AUDIOMOVERS

Binaural Renderer for Apple Music

Plugin & Standalone Application

User Manual

Introduction

Binaural Renderer for Apple Music is a plugin and standalone application from Audiomovers which enables you to hear how your Dolby Atmos 7.1.4 session material will sound when released on the Apple Music platform.

The plugin and application can be downloaded from the Downloads page on Audiomovers.com.

This is an invaluable tool for Mixing, Mastering and Post Production Engineers working with Dolby Atmos material.

Binaural Renderer for Apple Music utilizes Apple's built-in Binauralization allowing us to guarantee 100% accuracy when referencing with Binaural Renderer.

The ability to choose headphones or speaker profiles for music or movies gives you peace of mind and confidence in your mix or master.

Headtracking and personalized HRTF options are also available with supported headphones.

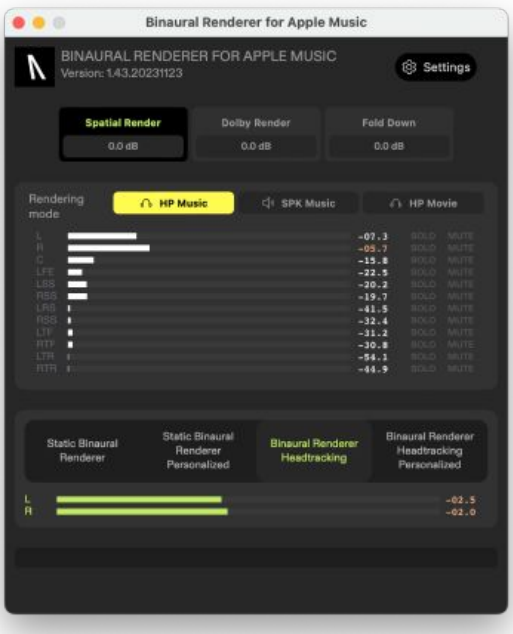


Table Of Contents

Installation **4**

System Requirements 4

Plugin/Application Authorization 5

Product Overview **6**

Plugin Controls 7

Application Controls 8

Application Settings 9

Getting Started - Plugin: **10**

Plugin Overview 11

Setting up the Plugin 12

Using personalized spatial and HRTF options 13

Native Dolby Integration Workflow 14

Utilizing Aggregate Devices 15

Pro Tools & Aux IO Workflow 16

Getting Started - Application: **17**

Application Overview 18

Auxiliary Inputs 19

Pass thru output 20

Routing Rerenders into the App 21

Supported formats, hosts and installation locations

Supported systems

- Apple Silicon Mac (M1+), OS 13+
- Intel 2018+, OS 12.3+
  (Limited functionality - not tested)

Supported plugin formats

AAX, AU, VST3

Note AU is fully supported with Logic Pro: In other DAWs we recommend using VST3/AAX (Pro Tools)*

Supported DAWs/hosts

Pro Tools 2023.6+, Logic Pro 10.7+, Nuendo 12+, Cubase Pro 12+, Reaper 6.66+, Studio One 6.50

Supported channel widths:

7.1.4 - 2.0
7.1.4 - 7.1.4 (L and R output)

Supported headphones for HRTF:

Personalized or headtracking options will only be available with supported headphones:

- AirPods Pro (1st & 2nd Gen)
- AirPods Max
- AirPods (3rd Generation)
- Beats Fit Pro
- Beats Studio Pro

Static rendering will be the only option available for wired and unsupported headphones. Please refer to the **Apple User Manual** in regard to HRTF profiles

Default Plugin Installation Locations

Mac OS

/Library/Audio/Plug-Ins/VST3
/Library/Audio/Plug-ins/Components
/Library/Application Support/Avid/Audio/Plug-Ins

To uninstall Binaural Renderer, use the Binaural Renderer Uninstaller

To manually uninstall Binaural Renderer, you will need to remove it from the default installation folders —

/Library/Audio/Plug-Ins/VST3
/Library/Audio/Plug-ins/Components
/Library/Audio/Plug-ins/Hal
/Library/Application Support/Avid/Audio/Plug-Ins

Authorization

In order to begin using Binaural Renderer, you must first authorize it with your Audiomovers account.

