



**Pyramix**  
DIGITAL AUDIO WORKSTATION

**5**

# Enhanced MIDI Control User Guide



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# Pyramix EMC Option - User Guide

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# Enhanced MIDI Control Guide

## Introduction

### Overview

This document details the physical and logical connections required to enable a variety of hardware control surfaces and mixing consoles to control and be controlled by Pyramix Virtual Studio using the optional **Enhanced MIDI Control** protocol.

### Scope

The Pyramix **Enhanced MIDI Control** option supports hardware control surfaces capable of full or partial HUI or MackieControl emulation using a subset of the Merging Technologies **Oasis** protocol.

### Supported and Validated Controllers

Mackie MCU in HUI mode and MackieControl mode

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 (MackieControl is specifically configured for certain DAWs other than Pyramix)

## Setup

### Requirements:

Components required for operating a HUI or compatible controller with Pyramix:

- A compatible control surface.
- Pyramix 5.0 SP2 or higher with **Enhanced MIDI Control** option authorized.
- A physical MIDI connection between the Pyramix workstation and the controller.

### Keys

Valid **Remote Control Support** (PSO-RCTR) and **Remote Control - MIDI EMC** (PSO-RCT-EMC) keys are required. If these are not present on your system, please contact your Merging Sales Partner in order to obtain the appropriate keys.

### MIDI Connection

Wherever possible it will generally be preferable and more convenient to use USB for the physical MIDI connection. Some controllers will require a specific driver to be installed on the workstation in order to communicate with Pyramix.

When no USB connection is available on a controller an additional MIDI interface will be required. Please be aware that some third party interfaces may lead to a freeze in Pyramix, depending on the driver and the firmware version of the MIDI device. The following devices have been tested with Pyramix:

- Edirol UM1, UM2 **OK**
- Yamaha UX-256 **OK**
- M-AUDIO UNO **Not working**

## Pyramix Settings

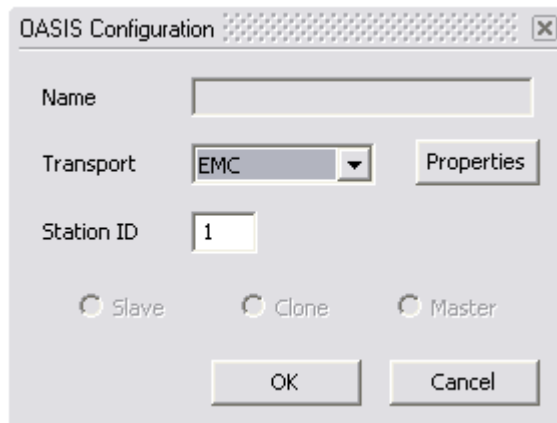
In order to set up Pyramix to communicate with the control surface, first go to Pyramix **Settings > All Settings > Remote Control > Controller** then press the **Add** function button. Enter a suitable name for the external controller in the **Name** field, such as "**My Controller**". Then choose the **OASIS** driver from the **Driver** drop-down list.

Here is a typical dialog example:



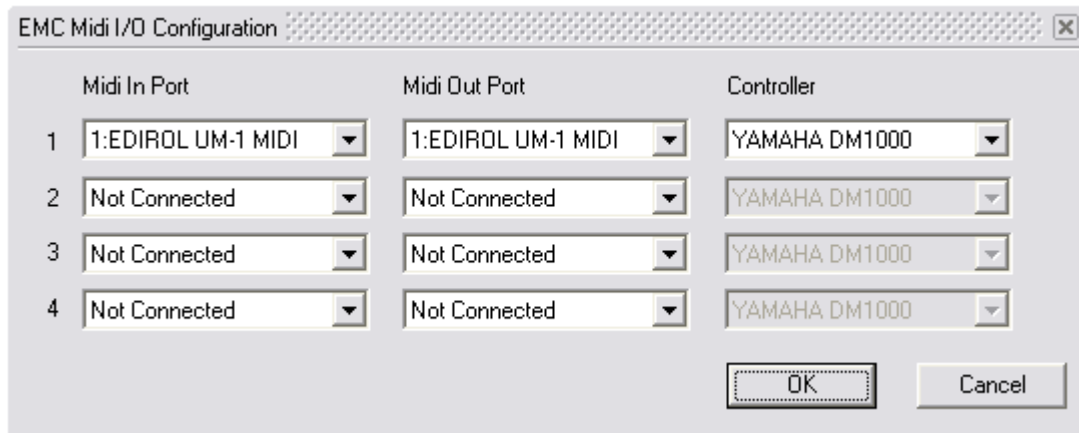
Pyramix Controller Properties dialog

Click on **Properties** and select **EMC** in the drop-down menu as shown below:



Oasis Configuration dialog

Then click on the **Oasis Configuration** dialog **Properties** button and choose the appropriate **Midi In/Out Port** and the connected **Controller type**. Each bank of 8 faders requires a dedicated MIDI port. The first fader bank, i.e. the right most one should be assigned to the first MIDI port.



