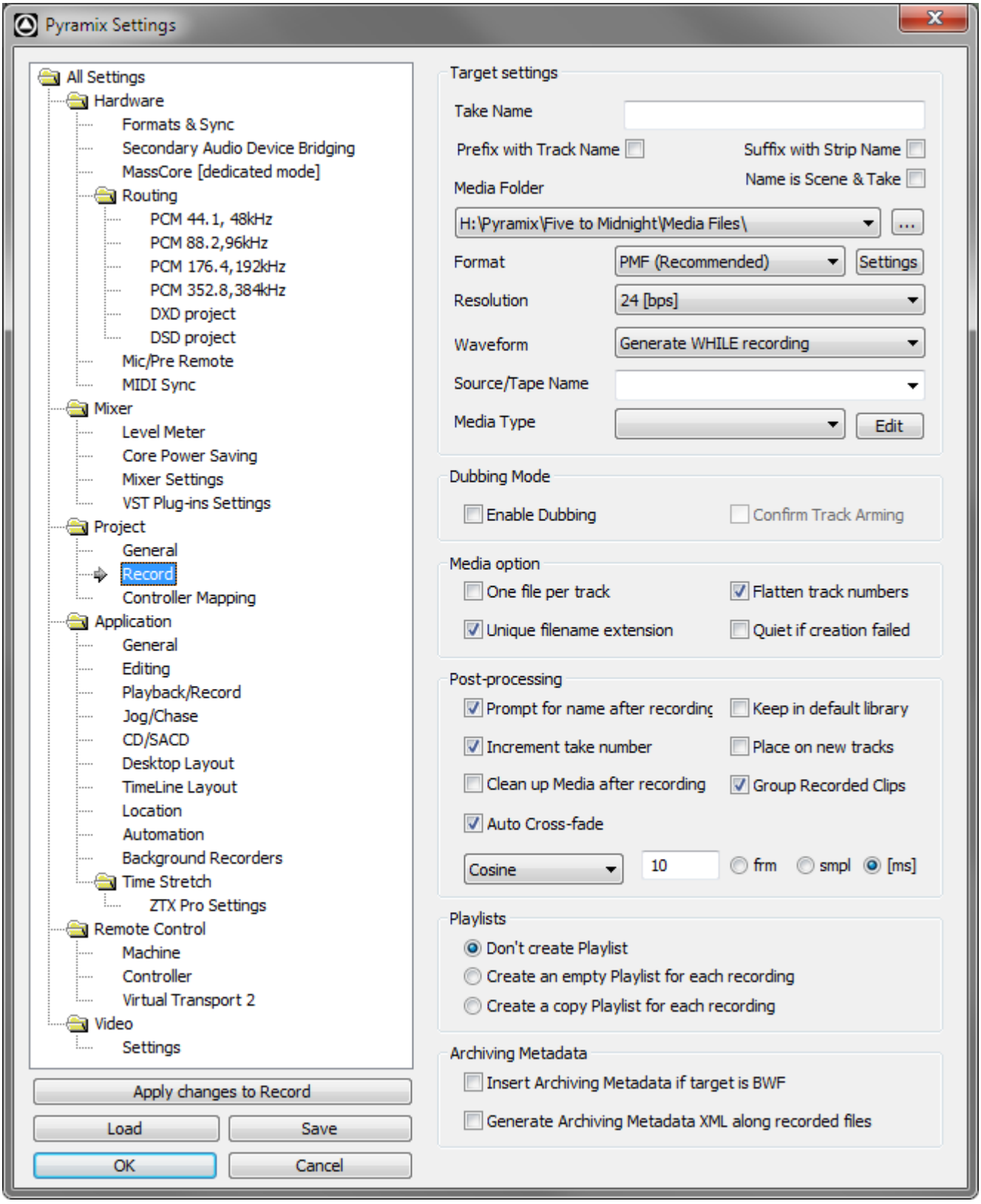
Lists three categories of Composition data:

Number of Groups

Number of Clips

Number of Cross-fades

Record



All Settings Project Record Page

Target Settings

Take Name

Type a 'seed' name here. This is used to begin the name of new recordings. E.g, if you type "Vocal" the next recording you make into a Track will be called "Vocal". This field works in conjunction with the "Increment take number" function (see below). If you leave this field blank, Pyramix will apply the name "Untitled" as a default.

Prefix with Track Name

When checked the name of the recording will be prefixed by the name of the Track it was recorded on, like:

Guitar-Take 001_##001##_.wav

Guitar-Take 002_##001##_.wav

Suffix with Strip Name

When checked allows Multitrack recording of typed sources, typically for archiving Film stems, or Render of Mixes/Dubs:

With a set of multi-channels strips (GPS strips) properly named and typed, the **Suffix with Strip Name** option will create files named like:

Episode3-M&E-Ls.wav

Episode3-M&E-Rs.wav

Episode3-LtRt-L.wav

Episode3-LtRt-R.wav

Name is Scene & Take

When checked, the name of a take recorded in Pyramix will be used as the source for the Scene and Take fields in BWF and PMF audio files with the proper tag set. The last numeric digits of the name are used as the Take number and any preceding characters are used as the Scene name.

E.g. 203/5 003 will be interpreted as SCENE = 203/5 TAKE = 003

Media Folder

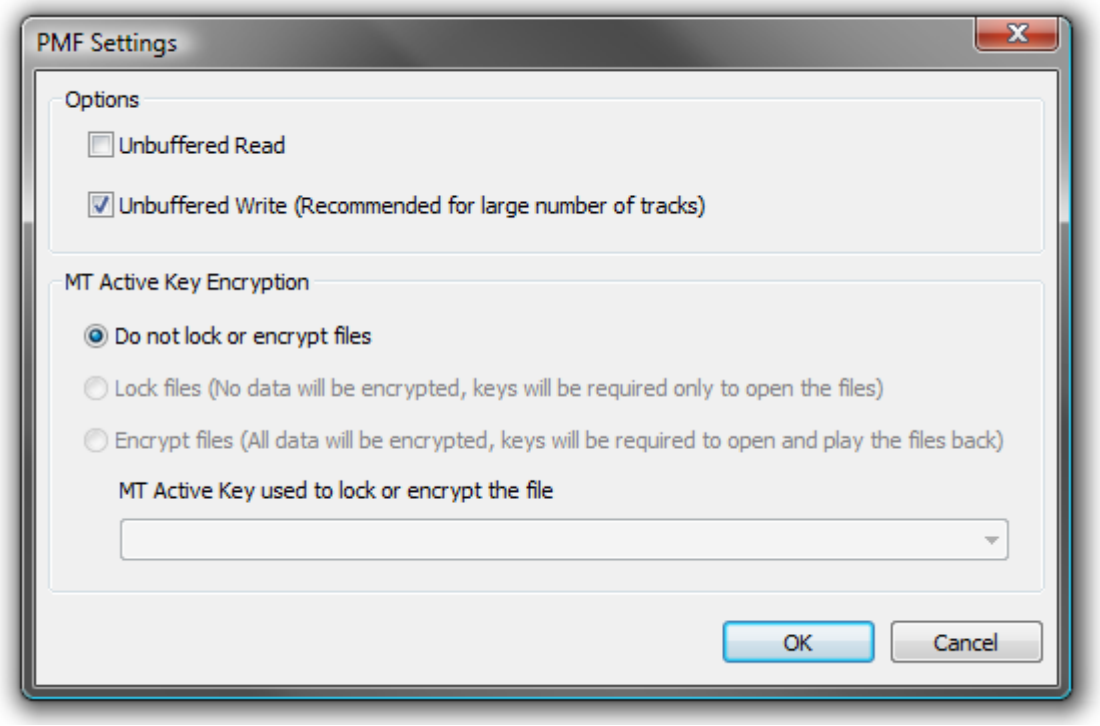
Displays the selected Media Folder for recording. Clicking the adjacent button opens the **Choose a Media Folder to Mount** window. This enables folders to be created mounted and managed. **Please See: Housekeeping on page 45**

Format

Displays the current recording format from the choice available in the drop-down list. (PMF, SD2, AIFF, AVI, WAVE, BWF, CD Image or OMF)

Settings

If **PMF** is chosen as the **Format** then the **Settings** button becomes active. When clicked the **PMF Settings** dialog appears:



All Settings Project Record : Format PMF Settings dialog

Options

Unbuffered read Improves general Playback performance but may impact on waveform display and update. **Default = OFF**

Unbuffered Write (Recommended for large number of tracks) Default = ON (may have a negative effect when recording over a network. If you experience problems set this to **OFF**.

Both the above options enable/disable the Windows Disk Cache.

MT Active Key Encryption

Under Construction

Do not lock or encrypt files Default =ON

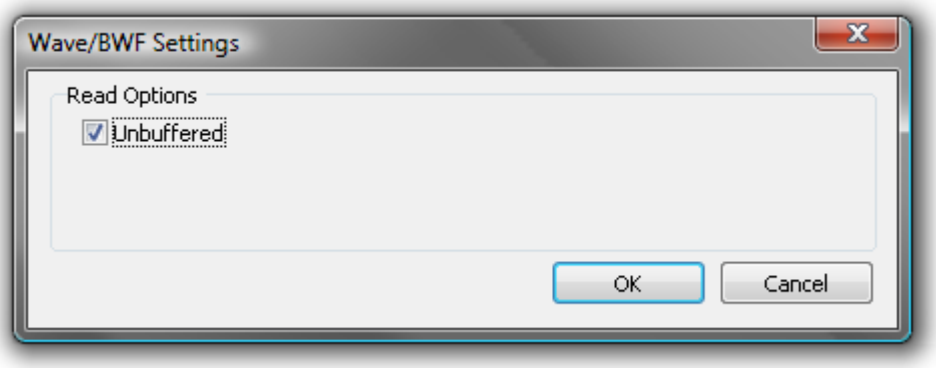
Lock files (No data will be encrypted, keys will be required only to open the files)

Encrypt files (All data will be encrypted, keys will be required to open and play the files back)

MT Active Key used to lock or encrypt the file

Copy and paste or type the appropriate key or choose from the drop-down list.

If **Wave** is chosen as the **Format** then the **Settings** button becomes active. When clicked the **Wave/BWF Settings** dialog appears:



All Settings Project Record : Format Wave/BWF Settings dialog

The only option is **Unbuffered**, ticked by default. When files are read the Windows cache is not used. This improves performance in most cases. Un-check the box to turn buffering on. The System Cache disk is then used to buffer.

Resolution

Displays the number of bits per sample for recordings from the choice available in the drop-down list. (16bps, 24bps or 32bps)

Read Options

Unbuffered read Improves general Playback performance but may impact on waveform display and update. **Default = ON**

This option enables/disables the Windows Disk Cache.

Request Size

The default value is **64kB**. This can be increased to a maximum of **320kB** if problems are experienced during playback.

Waveform

Displays the current Waveform generation mode from the choice available in the drop-down list. (None, Generate AFTER recording or Generate WHILE Recording for all supported formats) (Default is WHILE)

Source Name

This field allows you to give a name to indicate the source of the material being recorded into Pyramix. For example, you might enter "Reel #1" to indicate the first source reel, etc. If the MediaType field (see below) is set to "None", the Source Name field will be grayed out and not available.

Media Type

Displays the type of media the source material came from, chosen from the drop-down list. Clicking on the **EDIT** button allows existing names to be edited or new ones created. The media type chosen here and the source name given in the previous field are saved with the media file created by the new recording. This information can then be viewed by selecting a Clip and displaying its Properties page.

Dubbing Mode

Please see also: Dubbing Mode on page 545

This mode is provided principally for film re-recording. It allows Tracks to be Armed or Disarmed for recording while recording is taking place.

Enable Dubbing

When checked, **Dubbing Mode** is engaged.

Confirm Track Arming

Only available when **Dubbing Mode** is selected in the adjacent check box. A check in this box means that any changes to Track arming made whilst recording must be confirmed by a new Record command before they will take effect.

Media option

One file per track

When checked, each recording on each Track of a multi-track recording is recorded into a separate file. When this option is off (which is the default), one single media file is created containing all the Tracks.

Flatten track numbers

When a recording is made on a Track, Pyramix always adds a media number to it. When checked on (default), Pyramix starts enumerating at one. E.g. If a recording is made on Tracks 5 and 9 of a multitrack session simultaneously, the media numbers will be 1 and 2. When this option is off, Pyramix adds the real Track numbers to the media. In the example above, this would be 5 and 9.

Unique filename extension

When checked, Pyramix will append a random number to the name of each new recording in order to avoid duplicate file names.

Quiet if creation failed

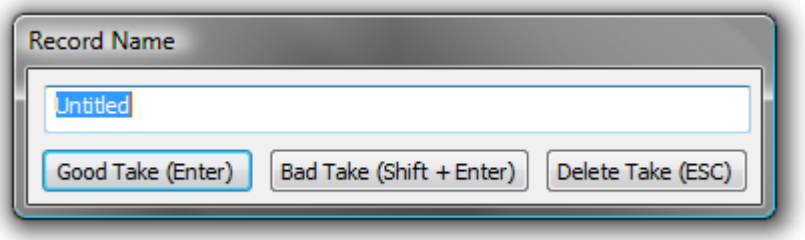
Unless this box is checked, Pyramix displays a dialog with an error message when the creation of a media file fails. This can be annoying if Pyramix is remotely controlled. Checking the box suppresses the error message.

Post Processing

These options determine what Pyramix will do after each recording is finished.

Prompt for name after recording

When checked, a **Record Name** dialog box will open immediately after recording is finished and playback of Pyramix is stopped.



Record Name dialog box

If a name was entered in the **Take Name** field (see above) it will automatically appear in the **Record Name** dialog box when it opens. You can edit the existing name, or replace it completely with a new name.

Keep in default library

When checked, new recordings will automatically appear in the Default library of the current Project.

Increment take number

When checked, each successive recording will have the name in the **Take Name** field applied to it, plus a number that will increment with each new recording. E.g, if the first recording is named "Take", the next recording will automatically be named "Take 2", etc.

Place on new tracks

When checked, Pyramix will place the newly recorded Clips on new Tracks. These new Tracks will be added to the Project Editor as soon as playback is stopped following a punch in/punch out recording. When first created, these Tracks are not assigned to mixer channels, so it will be necessary to assign them when you want to output them. If this item is not checked, the new Clips will be placed on the Track(s) set to record them.

Clean up Media after recording

Note: This option is automatically set OFF when a Project is opened.

This mode makes Pyramix work like an analog or DASH multitrack. I.e. All punch-ins are **highly destructive !!** With modern, large hard drives, we would rather recommend:

View > Used Media > Invert selection > Delete media (after a good **archive**/**consolidate**/**back-up** has been made) or:

b) **Project > clean-up media,** etc.

All these functions destroy media on the hard drive, but **b** & **c** offer more control over what is permanently deleted.

Group Recorded Clips

When checked, Clips in a multi-track recording are automatically grouped.

Auto Cross-fade

When checked a cross-fade is automatically applied when punching in or out. The current fade shape is displayed form the choice available in the drop-down list (Power, Linear, dB, Cosine or Root-Cosine) Duration can be set in frames, samples or milliseconds depending on which box is selected.

Playlists

These buttons toggle between three possible choices:

Don't create Playlist

Create an empty Playlist for each recording

Create a copy Playlist for each recording

Please see: Playlists on page 677

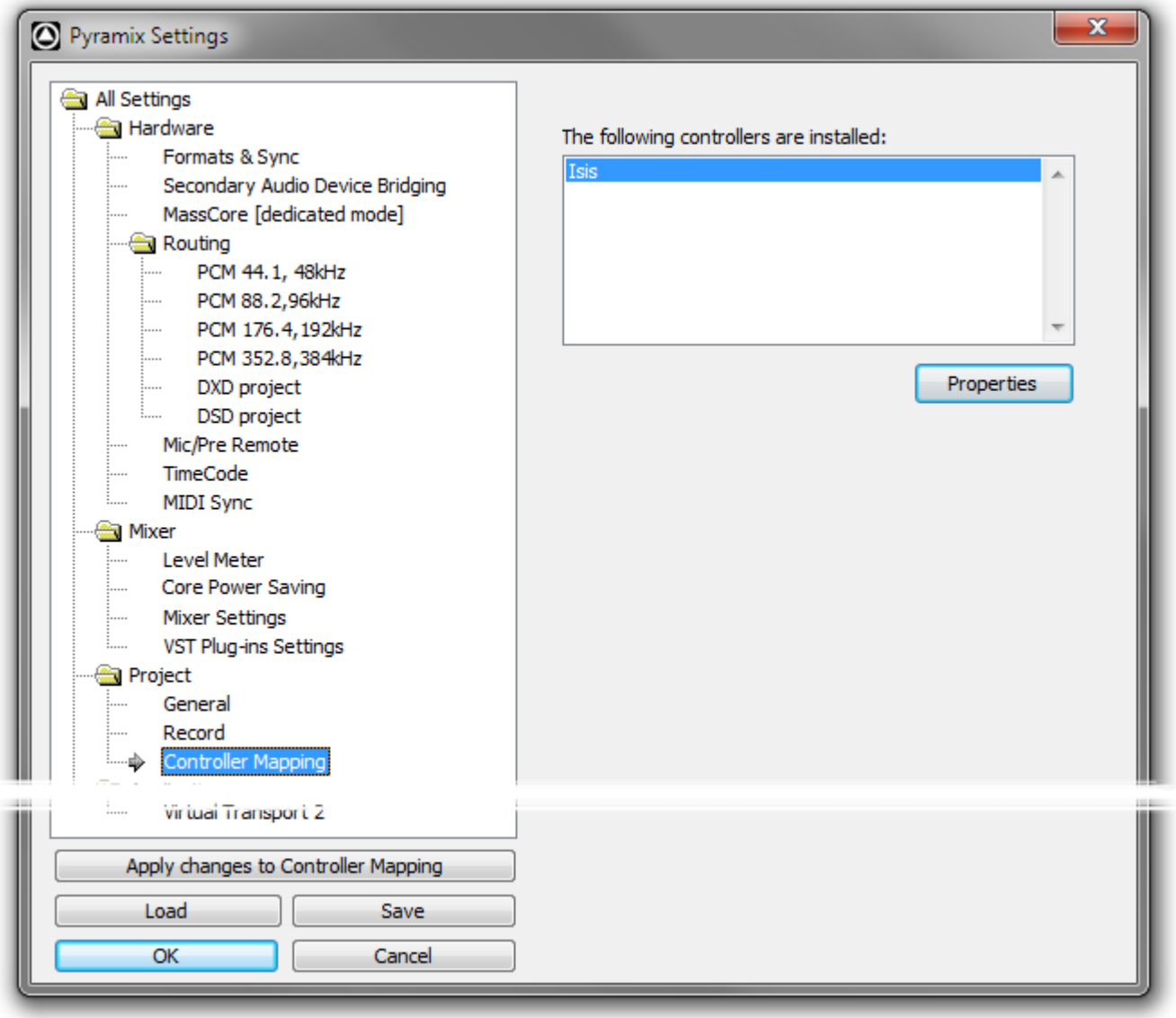
Archiving Metadata

Insert Archiving Metadata if Target is BWF

Generate Archiving Metadata XML along recorded files

Please see: Archiving Metadata on page 470

Controller Mapping

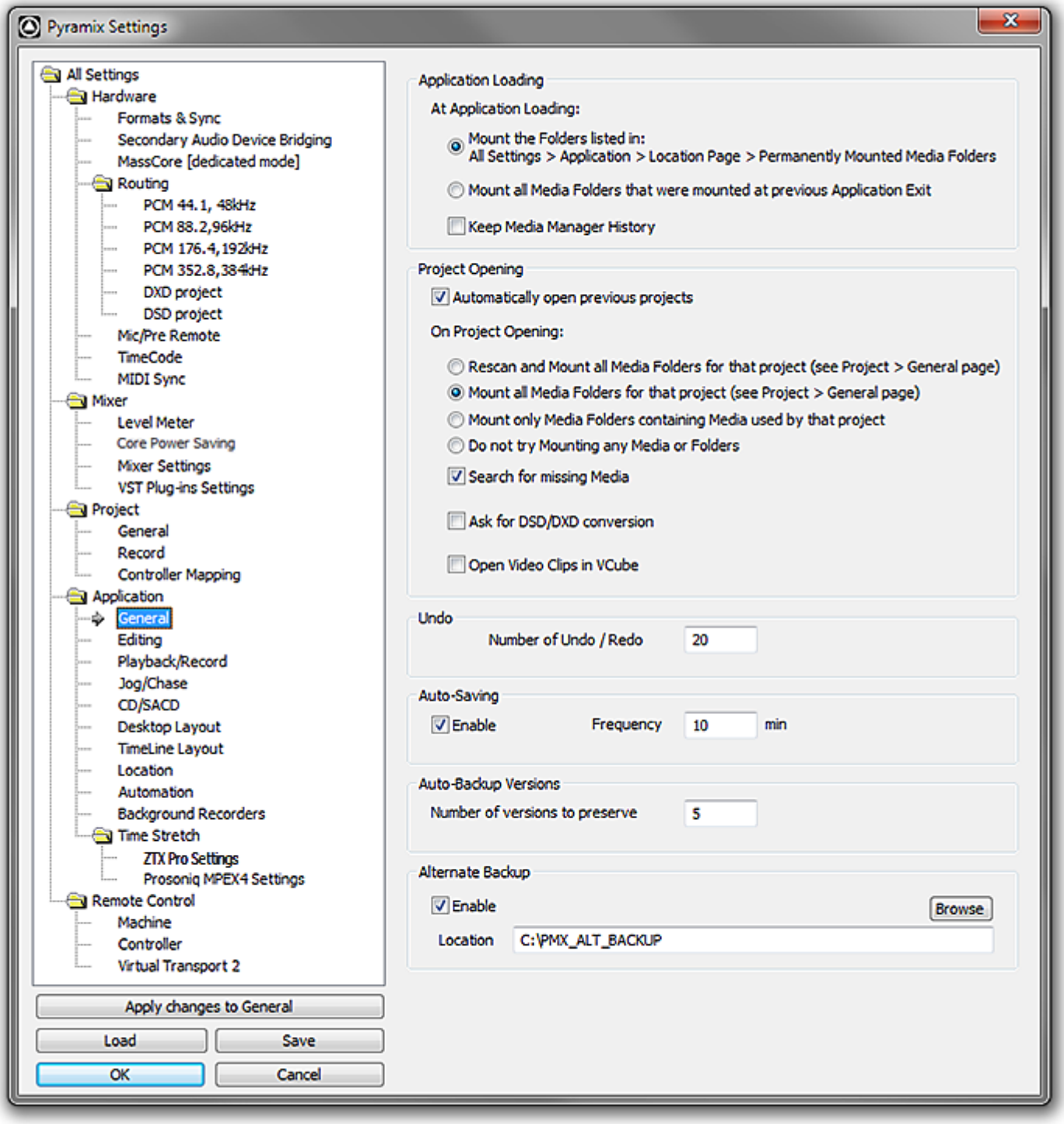


All Settings Project Controller Mapping Page

Please see Guides for specific controllers. E.g. Merging Technologies **Ramses MSC** and **ISIS** and for Sony P-2 Protocol 9-pin controllers please see: **Sony 9 - Pin Protocol Configuration (Pyramix controlled by external device) on page 810**.

Application

General



All Settings Application General Page

Application Loading

At Application Loading:

Mount the Folders listed in:

All Settings > Application > Location Page > Permanently Mounted Media Folders

Mount all Media Folders that were mounted at previous Application Exit

Keep Media Manager History

Project Opening

This section determines Pyramix behavior when the application is launched.

Automatically open previous projects

When checked, Pyramix opens all projects that were open when the application was last used.

On Project Opening:

Rescan and Mount all Media Folders for that project (see Project > General page)

Can result in long opening times when there are very large Media Folders

Mount all Media Folders for that project (see Project > General page)

Default. Usually results in the fastest opening time.

Mount only Media Folders containing Media used by that project

May be quicker than previous option when Project points to folders containing media not used in the project.

Do not try Mounting any Media or Folders

Media must be mounted manually.

Search for missing Media

When checked, Pyramix automatically searches for unmounted or missing media when a project is opened.