You can create an account on audiomovers.com

You will be prompted with the authorization dialog when you attempt to run the software the first time.

Each license can be authorized on up to 3 machines.

We also offer a ‘7 Day Demo’ - this is a one-time-only trial period given to new accounts.

The trial license can be authorized on one machine only.

1. Click Authorize or Start Demo in the plugin/application

2. For authorization you will be redirected to our website

3. Login/Signup with your Audiomovers account

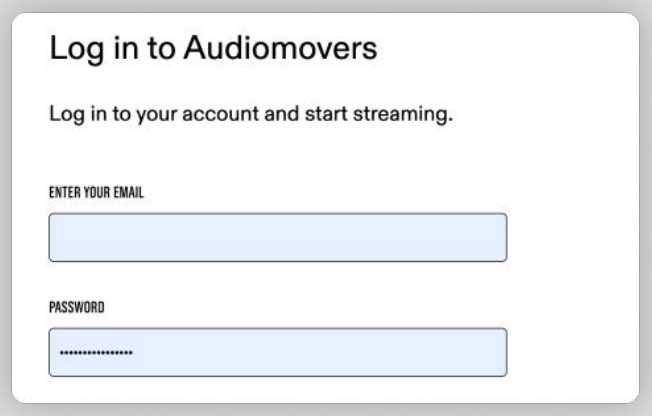
4. Select the licence/demo licence you wish to authorize

5. Return back to the plugin/application

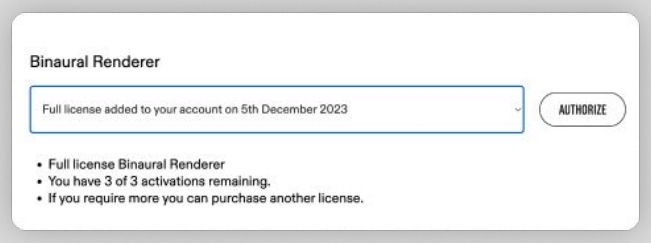
1.

2.

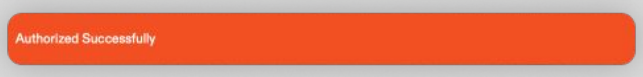
3.



4.

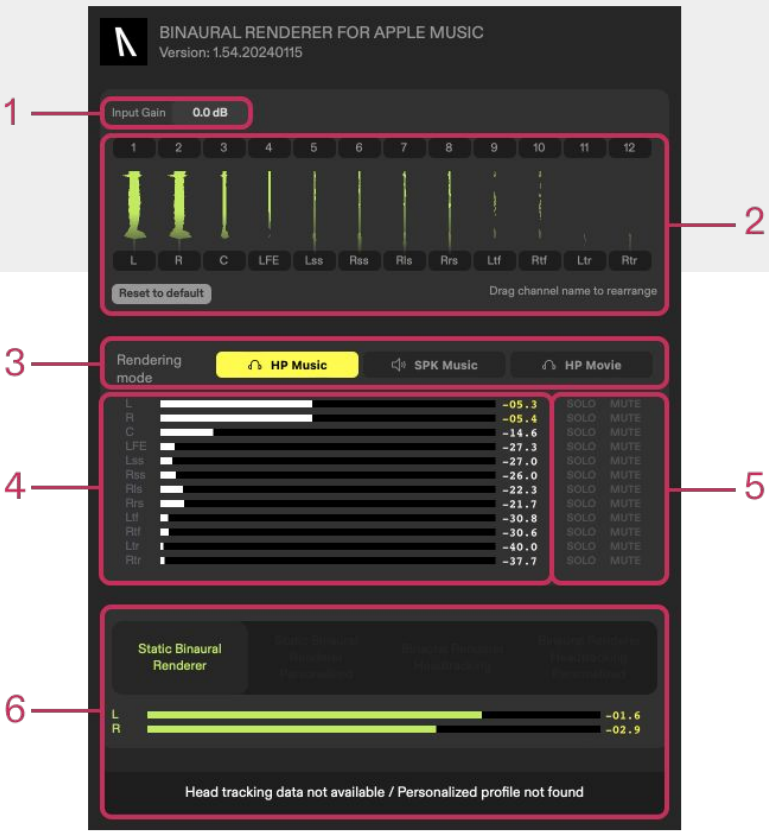


5.



