

Dolby Atmos Integration

Dolby Atmos is a surround sound technology developed by Dolby Laboratories.

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.

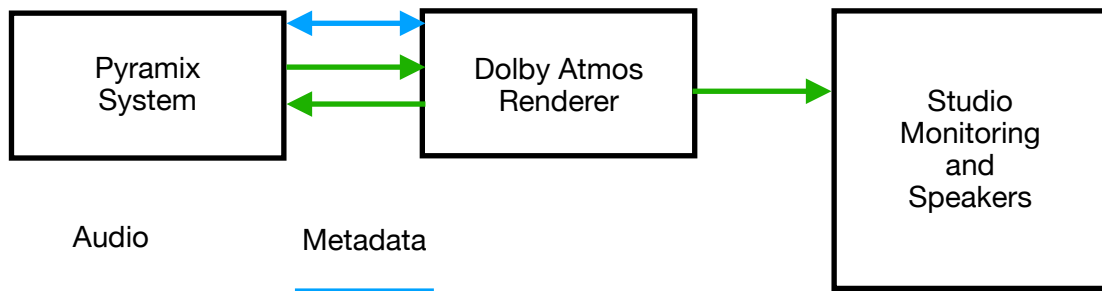
This means the ability for the creation tools to send both audio (over any protocol but usually via DANTE or MADI) and panning metadata (over a network connection) to one of the following Dolby Renderer systems:

- 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 currently recommended version software component.

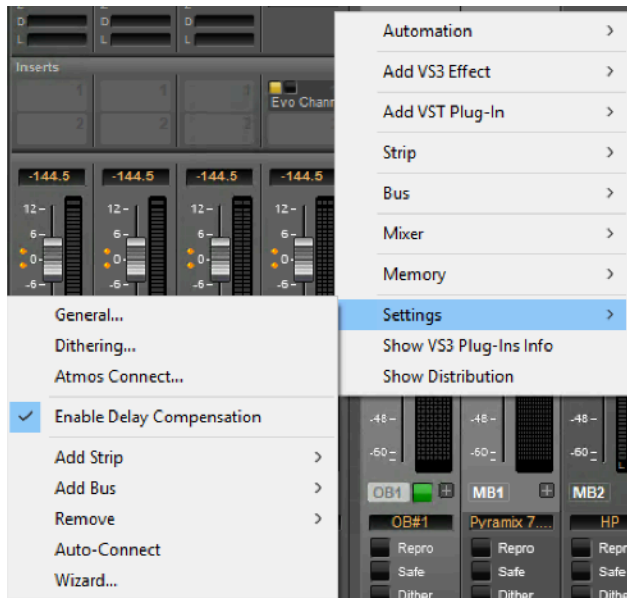
Only the theatrical RMU is unsupported at this time.

For Dolby Atmos configurations and options please contact your local Dolby distributor.

