

CDA Mixing Suite Guide

VS10 - EV 5.421

2025

An online version is available at:
www.concordia.ca/finearts/cda/suites/specialized

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About this guide

This guide explains the audio hardware and software settings required for stereo and surround playback in the CDA mixing suite (VS 10), EV 5.421.

Not all audio applications in the CDA mixing suite are included in this guide, but the settings will be similar.

Please email Phil Hawes if you have any issues in any of the CDA AV suites:
philip.hawes@concordia.ca

CDA Mixing Suite Specifications

Apple Mac Studio M1 Ultra

AVID OMNI interface

Pro Tools HD Native Thunderbolt card

5 x Genelec 8341A monitors

Genelec 7370A subwoofer

Genelec 9320 Controller

All five audio channels (L, R, C, Ls, Rs) are routed through the subwoofer with the crossover frequency set to 85 Hz.

There is no headphone monitor in the suite.

Genelec 9320 Controller Settings

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About the Genelec Controller and Speakers

The Genelec 9320 controller is used for adjusting the volume of the Genelec speakers connected to the controller with an ethernet connection.

EQ calibration, volume level settings, and phase settings are stored within the Genelec speakers to compensate for acoustic flaws in the suite or to manage the crossover of the bass frequencies.

The Genelec controller is also an analog/digital stereo interface but we are not using this function. Therefore, the headphone output does not work.

The controller works with the GLM software, see next page.