Ask for DSD/DXD conversion

When checked, Pyramix will open a dialog whenever a **DSD** or **DXD** Project is opened. This offers the opportunity to convert to the opposite format.

Open Video Clips in VCube

Single or multiple Video Clips are opened in VCube.

Undo

Number of Undo / Redo

Sets the **Number of Undo / Redo** levels. Also sets the number of automation versions to be kept when the **Automation** tab option, **Optimization : Limit versions to the number of Undo/Redo** is enabled. The default is 32.

Note: Increasing this value uses more RAM.

Auto-Saving

Pyramix can be set to automatically perform a save of all open projects at regular intervals. This does not create a backup unless a value in excess of 1 is entered in **Auto-Backup Versions** (see below).

Enable

When checked the current Project will be automatically saved at the interval set by:

Frequency

Sets the time between saves between 1 and 60 minutes.

Auto-Backup Versions

Number of versions to preserve

The number in the box determines how many previous versions will be kept. This ensures that every Save operation (Automatic or Manual) preserves at least one version of any projects being saved in their last stored state. The number of previously saved versions to preserve can be set by the user. The minimum is one.

Alternate Backup

Enable

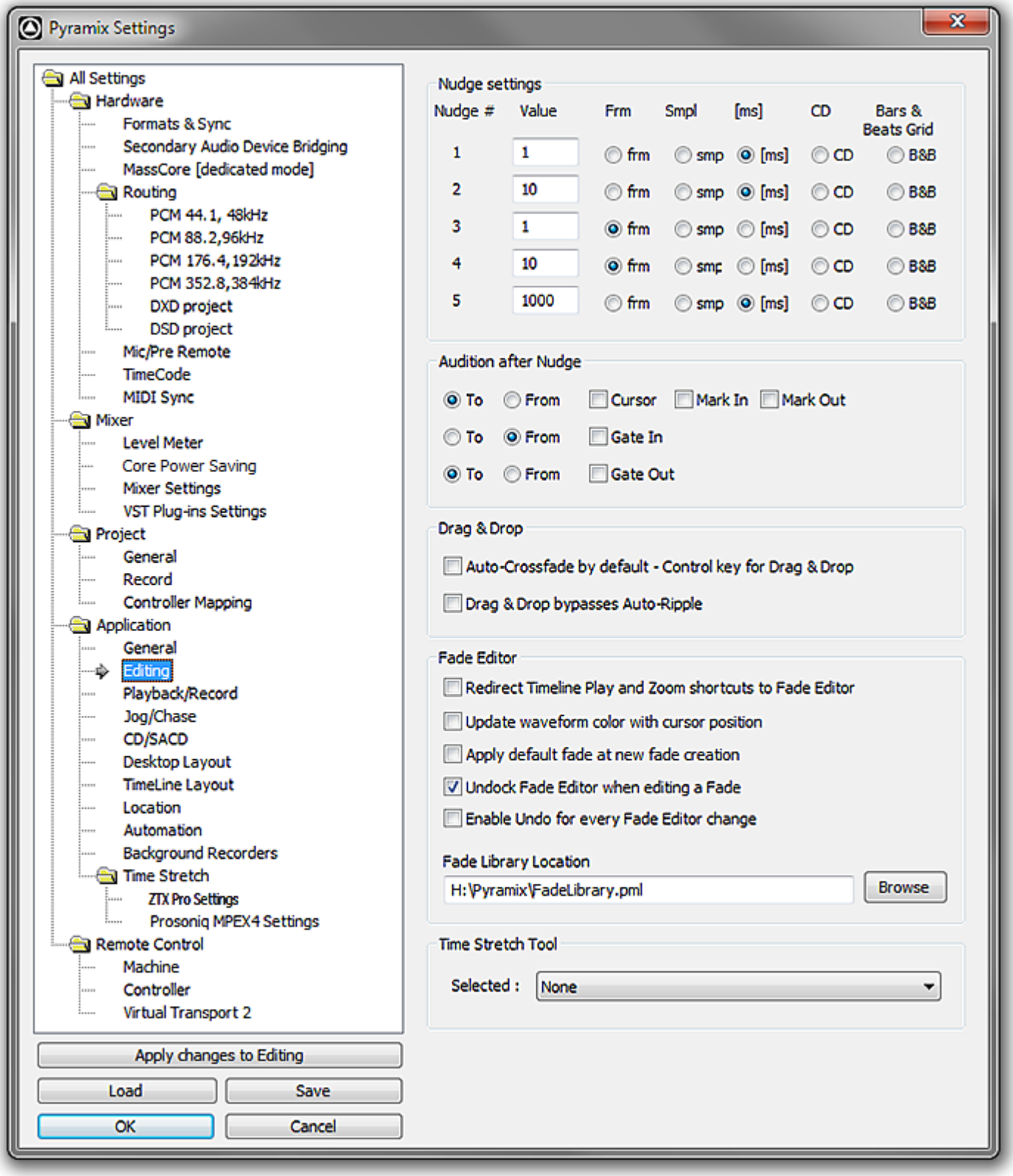
When enabled all projects saved (automatically or manually) are also saved to the chosen alternate location. The Backup Versions are not saved to the alternate location. This offers increased security if another drive or network drive is chosen.

Note: Only project files are stored into this directory, not the media files.

Location

Displays and sets the alternative location. The **Browse** button opens a Browser window to enable navigate to a suitable location.

Editing



Pyramix Settings Application Editing page

Nudge settings

These settings control the amount by which a cursor or Clip will be nudged when using the left and right Arrow keys. Five Nudge Settings can be stored. Any one of these can be selected as the current nudge setting using **Clips > Nudge > Current Setting** or **Cursors&Marks > Current Nudge Setting**.

Nudge #1~Nudge #5

For each nudge preset, enter an numeric value and click the appropriate check box to set increments to frames, samples, milliseconds, CD frames or the current Bars & Beats grid.

Audition after Nudge

These options set automatic **Audition** on for the selected actions.

To

When checked, the playback will start before the selected option and stop when this is reached (cursor, mark in or mark out)

From

When checked, the rehearse will be performed from the selected option (cursor, mark in or mark out)

Separate **To** and **From** options are provided for **Gate In** and **Gate Out**

Drag & Drop

Auto-Crossfade by default - Control key for Drag & Drop

When checked, dragging a selection or Clip over another results in a crossfade. (Cursor changes to a hand with an X.) Otherwise, dragging a selection or Clip over another overwrites it. (Cursor is a hand) Holding down the control key when dragging selects the alternate function.

Drag & Drop bypasses Auto-Ripple

When checked, dragging a selection on the Timeline to a new location does not cause a ripple to take place even when in **Auto-Ripple** mode.

N.B. If a Clip is dragged from the Media Manager over a Timeline clip a Ripple WILL result.

Fade Editor

Redirect Timeline Play and shortcuts to Fade Editor

When checked, the Timeline **Zoom** commands are redirected to the Fade editor. Also, the **Active Machine > Toggle Play/Stop** command usually mapped to the **Spacebar** is replaced with the **Fade Editor > Audition X Fade** command but only if the Fade Editor has been opened with the **Fade Editor > Open Editor** command.

Update waveform color with cursor position

When checked the waveform color will change from the default to the color set in **Settings > All Settings > Application > TimeLine Layout : Waveform Position Color** whenever the Playhead cursor is on the right-hand side of the **Reference Point** (default is centre fade position) in the Fade Editor.

Apply default fade at fade creation

When checked the default Fade In/Out default will be applied when a new fade is created.

Undock Fade Editor when editing a fade

On by default. When checked the Fade Editor Tab is automatically undocked when editing a fade.

Enable Undo for every Fade Editor Change

Fade library location

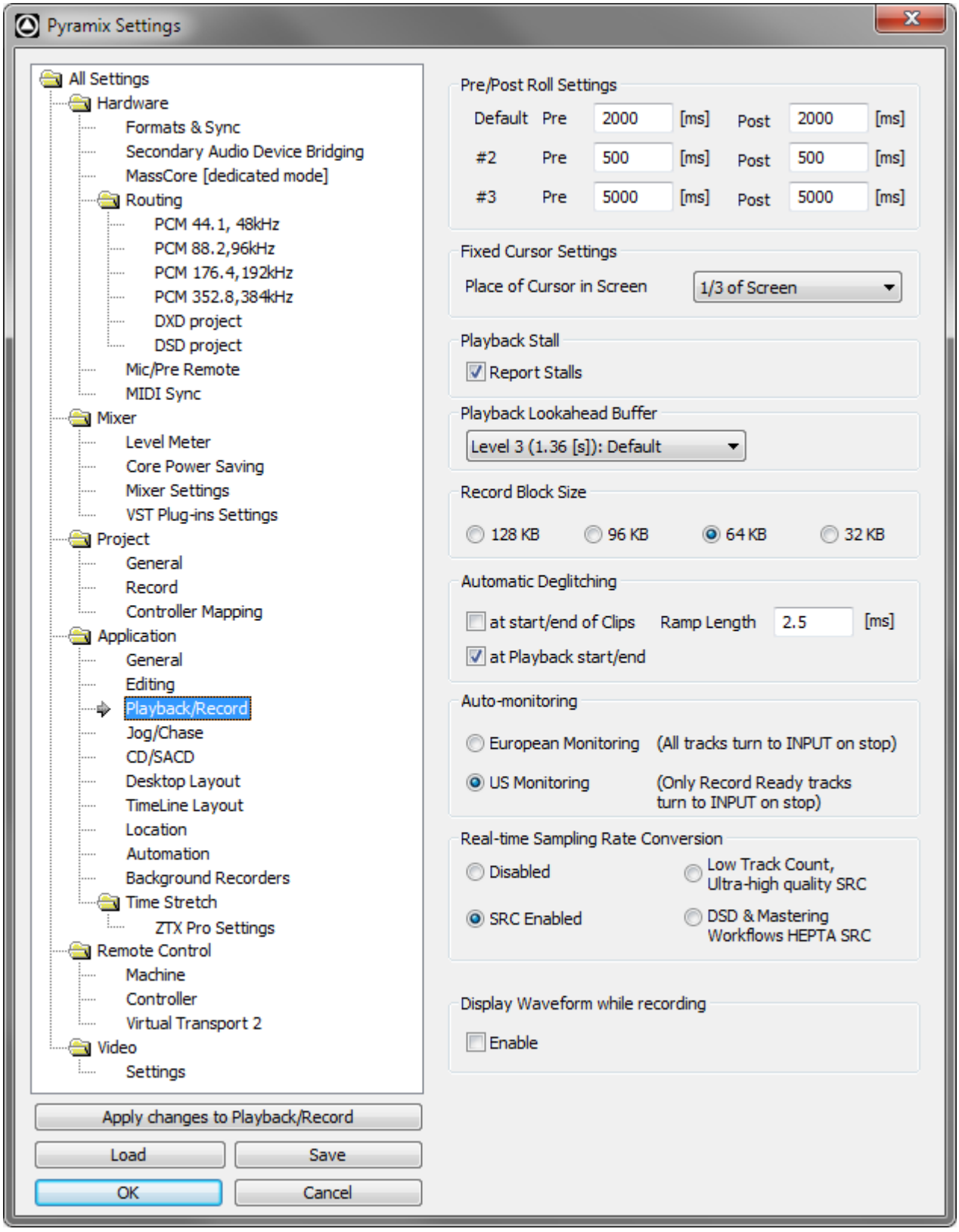
This is the path for the fade library. The **Browse** button launches an Explorer window allowing any local or network path to be set.

> **Note:** If you do decide to change the default location, copy the **FadeLibrary.pml** file from the default location to the new location and include it in the path.

Time Stretch Tool

The **Selected:** combo box offers a choice of Time Stretch algorithms depending on which keys are installed.

Playback/Record



All Settings Application Playback/Record Page

Pre/Post Roll Settings

Allows values to be set for the **Default** and two alternative Pre and Post-roll settings.

Fixed Cursor Settings

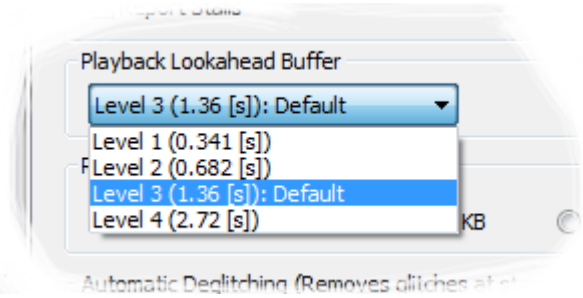
The drop-down list offers nine possible positions for the Playhead cursor position on screen when scrolling Timeline with fixed cursor is selected. (**View > Fixed Cursor while playing**)

Playback Stall

When checked, interruptions to playback will pop-up a message box with details of when the stall occurred.

Playback Lookahead Buffer

Sets the length of audio that will be pre-loaded into buffers prior to playback. Four levels are available in the drop-down list:



- Level 1 (0.341 [s])
- Level 2 (0.682 [s])
- Level 3 (1.36 [s]): Default
- Level 4 (2.72 [s]

The default value is Level **3**). A larger value may enable you to playback certain large projects. For example it can improve track count with one file per track BWF on some projects. This value should be increased gradually until behavior is as you wish.

> **Note:** The higher the **Level** the longer the PreLoad Buffer will be. The longer the Preload Buffer the greater the Memory consumption.

> **Note:** The higher the PreLoad level the longer the Playback Cursor will pause before playback commences.

The current Buffer Level is shown in the Pyramix Info bar during normal operation:

Record Block Size

Offers a choice of four possible values. Should be left at the default **64kB** in most circumstances.

Automatic Deglitching (Removes glitches at start / end of Clips)

at start/end of Clips
at Playback start/end

When the boxes are checked a short fade is applied to the **start and end** of every **Clip** and or when **Playback** is **started** or **stopped**.

Playback start/end deglitch is 64 samples long when active.

Ramp Length [ms] sets the fade duration when **at start/end of Clips** is active.

Note: If Automatic deglitching at **Playback start/end** is set to zero then high level clicks will be experienced

Auto-Monitoring

Toggles between two options:

European Monitoring (All tracks turn to INPUT on stop) (default) or

US Monitoring (Only Record Ready tracks turn to INPUT on stop)

Real-time Sampling Rate Conversion

Toggles between three options:

Disabled SRC will not be employed in real time on the Timeline. Files at sample rates not matching the Project sampling rate can still be placed in the Timeline, but will play back at the wrong speed.

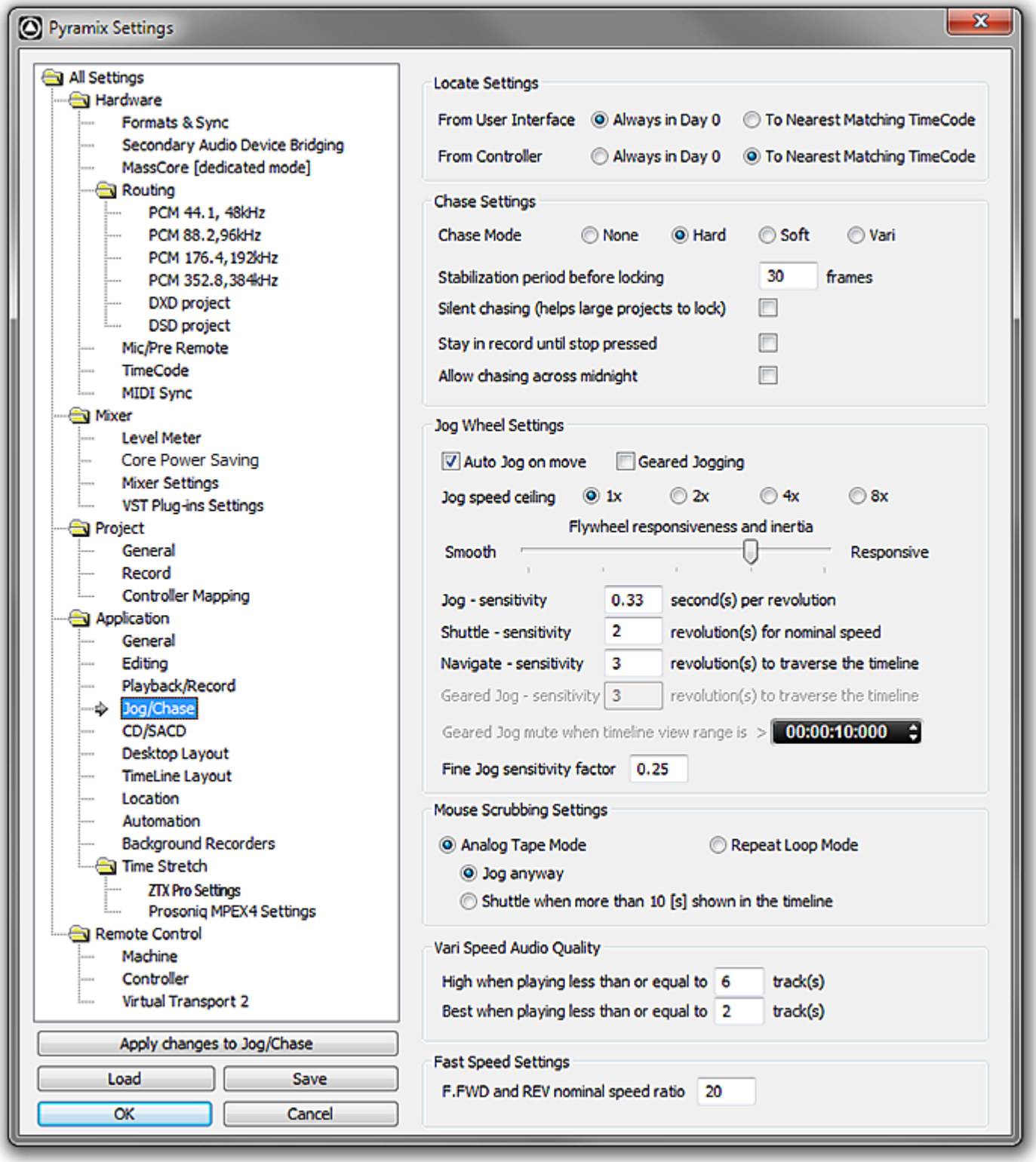
SRC Enabled SRC will be employed on the Timeline to correct the playback speed of files which do not match the Project sampling rate

Ultra High Quality SRC A more refined SRC for when even better real-time conversion is required on smaller sessions. Due to the additional processing resources required this should only be used on Projects with lower Track counts. If drop-outs occur when using this SRC, revert to **SRC enabled** as the Project is drawing too many resources to play back faithfully.

HEPTA SRC Specially designed real time SRC for use with DSD playback in DXD projects or with ultra-low track count mastering projects. This SRC should not be employed outside of these specific work flows since the processing power required will not allow for faithful playback in other scenarios.

Note: The **Hepta SRC** option **MUST** be enabled when working with DSD Media Files in a DXD Project.

Jog/Chase



All Settings Application Jog/Chase Page

Locate Settings

The radio buttons determine how Pyramix will locate. I.e. only within the current TimeCode day (0) or to the nearest iteration of the target TimeCode. (Which may be in Day -1 or +1).

From user Interface

Always in Day 0 Default selection. Retains V7.1 behavior.

To Nearest Matching TimeCode

From Controller

Always in Day 0

To Nearest Matching TimeCode Default selection. Retains V7.1 behavior.

Chase Settings

Chase Mode

The radio buttons give a choice of Chase Mode

None	Pyramix does not chase external TimeCode
Hard	When **Hard Chase** is active, Pyramix will only playback when valid TimeCode is detected on the chosen TimeCode input port. If there is a jump in the incoming TimeCode, Pyramix will adjust to the new TimeCode, re-synchronize and begin playback from the new TimeCode position. Pyramix will run on its own internal TimeCode for up to 1 frame if there is a drop out in the time code. If no valid TimeCode is detected after that time, playback will stop.
Soft	When **Soft Chase** is active, Pyramix will only playback when valid TimeCode is detected on the chosen TimeCode input port. If there is a jump in the incoming TimeCode, Pyramix will not adjust to the new TimeCode, but will continue playback with an offset from the incoming TimeCode position. Pyramix will continue to run on its own internal TimeCode for up to 1 frame if there is a drop out in the TimeCode. If no valid TimeCode is detected after that time, playback will stop.
Vari	When the **Vari Chase** is active, Pyramix will Varispeed, I.e. alter its sampling rate to follow fluctuations in an external TimeCode. (going back and forth, slowing down, accelerating, playing normally or backwards, up to 8x nominal speed) while in playback (not in record)

Stabilization period before locking

Although Pyramix is capable of locking to incoming TimeCode within 3 - 4 frames, there are cases where synchronization is more stable if there is a longer waiting time. This is because some external devices take a considerable time to stabilize their speed after playback is started. This parameter allows a waiting time to be defined before Pyramix will start chasing the TimeCode. 30 frames is a good starting point if you experience problems with external machines.

Silent Chasing (helps large projects to lock)

When checked Pyramix allows large projects to lock immediately while chasing. In this mode locking time does not depend on the number of Tracks. The drawback is that sound only appears one second after a lock is established.

Stay in record until stop pressed

If this box is checked Pyramix will remain in record (once properly locked to TimeCode) regardless of disturbances / discontinuities in the code until the Pyramix **Stop** button is pressed.

Allow chasing across midnight

When this option is unchecked the Chase engine always locks between 00:00:00:00 and 23:59:59:2X of Day 0

When this option is checked the Chase engine allows locking anywhere in the Pyramix timeline (-1000 days to +1000 days). The engine interprets the incoming timecode to be the nearest position to the current cursor position, thus allowing chasing around midnight of any days of the timeline.

For additional security and comfort, if Pyramix is in the "locked" state while crossing the midnight barrier, then even with this setting unchecked setting, there will not be an immediate jump from midnight back to zero while playing or recording in sync. The playback or recording will remain seamless, uninterrupted and cross the day barrier until an out-of-lock status is recognized. Only then is a re-chase triggered to whatever the incoming Timecode value is at that point.

Jog Wheel Settings

Auto Jog on move

When checked moving the jog-wheel enters **Jog** mode. When **Auto-Jog** is enabled, all Jog Commands are processed a slightly different way. Pyramix temporarily stops chasing and starts Jogging while sending Goto com-

mands to the External Machine. The audio is therefore perfectly scrubbed and the external machine follows the audio as well as it possibly can. When the user stops Jogging, Pyramix automatically returns to chase mode.

Geared Jogging

When checked the jog wheel "gearing" I.e. the amount you have to turn the wheel for a given amount of cursor movement is related to the current Zoom level.

Jog Speed ceiling

Sets the maximum jog speed from a choice of **1X**, **2X**, **4X** or **8X** play speed

Flywheel responsiveness and inertia

Responsive follows the actual movements as sent by the jog wheel. **Smooth** passes the actual movement through a smoothing filter. So, when the slider is set to **Responsive** the **Smoothing Filter** parameters have no effect.

For sound to picture work where tight sync to picture is required use a setting biased to **Responsive**. For a more pronounced flywheel effect choose a **Smooth**er setting.

The Middle position is a good starting point.

Jog - sensitivity [0.33] second(s) per revolution

Sets the time moved in one revolution of the jog wheel. Type the required value in the box.

Shuttle - sensitivity [2] revolution(s) for nominal speed

Sets the fraction of a revolution or number of revolutions required to maintain nominal speed. E.g. an entry of 0.25 will require a quarter of a turn clockwise to achieve nominal speed.

Navigate - sensitivity [3] revolution(s) to traverse the timeline

Navigate is silent jog mode. Sets the number of revolutions of the jog wheel required to traverse the visible timeline. I.e. the actual speed varies with the zoom setting.

Geared Jog mute when timeline view range is > 00:00:10:00

Audio will be muted when the TimeLine view range exceeds the value in the register.

Fine Jog sensitivity factor [ ]

Sets the fraction of the regular Jog Sensitivity Setting that will be invoked when **Fine Jog** is selected in the **Machines > Controllers** menu

Mouse Scrubbing Settings

Gives a choice between **Analog Tape Mode** with two options or **Repeat Loop Mode**

Analog Tape Mode gives a similar response to 'reel-rocking' on an analogue tape machine.