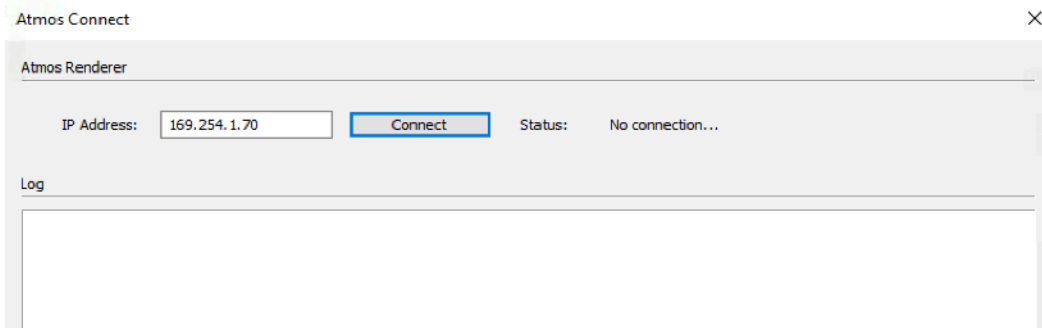


Connecting Dolby Atmos metadata from Pyramix to the Renderer

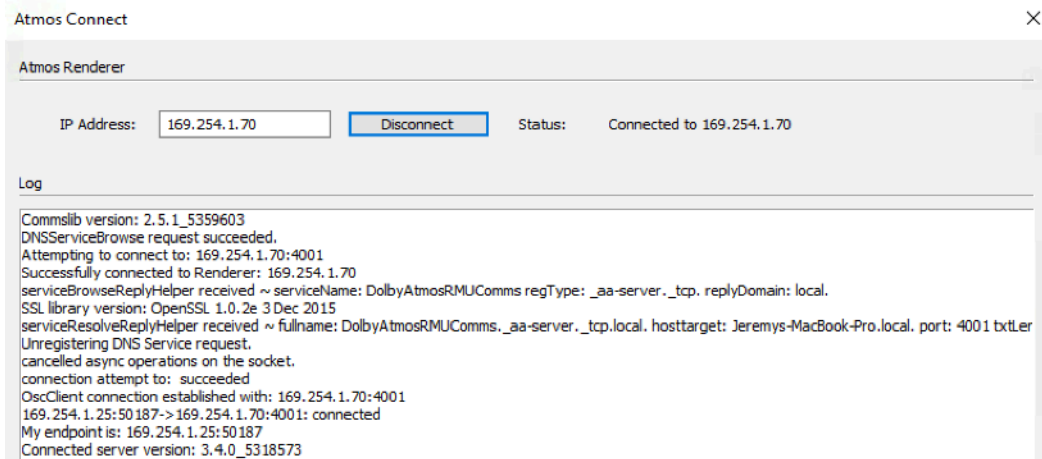
In order to establish a connection between Pyramix and the RMU for metadata connectivity, simply right click anywhere on the Pyramix mixer and go to settings -> Atmos Connect.



This will bring up the Atmos Connect window where the user needs to enter the Renderer IP address and click “Connect”.



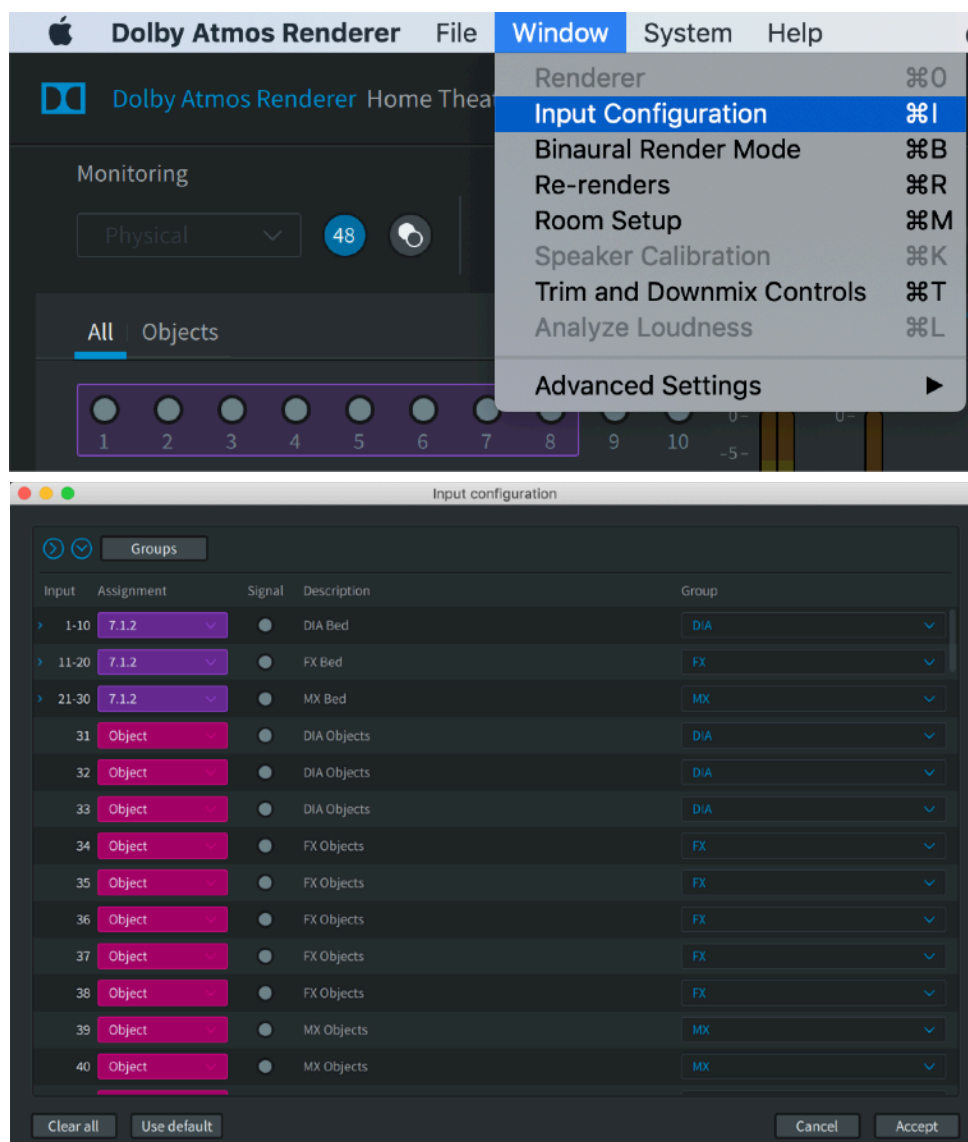
Once connected, the Atmos Connect window will look like this:



Using Pyramix with a Dolby Atmos Renderer (DAPS/DAMS/HT-RMU)

An Atmos project will typically comprise of a combination of beds (channel based busses such as stereo, 5.1, 7.1.2, etc...) and objects (mono sounds with associated panning metadata).

The content creator typically starts by configuring the Dolby Atmos Renderer with the correct input configuration:



A film/tv post production input configuration could look like on the above picture where 3 beds for Dialog, FX and Music have been created, along with a set of objects for Dialog, FX and Music.

This allows the creator to get 5.1/stereo/etc “re-renders” (or mixdowns) of the three main groups (DIA/FX/Music) out of the Dolby Renderer.

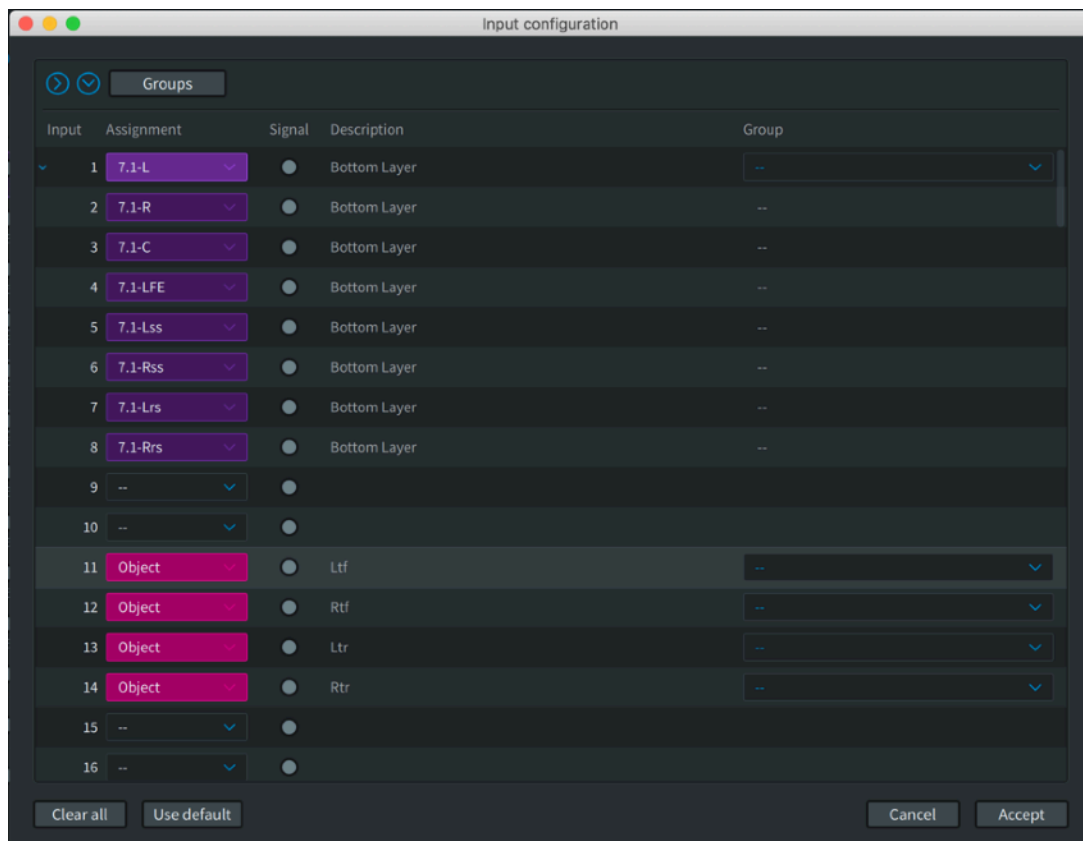
In a music workflow, the creator may be using just one bed and a set of objects.

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.