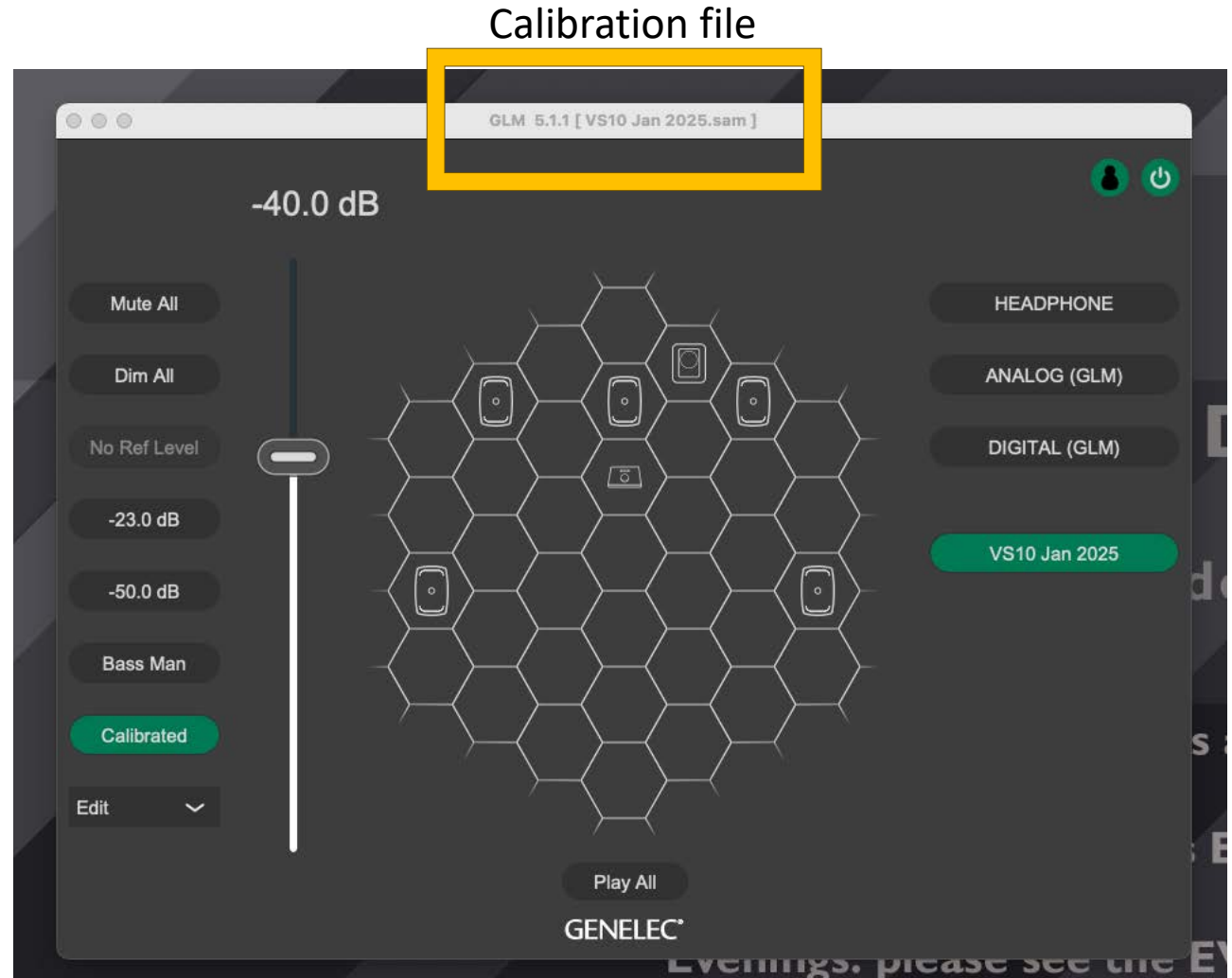
GLM software

When you log in with your user account, the GLM software will launch automatically with the calibration file. At the time of this writing, the file is called: VS10 Jan 2025.

Do not adjust any of the controls in the software otherwise you may lose the calibration. Simply hide the software (but keep it open).

All the necessary controls can be made physically on the 9320 controller.

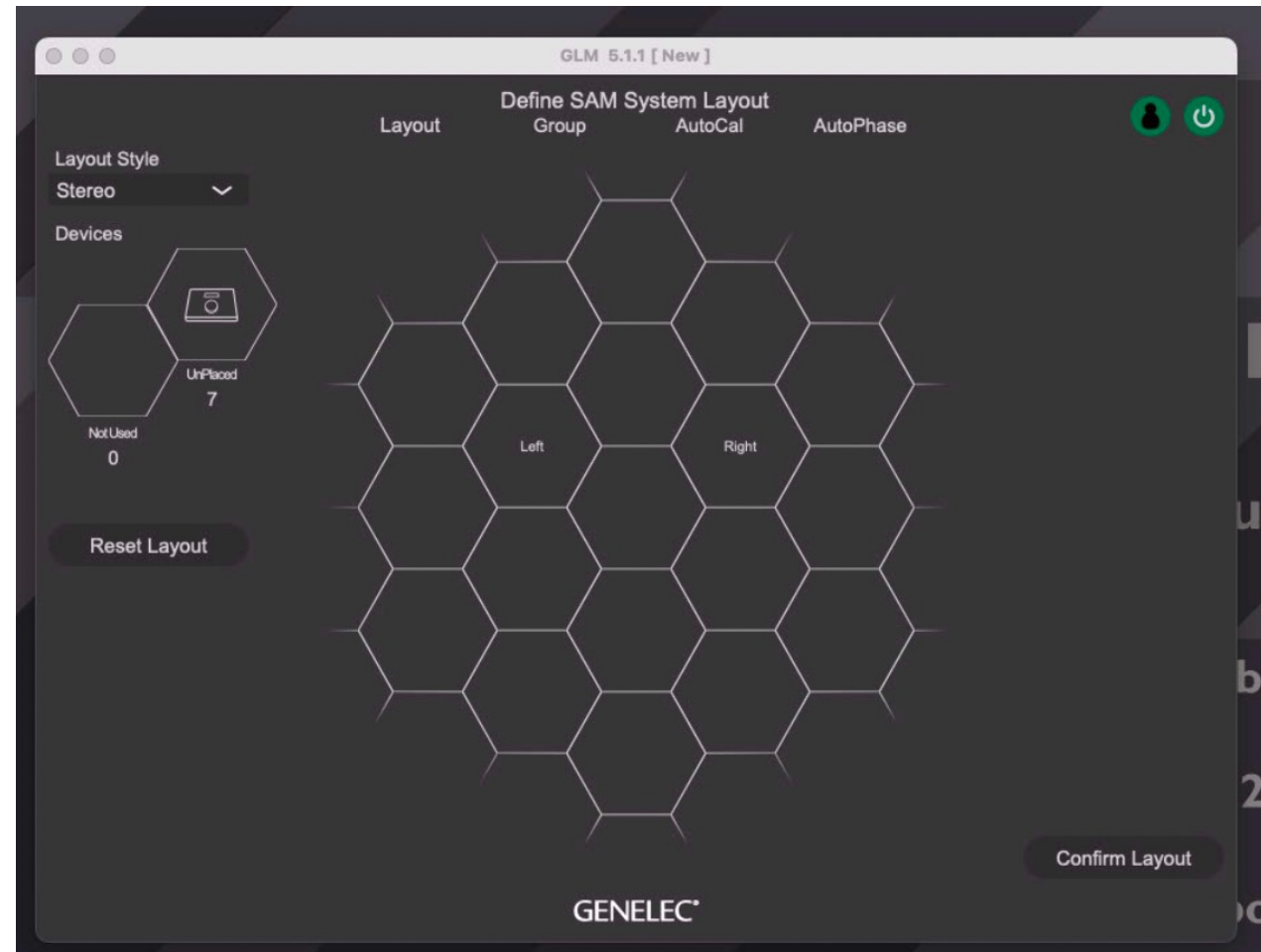
If the calibration file does not load, see the next page.