EMC Midi I/O Configuration dialog

## Mapping

EMC is factory mapped according to the HUI / MC specifications.

No manual mapping from within Pyramix is required or possible. However, for adventurous people with patience and some understanding of MIDI and XML, it is possible to duplicate then edit one of the included XML files to fine tune mapping according to personal taste and specific controllers. (In the EMC drop-down Pyramix will show any XML mapping file that it finds in:

**C:\Program Files\Common Files\Merging Technologies\Controllers**

Details of the factory mapping can be found in the: **EMC Mapping Table** on page 17

## Control Surface Set-up

### Activating HUI Mode

Pyramix and the HUI compliant controllers generally communicate using the Mackie HUI protocol. In many controllers, Mackie HUI mode is activated by selecting a Remote Layer and choosing ProTools as the target.

Please refer to the documentation for your specific control surface.

## Control Surface Paradigm

### Definitions

- **Bank:** A group of 8 faders.
- **VPot:** Stands for "Virtual Potentiometer" (derived from the operating element used in analog rotary controls) A VPot is a rotary control operating a digital shaft-encoder. Pressing a VPot knob often operates a switch giving an extra function, typically **Automation Release (AR)** in the table on page 18. Please see VPot Press/Release Modes below.

### VPot Horizontal and Vertical Modes

When **ANY** strip is **SE**lected Horizontal mode is engaged. When **NO** strip is selected Vertical mode is engaged.

#### Horizontal Mode

All VPots act on selected strip

#### Vertical Mode

VPots act on the strip they are vertically associated with.

### VPot Functions

Each strip has a dedicated select (**SEL**) button. When a strip is selected all the VPots in a bank are assigned to that strip and the LCD is updated, after a short time, with the name of the current VPot functions. These functions depend on the current VPot mode (Pan, Aux, Eq etc.). In this mode the VPots are assigned horizontally to the selected strip. The order of VPot assignment in this horizontal mode is also available in a vertical mode. This is the target of 8 special buttons named "VPot functions". When no strips are selected the VPot control parameter depends on the selected VPot function (1 to 8) button.

#### Example

Assume we have 8 Aux sends in a mixer of 8 strips. Select the first strip and the VPot controls are assigned to Aux 1-8 of the first strip. If you deselect the strip, the VPots control the Aux1 send on **each** mixer strip. If you wish to control Aux send 5 of each of the 8 strips press the **Fct5** button.

### VPot Press/Release Modes

When a VPot is pressed, a **Automation Release** command is interpreted by the Pyramix automation engine. (Resulting action is similar to **Touch Up**, i.e. when a touch sensitive fader released. )

**Automation Write** occurs automatically when a new value from a VPot is detected, i.e. when it is turned. This is similar to **Touch Down** when a touch-sensitive fader is touched.



### Modifiers

When **Shift**, **Ctrl** and/or **Alt** modifiers are used while pressing a VPot the switch directly operates a related button in the Pyramix mixer, around the mixer element controlled by the VPot.

### Example

Aux 1 gain is assign to a VPot. By pressing the VPot and with the **Alt** key held down, the pre-fader (**PF**) button of this strip's Aux1 will change its state.

**Note:** The various available controllers differ slightly in the buttons physically present and their functions. Please see the tables on the next page for details of supported controller mappings.

# Controllers Modifiers Mapping

Controller	Mackie MCU		Raditek SAC-2k		Tascam US-2400	
Action	Button	Panel	Button	Panel	Button	Panel
<b>MODES</b>						
Mode 1	Pan/Surround	Assignment	Pan	Mixer-Mode	Pan	
Mode 2	Send	Assignment	Inserts/Sends	Channel-Strips	F-Key + Aux 4	
Mode 3	EQ	Assignment	Eqs	Channel-Strips	F-Key + Aux 5	
Mode 4	Instrument	Assignment	Dynamics	Channel-Strips	F-Key + Aux 6	
<b>FUNCTIONS</b>						
Funtion 1	F1	Function	Snd/Ins 1	Mixer-Mode	Aux 1	
Funtion 2	F2	Function	Snd/Ins 2	Mixer-Mode	Aux 2	
Funtion 3	F3	Function	Snd/Ins 3	Mixer-Mode	Aux 3	
Funtion 4	F4	Function	Snd/Ins 4	Mixer-Mode	Aux 4	
Funtion 5	F5	Function	Low	Mixer-Mode	Aux 5	
Funtion 6	F6	Function	LowMid	Mixer-Mode	Aux 6	
Funtion 7	F7	Function	HiMid	Mixer-Mode		
Funtion 8	F8	Function	High	Mixer-Mode		
<b>MODIFIERS</b>						
Modifier 1	Shift	Modifiers	Shift	Transport	Shift	Transport
Modifier 2	Control	Modifiers	Audio	Mixer-Mode		
Modifier 3	X/Alt	Modifiers	Midi	Mixer-Mode		
Modifier 4						
<b>NAVIGATION</b>						
Bank -	< Bank	Fader Banks	17 to 24	Mixer-Mode	Bank +	Transport
Bank +	Bank >	Fader Banks	25 to 32	Mixer-Mode	Bank -	Transport
Channel -	< Channel	Fader Banks	1 to 8	Mixer-Mode		
Channel +	Channel >	Fader Banks	9 to 16	Mixer-Mode		