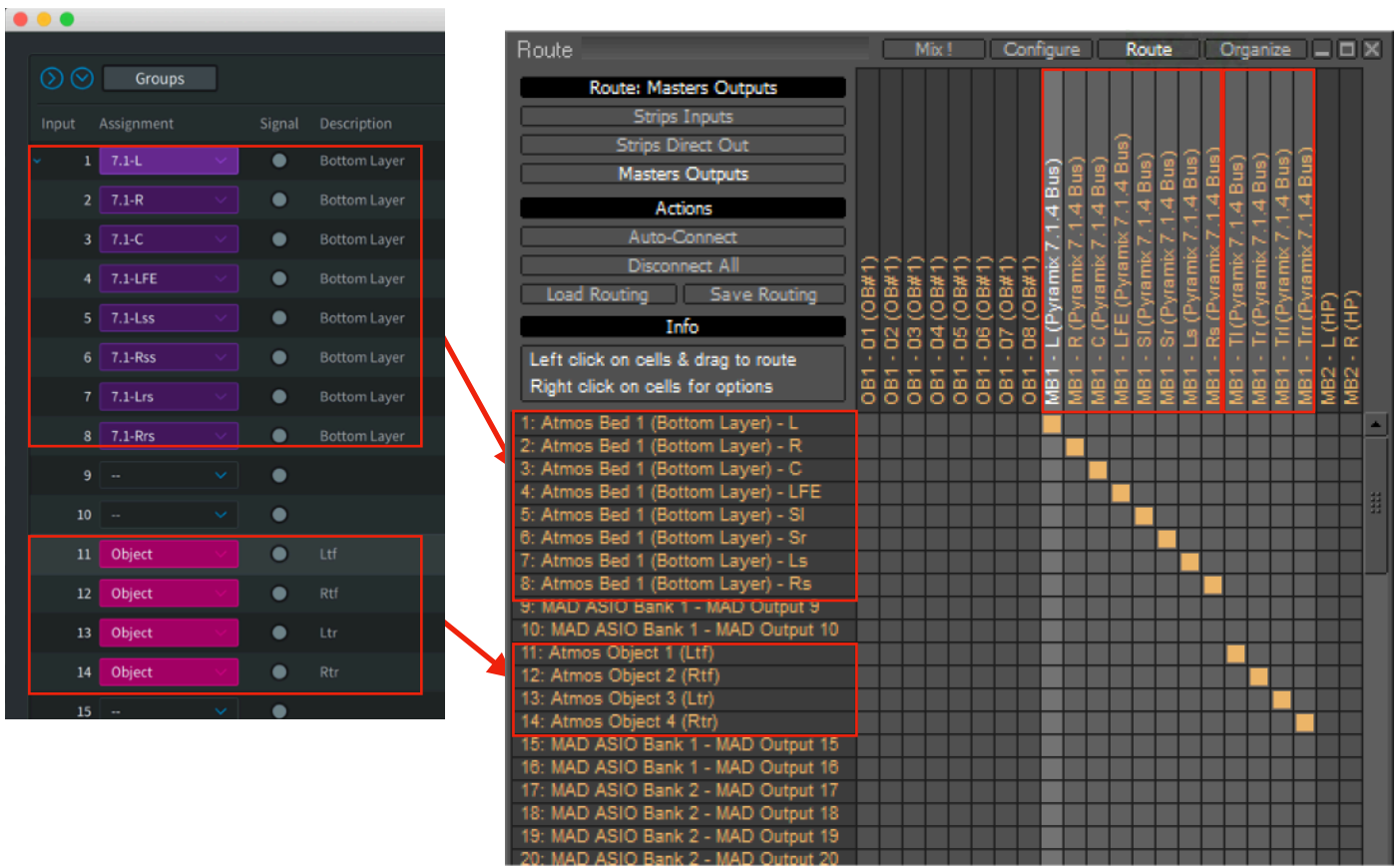
Let’s take the example of a classical music recording engineer, used to work natively in 7.1.4 with a Pyramix 7.1.4 output bus, and is now required to deliver an Atmos version of the soundtrack.