GLM software: loading the calibration file

If the calibration file does not load, the software will look like this.

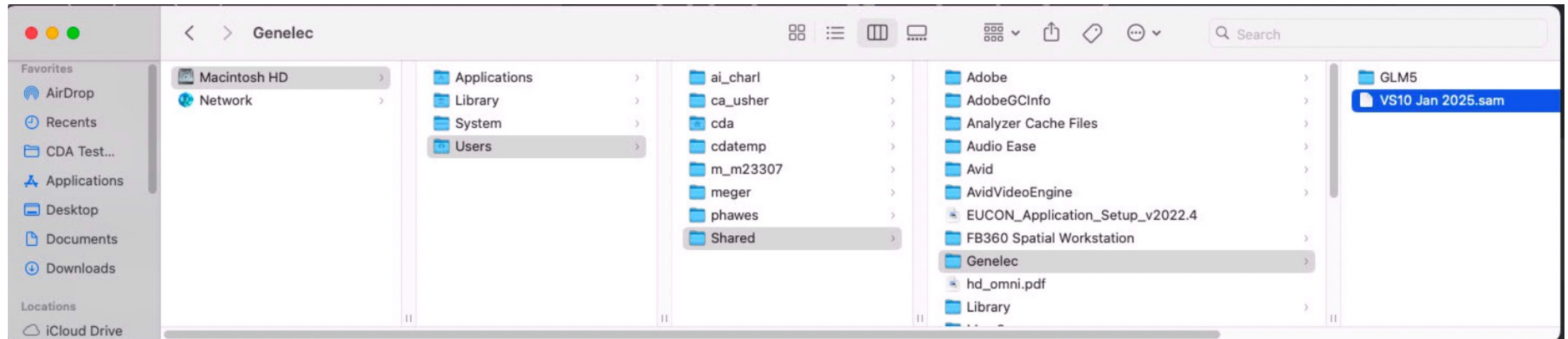
You will have to load the file manually (see next page).