Jog anyway

When lit, **Jog Mode** is used regardless of how much audio is visible in the **Timeline**

Shuttle when more than 10 [s] is shown in the Timeline

When lit, if there is more than 10 seconds of audio visible in the Timeline scrub will be in **Shuttle Mode**

Repeat Loop Mode continuously repeats a short loop starting at the cursor position.

Vari Speed Audio Quality

High when playing less than of equal to [6] track(s)

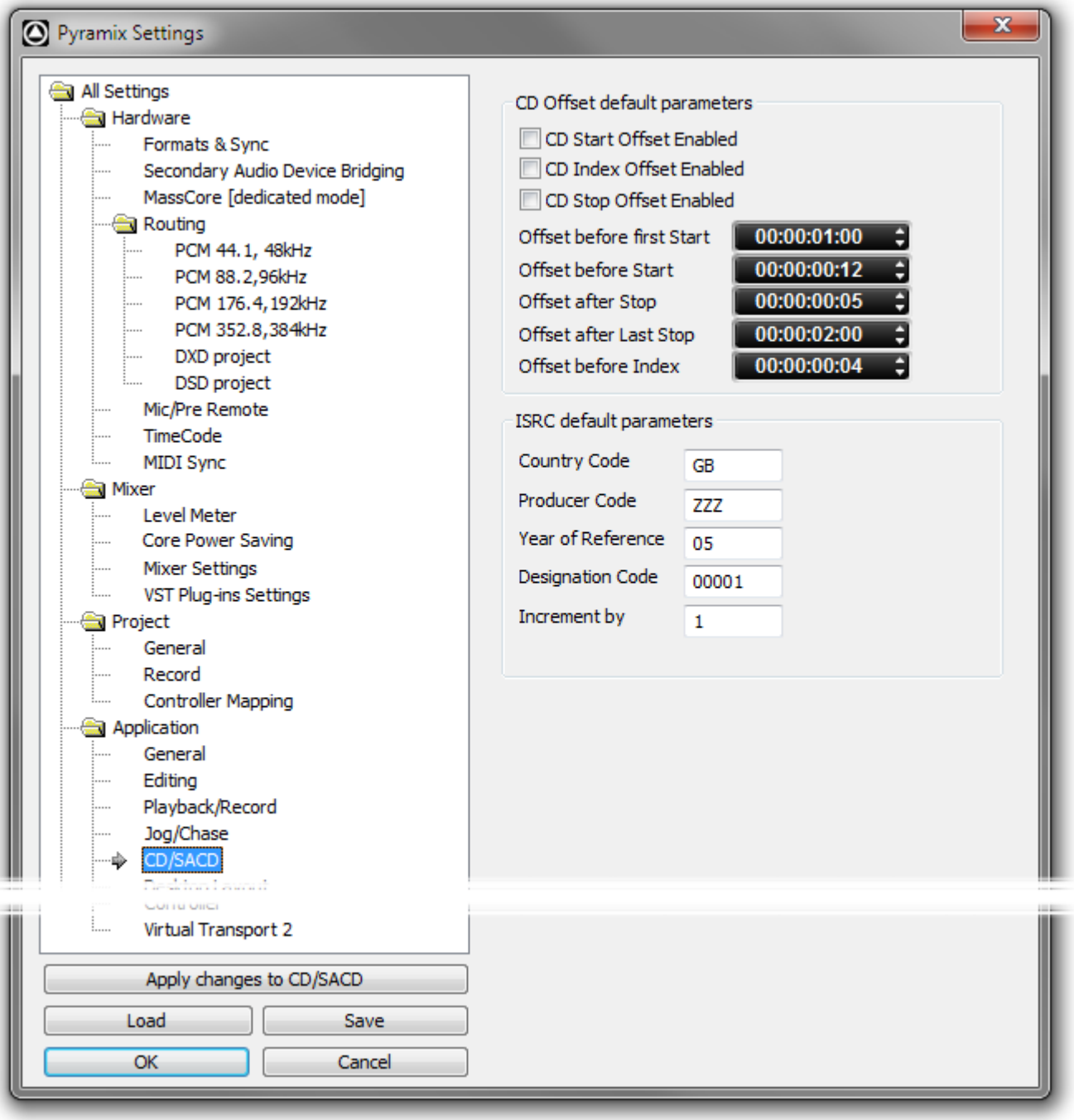
Best when playing less than or equal to [2] track(s)

Fast Speed Settings

F.FWD and REW nominal speed ratio [20]

Type in the box to set the nominal **F.FWD** and **REW** speed. (I.e. a value of **20** means 20 times sync play speed)

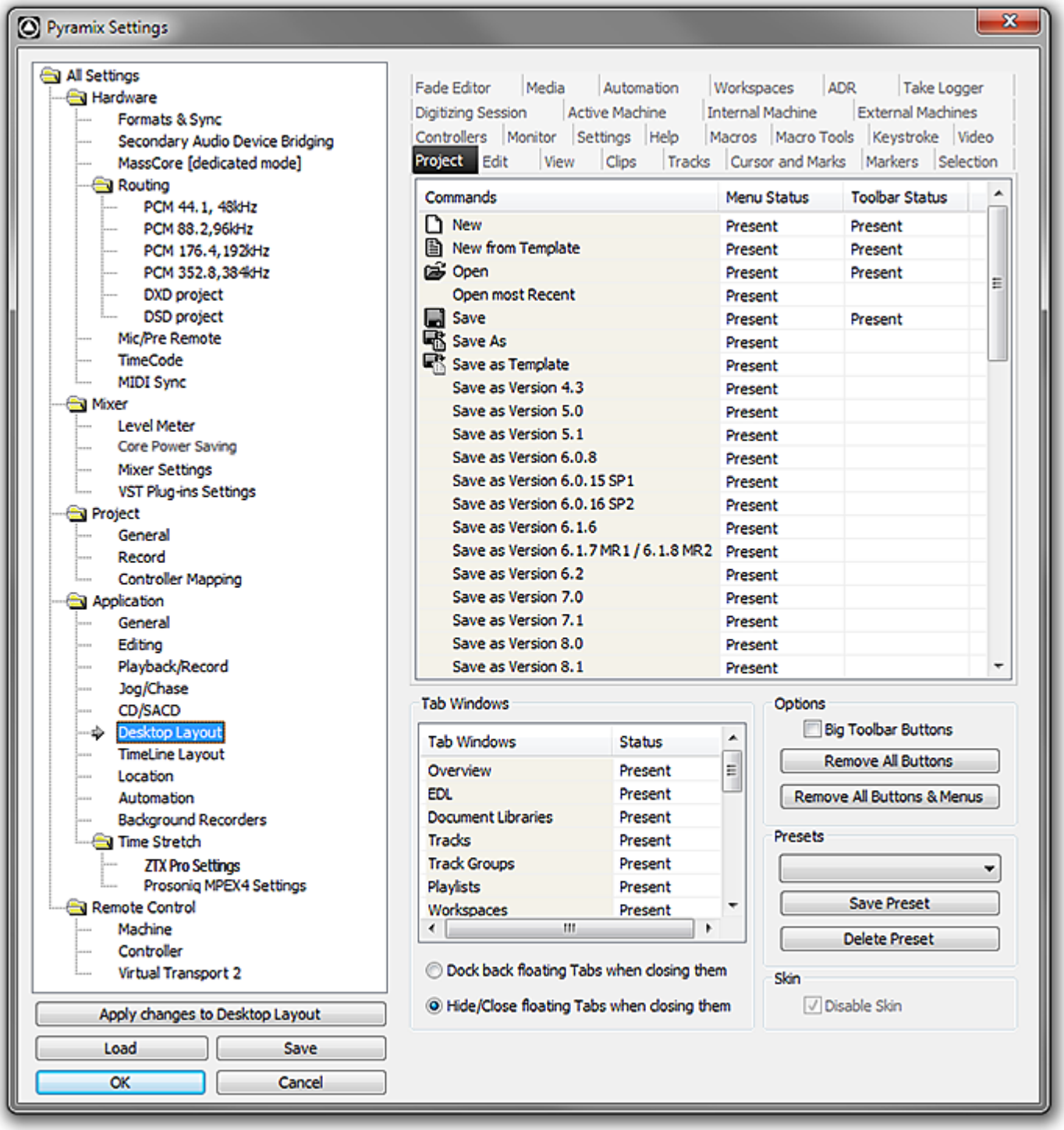
CD/SACD



All Settings Application CD/SACD Page

Please see: CD/SACD Default Settings on page 636

Desktop Layout



All Settings Application Desktop Layout Page

This is where you can customize the content of **Menu**s and **Toolbar**s. Clicking in the **Menu Status** and **Toolbar Status** cells toggles each entry **Present** or blank (absent). This can be used to tailor the user interface for specific tasks or operators.

Tab Windows

Clicking in the **Status** cells toggles each **Tab Window** entry **Present** or blank (absent).

Dock back floating Tabs when closing them as it says. Toggles with:

Hide/Close floating Tabs when closing them

Options

Big Toolbar Buttons Doubles the size of the Toolbar buttons when checked.

Remove All Buttons As it says - use with extreme caution.

Remove all Buttons and Menus Likewise - leaves a limited number of essential menu entries

Presets

The combo box offers a choice of previously saved **Presets**

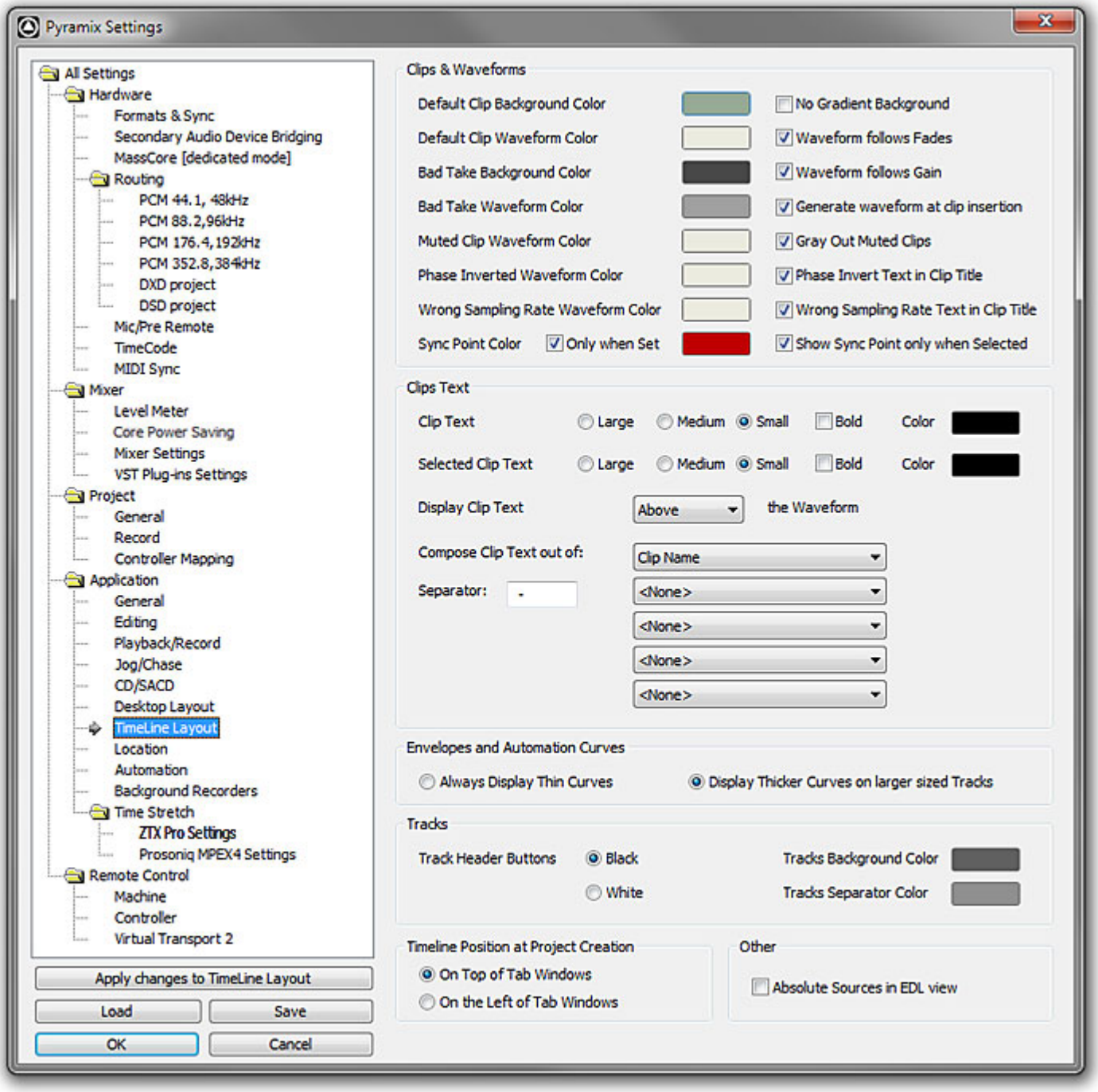
Save Preset Pops up a simple **Save Preset** dialog

Delete Preset Deletes the preset currently shown in the **Presets** combo box above.

Skin

Disable Skin Only applicable to Windows XP based systems. When ticked, reverts to earlier "look". This may be useful to improve performance on certain (older) systems.

TimeLine layout



All Settings Application Timeline Layout Page

For all the color options, clicking on the colored block pops up a list of defined colors. At the bottom of the list selecting **More Color...** opens a full **Color** picker dialog.

Clips and Waveforms

Default Clip Background Color

No Gradient Background

When checked **Clip Background** color is solid.

Default Clip Waveform Color

Waveform follows Fades

When checked the waveform display is scaled in height during fades and crossfades. The original waveform is shown grayed out.

Bad Take Background Color

Waveform follows Gain

When checked the waveform display is scaled in height to follow Gain changes. The original waveform is shown grayed out.

Bad Take Waveform Color

Muted Clip Waveform Color

Phase Inverted Waveform Color

Wrong Sampling Rate Waveform Color

Sync Point Color

Generate Waveform at Clip insertion When checked Waveform display is generated when the Media File is placed on the Timeline.

Gray Out Muted Clips When checked Muted Clips are grayed out in the Timeline.

Phase Invert Text in Clip Title When checked Phase Invert is shown in the Clip Title when the Clip phase is inverted.

Wrong Sampling Rate Text in Clip Title When checked Wrong Sampling Rate is shown in the Clip Title when the Clip phase is inverted.

Only when set When checked, means that **Sync Point**s are only visible when set somewhere other than the default position at the beginning of the Clip.

Show Sync Point only when selected When checked the **Sync Point**(s) is/are displayed only when the Clip(s) are selected.

Clips Text

Clip Text Font Size The radio buttons offer a choice of **Large**, **Medium** or **Small** and the **Bold** check box em**Bold**ens.

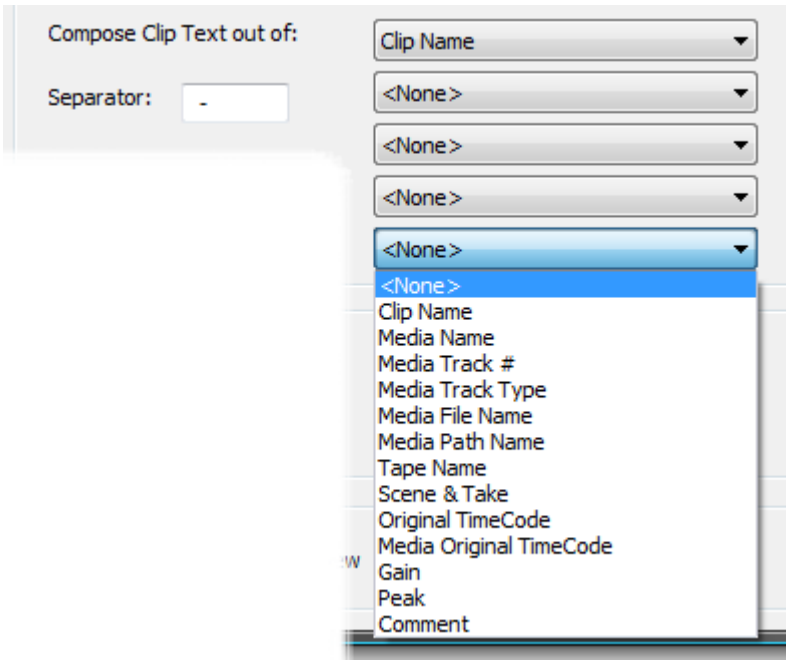
Clip Text Color

Selected Clip Text Font Size The radio buttons offer a choice of **Large**, **Medium** or **Small** and the **Bold** check box em**Bold**ens.

Selected Clip Text Color

Display Clip Text The combo box offers a choice of **Above**, **Below**, **In Front Of** or **Behind the Waveform**

Compose Clip Text out of: The Clip text displayed can consist of up to five elements chosen from the five combo boxes, separated by the character typed in the **Separator** box:



Compose Clip Text out of : combo box

Envelopes and Automation Curves

Always Display Thin Curves When checked, curves are always shown “thin” as in previous versions.

Display Thicker Curves on Tracks with larger size When checked, curves are displayed thicker on Tracks with increased Track height.

Tracks

Track Header Buttons **Black** Toggles

White

Tracks Background Color

Tracks Separator Color

Timeline Position at Project Creation

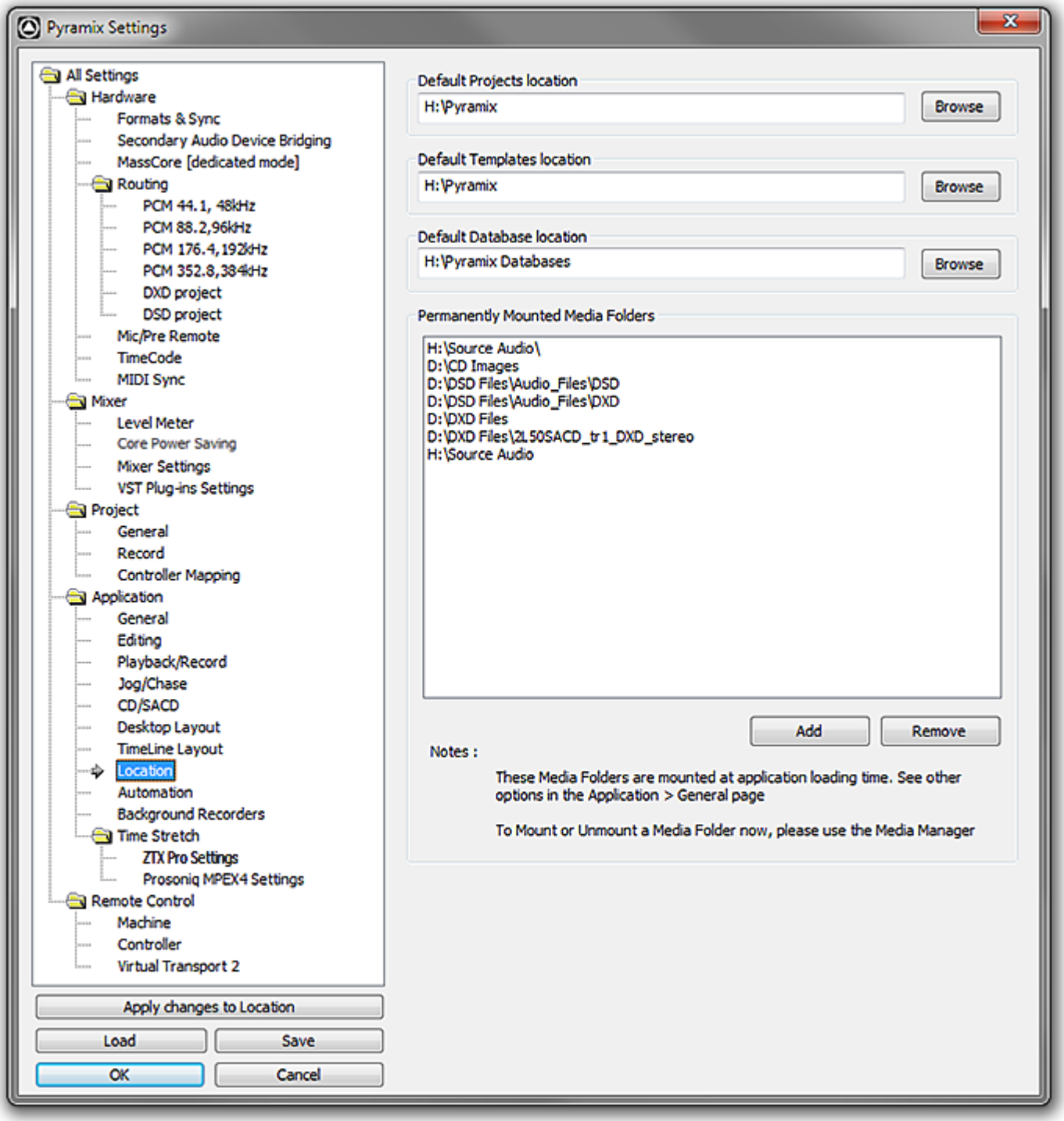
On Top Of Tab Windows Radio buttons toggle between this and:

On the Right of Tab Windows Provided to allow for good use of dual monitors. Check this box when using a dual monitor set-up to enable the Timeline to be displayed on one screen and all Tab Windows on the other one.

Other

Absolute Sources in EDL View When checked, the original **Source In**, **Source Out** and **Sync Point** times are shown in Absolute Time in the EDL View. Absolute time is the incoming TimeCode recorded at the audio capture. When this mode is disabled, the default start time of TimeCode for the captured Clip is **00:00:00:00**.

Location



All Settings Application Location Page

Default Projects Location

This path is set when a new Project Workspace is created. It can be changed here either by typing the path into the box or browsing the Windows filing system using the **Browse** button

Default Templates Location

This path is set when Pyramix is installed. It can be change here in the ways described above.

Default Database Location

This path is set when Pyramix is installed. It can be change here in the ways described above.

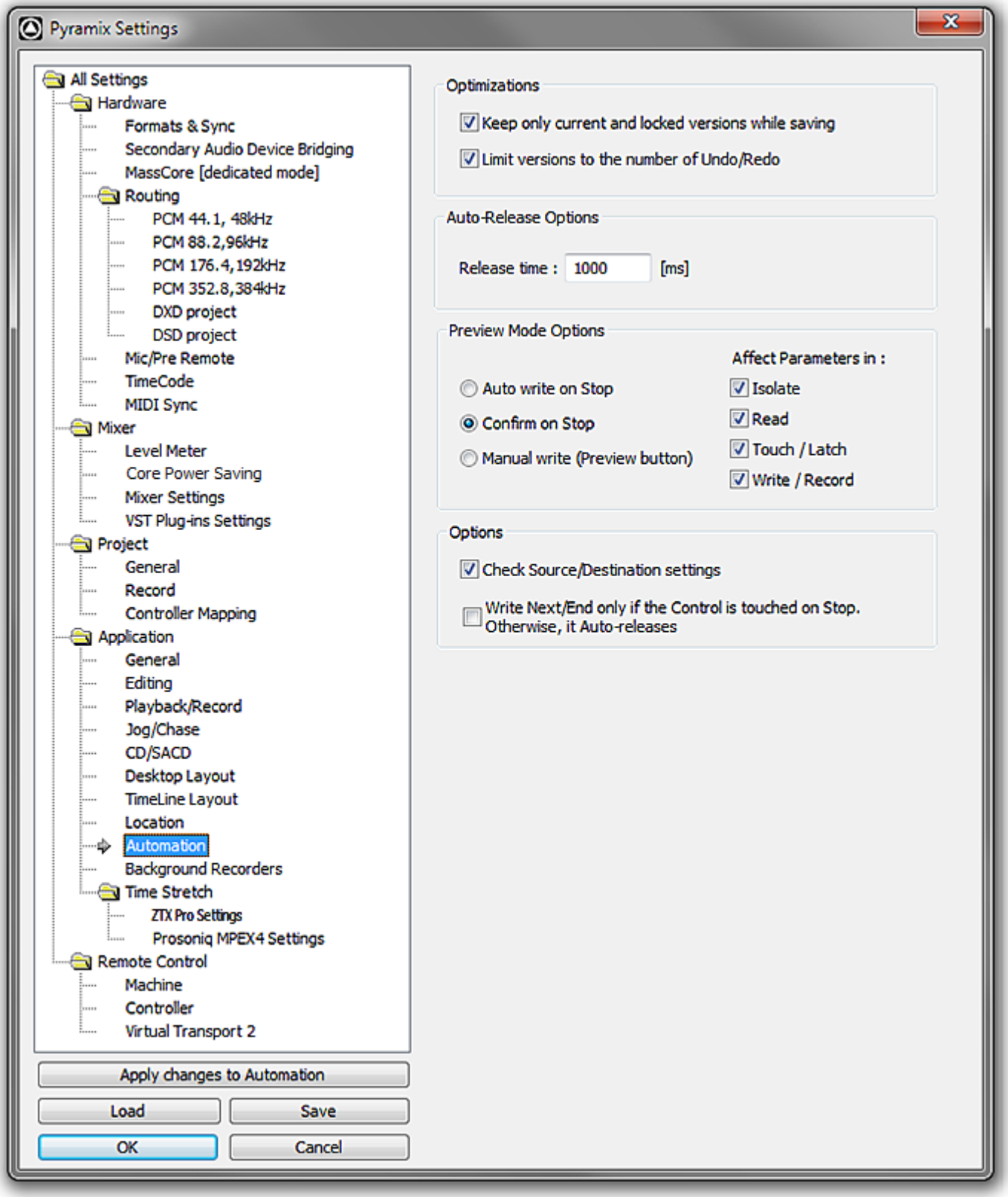
Permanently Mounted Media Folders

Shows a list of Media Folders available to all projects. Clicking **Add** opens the **Choose a Media Folder to Mount** window. Here you can browse for Folders or create new ones.