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 this way:

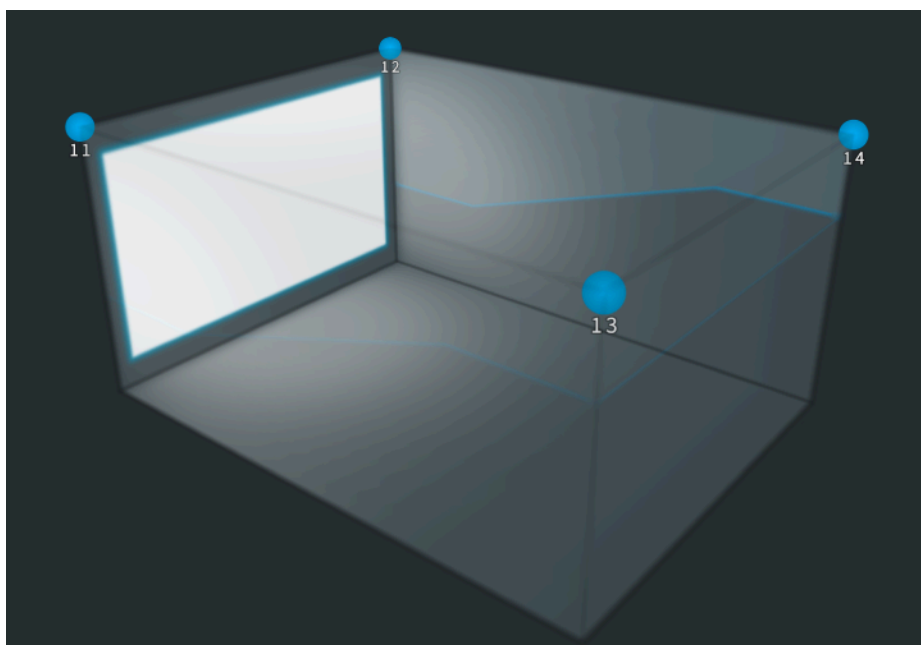


Once properly connected to the Dolby Renderer, Pyramix will automatically detect when a leg of a channel based Pyramix bus is connected to a Dolby Atmos object and will send the correct metadata to statically position this object in the right place.

To facilitate this, Pyramix discovers the Dolby Renderer input configuration and bring its channel names into the channel routing window of the Pyramix mixer.

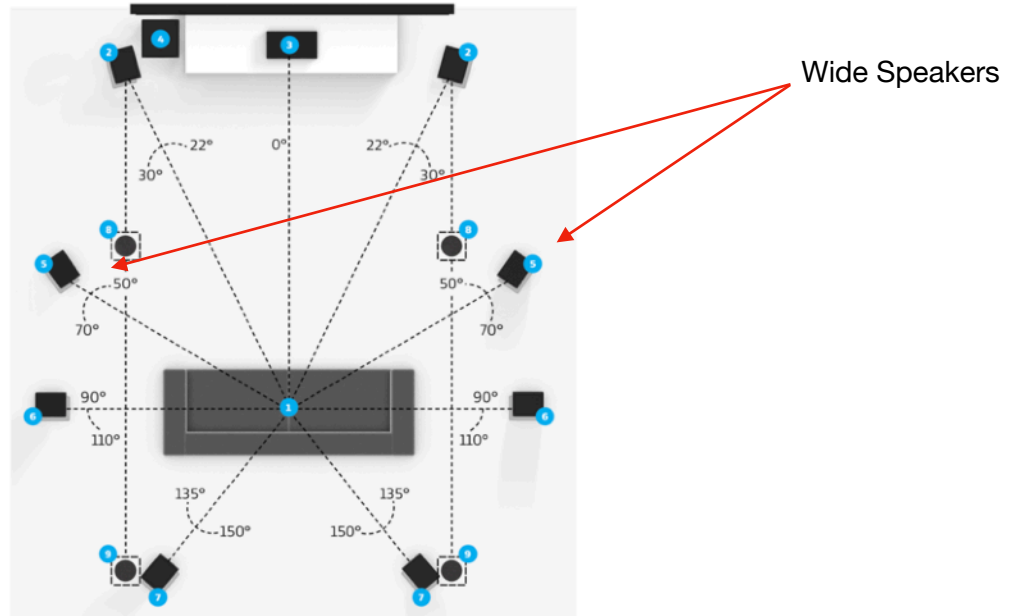


Once the Pyramix TI (Top Left) channel, for example, is connected to a Dolby Renderer object input, Pyramix will send the correct metadata so that the object is statically positioned in the Dolby Ltf (Left Top Front) speaker position.



Another example could be the case of a Pyramix user mixing natively with “Wide Left and Wide Right”.

Those two channels aren't 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 what is 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 right positions (in this case the Wide Speakers coordinates).