Product Overview

Plugin Controls



1. Plugin Input Gain (Post-Input Meters)

2. Plugin input channel remapping

3. Rendering Mode selector

a. **Headphones Music** - Applies Apple Music profile to 7.1.4 input - replicates headphone playback for Dolby Atmos music.

b. **Speaker Music** - Applies Apple Music profile to 7.1.4 input - replicates speaker playback for Dolby Atmos music on supported devices such as MacBook Pro etc.

c. **Headphones Movie** - Applies Apple TV profile to 7.1.4 - replicates rendering of material released on Apple TV

4. Level Meters

Individual meters for your 7.1.4 input

5. Channel Mute/Solo

Mute or solo individual channels

6. Headphone Rendering Options/Binaural Meters

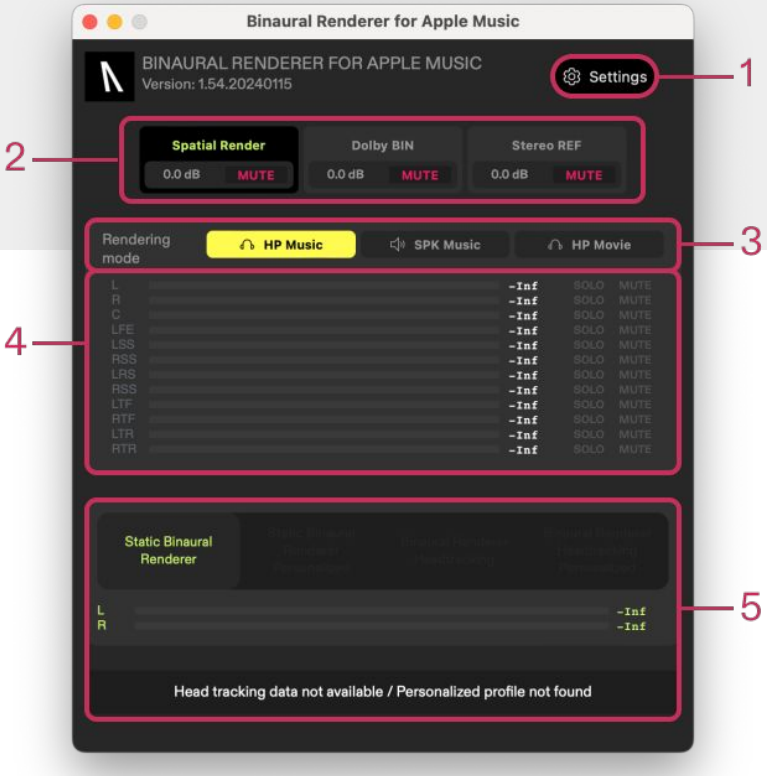
Static - works with any headphones

Static Personalized (HRTF) - works with any headphones, but available only if personalized HRTF profile is found in the system. For more info please refer to Apple: https://support.apple.com/en-us/HT213318

Headtracking* - works with Apple or Beats headphones only

Headtracking Personalized (HRTF)* - as above

Application Controls



1. Settings

Opens the Binaural Renderer settings page. *Shortcut:* ***Command*** *+,*

2. Input Source selector

A selector that allows for switching between **Spatial Renderer** input, pass thru **Aux 1** and pass thru **Aux 2.**

Each input selector has gain control with adjustment range from -120 dB to +20 dB of gain.

Shortcut: ***Alt+Click*** - Resets to default

Aux 1 and **Aux 2** inputs bypass Spatial Renderer and are routed to Binaural Renderer's Audio Output device channels.

3. Rendering Mode selector (Applicable only to Spatial Renderer 7.1.4 input)

a. **Headphones Music** - Applies Apple Music profile to 7.1.4 input - replicates headphone playback for Dolby Atmos music.

b. **Speaker Music** - Applies Apple Music profile to 7.1.4 input - replicates speaker playback for Dolby Atmos music on supported devices such as MacBook Pro etc.

c. **Headphones Movie** - Applies Apple TV profile to 7.1.4 - replicates rendering of material released on Apple TV

4. Meters and Solo / Mute controls

Solo and Mute per channel

Shortcut: ***Command + Solo*** to add a channel to Solo. Click on Solo to reset the multi solo,