GLM software: loading the calibration file

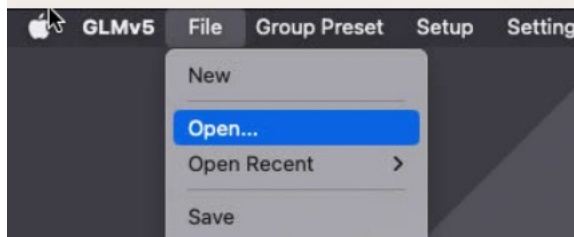
Copy the calibration file “ VS10 Jan 2025. sam” on to the desktop from this location:

Macintosh HD/ Users/ Shared/ Genelec

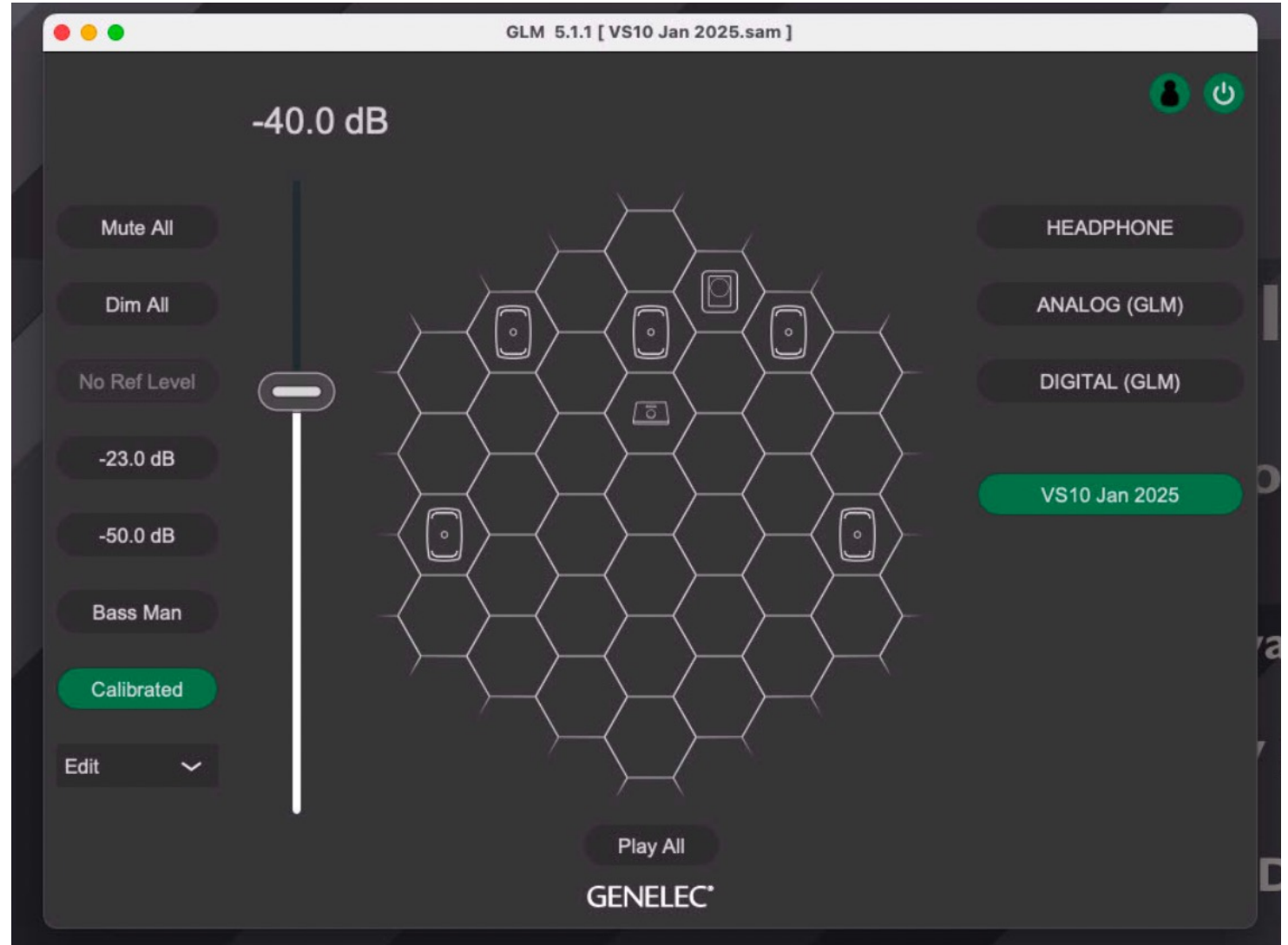


GLM software: loading the calibration file

Open the .sam calibration file in the GLM software.