Route

Mix | Configure | Route | Organize

Route: Masters Outputs

Strips Inputs

Strips Direct Out

Masters Outputs

Actions

Auto-Connect

Disconnect All

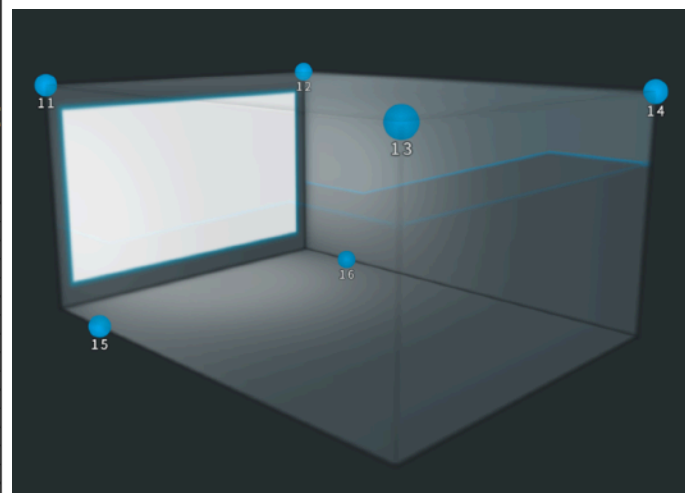
Load Routing Save Routing

Info

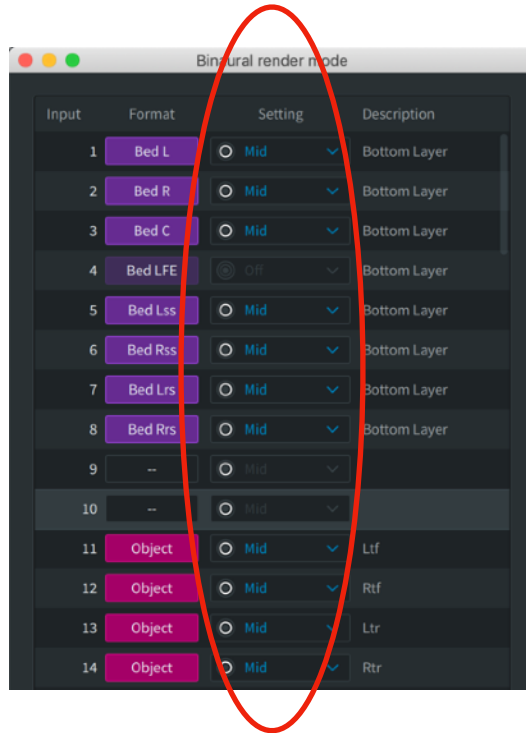
Left click on cells & drag to route

Right click on cells for options

	OB1 - 01 (Objects)	OB1 - 02 (Objects)	OB1 - 03 (Objects)	OB1 - 04 (Objects)	OB1 - 05 (Objects)	OB1 - 06 (Objects)	OB1 - 07 (Objects)	OB1 - 08 (Objects)	MB1 - L (Pyramix 9.1.4 Bus)	MB1 - R (Pyramix 9.1.4 Bus)	MB1 - C (Pyramix 9.1.4 Bus)	MB1 - LFE (Pyramix 9.1.4 Bus)	MB1 - Wr (Pyramix 9.1.4 Bus)	MB1 - Sl (Pyramix 9.1.4 Bus)	MB1 - Sr (Pyramix 9.1.4 Bus)	MB1 - Ls (Pyramix 9.1.4 Bus)	MB1 - Rs (Pyramix 9.1.4 Bus)	MB1 - Tr (Pyramix 9.1.4 Bus)	MB1 - Trl (Pyramix 9.1.4 Bus)	MB1 - Trr (Pyramix 9.1.4 Bus)	
1: Atmos Bed 1 (Bottom Layer) - L																					
2: Atmos Bed 1 (Bottom Layer) - R																					
3: Atmos Bed 1 (Bottom Layer) - C																					
4: Atmos Bed 1 (Bottom Layer) - LFE																					
5: Atmos Bed 1 (Bottom Layer) - Sl																					
6: Atmos Bed 1 (Bottom Layer) - Sr																					
7: Atmos Bed 1 (Bottom Layer) - Ls																					
8: Atmos Bed 1 (Bottom Layer) - Rs																					
9: MAD ASIO Bank 1 - MAD Output 9																					
10: MAD ASIO Bank 1 - MAD Output 10																					
11: Atmos Object 1 (Object for Ltr)																					
12: Atmos Object 2 (Object for Rtr)																					
13: Atmos Object 3 (Object for Ltr)																					
14: Atmos Object 4 (Object for Rtr)																					
15: Atmos Object 5 (Object for Wide L)																					
16: Atmos Object 6 (Object for Wide R)																					
17: Atmos Object 7 (Object 1)																					
18: Atmos Object 8 (Object 2)																					
19: Atmos Object 9 (Object 3)																					
20: Atmos Object 10 (Object 4)																					
21: Atmos Object 11 (Object 5)																					
22: Atmos Object 12 (Object 6)																					



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 entirely left to the creator’s taste.