Folders are removed by highlighting their list entry and clicking the **Remove** button.

Note : these folders are mounted at application loading time. See other options in the **Application > General** page

Automation



All Settings Application Automation Page

Optimizations

Keep only current version while saving when checked does as it says

Limit versions to the number of Undo/Redo when checked does as it says. Number of **Undo/Redo**s is defined in the **Settings > All Settings > Application General** page.

Auto-Release Options

Release time If **Auto Release** is enabled any control will, when released or when the transport is stopped, return to its value or state in the previous automation pass or the default where no previous pass exists. This occurs either immediately if the control only has two states (e.g. a button) or over a period of time if the control is a fader or knob. The time period is determined by the value entered in the Release Time box in ms.

Preview Mode Options

The selections here affect actions in Automation Preview Mode.

Auto write on Stop Automation goes into Auto write mode when a Preview pass is stopped.

Confirm on Stop A confirmation dialog pops-up when a Preview pass is stopped.

Manual write Clicking on the Preview button writes the Preview pass.

Affect Parameters in :

Isolate When checked, parameters are affected in Isolate mode.

Read When checked, parameters are affected in Read mode.

Touch / Latch When checked, parameters are affected in Touch /Latch mode.

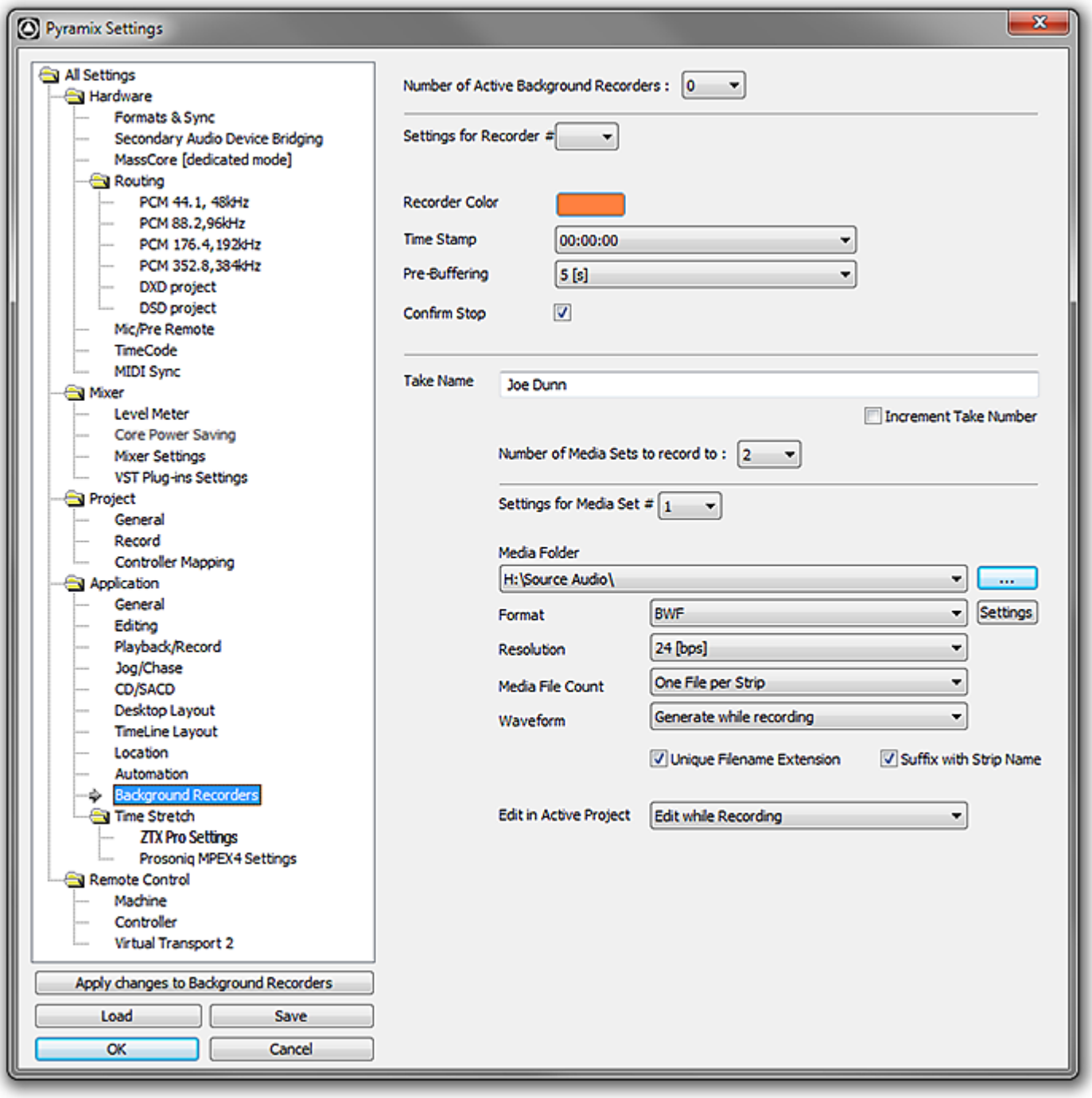
Write / Record When checked, parameters are affected in Write / Record mode.

Options

Check Source/Destination settings When enabled (default) verifies the project when it is opened and ensures that the **Automation > Automation Tracks : Master Controls Link** setting is set to **Master Controls are linked to any Track**.

Write Next/End only if the Control is touched on Stop. Otherwise it Auto-releases

Background Recorders



All Settings Application Background Recorders page

Number of Active Background Recorders The drop-down list offers the choice of: **0**, **1**, **2**, **3** or **4**.

Settings for Recorder # The drop down list offers the choice of any of the Background Recorders specified in **Number of Active Background Recorders**. Settings made in the rest of the page will affect the Recorder selected here ONLY.

Recorder Color Clicking on the button pops-up a box with four colors and **More Color...** Selecting **More Color...** opens a standard Color Picker dialog. The color chosen for the Recorder here is reflected in the recorder's associated Mixer, in the Transport Control Panel and the color of resultant Clips in the Timeline. (The button displays the color selected currently.)

Time Stamp The drop-down list offers the choice of **00:00:00** (I.e. the recorded media files will be time-stamped according to elapsed time from the start of recording.) or with **Time of Day** according to the PC internal clock. (Time Stamp will be incoming TimeCode when in Chase mode.)

Pre-Buffering The drop-down list offers the choice of: **0[s]**, **5[s]**, **10[s]**, **20[s]** or **30[s]**. This setting determines how much audio is recorded *before* recording is initiated.

Confirm Stop When checked a confirmation dialog is displayed when **Stop** is pressed. (Default **Off**)

Take Name Type a name here which will be applied to ALL media files recorded by the selected Recorder.

Increment Take Number When checked a number is added to each media file name for each take and is incremented on subsequent takes. (default **On**)

Number of Media Sets to record to : The drop-down offers the choice of **1** or **2**.

Settings for Media Set # The drop down list offers the choice of either Media Set **1** or **2** if **2** is specified in **Number of Active Media Sets to record to :**. Settings made in the rest of the page will affect the Media Set selected here ONLY.

Media Folder The drop-down list offers the choice of any Media Folder mounted currently.

... button Clicking on the **...** button opens the **Choose a media folder to mount** dialog. This enables a folder to be selected or created on any storage device accessible to Pyramix.

Format The drop-down offers the choice of **BWF** or **MTFF**.

Resolution The drop-down list offers the choice of: **32[bps]**, **24[bps]** or **16[bps]**.This setting applies to BOTH Media Sets where two are specified and the setting is grayed out for the second Media Set.

Media File Count The drop-down list offers the choice of: **Single Media**, **One File per Track** or **One File per Strip**.

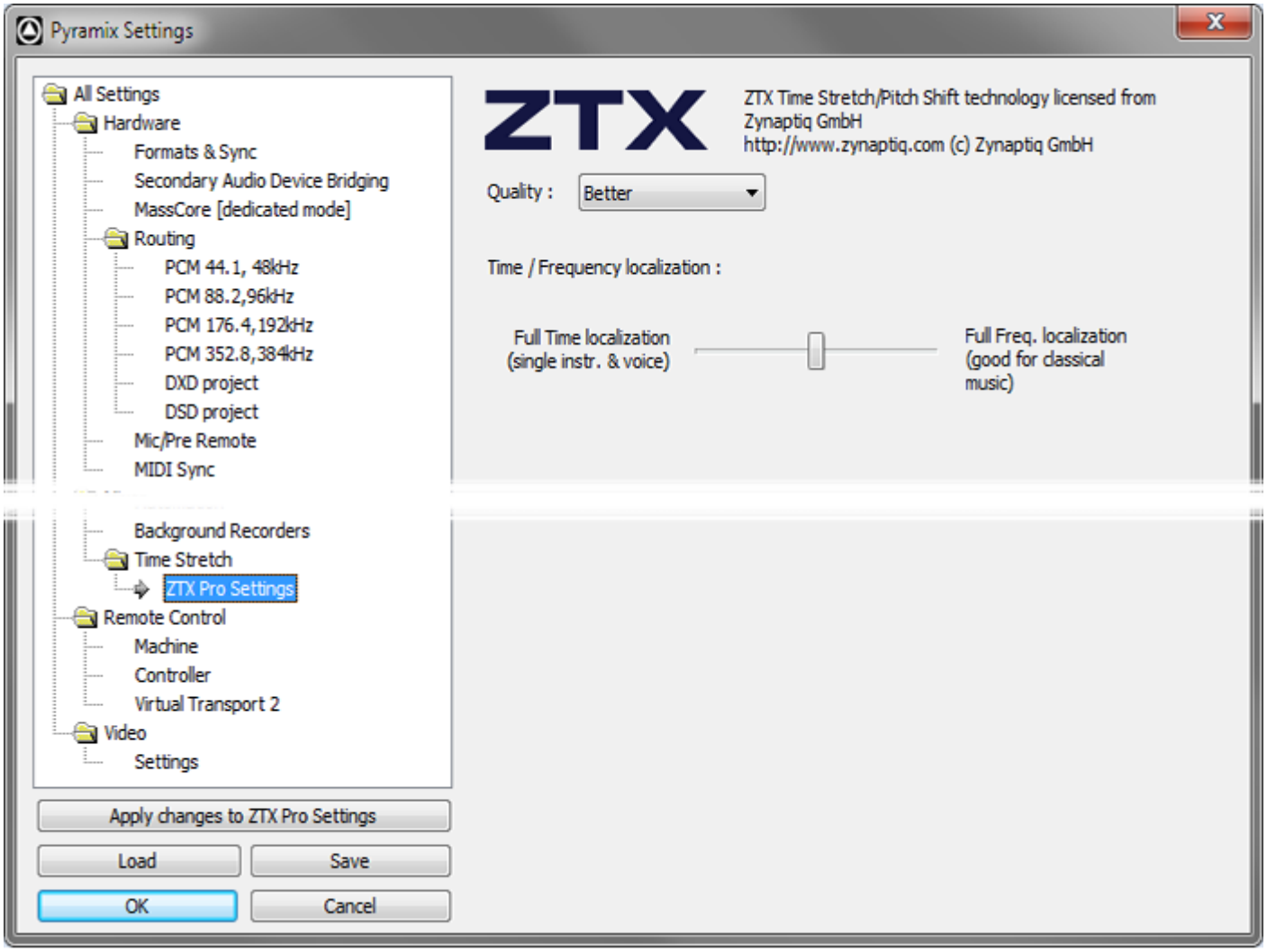
Waveform The drop-down list offers the choice of **None** or **Generate while recording**.

Edit in Active Project The drop-down list offers the choice of: **No**, **Edit while Recording** or **Edit at End of Recording**.

Please click here to return to **Background Recorders on page 149**

Time Stretch

ZTX Pro Settings

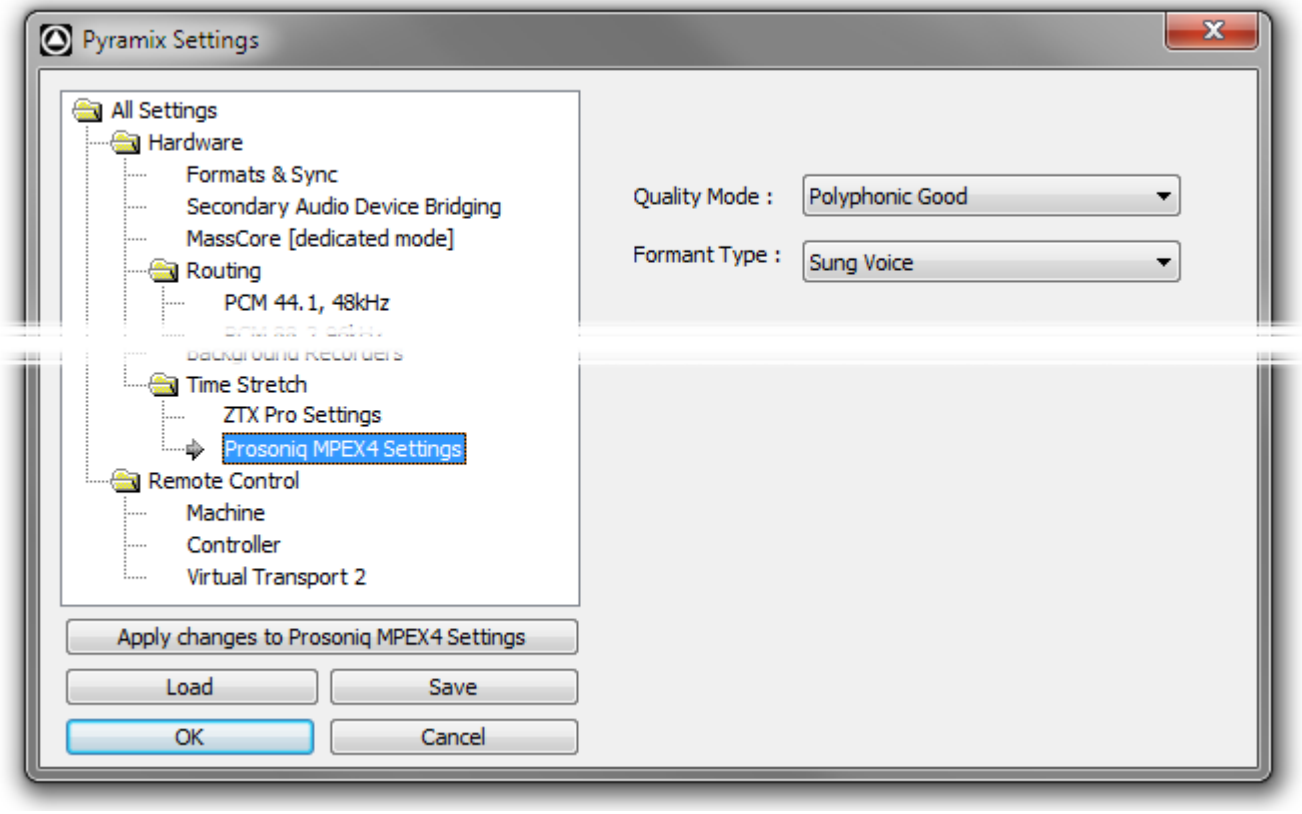


All Settings > Application > Time Stretch > ZTX Pro Settings Page

Quality: The drop-down list offers the choice of **Good**, **Better** or **Best**

Time / Frequency localization: The slider enables the processing bias to be altered between **Full Time localization (single instr. & voice)** and **Full Freq. localization (good for classical music)**

Prosoniq MPEX4 Settings

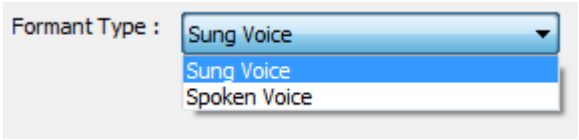


All Settings Application Time Stretch Prosoniq MPEX4 Settings Page

Optimize **MPEX4 Settings** by making appropriate choices from the **Quality Mode** and **Formant Type** combo boxes.

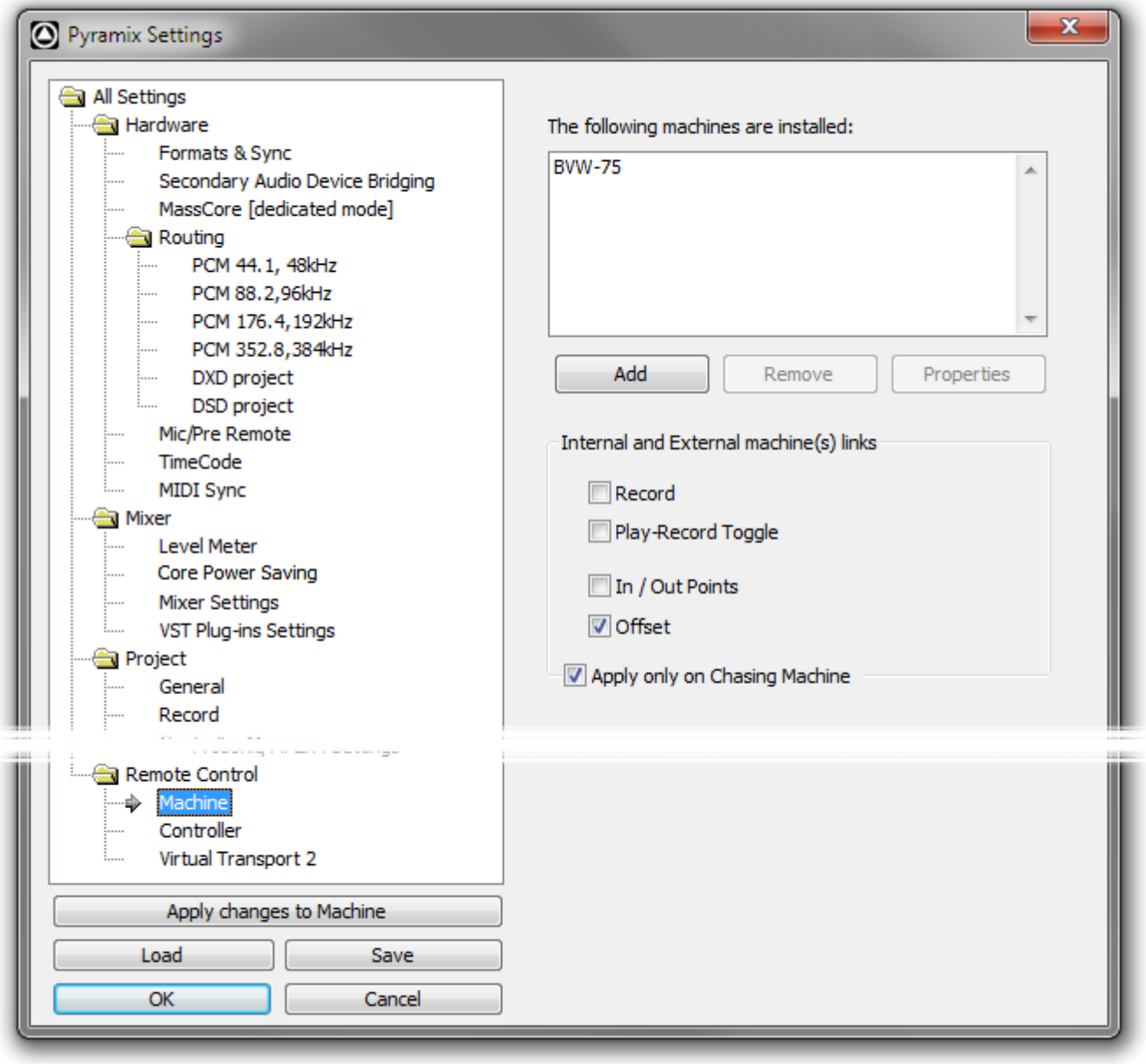
Quality Mode

Formant Type



Remote Control

Machine



All Settings Remote Control Machine Page

The following machines are installed:

Displays a list of all installed machines. Machines in this list will be available as possible machine choices in the Transport Control.

Internal and External machine(s) links

The buttons determine which machine functions will be linked. Simply tick the boxes to link any or all of the following functions for all active machines:

Play and Record

Play-Record Toggle

In / Out Points

Offset

Apply only on Chasing Machine — When ticked the links are only applicable to machines currently in Chase mode.

Add

Clicking on the **Add** button opens the **Machine Properties** dialog box (see below)

Remove

If a machine is selected (highlighted) in the list, clicking **Remove** uninstalls the machine and removes it from the list.

Properties

Clicking on the **Properties** button opens the **Machine Properties** dialog box (see below)

OK

Click OK to accept changes (if any) and close the Machines page.

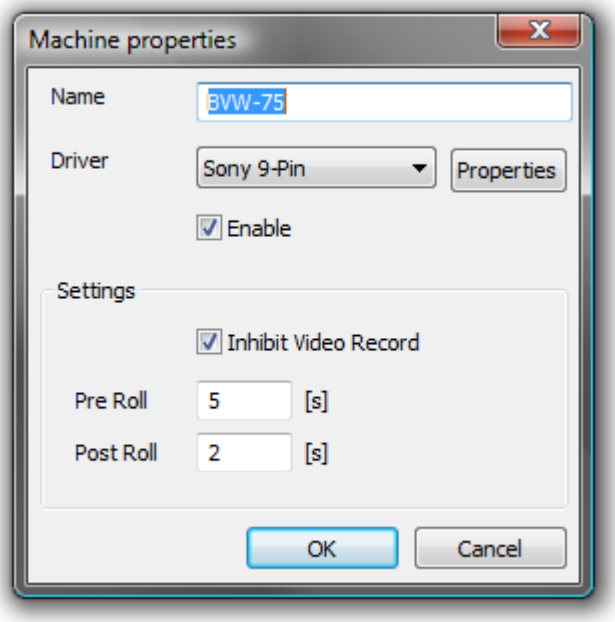
Cancel

Click Cancel to reject changes (if any) and close the Machines page.

Apply

Click Apply to apply changes without closing the Machines page.

Machine Properties



Machine Properties dialog

When the **Machine Properties** dialog is opened by the **Add** button, the **Name**, **Protocol** and **Port** displays are blank. When the dialog is opened by the **Properties** button the displays reflect the name etc. for the selected machine.

Name

Displays the name of the current selected machine. When adding a new machine, type a suitable name here.

Driver

Displays the current interface protocol **Sony** (9-pin P2 protocol) in the drop-down list. (Currently Sony only)

Driver - Properties

Opens the **Sony 9 - Pin Protocol Configuration** dialog box (see below) when **SONY** is selected. There are currently no options for **MMC**

Settings

Inhibit Video Record

When checked prevents record arming of video in order to ensure video cannot be accidently overwritten.