5. Headphone Rendering Options

Static - works with any headphones

Static Personalized (HRTF) - works with any headphones, but available only if personalized HRTF profile is found in the system. For more info please refer to Apple:
https://support.apple.com/en-us/HT213318

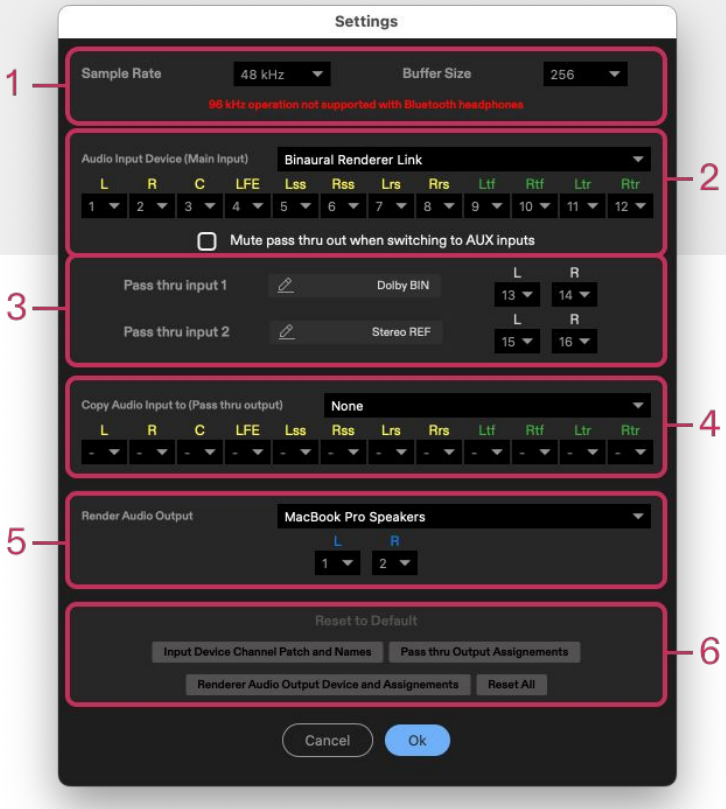
Headtracking* - works with Apple or Beats headphones only

Headtracking Personalized (HRTF)* - as above

Personalized or headtracked options will only be available with supported headphones:

AirPods Pro (1st & 2nd Gen), AirPods Max, AirPods (3rd Generation), Beats Fit Pro, Beats Studio Pro

Application Settings



1. Sample Rate/Buffer Size

48 or 96* kHz *(96 kHz operation is not supported with Bluetooth headphones)*
32 - 2048 (dependant on output device)

2. Audio Input Device

Input device selection for 7.1.4 Spatial Renderer Aux 1 and Aux 2 inputs.

Spatial Renderer channel assignment - assign channel to corresponding inputs

3. Aux Inputs

AUX 1 and AUX 2 channel assignment - assign channels to AUX 1 and AUX 2 Left and Right inputs respectively

AUX 1 and AUX 2 Name fields - allows to enter any name that will be reflected in main UI

4. Copy audio input to (Passthru Output)

Output device selector that will be used to pass thru audio from 7.1.4 Spatial Renderer Input.

5. Renderer Audio Output

Selection for device that will be used for Spatialized audio output, or pass thru Aux inputs.

6. Reset settings to default

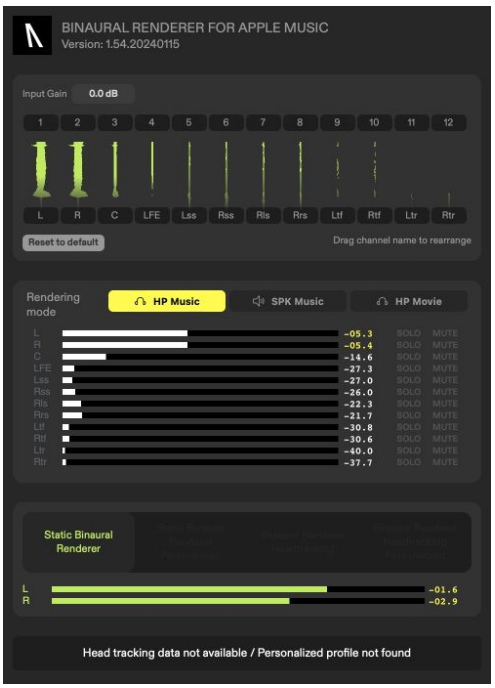
**96 kHz operation not supported with Bluetooth Headphones*

Getting started with Binaural Renderer for Apple Music (Plugin)

Plugin Overview

Binaural Renderer for Apple Music is a plugin and standalone application from Audiomovers which enables you to hear how your Dolby Atmos 7.1.4 session material will sound when released on the Apple Music platform.