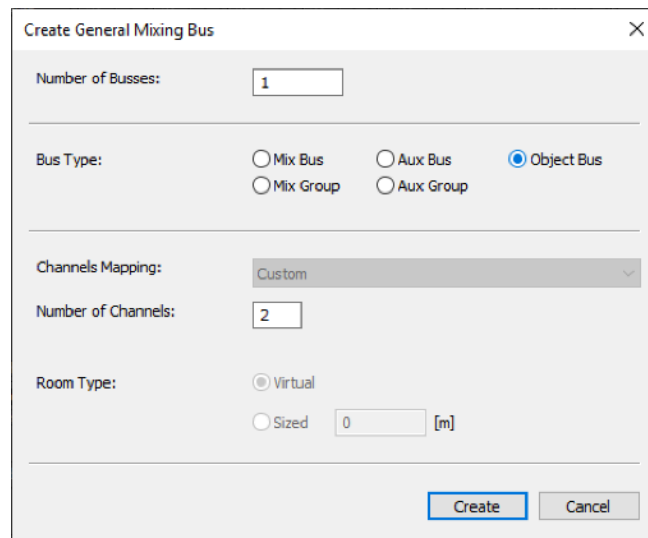


Sending Pyramix Objects to the Dolby renderer

When working with object busses in Pyramix, the workflow is seamless whether using a Dolby Renderer or not.

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 and choose the number of channels required.



Number of Busses: 1

Bus Type: Mix Bus Aux Bus Object Bus
 Mix Group Aux Group

Channels Mapping: Custom

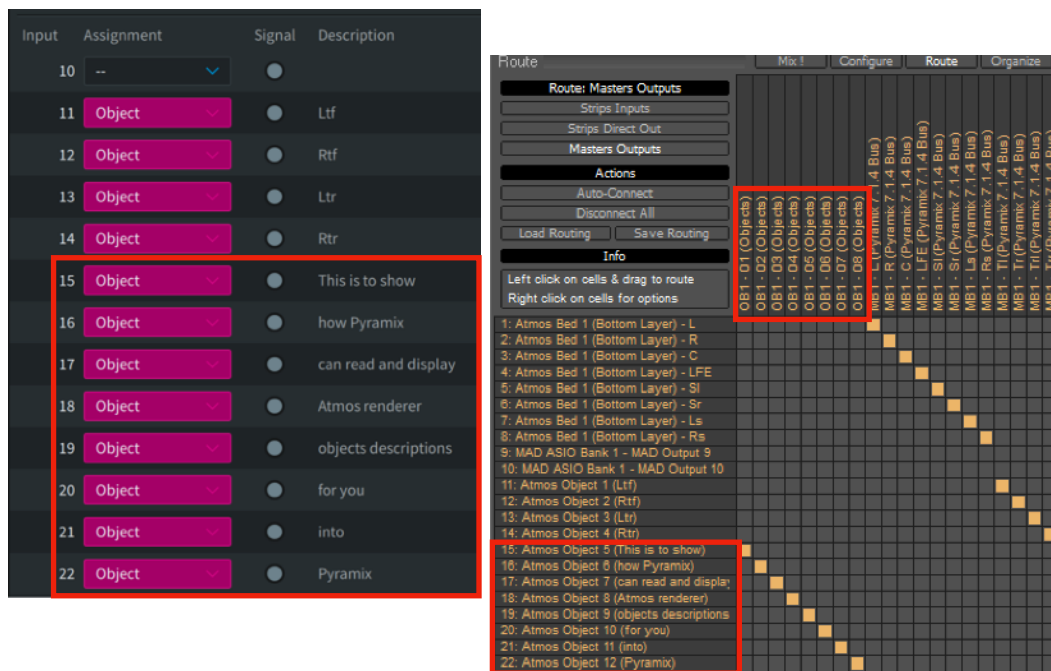
Number of Channels: 2

Room Type: Virtual
 Sized 0 [m]