Controller	DM2000		DM1000		Yamaha 02R96	
Action	Button	Panel	Button	Panel	Button	Panel
<b>MODES</b>						
Mode 1	Pan	Encoder Mode	Pan	Encoder Mode	1	Effects / Plug-Ins
Mode 2	Assign 3	Encoder Mode	Aux	Encoder Mode	2	Effects / Plug-Ins
Mode 3	Assign 4	Encoder Mode	Meter	Display Access	3	Effects / Plug-Ins
Mode 4	Assign 3	Encoder Mode	Automix	Display Access	4	Effects / Plug-Ins
<b>FUNCTIONS</b>						
Funtion 1	Aux 1	Aux Select	Aux 1	Aux Select	Aux 1	Aux Select
Funtion 2	Aux 2	Aux Select	Aux 2	Aux Select	Aux 2	Aux Select
Funtion 3	Aux 3	Aux Select	Aux 3	Aux Select	Aux 3	Aux Select
Funtion 4	Aux 4	Aux Select	Aux 4	Aux Select	Aux 4	Aux Select
Funtion 5	Aux 5	Aux Select	Aux 5	Aux Select	Aux 5	Aux Select
Funtion 6			Aux 6	Aux Select		
Funtion 7						
Funtion 8						
<b>MODIFIERS</b>						
Modifier 1	Back	Transport	Fader/Aux	FaderMode	5	Locate mem
Modifier 2	Forward	Transport	User Defined		6	Locate mem
Modifier 3	User Defined		User Defined		7	Locate mem
Modifier 4						
<b>NAVIGATION</b>						
Bank -	5	Effects/Plug-ins	User Defined		Left Narrow	Machine Ctrl
Bank +	8	Effects/Plug-ins	User Defined		Right Narrow	Machine Ctrl
Channel -	6	Effects/Plug-ins	User Defined			
Channel +	7	Effects/Plug-ins	User Defined			

## Controller Specific Notes

### SAC-2k

SAC controllers now work in HUI mode. The SAC-2k should be set to “Proto” mode.

### Yamaha

#### Driver

Before attempting to set up a Yamaha console please download and install the required USB driver from the Yamaha Pro Audio Web site. For the DM2000, DM1000, 02R96 and 01V96 this can be found at:

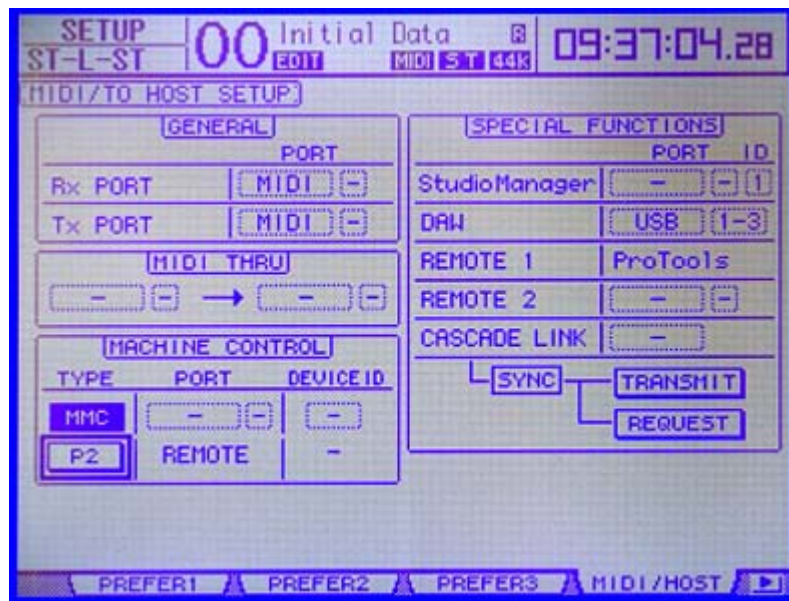
<http://www.yamahaproaudio.com/>

#### DM1000

##### DM1000 Settings

Detailed steps for activating this mode in a DM1000 include:

- Press **DISPLAY ACCESS [SETUP]**, then **[F4]** (below the LCD) to access the **MIDI/HOST** setup page.