Then it should look like this:



Genelec Controller Settings: Volume

Move the volume knob to activate (wake up) the speakers.

Use the volume knob to listen at a comfortable listening level.

By default, the volume will start at -40 dB.



Genelec Controller Settings: Volume

The volume on the controller will not advance beyond -10 dB. This is very loud!



Genelec Controller buttons

Menu: Usually, the controller is on and just has to be woken up by turning the volume knob. The Menu button is also the power knob in case someone has turned off the unit. It also gives you access to limited menu items but you don't need to access these functions. Use the **Mono** button to exit the menu system.

Mute: mutes all speakers

DIM: diminishes the volume by -20 dB.

Mono: takes a stereo signal (L, R) and turns it into MONO. The summed signal is attenuated by 6 dB so there is no noticeable level change. This button also takes you out of the internal menu system.

Genelec Controller buttons

DIFF: is a mono signal produced by subtracting the right channel content from the left and inserting the difference into the left and right channels. This enables you to listen to the uncorrelated content in the stereo audio.

INVERT: The common content in the stereo signal moves to undefined directions when the INVERT is engaged while the uncorrelated content may become more apparent in the centre of the sound stage. This can help with understanding the structure of the stereo recording.

Genelec Controller: Preset

The **Preset** button will take the volume level to -23 dB.

You can use this as a reference level. See next page.



Working to the EBU R128 reference level

The **Preset** on the Genelec controller will set the volume level to -23 dB. To use this reference level properly, place a LUFS measurement meter on the master fader of your session (for example Izotope Insight). When your session is mixed to -23 LUFS and the Genelec 9320 controller is set to the preset level of -23 dB, you will be listening at 73 dB SPL. This is the EBU R128 broadcast standard.

This Genelec volume preset was created using Pro Tools. Pro Tools operates differently than the other audio applications. It does not use Core Audio. When you are using Pro Tools, the Mac OS system audio level is disabled. For the other audio applications, you must have the Mac OS system audio level at the maximum to get to this level, **in addition** to your session level at -23 LUFS. The results may vary slightly depending on the software. I have verified that the preset level is accurate for Logic Pro with the Mac OS system level at the maximum.

Working to the EBU R128 reference level

The maximum listening level allowed by the Genelec controller is -10 dB. If your program is mixed to -23 LUFS within Pro Tools , this -10 dB volume level will exceed 85 dB SPL. It is not recommended to listen at or above 85 dB SPL level for extended periods of time in a room the size of the CDA mixing suite. Only listen at that level briefly, if necessary.

HD Native settings in the Audio MIDI device window

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AVID HD Omni Audio Interface

For all audio applications and system audio, choose the **HD Native Thunderbolt** as as the audio hardware device or audio output device.

The AVID HD Omni interface appears in the Audio MIDI setup application as the **HD Native Thunderbolt device**.