In this first section we will cover the plugin version. When you purchase Binaural Renderer, both versions are available to you. They can be downloaded from the Downloads page on Audiomovers.com.



Binaural Renderer applies Apple Spatial Audio rendering to Dolby Atmos 7.1.4, allowing you to monitor how the spatialized audio will sound when uploaded to and streamed on Apple Music and Apple TV.

The ability to choose headphones or speaker profiles for music or movies gives you peace of mind and confidence in your mix or master.

Headtracking and personalized HRTF options are also available with supported headphones. (See system requirements)

Setting up the plugin

In your DAW session, insert the Binaural Renderer plugin on a 7.1.4 Atmos Mix content master, audio track or aux track (depending on Dolby Atmos Workflow

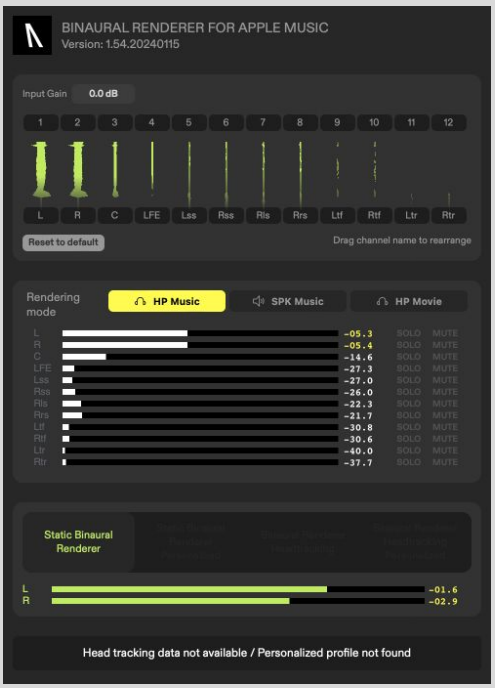
Once inserted, your discrete channels inputting the plugin will be converted to a binaural render that is an accurate reflection of how audio will sound on Apple Music or Apple TV depending on the selected profile.

You can select your render profile between Music, TV and Speaker depending on the platform you are mixing for.

Output your stereo render to your headphones of choice to see how your mix translates.

If using Apple Headphones that support HRTF functionality, make sure you have supported Apple Headphones (See system requirements)

For HRTF functionality with Binaural Renderer, your wireless headphones will need to be connected to your Mac for the plugin to communicate with your headphones for personalized spatial and headtracking.



Using personalized spatial and HRTF options

Utilizing personalized HRTF

To monitor your audio with personalized spatial and headtracking, you will need supported headphones (see Page 4).

You will also need to enable personalized spatial on your headphones. Please refer to Apple's User Manual for more info: https://support.apple.com/en-us/HT213318

Your wireless headphones will need to be connected to your Mac for the Binaural Renderer plugin to communicate with your headphones for personalized Spatial and Headtracking.

You can also use any wired headphones plugged into your machine, however you will only have the option to playback a static binaural render.

More information on connecting to Apple headphones while using Pro Tools is included overleaf.