Pre Roll

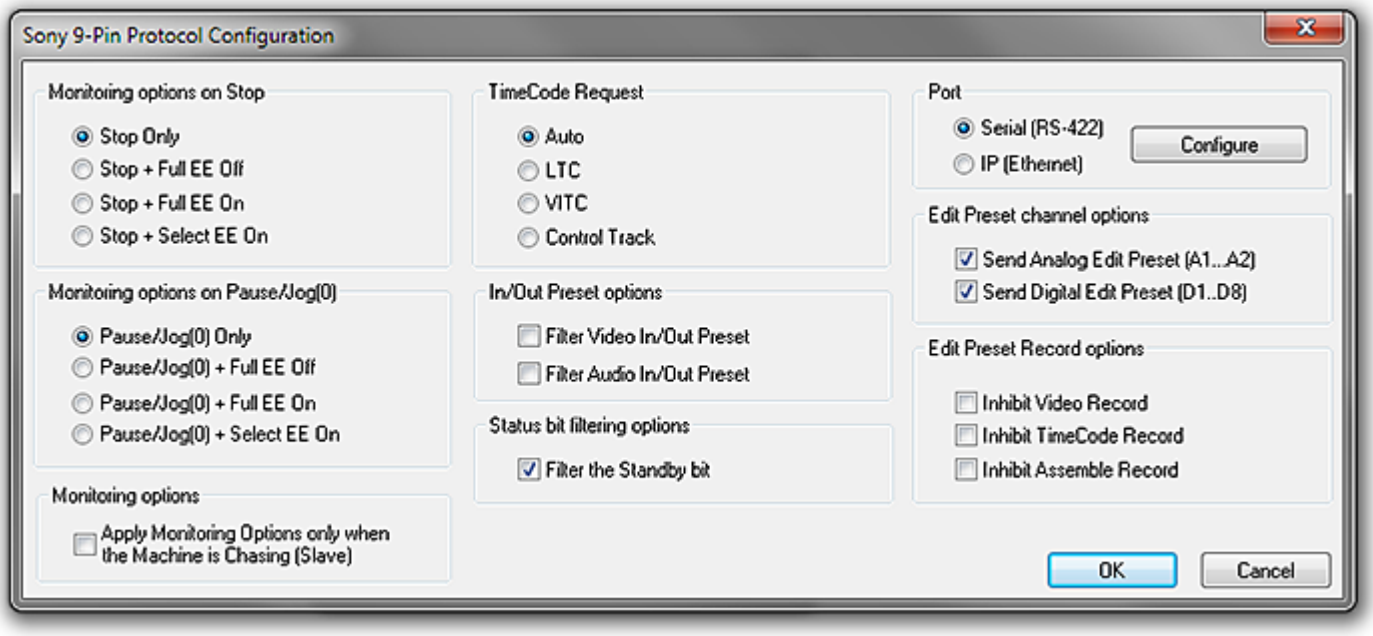
Shows the current **Pre Roll** time for the external machine. Type in the box to change the value.

Post Roll

Shows the current **Post Roll** time for the external machine. Type in the box to change the value.

Driver Properties

Sony 9-Pin Protocol Configuration (Machine)



Sony 9-Pin Protocol Configuration dialog

This dialog determines **Monitoring Options on Stop**, **Monitoring Options on Pause/Jog**, **Preset Channel and Record Options** the type of **TimeCode Request**, **In/Out Preset options** and gives access to the **Serial Port** configuration dialog.

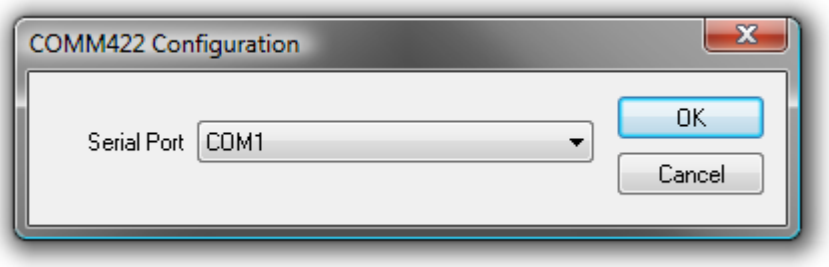
Port

- **Serial (RS422)** Select this option if the connection uses conventional 9-pin cabling
- **IP (Ethernet)** Select this option if connecting to remote Pyramix or VCube machine(s) using Sony P2 over IP.

Configure

Clicking the **Configure** button (Serial (RS-422 only) opens the configuration dialog.

COMM422 Configuration:



COMM422 Configuration dialog

Serial Port

Shows the current **Serial Port** selected from the drop-down list. If not already highlighted, select the desired serial COM port. Standard choices are either COM1 or COM2.

Click **OK** to confirm the choice. This automatically sets the selected COM port with the proper parameters of the Sony 9-pin communication protocol.

Monitoring options on Stop

After a **Stop** command the following command will be issued:

- **Stop Only**
- **Stop + Full EE Off**
- **Stop + Full EE On**
- **Stop + Select EE On**

Monitoring Options on Pause/Jog(0)

After a **Pause/Jog** command the following command will be issued:

- **Pause/Jog(0) Only**
- **Pause/Jog(0) + Full EE Off**
- **Pause/Jog(0) + Full EE On**
- **Pause/Jog(0) + Select EE On**

Monitoring options

Selecting:

- **Apply Monitoring Options only when the Machine is Chasing (Slave)**

ensures that the above options, **Monitoring options on Stop** and **Monitoring options on Pause/Jog(0)** are only applied when the 9-pin external machine is chasing the Internal Machine (being synchronized, i.e. editing). When the 9-pin external machine is Master (the Internal Machine is chasing it, typically for recording back to tape) then the 9-pin external machine is in normal Input/Repro Auto mode.

TimeCode Request

- **Auto**
- **LTC**
- **VITC**
- **Control Track**

The radio buttons select the source of the TimeCode from the external machine. Sony machines usually respond to all requests, so the Auto setting will probably be appropriate. If necessary E.g. where there are several different TimeCodes present on a tape, you can specify a desired TimeCode source to override the automatic setting. U-Matic machines do not respond to all requests, therefore you must specify the TimeCode source.

Send In/Out Preset options

By default, Pyramix sends Edit Video In/Out and Edit Audio In/Out points when an In/Out point is set in the Transport Control panel. These options enable these commands to filtered out if necessary.

- **Filter In/Out Preset** (video)
- **Filter Audio In/Out Preset**

Status Bit Filtering Options

Some SonyP2 devices do not report the Standby bit correctly (always in Standby). In this case the Pyramix Transport Window reports Standby status continuously, thereby hiding the true status. You may wish to set filter if the target machine fails to report standby correctly.

- **Filter the Standby bit**

Edit Preset channel options

Edit Preset in the 9-pin P2 protocol world means Track Arming.

These options enable Track Arming commands to be filtered out if required.

- **Send Analog Edit Preset (A1..A2)**
- **Send Digital Edit Preset (D1..D8)**

This feature is mostly relevant where a console or a third-party record/monitoring controller is used for record commands.

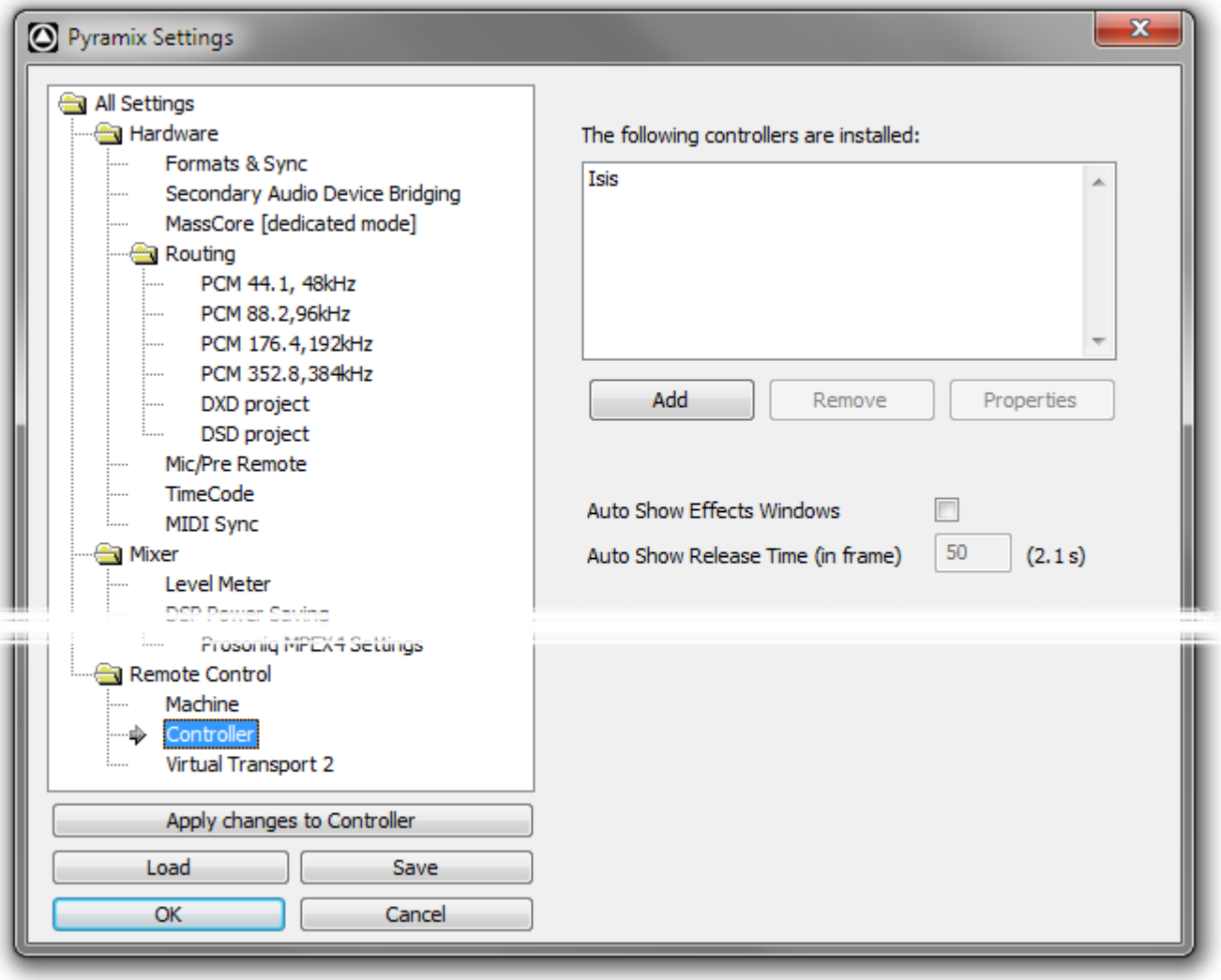
Edit Preset Record Options

These 3 options Inhibit Recording when one of the Video/Timecode/Assemble Edit preset modes is checked and the corresponding Track is armed. In a typical TV workflow, when audio is laid back to the tape, it is essential to prevent the video track entering record (edit) These options avoid nasty accidents.

- **Inhibit Video Record**
- **Inhibit TimeCode Record**
- **Inhibit Assemble Record**

This feature is mostly relevant where a console or a third-party record/monitoring controller is used for record commands.

Controller



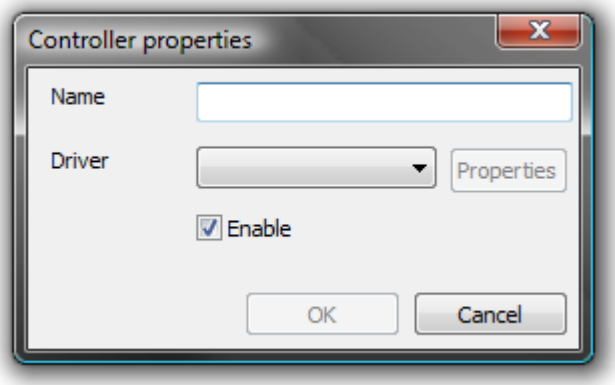
All Settings Remote Control Controller Page

The **Controller** page shows a list of all external controllers currently installed (if any) in the **The following controllers are installed** pane.

Note: Please see also: **Controller Mapping on page 777**

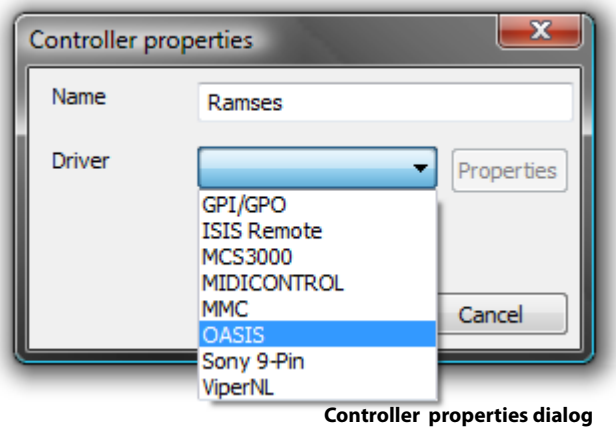
Add

Pops up the **Controller properties** dialog.



Controller properties dialog

Type a suitable name for the controller you wish to add in the **Name** field. Click on the down arrow to drop down the list of drivers.



Controller properties dialog

Select the correct driver for the controller you are installing.

Clicking on **Properties** will open a configuration dialog specific to the driver.

Ensure that the **Enable** check-box is ticked and Click on **OK** to add the controller.

Remove

Removes the Controller currently highlighted in the **The following controllers are installed** list (if any)

Properties

Pops up the configuration window for the selected controller.

Please see: Control by External Device on page 613 for further details.

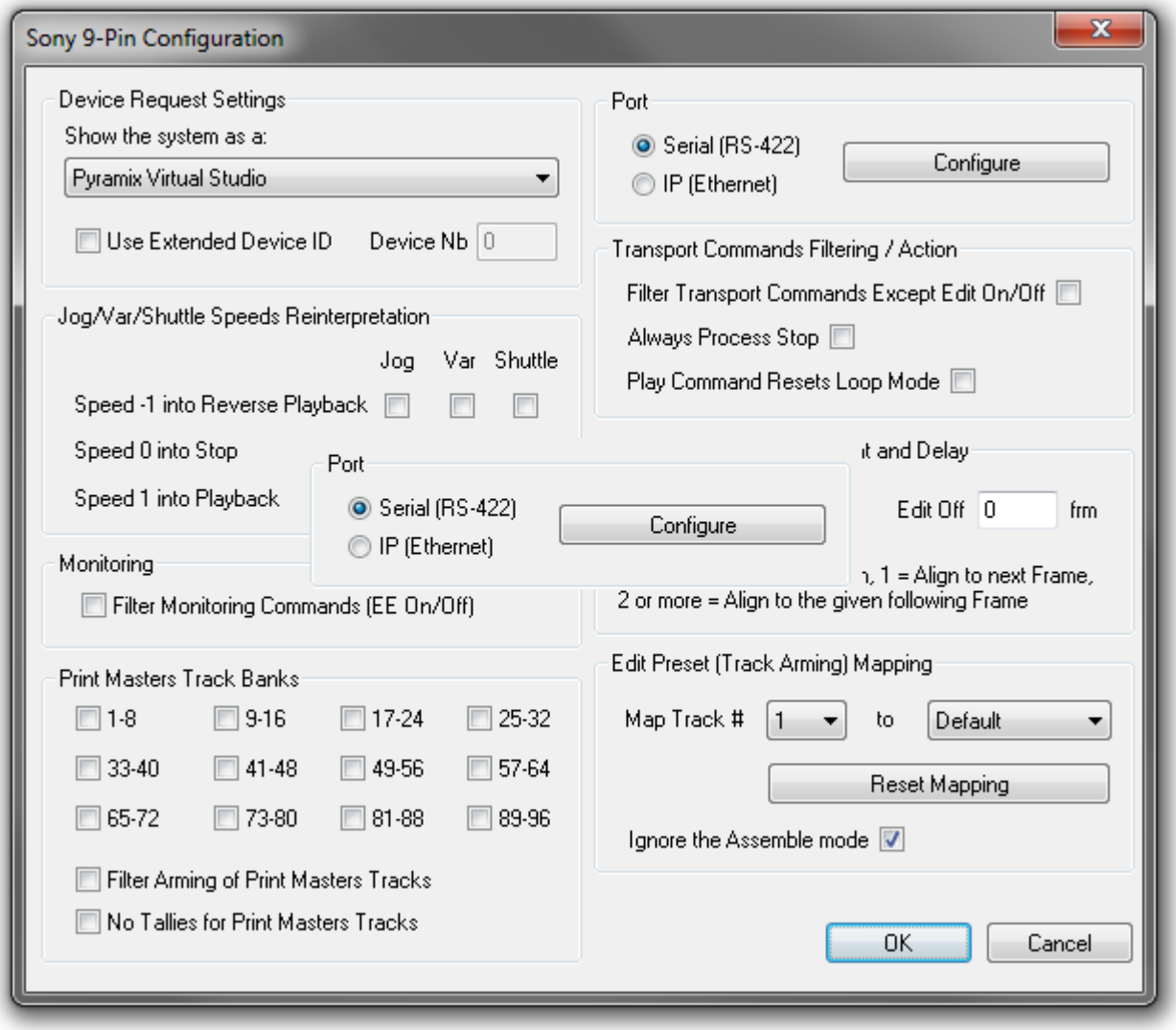
Auto Show Effects Windows

When selected moving a control on the hardware controller mapped to an effect will open the relevant plug-in's window.

Auto Show Release Time (in frames)

Sets the amount of time an Auto Shown window persists after the last detected control move.

Sony 9 - Pin Protocol Configuration (Pyramix controlled by external device)



Sony 9-Pin Configuration dialog

Device Request Settings

The Sony 9-pin P2 protocol transmits a code to identify the machine. Some machine controllers will do nothing or exhibit aberrant behavior if they do not recognize the identifier code. Therefore, Pyramix can masquerade as another device. The device identifier can be selected from a long list in the **Show the system as a:** combo box.

Jog/Var/Shuttle Speeds Reinterpretation

The radio buttons determine Pyramix behavior when specific Jog/Var or Shuttle commands are received.

- **Speed -1 into Reverse Playback**
- **Speed 0 into Stop**
- **Speed 1 into Playback**

Note: When using a controller with a jog wheel please set **Jog/Var/Shuttle ... Speed = 0**.

Note: Interpreting a Sony reverse varispeed command as Reverse Playback is sometimes necessary to achieve proper (locked to video) reverse playback.

Monitoring

Filter Monitoring Commands (EE On/Off) when ticked, E to E On and off commands are filtered out.

Print Masters Track Banks

The selected banks of **8 tracks** are armed for recording when any OTHER track is armed. This is primarily useful when recording a Print Master or Masters at the same time as stems. E.g. if you are recording Dialogue, Music and Effects stems it is common practice to update an element on one stem only. However, the final mix Print Master, which is the sum of all the stems must be updated at the same time. Print Masters Track banks allow the user to forget about arming the Print Master Tracks and concentrate on the stems.

Filter Arming of Print Masters Tracks

When ticked, arming a Print Master Track will not arm the other Print Master Tracks.

No Tallies for Print Masters Tracks

When ticked, record tally commands are filtered out for the Print Masters Tracks.

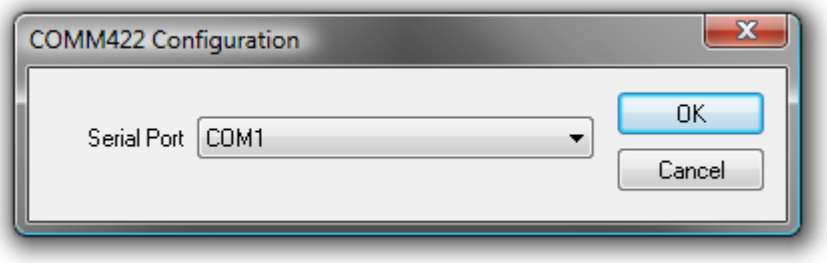
Port

- **Serial (RS422)** Select this option if the connection uses conventional 9-pin cabling
- **IP (Ethernet)** Select this option if connecting to Pyramix or VCube machine(s) using Sony P2 over IP.

Configure

Clicking the **Configure** button opens the respective configuration dialog.

COMM422 Configuration:



COMM422 Configuration dialog

Serial Port

Shows the current **Serial Port** selected from the drop-down list. If not already highlighted, select the desired serial COM port. Standard choices are either COM1 or COM2.

Click **OK** to confirm the choice. This automatically sets the selected COM port with the proper parameters of the Sony 9-pin communication protocol.

Transport Commands Filtering

- **Filter Transport Commands Except Edit On/Off** When ticked all transport commands apart from Edit On or Edit Off are filtered out.
- **Always Process Stop** Some controllers send a **Chase Off** command for Stop. If you need this command when filtering Transport Commands, checking the box will allow it through.
- **Play Command Resets Loop Mode** (I.e. the transport Loop)

Note: These filter settings are mainly relevant where multiple controllers are in use. E.g. where a Mixing console controls monitoring and recording.

Edit On/Off Frame Alignment and Delay

Edit On and **Edit Off** boxes enable delays (in ms) to be entered.

Note: 0 = Immediate Punch, 1 = Align to next Frame boundary, 2 or more = Align to the given following Frame boundary.

Edit Preset (Track Arming) Mapping

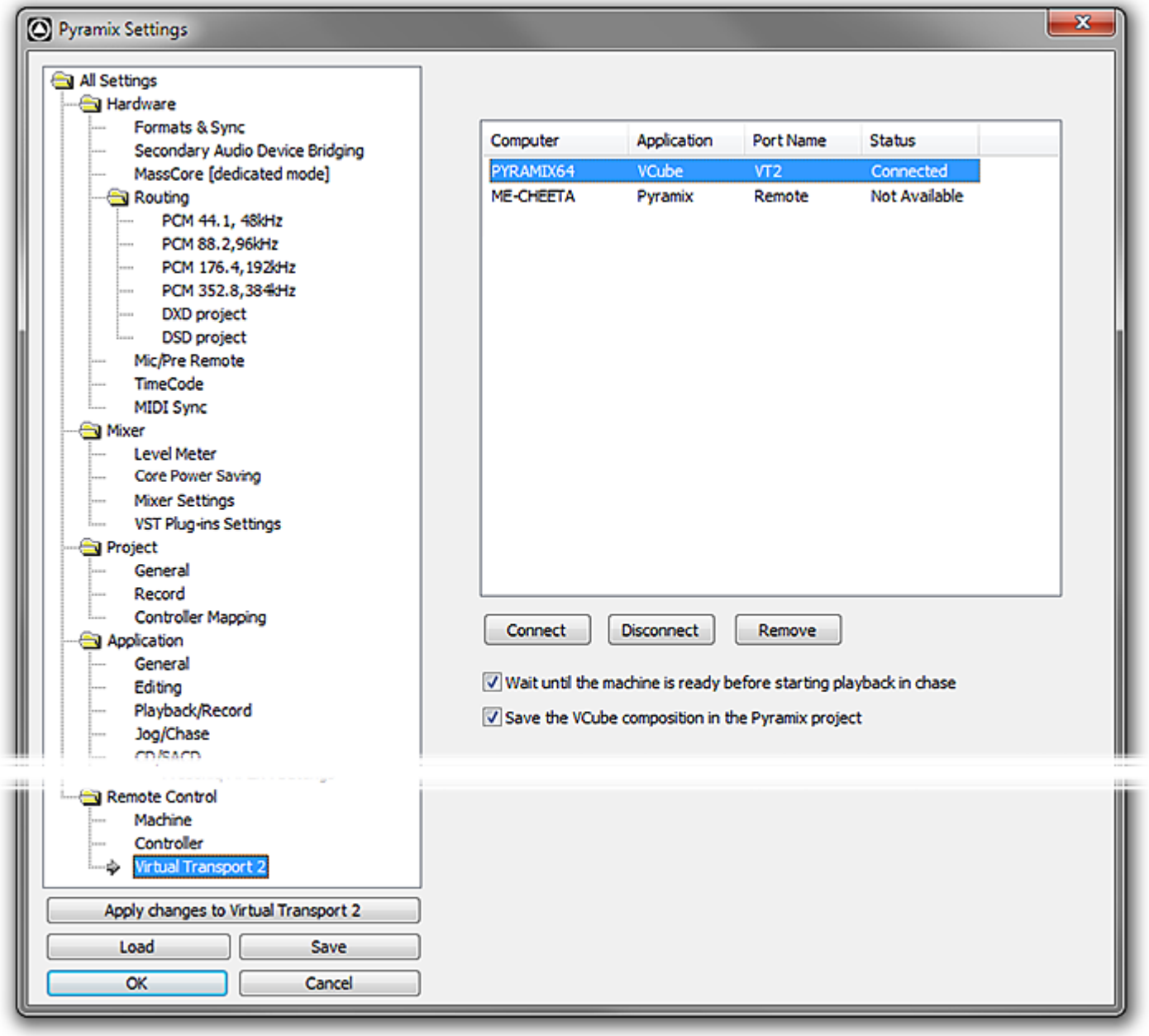
The **Map Track #** combo box allows you to select a Track between **1** and **96** to be mapped to a choice made in the second combo box from:

- **Default**
- **No change**
- **Always Off**
- **Always On**

or any Track between **1** and **96**

This function is useful if more than one Pyramix is to be controlled by the same controller. E.g. with two machines set up to record 32 Tracks each, Pyramix one is mapped **1 - 1** to **32 - 32** and Pyramix two is mapped **1 - 33** to **32 - 64**

Virtual Transport 2



All Settings Remote Control Virtual Transport Page

General

Connect

Click on a machine name in the list. Click **Connect** to connect to a local or remote VCube. Or a remote Pyramix set up as a slave using the Sony 9-pin protocol over IP. **Please see also: Configuring Pyramix for Control by another Pyramix using P2 over IP / VT2 on page 613**

Disconnect

Click to disconnect the selected client.