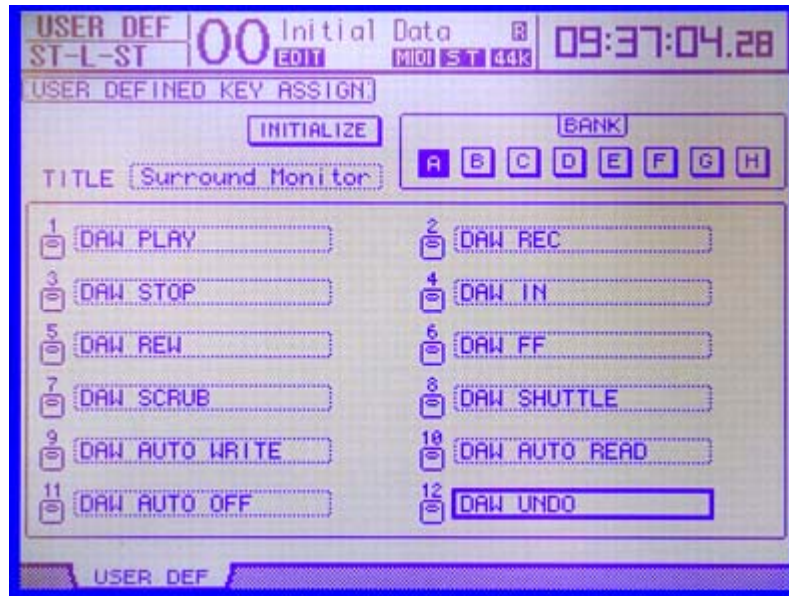


DM1000 USER DEF page

- Check the **TO HOST SERIAL** parameter is set to **PC**.  
**Note:** If this parameter is set to **MAC** the Pyramix workstation may crash when connected to the DM1000
- Now move the cursor to the port parameters for **DAW**, select **USB** and next to it **1 - 3**.  
**Note:** DM1000 V2 will require four ports. DM1000 V1 only needs three, and these must be the first three. I.e. ports 1-3

**Note:** Pyramix currently only allows three ports to be selected in the **EMC Midi I/O Configuration** dialog. Functionality is the same as DM2000 V1. The fourth will carry Selected Channel data in the future.

Certain controls are assignable from the control surface itself. Press the **User Defined Key** button (from the DM1000 default 1-16 layer) and assign your dedicated function from the list available. All listed items beginning with **DAW** are usable.

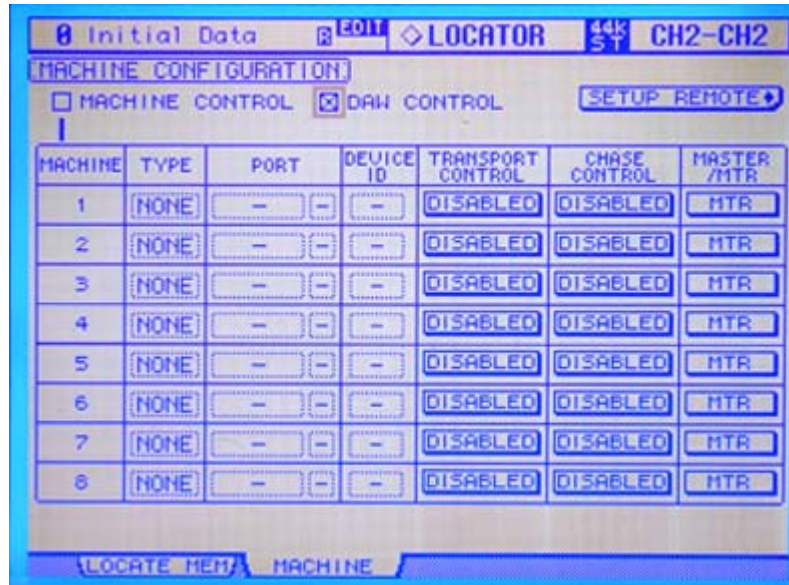


DM1000 USER DEF page

We recommend having the following controls in a dedicated bank:

- DAW PLAY**
- DAW STOP**
- DAW CTRL**
- DAW ALT**
- DAW BANK +**
- DAW BANK -**
- DAW AUTO WRITE**
- DAW AUTO READ**
- DAW AUTO OFF**
- DAW REC**