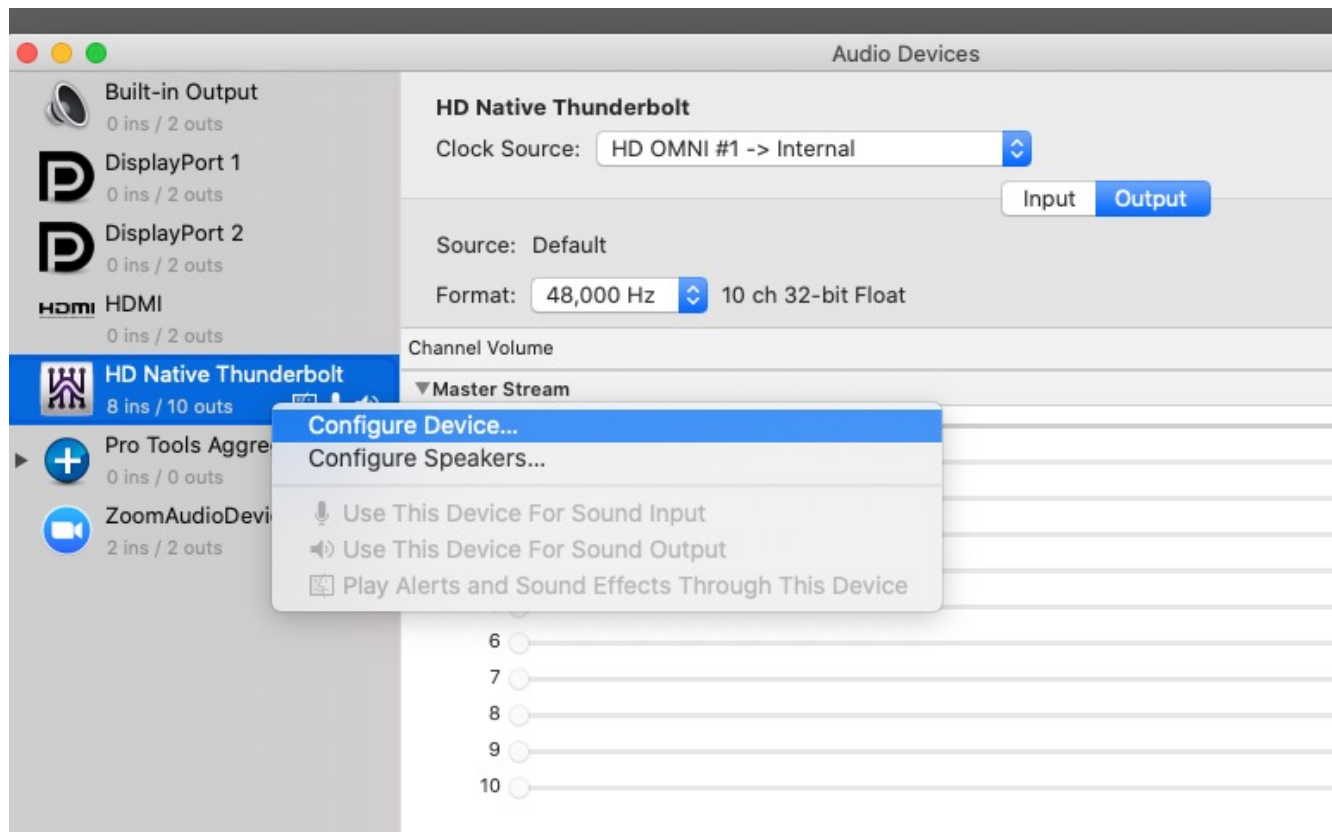
The AVID HD Omni audio interface cannot be used by other applications when it is being used by Pro Tools Ultimate. Pro Tools takes complete control of the device. The HD Native Thunderbolt device **will not appear** in Audio Midi setup application when Pro Tools is launched.

About the following setup

This is just one of several ways to configure the AVID Omni interface, also known as the HD Native Device. You will want to follow this method when not using Pro Tools.

This setup also presumes that you are using the software on the computer in the suite. If you are using your own laptop, see the separate guide on that setup.