Utilizing Binaural Renderer Plugin in DAWs with native Dolby Atmos Integration

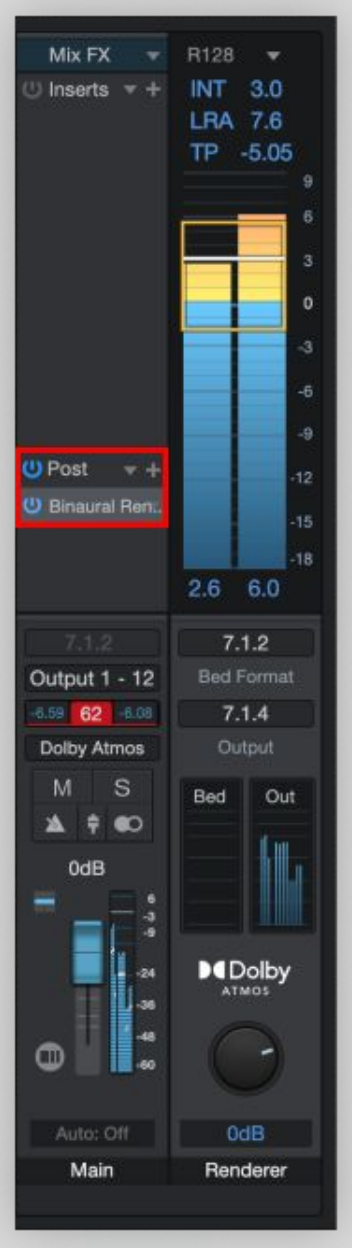
Native Dolby integration workflow:

DAWs such as Logic Pro, Studio One 6 Pro, Nuendo/Cubase Pro 12 and Pro Tools 2023.12 now have built-in Dolby Atmos Integration. This allows for a simple workflow with Binaural Renderer plugin.

On your 7.1.4 Multi Channel Master, insert Binaural Renderer for Apple Music, if using Studio One 6, Cubase 13 Pro or Nuendo, make sure you are inserting the plugin ‘post’.

The plugin comes in 7.1.4 > 7.1.4 format (L & R output) allowing it to be inserted on your Master channel.

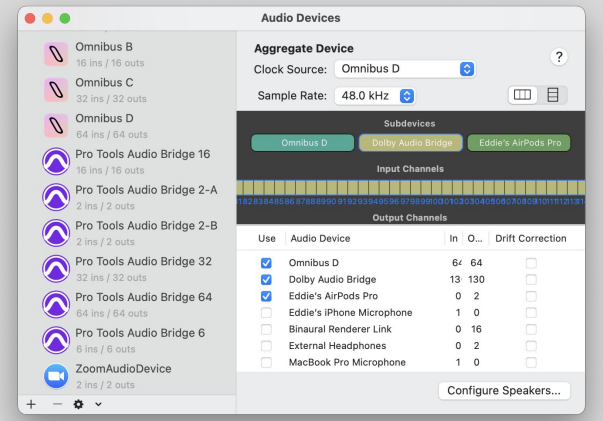
Note AU is fully supported with Logic Pro: In other DAWs we recommend using VST3/AAX (Pro Tools)*



*Demonstration in Studio One 6 Pro

Outputting audio to AirPods with an Aggregate Device

There are various different ways of monitoring your Binauralized 7.1.4 session audio with your AirPods. One method is to use an Aggregate Device. This will allow you to output your audio to your preferred outputs as well as through AirPods simultaneously. The below steps will guide you through setup:



Audio MIDI Setup:

1. Open Audio MIDI Setup
2. Create Aggregate Device
3. Select preferred playback engine device as well as AirPods/Bluetooth Speakers
4. Disable Drift Correction

DAW:

1. Select Aggregate Device as DAW Playback Engine
2. Route Discrete Channel output to dedicated HW outputs.
3. Duplicate 7.1.4 output and send to Aux track
4. Insert Binaural Renderer on Aux track
5. Route stereo Binaural Render output to channels connected to AirPods/Bluetooth Headphones