## DM2000



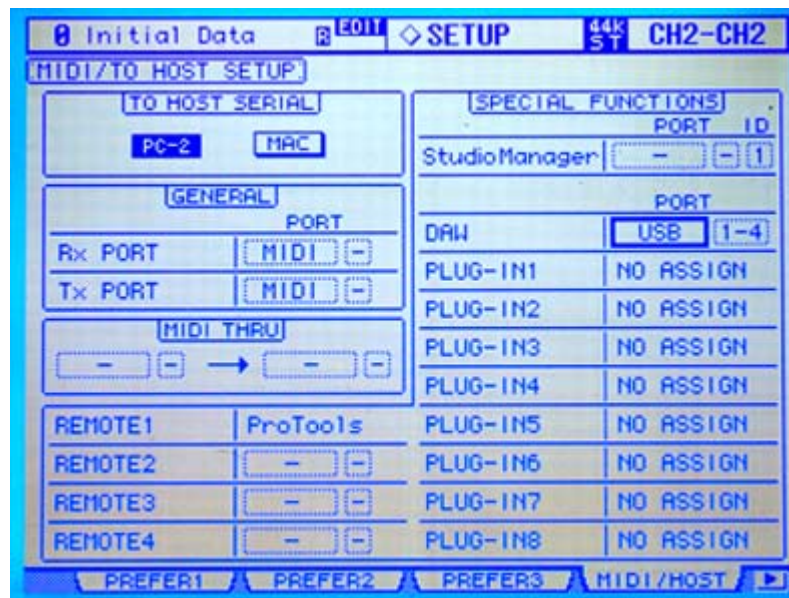
DM2000 MACHINE CONTROL DISPLAY MACHINE page

The transport buttons and many others will not work by default in remote with Pyramix. You first have to go to the **MACHINE CONTROL [DISPLAY] MACHINE** page of the DM2000 and check the **DAW** transport option.

### DM2000 Settings

Detailed steps for activating this mode in a DM2000 include:

- Press **DISPLAY ACCESS [SETUP]**, then **[F4]** (below the LCD) to access the **MIDI/HOST** setup page.



DM2000 DISPLAY ACCESS [SETUP] : MIDI/HOST setup page

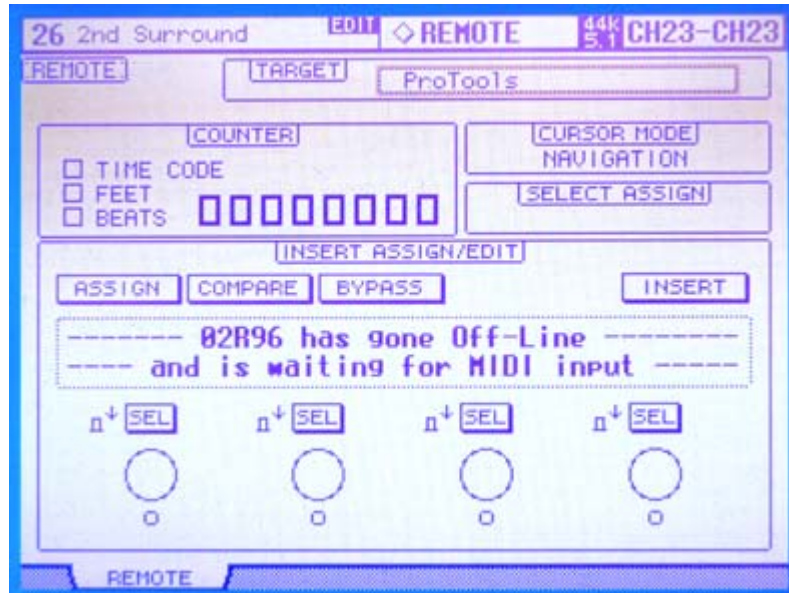
- Check the **TO HOST SERIAL** parameter is set to **PC**.  
**Note:** If this parameter is set to **MAC** the Pyramix workstation may crash when connected to the DM2000
- Now move the cursor to the port parameters for **DAW**, select **USB** and next to it **1 - 3**.



**Note:** DM2000 V2 will require four ports. DM2000 V1 only needs three, and these must be the first three. I.e. ports 1-3

**Note:** Pyramix currently only allows three ports to be selected in the **EMC Midi I/O Configuration** dialog. Functionality is the same as DM2000 V1. The fourth will carry Selected Channel data in the future.

- Press **DISPLAY ACCESS [REMOTE]**, then **[F1]** (below the LCD) to access **REMOTE Page 1**.