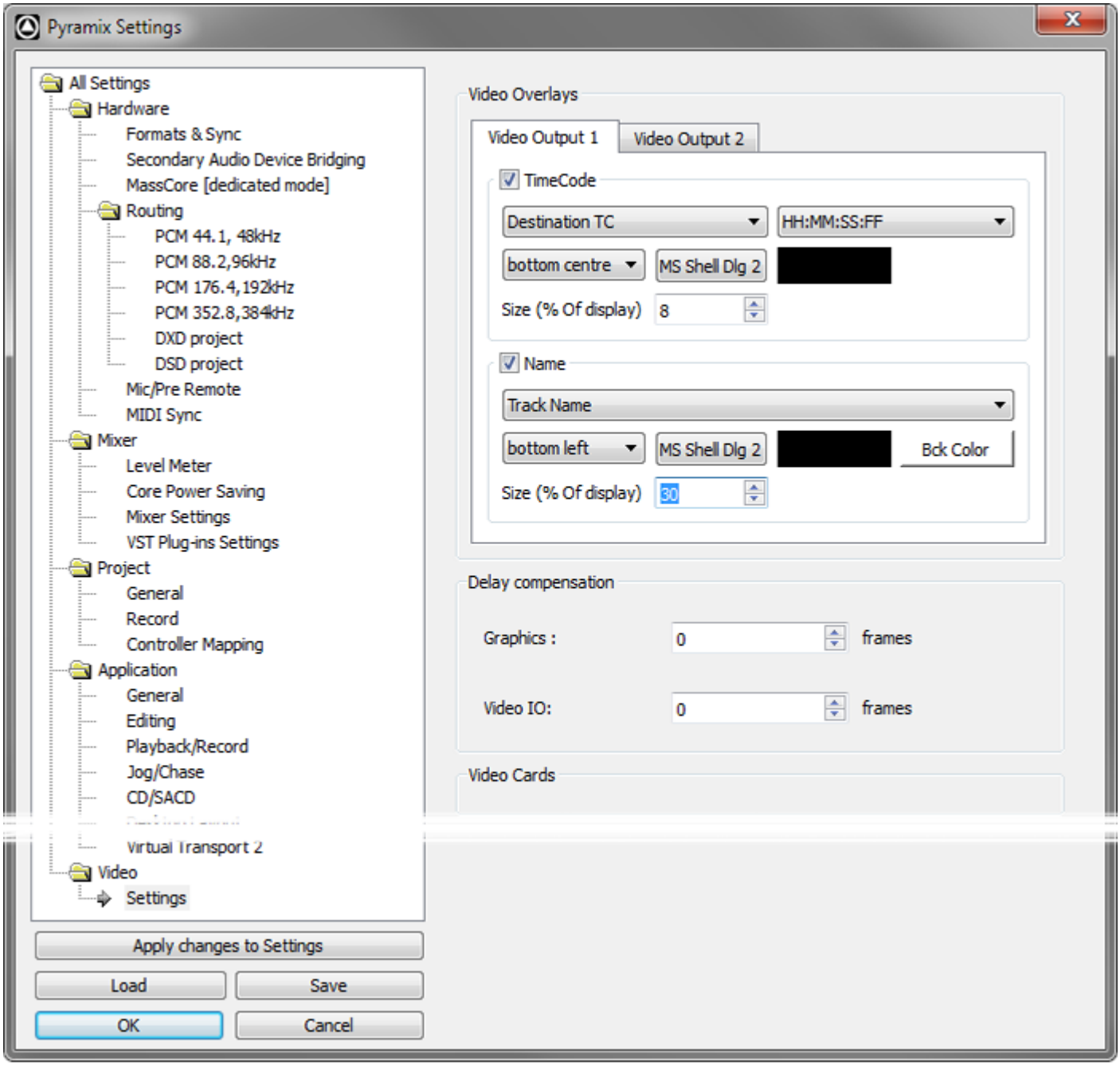
Remove

Click to remove the selected client from the list.

Wait until the machine is ready for use before starting playback in chase When box is checked.

Save the VCube composition in the Pyramix project When box is checked. Use this option when importing Video clips into a Pyramix Project so that the video Clips will load automatically when the Project is re-opened and the VCube is active.

Video



All Settings Video Overlays Page

Overlays

Each of the **Video Output x** tabs are identical in contents and set the parameters for each of the Video Outputs independently.

> **Note:** The following field labels match the screenshot above. Since the drop-down lists offer choices, what you actually see on screen may differ.

TimeCode

When checked **TimeCode** is overlayed on the Video Output according to the parameters set here.

Source TC The drop-down list offers the choice of:

Source TC

Destination TC

HH:MM:SS The drop-down list offers the following choice of TimeCode display formats:

- **HH:MM:SS**
- **HH:MM:SS:FF**
- **S :HH:MM:SS**
- **S : HH:MM:SS:FF**
- **(D) HH:MM:SS**
- **(D)HH:MM:SS:FF**
- **MM:SS:FF**

Bottom Left The drop-down list offers the following choice of TimeCode display positions:

- **top left**
- **top centre**
- **top right**
- **centre left**
- **centre**
- **centre right**
- **bottom left**
- **bottom centre**
- **bottom right**

MS Shell Dlg2 Clicking in the field opens a **Select Font** dialog with a choice of **Font**, **Font style** and **size**.

Text Color Clicking in the field opens a color picker where the Text Color may be selected.

Size (% Of display) The percentage may be typed directly, set with the increment/decrement buttons or with the mouse scroll wheel when the cursor is over the field.

Name

When checked a **Name** is overlayed on the Video Output according to the parameters set here.

Clip Name The drop-down list offers the choice of:

- **Track Name**
- **Clip Name**
- **Media Name**

MS Shell Dlg2 Clicking in the field opens a **Select Font** dialog with a choice of **Font**, **Font style** and **size**.

Text Color Clicking in the field opens a color picker where the Text Color may be selected.

Bck Color (**Bck**ground color) Clicking in the field opens a color picker where the Background Color may be selected.

Size (% Of display) The percentage may be typed directly, set with the increment/decrement buttons or with the mouse scroll wheel when the cursor is over the field.

Delay compensation

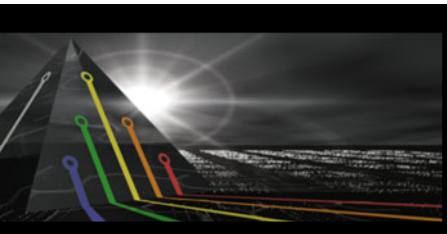
Use **Delay Compensation** when the Video output is delayed with respect to the Audio

Graphics delay Compensates for the graphic card(s) output delay.(computer screen) Type a value (in frames) or use the increment / decrement buttons.

Video delay Compensates for the video card(s) output(s) (Blackmagic Design). Type a value (in frames) or use the increment / decrement buttons.

Note: These are global user settings.

30 Troubleshooting



Troubleshooting is always a moving target as users discover ever more exotic ways to use Pyramix. Therefore, this section is necessarily historic.

If the answer to your problem cannot be found here or elsewhere in the documentation, for the latest information please consult the FAQ sections at:

http://www.merging.com

If you need further technical support, please e-mail

support@merging.com

Keeping Up To Date

Acquiring and installing regularly the latest Drivers/Firmware/BIOS or Operating System available for equipment such as: Graphic Cards, CD/DVD writers, Network Adapters, Motherboards, (but exercise especial caution), external drives, RAID controllers and other third party hardware add-ons, will ensure that your system will always perform as efficiently as possible. Always accept any 'rollback' options, just in case the driver updates have unforeseen consequences.

Keeping Windows (and DirectX) up to date with latest service packs is also, in general, a positive move towards maintaining a healthy system.

> **Note:** These operations are not required for Mykerinos and Daughterboards simply because the latest firmware for your hardware (if any) is automatically installed by the most recent Pyramix installer.

Pyramix Busy Warning

When Pyramix is engaged on a very demanding task, such as a opening a huge project, or a long and complex render, the user interface may appear to *freeze* with the window changed to white and the interface not responding.

A status window opens at the bottom right of the main Pyramix window to inform the user that Pyramix is still operational. One of the following messages may be displayed:

- Pyramix Virtual Studio busy (during tasks like: opening project, mount, renders, libraries,…)
- AAF Parser busy (during AAF import task)
- Merging Technologies VS3 busy (during Mixer tasks)
- Merging Technologies Convert busy (during Convert task)

> **Note:** The small progress bar within the Pyramix status window (white) will progress at different speeds. Please be aware that the progress bar does not necessarily indicate the remaining busy time.

Error Messages

Audio Engine Drops Warning

This message informs users about possible CPU delays leading to potential audio errors in record or playback.

Mykerinos sends or requests audio data to or from the CPU in "frames" of 26ms. If one of these frames is not given to, or taken from, the Mykerinos driver in time, this will result in a loss of audio data, and the **Audio Engine Drops Warning** will be shown.

Playback Stalls Warning

Playback Stall messages are triggered by access delays impacting the VS3, resulting in audio drops while preserving the synchronization of the Tracks. In the latter case the stall may also endanger the integrity of the synchronization between Tracks being recorded.

Record Stalls Warning

The **Your Recording may be at risk** warning indicates that the Destination Media Drive performance may be insufficient. If so, we detect it and recommend that you change the destination media drive or optimize it.

MassCore Drops

Please see MassCore Overload Diagnosis and Cures on page 38

Multi-channel Audio Files

Wave, Broadcast Wave, AIFF or SDII multi-channel files are seen as mono files by the Pyramix Media Manager unless their file names conform to Pyramix requirements.

Audio File Formats

Some audio file formats (like Pyramix native format, PMF and OMF) embed the Track/Channel number(s) in the file itself. In this case, Pyramix recognizes the Track as mono, stereo or multi-channel without problem even if the different audio Tracks/Channels of these files are actually stored in separate files.

Some other formats (like Wave, Broadcast Wave Format, AIFF or MacIntosh SDII) do not keep this information in the file itself but in the filename. Unless the correct naming convention is followed, Pyramix will see files in these formats as individual mono, regardless of whether they are part of a stereo pair or multi-channel recording.

Broadcast WAV Files

BWF-P means polyphonic. I.e. multitracks within the same file

BWF-M means monophonic. I.e. one file per track

Pyramix Requirements

In order for Pyramix to recognize that separate audio files in these formats are actually part of a stereo or multi-channel recording, Pyramix requires the following naming convention:

The filename of the different Tracks/Channels must be the same except for one section containing the Tracks/Channels number as 3 digits surrounded by _## and ##_. For example: MyStereoSound_##001##_.wav and MyStereoSound_##002##_.wav are seen by Pyramix as a single two Track media named MyStereoSound.

Other systems, the Zaxcom DEVA portable recorder for example, do not use the same convention. They may name the files they produce in this fashion: **MyStereoSound-1.bwf** and **MyStereoSound-2.bwf**. These files will be recognized by Pyramix as two mono media files.

Solution

MultiFileFixer is a small 'tool' application that automatically renames all files in a given folder and sub-folders, that fit selected parameters, to follow the Pyramix convention.

In a normal Pyramix installation the **MultiFileFixer** application can be found on the Windows Start menu:

Start > Programs > Pyramix > MultiFileFixer

Clip Display Problems

No Waveform Display

Symptoms

Files are dragged into the Timeline from a mounted folder but no waveform is generated. Manually invoking **Generate Waveform** doesn't work.

Solution

This problem with Waveform Generation is likely to be due to the fact that the audio files are in **Read Only** mode. This will often be the case when copying files from a CD-ROM. In Windows Explorer simply select all the Tracks from the CD, right click, select **Properties** and uncheck the **Read Only** box under **Attributes**.

Clip Names are Unreadable

Symptoms

With some color schemes, Clip Names are unreadable.

Solution

Simply choose a more suitable Windows color scheme to resolve this. You also can change the background and waveform colors (right click) for individual Clips and Tracks in Pyramix.

Relaunch After Improper Exit

In the case of an 'improper application exit' (politically correct term for crash) the system does not attempt to open the last backed up project automatically, since the most up to date version is the project itself in its last saved state. All ProjectXXX (Backup).pmx, ProjectXXX (backup 2).pmx,etc… documents are older versions of ProjectXXX.pmx which is now always the last one saved.

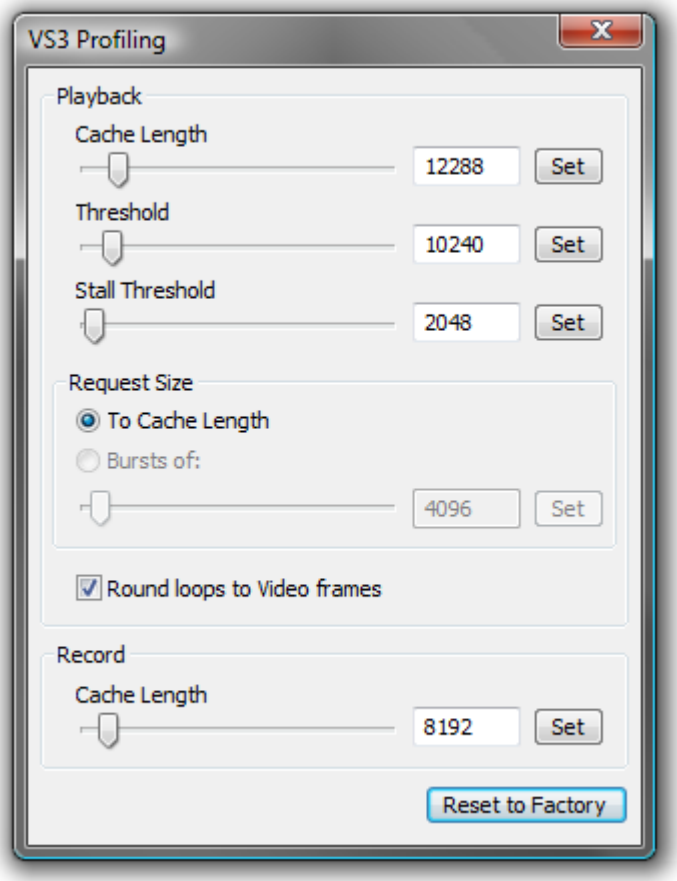
Debug Menu

Right-clicking on bottom right of the Status bar opens a context menu with a choice of **Debug**, **I/O Status Input Check** and **Cancel Waveform Generation** (grayed out unless Waveform Generation is in progress.

Selecting **Debug** opens a further sub-menu with a number of tools primarily intended for Merging Technologies Support use. One option, **Profiling** is worth examining in detail.

The Profiling Window

The VS3 Profiling window contains the parameters used to fine-tune the performance of hard disk accesses for Pyramix. These parameters are not intended for user modifications, and Merging cannot guarantee the proper functionality of Pyramix when modifications are made in this window.



VS3 Profiling window

Cache length

This is the size of the playback buffers allocated in the host PC's RAM. Pyramix allocates one buffer per Track. When the audio playback is started, all the buffers are completely loaded by reading the data from the hard disk before the actual playback starts. Increasing the buffer size offers the benefit of a larger immunity against short term hard disk access stalls and other operating system slow-downs at the cost of longer latency at initial playback start.

Threshold

During playback, the audio data is read from the playback buffers, which are thus progressively emptied. When the amount of data in a buffer falls below the threshold value, new data is read from the hard disk to refill the buffer.

Request size

This parameter determines how much data is read from the hard disk when the threshold level is reached. One option is to completely fill (To Cache Length), the other option is to load a defined amount of data (Bursts of).

Stall Threshold

When the amount of data falls below the stall threshold, this means that the system has serious performance problems. Playback will be temporarily stopped, while a stall warning is issued.

Round loops to Video Frames

This option, which is enabled by default, rounds the start and the end point of a playback loop to complete video frames. The start point will always be rounded down, and the end point will always be rounded up, so that the loop will always contain at least the initial range intended for the loop.

Record cache length

This is the size of the buffer used while recording new data.

Reset to Factory

This button restores all the values to their factory default.

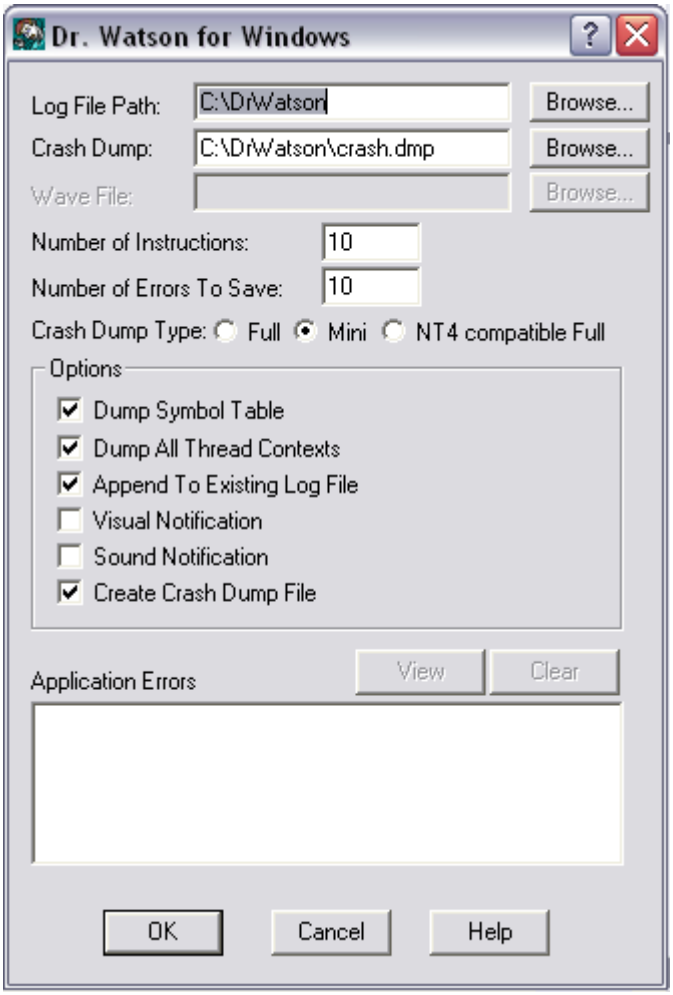
General Troubleshooting

DrWatson, Crash Log Activation:

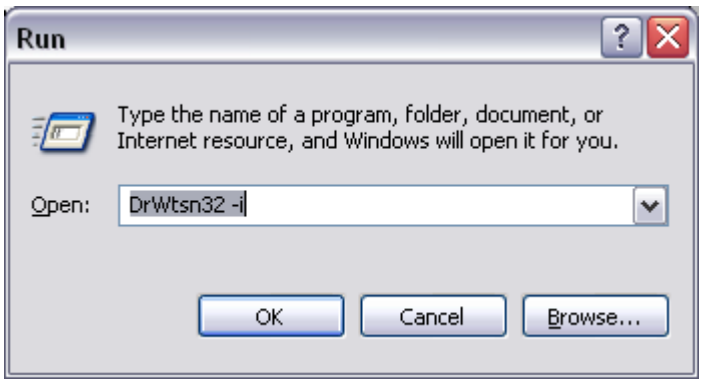
Note: You will need to download DrWatson first, since it is no longer included in the Windows distribution.

http://download.merging.com/beta/SupportTools/DrWatson.zip

1. Create a new folder named **DrWatson** at the root of C drive
2. Launch DrWatson 32bit exe, found in: **C:\WINDOWS\system32\drwtsn32.exe**
3. Set-it up as shown in **ScreenShot 1** below
4. Activate DrWatson as the default debugger tool, as shown in **ScreenShot 2** below



Dr. Watson Screenshot 1



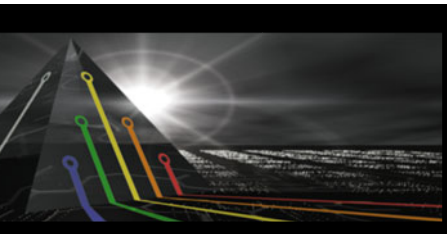
Dr. Watson Screenshot 2

Then, once a crash has happened, send us the log file that you will find in the C:\DrWatson folder. Please, also remember that access to support is free, according to the following conditions:

With a valid ASM (Annual Software Maintenance) or:

Within the first year following the purchase of a new Pyramix Virtual Studio system.