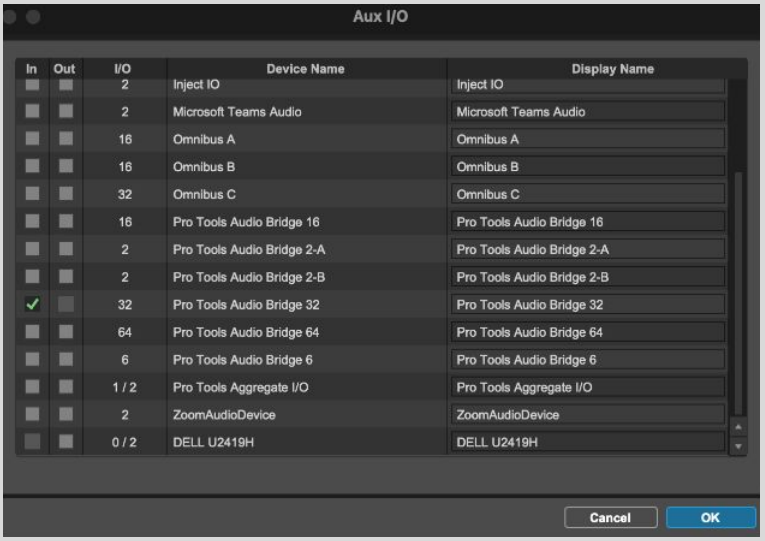
Utilizing Aux IO in Pro Tools

If using Pro Tools in conjunction with the Dolby Renderer, you can utilise Pro Tools' Aux IO to bridge audio between the Dolby Renderer and Pro Tools to reference utilising the Binaural Renderer Plugin.

In the Dolby Renderer's settings, assign the output device as one of the Pro Tools Audio Bridge Devices, the 32 channel device will work great as you have more channels to output re-renders as well as 7.1.4 discrete channels for the Binaural Renderer Plugin.

In the Aux IO settings in Pro Tools, select this device as an AUX IO input device, following this, in input settings create a 7.1.4 input configuration for the discrete channels from the Dolby Renderer to travel into Pro Tools and then the Binaural Renderer plugin.

If you wish to output to AirPods or you can utilize your AirPods as an AuxIO output device



Getting started with Binaural Renderer for Apple Music (Application version)

Application Overview

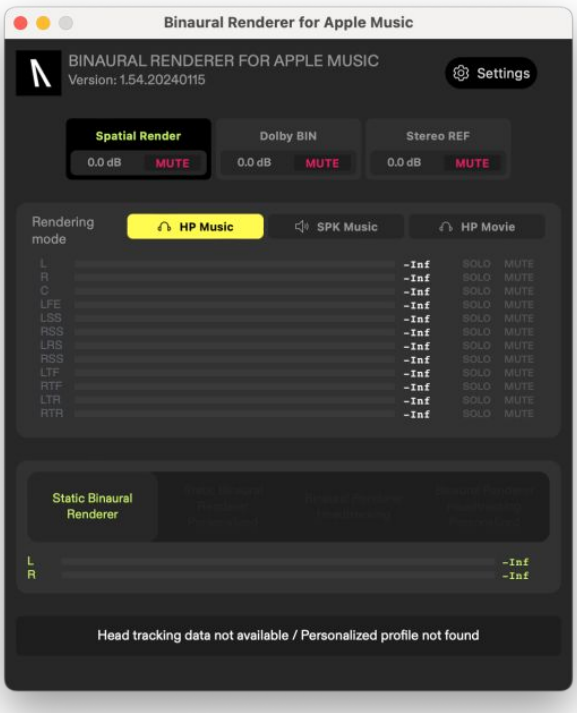
Binaural Renderer for Apple Music is a plugin and standalone application from Audiomovers which enables you to hear how your Dolby Atmos 7.1.4 session material will sound when released on the Apple Music platform.

In this section we will cover the standalone application version. When you purchase Binaural Renderer, both versions are available to you. They can be downloaded from the Downloads page on Audiomovers.com.

The Application comes with a 16-channel virtual driver (named ‘Binaural Renderer Link’) that allow users to place the Binaural Renderer app between the Dolby Renderer output and the output audio device of your system.

The app also has a 12-channel Spatial Renderer input which can be copied (Pass thru) to any audio device in a system so you don’t lose your speaker routing.

For convenience, it also features two 2-channel pass thru aux inputs, which can be used to quickly A/B between different versions of binaural and stereo material.



Aux Inputs

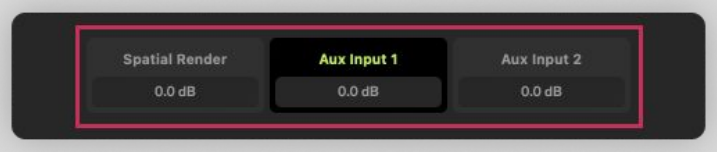
Binaural Renderer has two Auxiliary inputs that can be selected at the top of the applications UI.

These can be toggled between the Spatial Renderer Input to reference Apple's Spatial Rendering with two stereo audio sources.