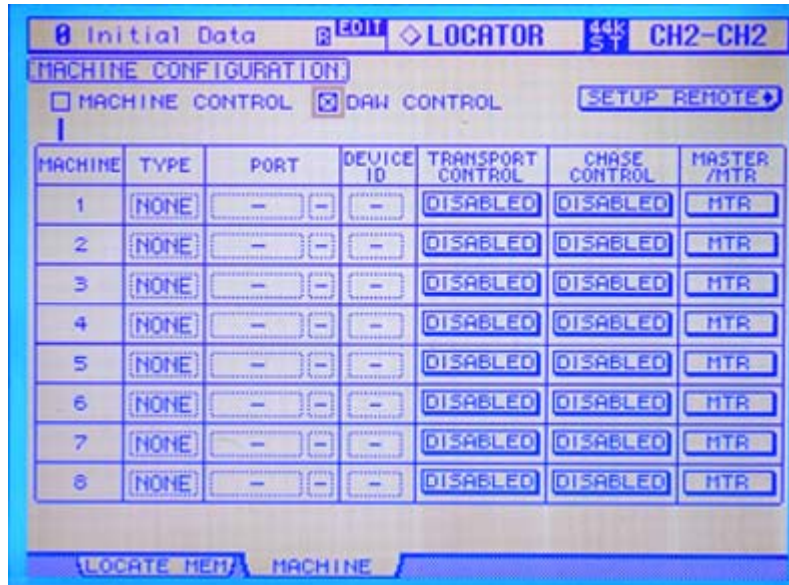


02R96 DISPLAY ACCESS [REMOTE] : REMOTE page

**Note:** Screenshot is from an 02R96. DM2000 is identical except for the name and there will be four Remote Layer tabs

- Cursor to the **TARGET** parameter and use the **INC / DEC** keys or the **Parameter Wheel** to highlight (choose) **ProTools** from the list. Press **Enter** to confirm.
- Press **LAYER [REMOTE 1]**.

02R96



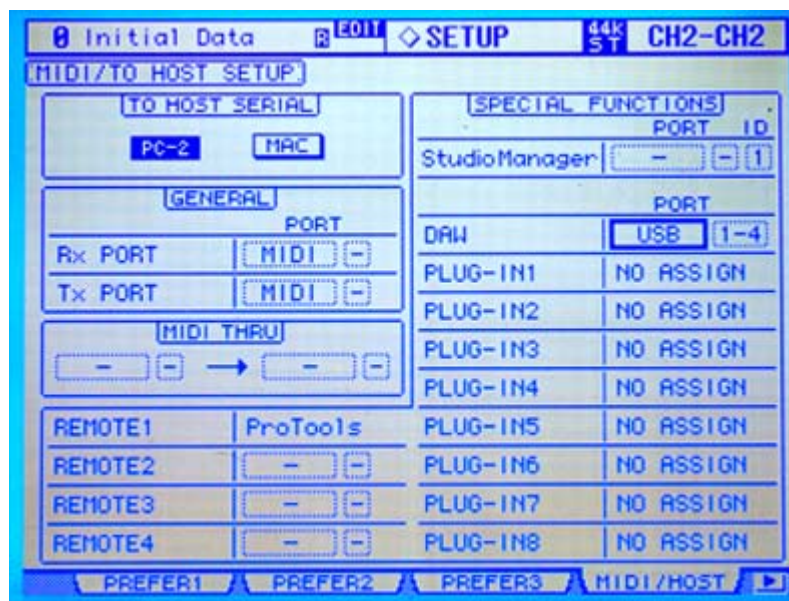
DM2000 MACHINE CONTROL DISPLAY MACHINE page

The transport buttons will not work by default in remote with Pyramix. You first have to go to the **MACHINE CONTROL [DISPLAY] MACHINE** page of the 02R96 and check the **DAW** transport option.

**Note:** This screenshot is from a DM2000. 02R96 screen is identical except there is no **CHASE CONTROL** column since this has no relevance in an 02R96

**02R96 Settings**

- Detailed steps for activating this mode in a 02R96 include:



DM2000 DISPLAY ACCESS [SETUP] : MIDI/HOST setup page

**Note:** This screenshot is from a DM2000. 02R96 screen is identical apart from the name and the number of Remote Layer and Plug-in entries.

- Press **DISPLAY ACCESS [SETUP]**, then **[F4]** (below the LCD) to access the **MIDI/HOST** setup page. Check the **TO HOST SERIAL** parameter is set to **PC-2**.