31 Appendices



Appendix I - Mouse Modifier Keys

This table shows the valid modifier keys which can be used in conjunction with some mouse operations

Main Editor

Left Mouse Button

Click In the TimeCode Scale

Set Cursor to the mouse	None
Set Mark In to the mouse	Shift
Set Mark Out to the mouse	Ctrl
Set New Marker to the mouse	Ctrl + Shift

Click In the Bars & Beats Scale

Set Cursor to the mouse	None
Adjust tempo to the end	Shift
Adjust tempo for the current portion	Ctrl
Adjust tempo for the current Beat	Ctrl + Shift

Click In the Tempo Map

Create a new tempo portion	Ctrl

Click In the Track headers zone

Repeat action for the same button on all Tracks	Shift

Click In the Clips zone (anywhere)

Draw a Region to zoom in	Alt
Dyna-Zoom	Z
Draw a Region to select	None
Draw a Region to select Clips completely	Shift
Extend/Reduce the current Region to this Track	E
Invert No Selection mode for Track Groups	Q
Invert Auto Select Tracks	Q

Click In a Clip handle

Move only the Clip handle under the mouse (no groups)	Shift
Move only the envelope point under the mouse (no groups)	Shift

Click In a Clip

Add remove Clips to the selection	Shift
Drag the selection (to a library)	Shift + Alt
Move selected Clips	None
Move selected Clips with auto-crossfade	Ctrl
Slide the underlying media of a Clip	Ctrl + Shift
Slide a Clip over its underlying media	Ctrl + Alt
Move selected Clips constrained in time	Ctrl + Shift + Alt
Cutter	C
Duplicate Clip	D
Duplicate Clip constrained in time	F

While moving

Auto-crossfade while moving Clips	Ctrl
Force crossfade while moving Clips lower handle	Ctrl
Detach crossfade while moving Clips middle handle	Ctrl
Don't merge Envelope points	Ctrl
Constrain Envelope in time	V
Constrain Envelope in value	H
Don't merge Automation points	Ctrl
Constrain Automation in time	V
Constrain Automation in value	H
Select only what is under the mouse (no groups)	Shift
Select all Tracks	Ctrl + Shift
Select and limit selection the Clips boundaries	Ctrl + Alt
Snap Sync Point	S
Snap Head	H
Snap Tail	T
Audition while moving (Scrubbing)	A

Double-click in a Clip

Selection Properties	
Clip Properties	Ctrl

Double-click in a fade

Edit the fade in the Fade Editor

Double-click in an envelope point

Reset the envelope point	
Reset only the envelope point under the mouse (no groups)	Shift

Middle Mouse Button

Edit crossfade	Ctrl
Create & Edit crossfade	Ctrl + Shift
Select between edits	None
Enlarge selection between edits	Shift

Click In the TimeCode Scale

Scrub Audio	None

Mouse Scroller

Scroll Tracks up and down	None
Increase / Decrease Track height	Shift
Zoom	Alt
Scroll horizontal	Ctrl

Right Mouse Button

Contextual Menu	None
Clip Gain	Ctrl

On dropping a fade or crossfade from a library

Apply to whole group	Shift

Overview

Left Mouse Button

Draw a Region to zoom in	Alt
Drag the current composition (to a library)	Shift + Alt

Notes

Left Mouse Button

Drag the notes (to a library)	Shift + Alt

Media Folder

Left Mouse Button

Replace media for target Clip(s)	Ctrl

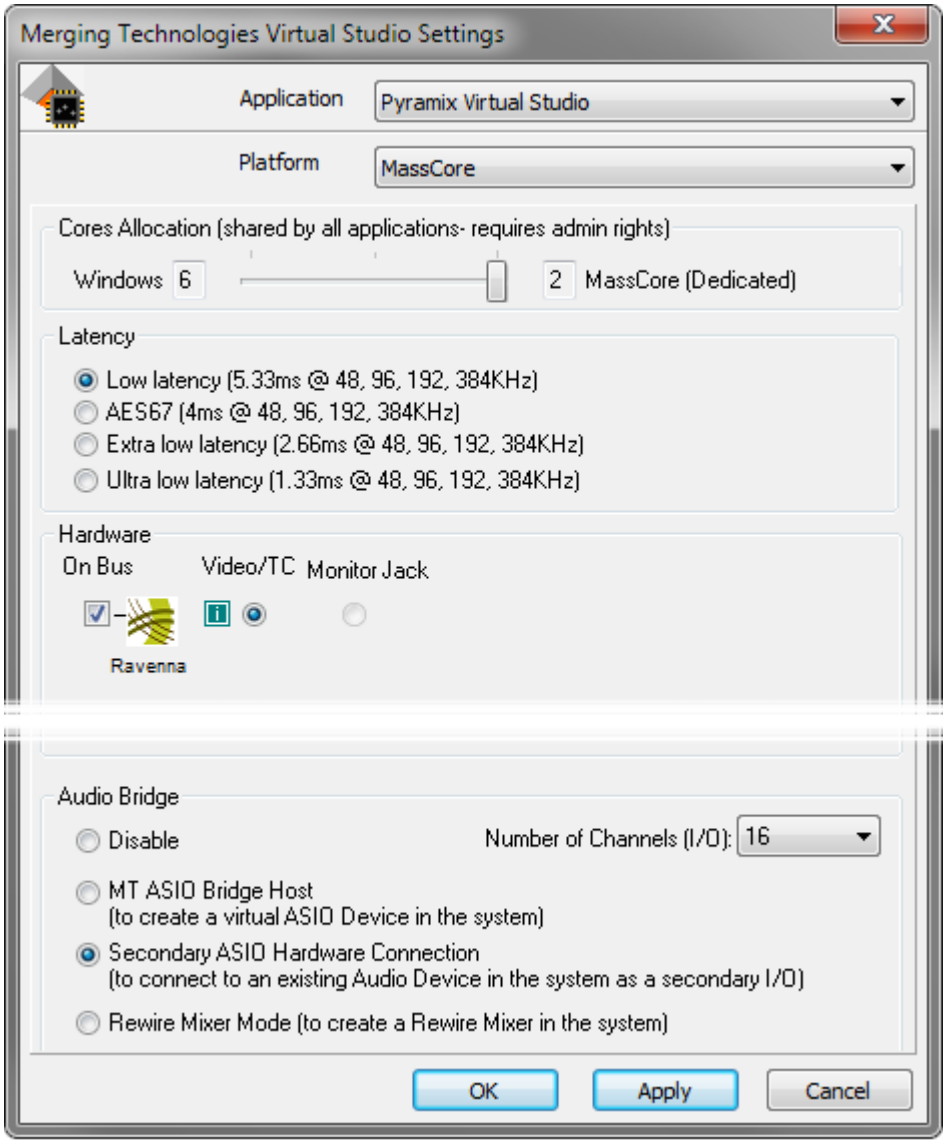
Appendix II VS3 Control Panel

The VS3 Control Panel is a separate application that should only be launched when Pyramix is not running. Here, you can set various parameters relating to Merging Technologies hardware and software. If you are running both VCube and Pyramix on one system you can assign separate audio I/O to each application. In the case of a system running MassCore this is also where you can set global latency.

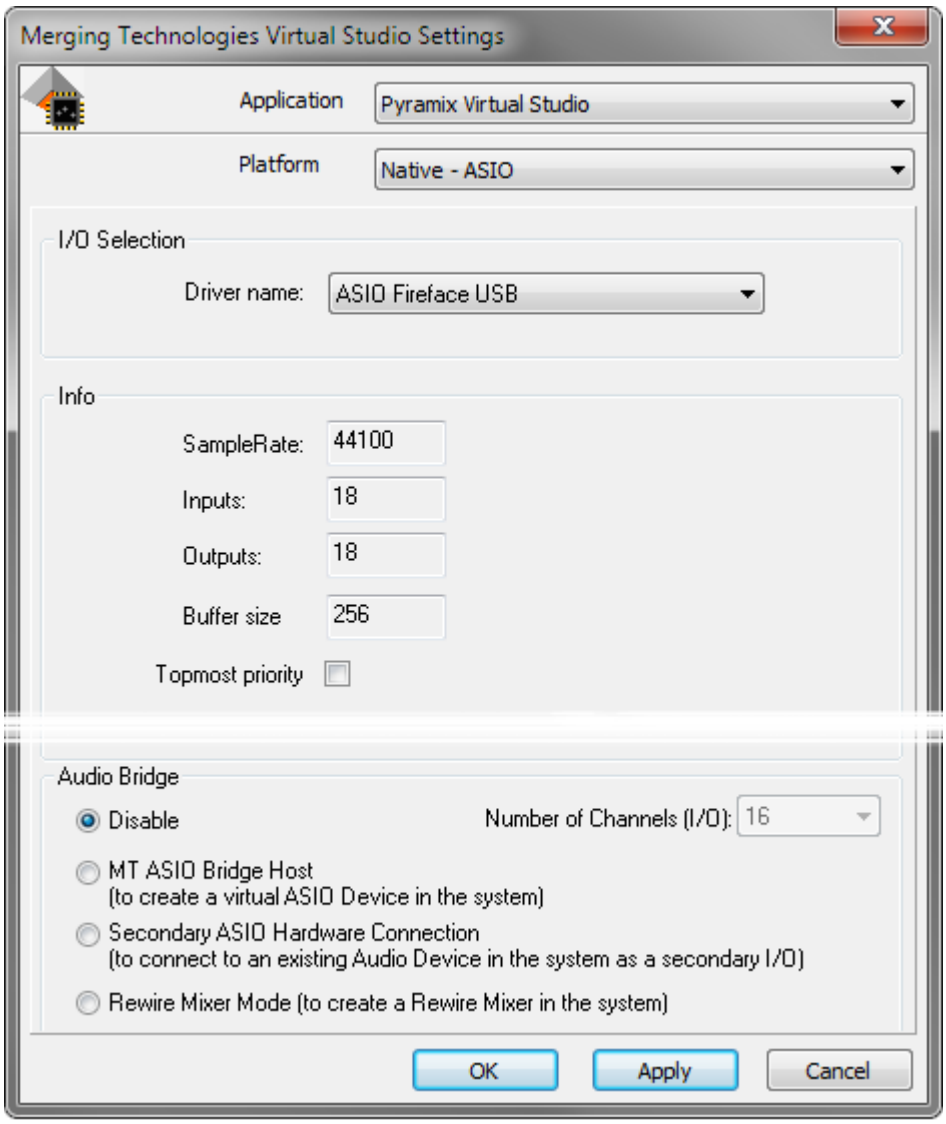
MassCore

Application

The drop-down list enables you to choose which Merging Technologies application the settings apply to. E.g. Pyramix Virtual Studio, VCube, ASIO Driver etc. The rest of the settings in the VS3 Control Panel Window update to reflect the current settings for the selected application.



VS3 Control Panel Window MassCore Platform



VS3 Control Panel Window Native - ASIO Platform

Platform

This drop-down list determines which processing platform mode will be used. Dependant on the options installed these may include MassCore and Native - ASIO.

Core Allocation

Note: This setting is only available in MassCore Systems and only when the **MassCore SMP** key is present. This setting applies to ALL applications.

The slider enables the number of processor cores dedicated to MassCore to be varied. The numbers shown vary according to the number of cores available on the specific system and on whether Hyperthreading is switched on in the BIOS.

Latency

These options are only available when **MassCore** is installed and chosen as the **Platform**. **Please see: Pyramix Latency Modes for MassCore on page 38**

I/O Selection

Only present when **Native - ASIO** is the selected **Platfom**. The drop-down list offers the choice of all ASIO devices present on the system.

Info

This section shows the following information when **ASIO** is the selected **Platform**.

Sample Rate:	Shows the Sample Rate the selected interface is operating at.
Inputs:	Shows the number of Inputs available on the selected ASIO device.
Outputs:	Shows the number of Outputs available on the selected ASIO device.
Buffer Size:	Shows the Buffer Size set for the selected ASIO device.

Hardware

All Horus or Hapi units discovered on the RAVENNA network are shown here with check-boxes which determine if they are **On Bus** (I.e. will be used), for the selected application and will be used for **Video/TC**.

Audio Bridge

The **Audio Bridge** is the mechanism used by Pyramix to accommodate **ASIO** and **Rewire** applications into the Pyramix mixer.

Audio Bridge

The radio buttons offer the choice of

Disable Audio Bridge disabled.

ASIO Device Mode (to create a virtual ASIO Device in the system).

Secondary Audio Device Host Mode Secondary Audio Device

(To connect to an existing Audio Device in the system as a secondary I/O)

Rewire Mixer Mode

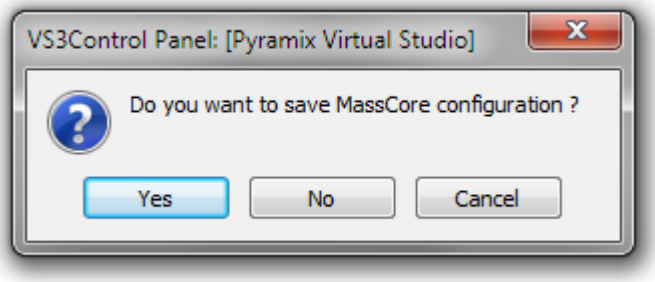
Number of Channels

The drop-down list offers the choice of how many channels will be dedicated to **ASIO** or **Rewire**.

Please see also: Rewire on page 292, **Secondary Audio Device Host Mode on page 289** and **ASIO Device Mode on page 288**.

Saving Settings

If you change any settings for a given application then clicking on **Apply** opens the **Save MassCore Configuration dialog** :



VS3Control Panel Save MassCore Configuration dialog

Click on **Yes** to save.

Appendix III Optional Features

Pyramix DSD / DXD / SACD

Pyramix v10 and v11support 64 IO of DXD/DSD64/DXD128/DSD256.

Note: This only applies to 8FS/DXD or DSD. 1FS capability is still 384 Live I/O (768 simultaneous).

Requirements:

- Pyramix v10 or v11
- A Merging Technologies Turnkey System running Windows 7 Professional 64-bit
- **MassCore 256 +** Key
- System configuration based on Intel Core i7-4790 or above
- SSD required (Recommended 4 x SSD Crucial® M550 disks configured in Raid 0 / 64k block size) or 4x Crucial® MX200 1TB 2.5" SSD in Raid 0 / 64k or SSD-SAMSUNG MZ1000 available on Merging price list)
- **MassCore** must be set to **Low latency** mode
- Record in single media (not one file per track)
- For better performance disable **Waveform Generation** while recording
- Use a **Windows 7 Basic Theme** (avoid **Windows 7 Aero**)

Note: DSD256 or DSD128 (DSDIFF) in a DXD project requires a lot of resources therefore the number of I/Os may need to be reduced in such a missmatched format Record scenario. For Editing please be aware that edits such as CrossFade require **twice** the processing resources, so Track counts must be divided by two in such a case. Crossfading a Media file with itself is **not** recommended.

Merging Technologies Horus

Merging Technologies Horus is the ideal solution to DSD and DXD interfacing.

The tables below shows the capabilities you can expect:

Merging RAVENNA MassCore - DXD/DSD Specifications

(Requires Pyramix v10 and above, with 4xSSD in RAID 0, Windows 7 Basic Theme and a Merging Turnkey i7 4790 or better.)

	Project DXD		*Project DSD64*		*Project DSD128*		*Project DSD256*	
MEDIA *(single media)*	***Playback* & Outputs***	***Record***	***Playback* & Outputs***	***Record***	***Playback* & Outputs***	***Record***	***Playback* & Outputs***	***Record***
DXD	**64 Tracks & Outputs**	**64 inputs**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
DSD64	**64 Tracks & Outputs**	**64 inputs**	**64 Tracks & Outputs**	**64 inputs**	**NA**	**NA**	**NA**	**NA**
DSD128	**48 Tracks*** & Outputs**	**48 inputs**	**NA**	**NA**	**64 Tracks & Outputs**	**64 inputs**	**NA**	**NA**
DSD256	**32 Tracks*** & Outputs**	**32 inputs ****	**NA**	**NA**	**NA**	**NA**	**64 Tracks & Outputs**	**64 inputs**

* Projects have no tracks limitation, the specified playback track value is based on the tracks containing media.

** Requires optimal configuration (turnkey) with MassCore SMP (benchmarks were performed in Hyperthreaded mode with a 4 Cores to MassCore and 4 cores to Windows repartition)

*** Playback track count without Edits (such as crossfades). When editing with Crossfades performance can reduce significantly and stalls may occur, we recommend not crossfading between the same media source and if performance cannot be sustained to convert your medias to DXD during the editing work, you could consider relinking to the DSD256 medias for the final processing.

For complete information about Horus please see its own documentation and for full information about DSD / DXD and SACD please see the forthcoming DSD / DXD / SACD Guide.

Note: Recording DXD using the Horus / Hapi A to D converters in DSD is very intensive in CPU processing with AD in DSD. In such a scenario MassCore SMP users may need to allocate more Cores to Windows than to MassCore (e.g. 6 Windows and 2 MassCore).

ASIO

For details of the capabilities you can expect when using the Merging Technologies **RAVENNA ASIO / Core Audio Driver** please see:

http://www.merging.com/uploads/assets/Installers/ravenna/ASIO/Merging%20Ravenna%20ASIO%20Guide.pdf

RAVENNA ASIO Driver overview is available here:

http://www.merging.com/products/networked-audio/for-3rd-party-daw

Wordclock settings.

In DSD mode it is imperative Pyramix wordclock settings correspond with the requirements of the converters employed. To date all the DSD compatible converters we have tested generate and expect wordclock at the standard nominal rate. I.e. 44.1kHz.

Failure to set Pyramix to expect only 44.1kHz in DSD operation will prevent proper locking to the external source and therefore prevent correct decoding of the DSD bitstreams, resulting in very loud noise on its outputs. Check the setting via:

Settings > All Settings > Formats & Sync

make sure that the "Wordclock is Input at 44.1k x 2" check-box is **NOT** checked when operating in DSD mode.

To verify Pyramix is correctly locked to incoming Word clock:

Left-click on the red 'LED' in the **Sync: WordClock** box (bottom right of Pyramix screen in the status bar). This will open the **I/O status** window The green LEDs indicate active inputs and there will be a red LED in front of the chosen sync source if this is locked.

Right-click on the same (**Sync: WordClock**) red 'LED'. Select, **Debug > Input Check**. This window will enable you to check that Pyramix is effectively locked at the correct frequency.

Project Types

DXD versus DXD Mixing

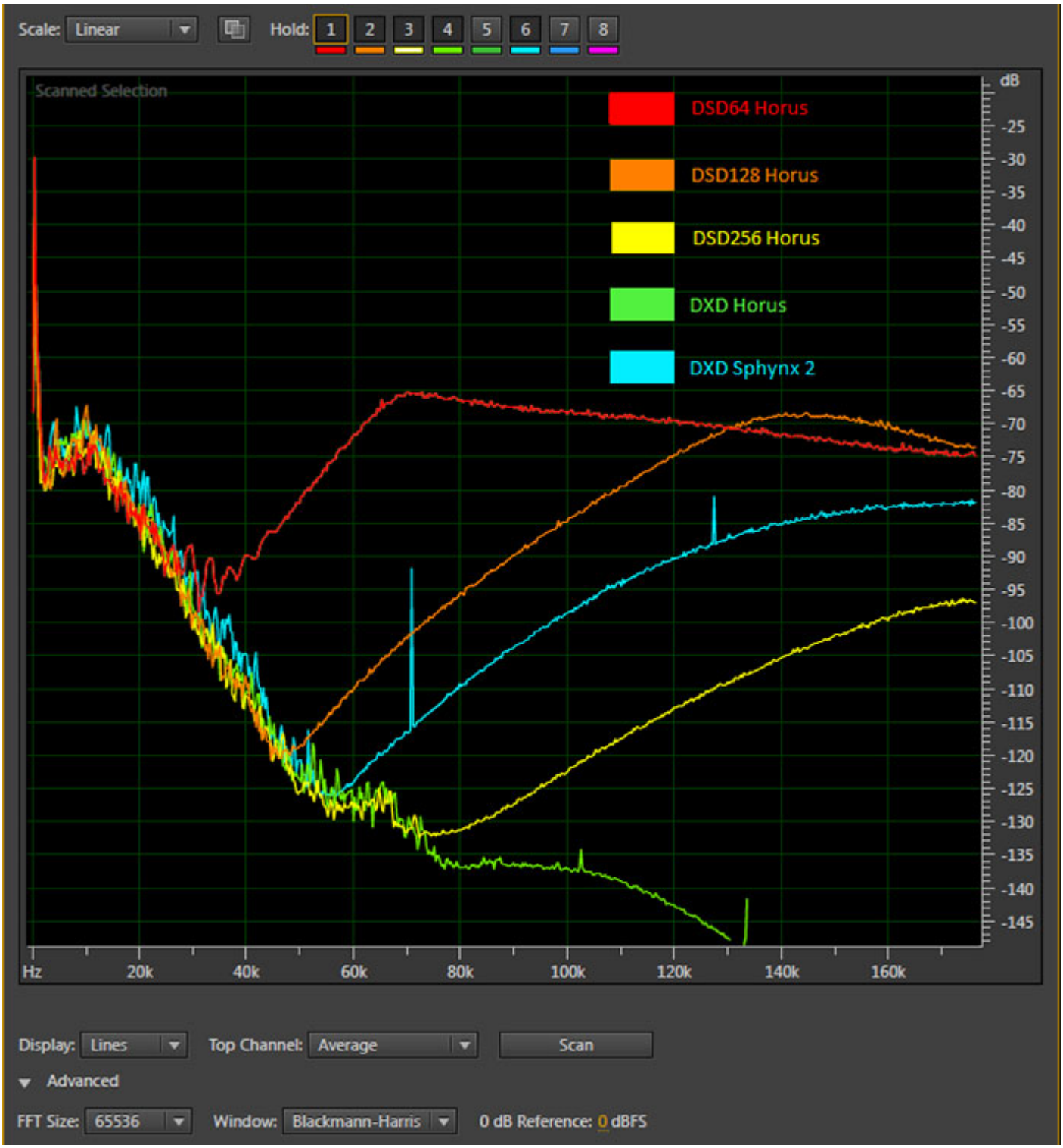
In principle both modes will produce essentially the same results in the resultant file.

The subtle differences occur only in the way in which signals are managed in the Pyramix mix engine, in particular when displaying the Peak or VU meters, as well as in certain plugins, especially in the side chain of Dynamic Processing. In 352.8 kHz mode, no filtering is applied above 20 kHz while a gentle low-pass filtering will be applied in DXD mode to avoid being affected by possible High Frequency noise that could be contained in the source material (either by conversion from DSD source material or A/D converters presenting significant levels of High Frequency noise due to their Sigma-Delta Noise shaping topology.

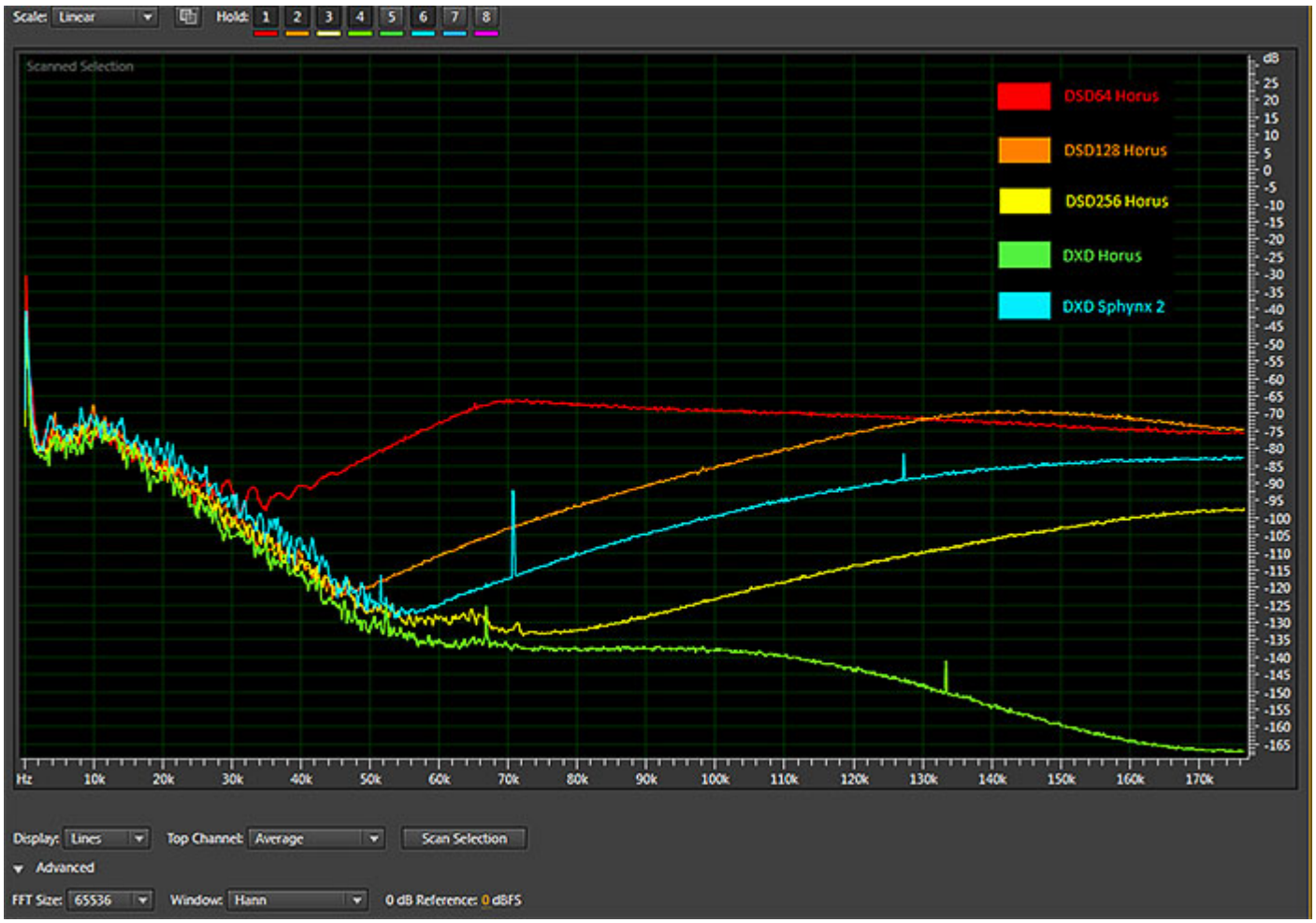
So, Merging recommends operating by default in DXD mode, unless one specifically wants to assess how much energy (inaudible) is present in the signals above 20 kHz.