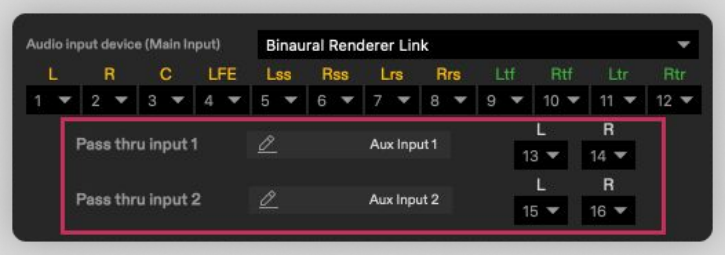
In the settings tab you can select the input channels. By default it will be set to:

Aux Input 1: Channels 13 - 14
Aux Input 2: Channels 15 - 16

The Aux Inputs can also be renamed in the settings tab to help easier navigate the audio source you are listening to.



Auxiliary Inputs



Auxiliary Input Channel Selection

Aux Inputs

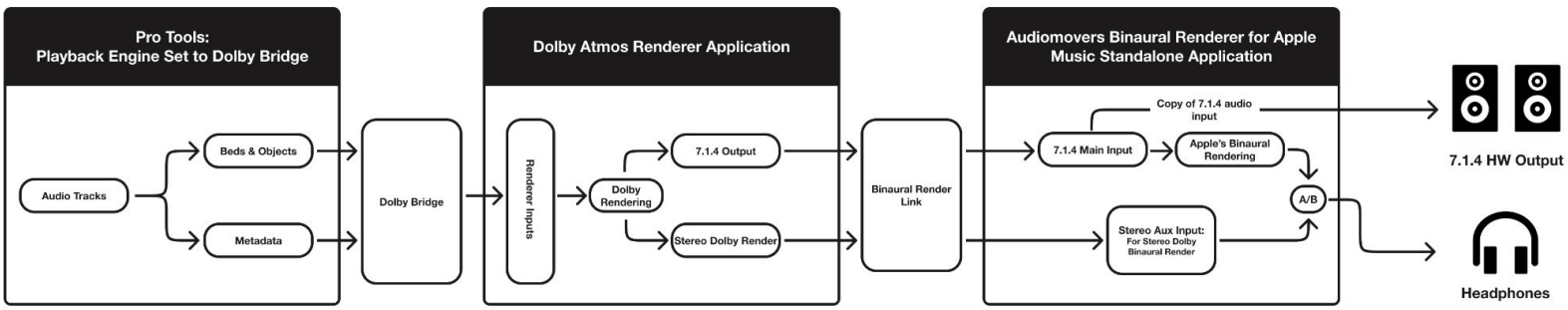
Binaural Renderer allows you to copy the incoming 7.1.4 discrete channels to any audio device on your system, bypassing Apple's Spatial Rendering.

This will you to reference Apple's Spatial Render as well as output the discrete channels to your designated 7.1.4 speaker configuration.

This could also be used to send the discrete channels to a routing application for various utilities such as streaming discrete channels with LISTENTO or routing your 7.1.4 back into pro tools.

Pass thru output

Routing your Dolby Atmos audio with your DAW to monitor through **Binaural Renderer for Apple Music**



Recommended setup with the Dolby Renderer application

1. Assign the output of your Dolby Renderer application to ‘Binaural Renderer Link’.
   You can use any other device to route 7.1.4 output from Dolby Renderer application to Binaural renderer Application audio input, this is just a recommendation.
2. If you use speaker setup you can utilize ‘copy audio to’ option in settings and select your audio device that will playback to your 7.1.4 speaker configuration
3. Select the Renderer’s output device and channels that are routed to headphones.
4. Additional AUX channels may be used to route Dolby Binaural renderer output from Dolby Renderer application, or any other 2-channel source.

Have more questions about Binaural Renderer or Audiomovers?

Head to —
https://audiomovers.com/help

Alternatively, please contact us at contact@audiomovers.com

*Binaural Renderer for Apple Music is solely a product of Audiomovers, and not created or endorsed by Apple Inc

All product names, logos, and brands are property of their respective owners. All company, product and service names used in this guide are for identification purposes only.

Copyright © 2023 Audiomovers TA Virgin Records, All rights reserved.