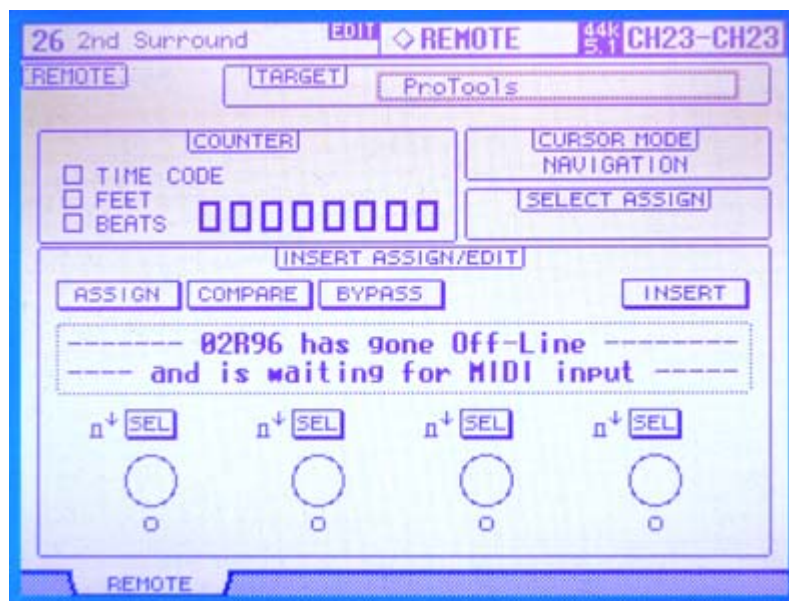
**Note:** If this parameter is set to **MAC** the Pyramix workstation may crash when connected to the 02R96

- Now move the cursor to the port parameters for **DAW**, select **USB** and next to it **1 - 3**.

**Note:** 02R96 V2 will require four ports. 02R96 V1 only needs three, and these must be the first three. I.e. ports 1-3

**Note:** Pyramix currently only allows three ports to be selected in the **EMC Midi I/O Configuration** dialog. Functionality is the same as 02R96 V1. The fourth will carry Selected Channel data in the future.

- Press **DISPLAY ACCESS [REMOTE]**, then **[F1]** (below the LCD) to access the **REMOTE** page.



02R96 DISPLAY ACCESS [REMOTE] : REMOTE page

- Cursor to the **TARGET** parameter and use the **INC / DEC** keys or the **Parameter Wheel** to highlight (choose) **ProTools** from the list. Press **Enter** to confirm.
- Press **LAYER [REMOTE]**.

**Note:** Apart from the functions set out in the tables below, the 02R96 also supports the following functions:

**Cursor Down zooms in to the Timeline**

**Cursor UP key zooms out.**

**SHIFT (locate memory 5) + Play gives Reverse Play**

**SHIFT (locate memory 5) + REW gives Rew with audio**

**SHIFT (locate memory 5) + FF gives FF with audio**

## Tascam US-2400

This controller has a special button named **F-Key**. This key modifies the behavior of many other buttons on the surface.



Examples:

Aux 4: select Fct4 of the VPot (in horizontal VPot mode only).

Aux 4 + F-Key: select Aux mode on the VPot.

Sel: the select function.

Sel + F-Key: collapse the strip.

As this controller has insufficient extra buttons, the **Ctrl** and **Alt** buttons are not present. The **F-Key** partially replaces some of missing functions you can have with **Ctrl** and **Alt**.

Currently the Aux 1-6 buttons LEDs turn on/off strangely in function of the VPot function chosen. This is being investigated via discussions with Tascam.

## EMC Mapping Table

### Horizontal Mode

With Strip Selected

EMC Enhanced Midi Control Mapping - Horizontal Mode (with a strip selected)									
All 8 VPots actions effective on one selected strip									
Mode	Action	VPot1	VPot2	VPot3	VPot4	VPot5	VPot6	VPot7	VPot8
1 (PAN)	Turn	Pan				L/R Srnd (L)	F/R Srnd (L)	Div Srnd (L)	Sub Srnd (R)
	Shift + Turn					L/R Srnd (R)	F/R Srnd (R)	Div Srnd (R)	Sub Srnd (R)
	Push	AR Pan				AR L/R Srnd (L)	AR F/R Srnd (L)	AR Div Srnd (L)	AR Sub Srnd (L)
	Shift + Push					AR L/R Srnd (R)	AR F/R Srnd (R)	AR Div Srnd (R)	AR Sub Srnd (R)
2 (AUX)	Turn	Gain Aux 1	Gain Aux 2	Gain Aux 3	Gain Aux 4	Gain Aux 5	Gain Aux 6	Gain Aux 7	Gain Aux 8
	Push	AR Gain Aux 1	AR Gain Aux 2	AR Gain Aux 3	AR Gain Aux 4	AR Gain Aux 5	AR Gain Aux 6	AR Gain Aux 7	AR Gain Aux 8
	Shift + Push	On/Off Aux 1	On/Off Aux 2	On/Off Aux 3	On/Off Aux 4	On/Off Aux 5	On/Off Aux 6	On/Off Aux 7	On/Off Aux 8
	Ctrl + Push	In Place Aux 1	In Place Aux 2	In Place Aux 3	In Place Aux 4	In Place Aux 5	In Place Aux 6	In Place Aux 7	In Place Aux 8
	Alt + Push	Pre/Post Aux 1	Pre/Post Aux 2	Pre/Post Aux 3	Pre/Post Aux 4	Pre/Post Aux 5	Pre/Post Aux 6	Pre/Post Aux 7	Pre/Post Aux 8
3 (EQ Filter)	Turn	Gain 1	Frequency 1	Gain 2	Frequency 2	Gain 3	Frequency 3	Gain 4	Frequency 4
	Shift + Turn	Type 1	Q1	Type 2	Q2	Type 3	Q3	Type 4	Q4
	Push	AR Gain 1	AR Frequency 1	AR Gain 2	AR Frequency 2	AR Gain 3	AR Frequency 3	AR Gain 4	AR Frequency 4
	Shift + Push	AR Type 1	AR Q1	AR Type 2	AR Q2	AR Type 3	AR Q3	AR Type 4	AR Q4
	Ctrl + Push	Filter 1 On/Off		Filter 2 On/Off		Filter 3 On/Off		Filter 4 On/Off	
4 (Dynamics)	Turn	Threshold (comp)	Ratio (comp)	Attack	Release	Hold			
	Shift + Turn	Threshold (exp)	Ratio (exp)						
	Push	AR Threshold (comp)	AR Ratio (comp)	AR Attack	AR Release	AR Hold			
	Shift + Push	AR Threshold (exp)	AR Ratio (exp)						