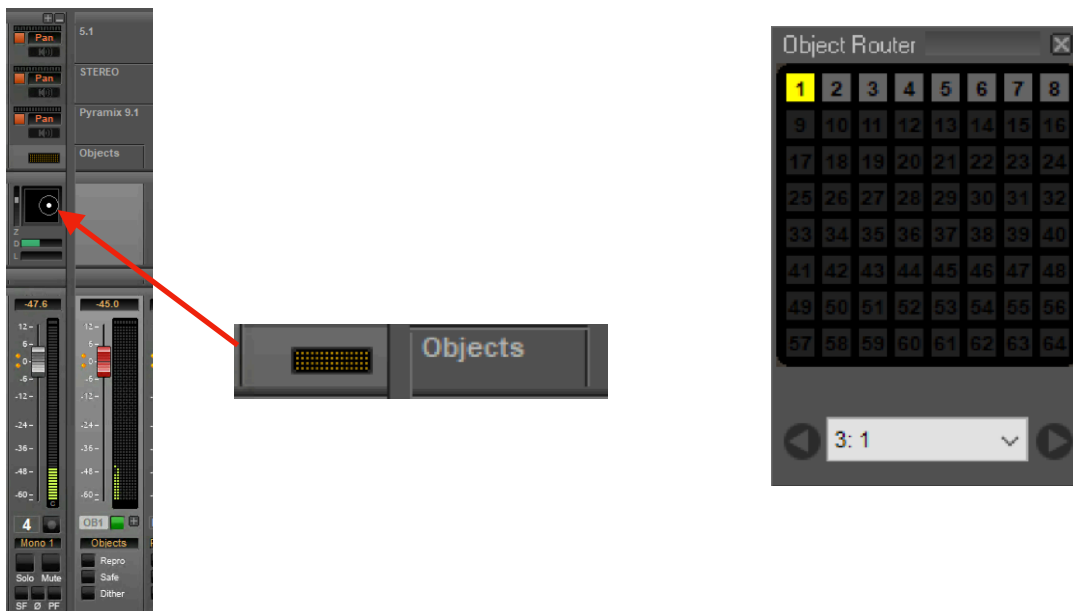
Create Cancel

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 busses to, for example, group various elements of the soundtrack (stems, etc...).

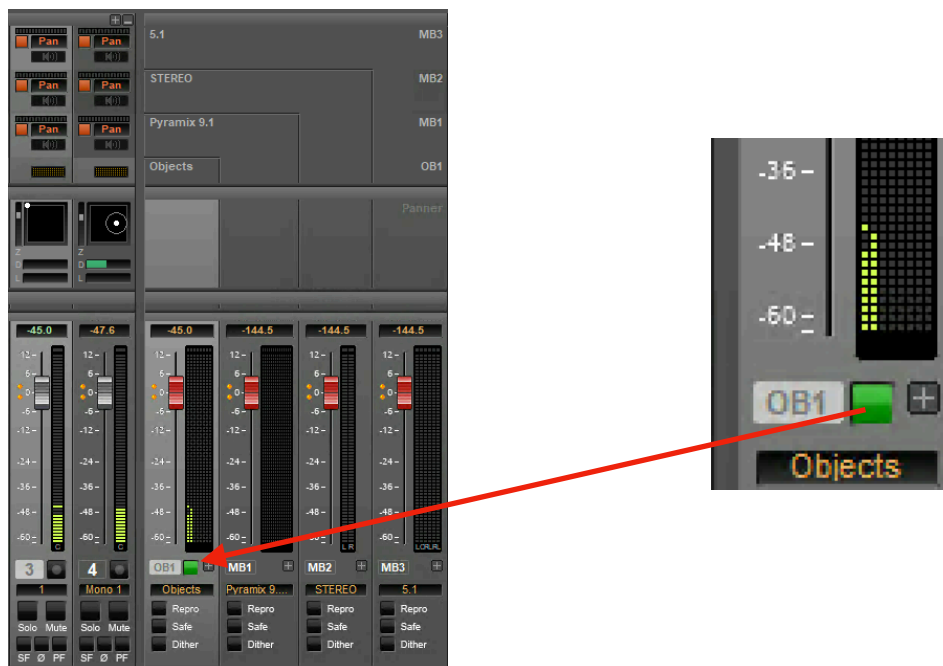
The object busses simply need to be mapped to the correct Dolby Renderer object inputs. Pyramix will then send individual dynamic/static panning metadata (including divergence which is mapped to the Dolby Atmos object “size”) from the various Pyramix strip panners straight into the Dolby Renderer.



In order to route a strip to an object bus, the user must click on the Object Router available on the strip and choose a channel of the object bus (see below).



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.



Whenever an object bus is deactivated (green button), audio coming from any strip feeding this object bus is sent instead to the other "Mix Busses" those strips are routed to and no more metadata is sent to the Dolby Atmos Renderer. (The panner then simply acts as a regular panner.)