When using exclusively DXD material originating from Horus or Hapi AD8P or AD8DP converters (which exhibit ultra-flat noise up to and beyond 100 kHz) there should be very little difference between modes.

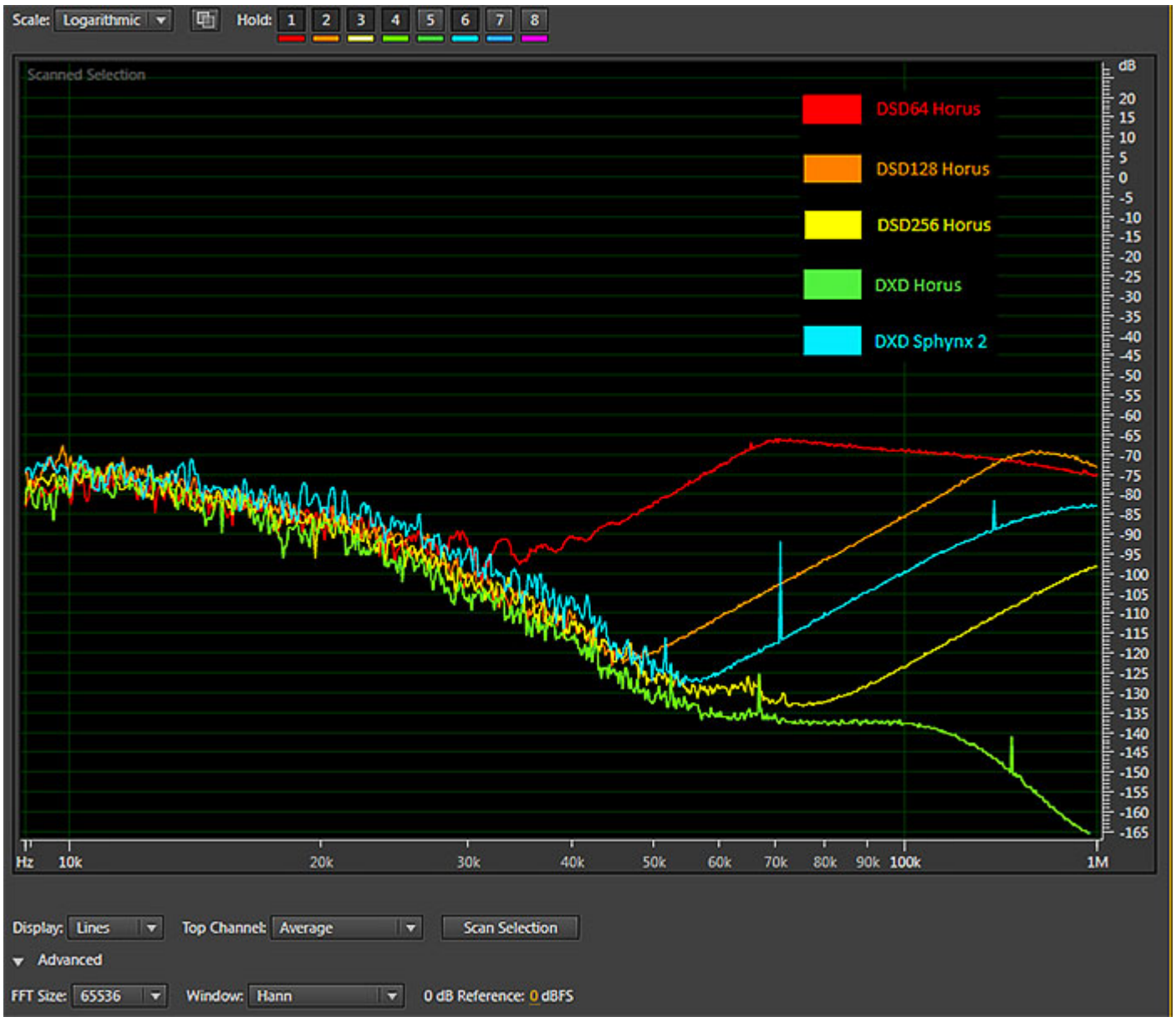
The following plots of different source material show the importance of such filtering:



FFT Plot - All



FFT Plot - All Linear Hann



FFT Plot - Log Hann

DXD Mixing Project

The DXD Mixing Project can be used use for recording, editing, mixing, processing and mastering DSD/SACD in DXD format (352.8 kHz - 32 bits).

Opening a DXD Mixing Project

When an existing DXD Mixing Project is opened this dialog appears:

Convert DXD Project to DSD Project mode? dialog

Would you like to convert this DXD Mixing Project into a DSD only Project?

If the answer is **YES** the project will be opened in **DSD mode** and the **DXD** mixer will be replaced by a default mono mix 8x8.

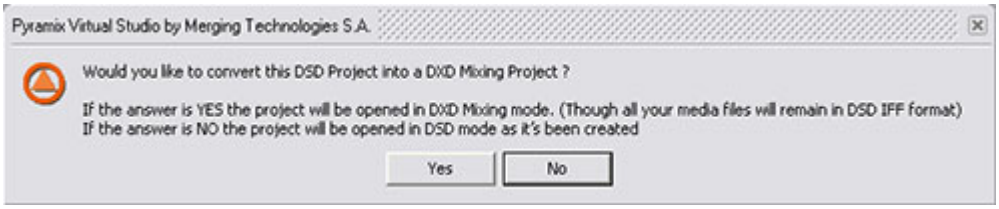
If the answer is **NO** the project will be opened in **DXD Mixing mode** with the **DXD** Mixer in the same configuration as it was when the Project was Saved.

DSD Project

The DSD Project - can be used recording, editing and mastering DSD/SACD in DSD format (2.8 MHz - 1 bit) Project for recording, editing and mastering DSD/SACD in DSD format (2.8 MHz - 1 bit

Opening a DSD Project

When an existing DSD Project is opened this dialog appears:)



Convert DSD Project to DXD Mixing Project mode? dialog

Would you like to convert this DSD Project into a DXD Mixing Project ?

If the answer is **YES** the project will be opened in **DXD Mixing mode**. (Though all your media files will remain in **DSD IFF** format)

If the answer is **NO** the project will be opened in **DSD mode** as it was when created.

Peak Values in DSD and DSDIFF Media Files

Peak Computations

For DXD audio media, the peak displayed in the media **Properties** page is computed from the audio without a [20..20kHz] filter.

For DSD audio media (DSDIFF), the peak displayed in the media **Properties** page is computed from the audio after a [20..20kHz] filter.

This could change the behavior of **Auto-scale Waveform** and **Normalize**.

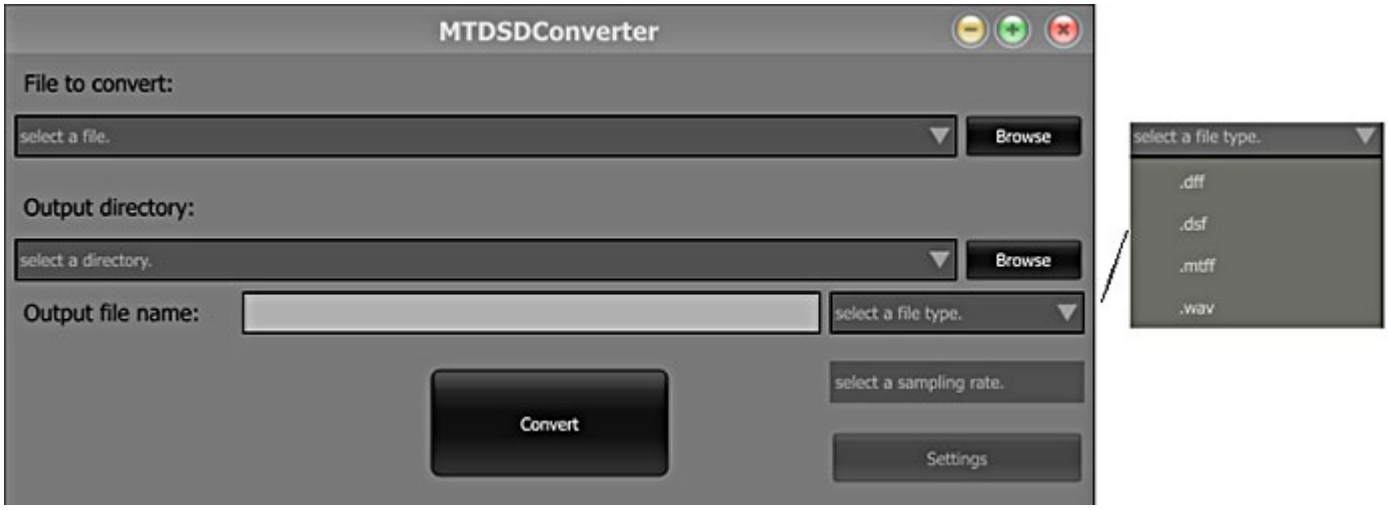
For example:

A DXD file generated from a 1kHz sine @-10dB -> peak = -10dB

A DSDIFF file generated from a 1kHz sine @-10dB -> peak = -9.9dB

MTDSD Converter

A stand alone DSD converter application is installed with Pyramix.
You will find it in **Start > All Programs > Merging Technologies > Pyramix**.



MTDSD Converter user interface

The input file format can be **8FS**, **DXD** or **DSD**. The output file type is chosen from the **select a file type.** drop-down list.Sampling rate is selected from the **select a sampling rate.** drop-down list such as **DSD64**, **DSD128** or **DSD256**.

- **DFF** = **DSDIFF**
- All formats support up to **DSD256** except **WSD** (**DSD 64** and **DSD128** supported).
- Edited masters can only be **DSDIFF** (Stereo, 5.0 or 5.1).
- DSDIFF can support up to **64** channels
- **DSF** supports **1** to **6** channels.
- **WSD** is limited to **256**.
- **MTFF** supports up to **6** channels with specified channel mapping as a Digital Release (TOC included). Otherwise, as regular media support is up to **256** channels.

Appendix IV 9-Pin connection

PC RS-232 Serial Port to External Sony P2 RS-422 Controller

The RS-232 ports of a standard PC are slightly different from the RS-422 format used for the Sony P2 protocol. We recommend the use of an external RS-232/RS-422 adapter. One example is the **USB Sync** option which can be ordered from your Merging sales partner.

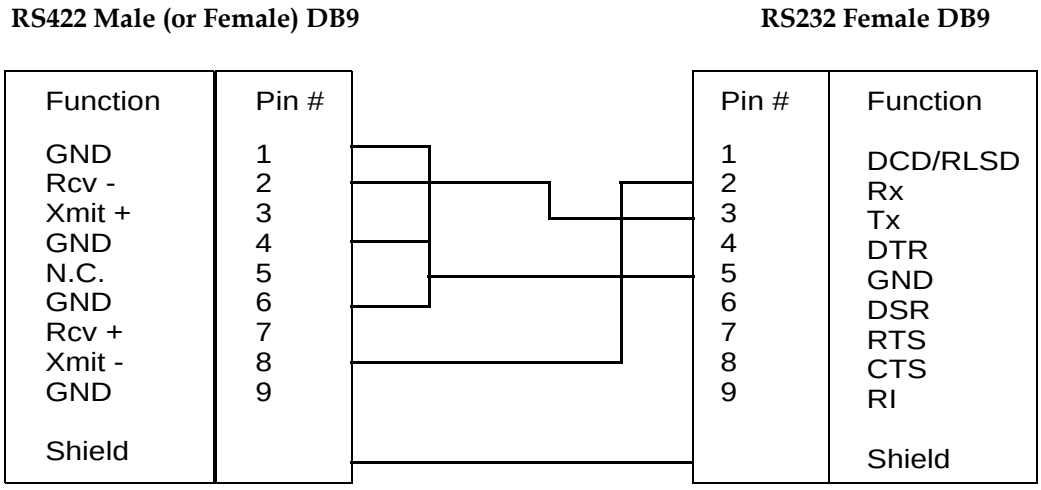
Connecting an RS422 device using a direct cable

(without RS-232 / RS-422 adapter)

For emergency use and for short distances, a direct cable may be used. However, Merging Technologies does not guarantee the correct function of an external controller if this cable is used. Different cables are required depending on whether Pyramix is controlled by a master device or is controlling a slave device.

Direct Cable for a Master Device

This pinout should work in most of the cases where Pyramix is controlled by a Master device (check on your controller if the RS422 connector has to be male or female). It has been tested with various mixers such as Sony DMX-R100, Soundcraft Spirit, Soundtracs DPC II and DS3, and various other Sony P2 protocol capable controllers:

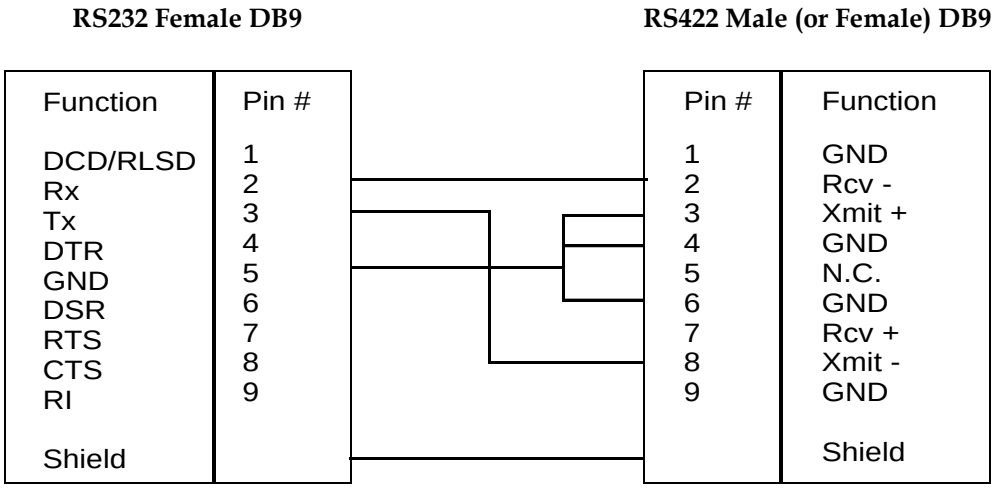


RS422 DIrect Cable for Master Device pinouts

The RS422 standard is not implemented consistently on all devices, so the cable pinouts may differ. Please consult your controller's user guide for appropriate connector cabling.

Direct Cable for a Slave Device

This pinout should work in most of the cases where Pyramix is controlling a Slave device.



RS422 DIrect Cable for Slave Device pinouts

The RS422 standard is not implemented consistently on all devices, so the cable pinouts may differ. Please consult your controller's user guide for appropriate connector cabling.

Appendix V - Network Connections

Note: Direct Ethernet connection of Workstations (i.e.: 1x VCube and 1x Pyramix) with standard factory default DHCP settings and without a proper DHCP server available in the network may lead to unexpected behavior, E.g. software or system freezes. (ISIS controller will default to a fixed IP address, if no DHCP server is available).
At all times proper, individual, TCP-IP addresses for each machine, assigned either automatically (DHCP, if available) or manually (Fixed IP) are required, as described below.

This caution is not relevant for machines operating without network connection.

Ethernet Connection & Settings

1. Create an Ethernet connection between the machines, via an Ethernet switch or using a direct, cross-wired, Ethernet cable. (100Mbit for Sync/Control, 1000Mbit for file sharing recommended)
2. If, on your existing network, an Admin DHCP server is giving TCP/IP addresses to all connected clients, leave all Pyramix, Isis and VCube machines with the default "DHCP" settings ("Obtain IP address automatically" in the Local Area Connection Properties / Internet Protocol (TCP/IP) properties. (If you are connected to an existing network with no active DHCP server, please contact the (human) server administrator to obtain a range of available IP address from him, and enter these as shown below).
3. If no admin DHCP server is available, manually give each of your machines a unique TCP/IP number, in the Local Area Connection Properties / Internet Protocol (TCP/IP) properties. Typically, IP addresses can be, respectively: 192.168.0.3 (PMX) 192.168.0.4 (VCube) and 192.168.0.5 (Isis), with a common Subnet mask being 255.255.255.0. No default gateway is necessary.

Set-up for Pyramix & VCube in: **Control Panel > Network Connections > Local Area Connection > Properties / Internet Protocol TCP/IP / Properties**.

Set-up for Isis: Press **STOP** key for 5 seconds during power up. Set-up address with left/right cursor and Track keys 1 to 10, then **Set** key. See also **ISIS User Manual page 14**.

Fixed IP address range, examples:

Choice A*	Choice B*	Typical use
192.168.0.1	10.0.0.1	Usually reserved (for Gateway or Server)
192.168.0.2	10.0.0.2	Usually reserved
192.168.0.3	10.0.0.3	Pyramix A
192.168.0.4	10.0.0.4	VCube A
192.168.0.5	10.0.0.5	ISIS A
192.168.0.6	10.0.0.6	Pyramix B
192.168.0.7	10.0.0.7	VCube B
192.168.0.8	10.0.0.8	ISIS B
192.168.0.9	10.0.0.9	Pyramix C
etc.	etc.	Increase only right-most number (up to 254)

*Use an address from column A or B, then stick to the selected range for all machines connected on a single network.

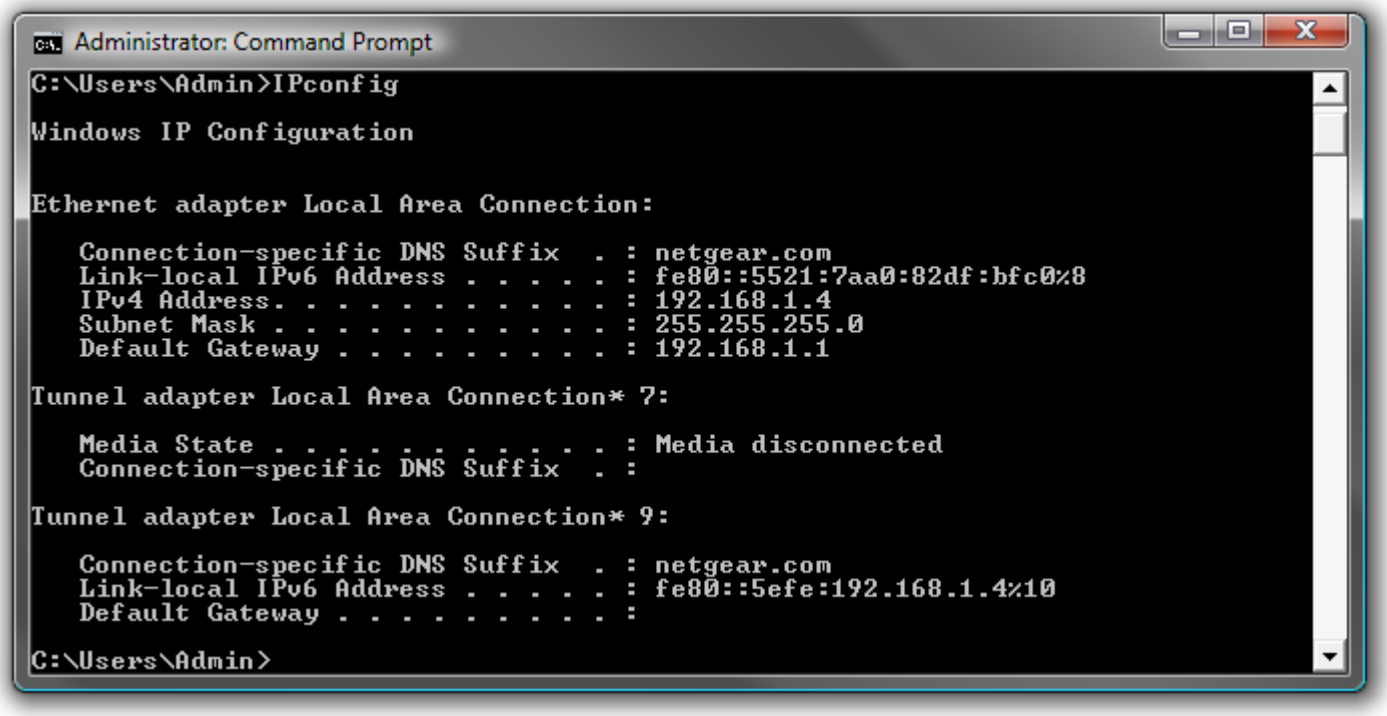
Set subnet mask to **255.255.255.0**

Checking IP Configuration

To check the **IP Configuration** of the machine you are working on do the following:

Open a Command Prompt window. (**Start > All programs > Accessories > Command Prompt**) then type in the following command:

IPCONFIG followed by **Enter**. The IP configuration for the machine will be shown like this:



Command Prompt Window with IPCONFIG

Checking Network Connections

Using "Ping"

To check that the connections you have set up are operational do the following:

Open a Command Prompt window. (**Start > All programs > Accessories > Command Prompt**) then type in the following command:

PING 192.168.0.3 (or whatever TCP/IP address is currently assigned to the workstation or device you wish to check) followed by **Enter** then wait for the machine to reply. Repeat the process for all other connected workstations / controllers.

Using Windows Explorer

In a Windows Explorer window, right-click on My Network Places and choose **Explore > Entire Network / Microsoft Windows Network / Workgroup or Domain** (choose whichever is appropriate) then verify that all Pyramix and VCube workstations can search/see each other on the network, including shared hard drives and folders. (Having all machines in the same **"Workgroup"** (default workgroup is "**WORKGROUP**") helps.

> **Note:** It may take some time for the TCP/IP lists to be appropriately updated to reflect the complete network topology on all machines. (Particularly when additional computers are added to a large existing network). Please allow for time for these operations to be properly carried out in the background. It may in fact take something like 10 to 50 minutes depending on the size of the network. (In certain situations, E.g. a small 2 machine peer-to-peer network, rebooting both machines may speed up the process).

Synchronization with Virtual Transport 2

Synchronization is automatic between Pyramix and VCube(s) listed and connected in **Settings > All Settings > Remote Control > Virtual Transport**.

Note: For proper synchronization between Pyramix and VCube in a non MassCore Native mode PyraCube the ASIO buffer size of the ASIO device should be set to 256 samples. If this is not possible for the ASIO device then switch the VCube configuration from **Platform Native - ASIO** to No **VS3/ASIO audio** in the VS3 Control Panel. In this case, synchronization between Pyramix and VCube may take longer, but will work.

Appendix VI - Pyramix iXML Implementation

VENDOR MODEL	Merging Technologies Pyramix Virtual Studio		DATE VERSION	21.03.2006 5
IXML MASTER TAG	**IXML SUB TAGS**	**WRITTEN**	**READ**	**REMARKS**
<PROJECT>		X	X	
<SCENE>		O	O	
<TAKE>		O	O	
<TAPE>		O	O	
<CIRCLED>		X	X	
<FILE_UID>		O	O	BWF like Originator Reference
<UBITS>		X	O	
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<TRACK_LIST>	<TRACK_COUNT>	O	O	
<TRACK>	<CHANNEL_INDEX>	O	O	
<TRACK>	<INTERLEAVE_INDEX>	O	O	
<TRACK>	<NAME>	O	O	
<TRACK>	<FUNCTION>	O	O	
NOTES:				
XML Encoding	UTF-8	O	O	
BWF Mono		O	O	up to 128 channels
BWF Poly		O	O	up to 128 channels
BWF Dual Poly		O	O	up to 128 channels

Key: O = Supported X=Not Supported

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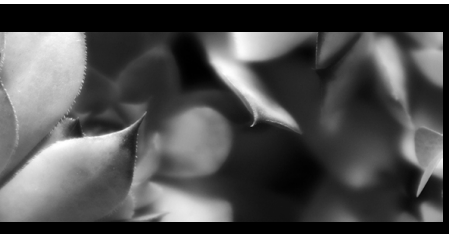

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MERGING
AUDIO FOR THE NETWORKING AGE