Note: AR = Automation Release

## Vertical Mode

### NO Strip Selected

EMC Enhanced Midi Control Mapping - Vertical Mode (NO strip selected)							
All actions effective on corresponding strips (VPot 1 for Strip 1, VPot 2 for Strip 2, etc.)							
Mode	Function	VPot 1 mapping shown (Identical for Vpots 2 to 8)					
	Actions	Turn	Shift + Turn	Push	Shift + Push	Ctrl + Push	Alt + Push
1 (PAN)	F1	Pan		AR Pan			
	F2						
	F3						
	F4						
	F5	L/R Srnd (left)	L/R Srnd (right)	AR L/R Srnd (left)	AR L/R Srnd (right)		
	F6	F/R Srnd (left)	F/R Srnd (right)	AR F/R Srnd (left)	AR F/R Srnd (right)		
	F7	DIV Srnd (left)	DIV Srnd (right)	AR DIV Srnd (left)	AR DIV Srnd (right)		
	F8	SUB Srnd (left)	SUB Srnd (right)	AR SUB Srnd (left)	AR SUB Srnd (right)		
2 (AUX)	F1	AUX 1		AR AUX 1	On/Off	IP (In Place)	Pre/Post
	F2	AUX 2		AR AUX 2	On/Off	IP (In Place)	Pre/Post
	F3	AUX 3		AR AUX 3	On/Off	IP (In Place)	Pre/Post
	F4	AUX 4		AR AUX 4	On/Off	IP (In Place)	Pre/Post
	F5	AUX 5		AR AUX 5	On/Off	IP (In Place)	Pre/Post
	F6	AUX 6		AR AUX 6	On/Off	IP (In Place)	Pre/Post
	F7	AUX 7		AR AUX 7	On/Off	IP (In Place)	Pre/Post
	F8	AUX 8		AR AUX 8	On/Off	IP (In Place)	Pre/Post
3 (EQ Filter)	F1	Gain 1	Type 1	AR Gain 1	AR Type 1	On/Off Filter 1	
	F2	Frequency 1	Q 1	AR Frequency 1	AR Q 1		
	F3	Gain 2	Type 2	AR Gain 2	AR Type 2	On/Off Filter 2	
	F4	Frequency 2	Q 2	AR Frequency 2	AR Q 2		
	F5	Gain 3	Type 2	AR Gain 3	AR Type 3	On/Off Filter 3	
	F6	Frequency 3	Q 2	AR Frequency 3	AR Q 3		
	F7	Gain 4	Type 3	AR Gain 4	AR Type 4	On/Off Filter 4	
	F8	Frequency 4	Q 3	AR Frequency 4	AR Q 4		
4 (Dynamics)	F1	Threshold (comp)	Threshold (exp)	AR Threshold (comp)	AR Threshold (exp)		
	F2	Ratio (comp)	Ratio (exp)	AR Ratio (comp)	AR Ratio (exp)		
	F3	Attack		AR Attack			
	F4	Release		AR Release			
	F5	Hold		AR Hold			
	F6						
	F7						
	F8						

AR = Automation Release

### Common Controllers Buttons

EMC Enhanced Midi Control Mapping - Common Controllers Buttons								
All actions effective on corresponding strips (Mute 1 for Strip 1, Solo 1 for Strip 1, Mute 2 for Strip 2, etc.)								
Buttons	Actions							
	Push	Push Released	Shift + Push	Shift + Push Released	Ctrl + Push	Ctrl + Push Released	Alt + Push	Alt + Push Released
MUTE	Mute	AR Mute			Collapse Strip			
SOLO	Solo	AR Solo	Solo Safe	AR Solo Safe				

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