Applications/Utilities/ Audio MIDI Setup

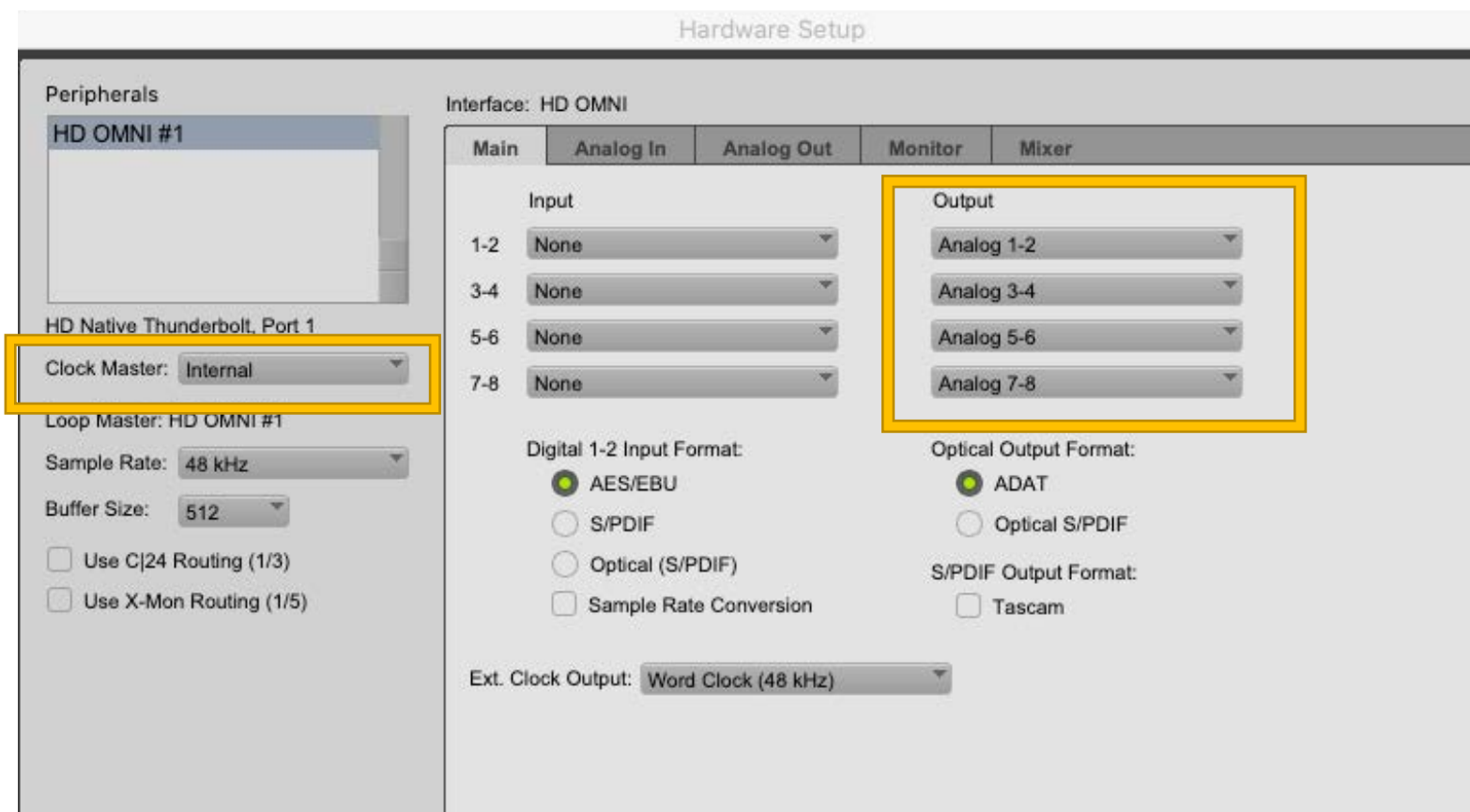


Once an application other than Pro Tools is launched, You should see the HD Native Thunderbolt as an Audio Device in the Audio MIDI Setup software in Applications/ Utilities.

No matter which software you are using, the first step is to confirm the track assignments in of the HD Native audio card. These should not change.

In Audio MIDI setup display the audio devices. Right Click on the **HD Native Thunderbolt** and choose **Configure Device**.

Hardware Setup/Main – should look like this

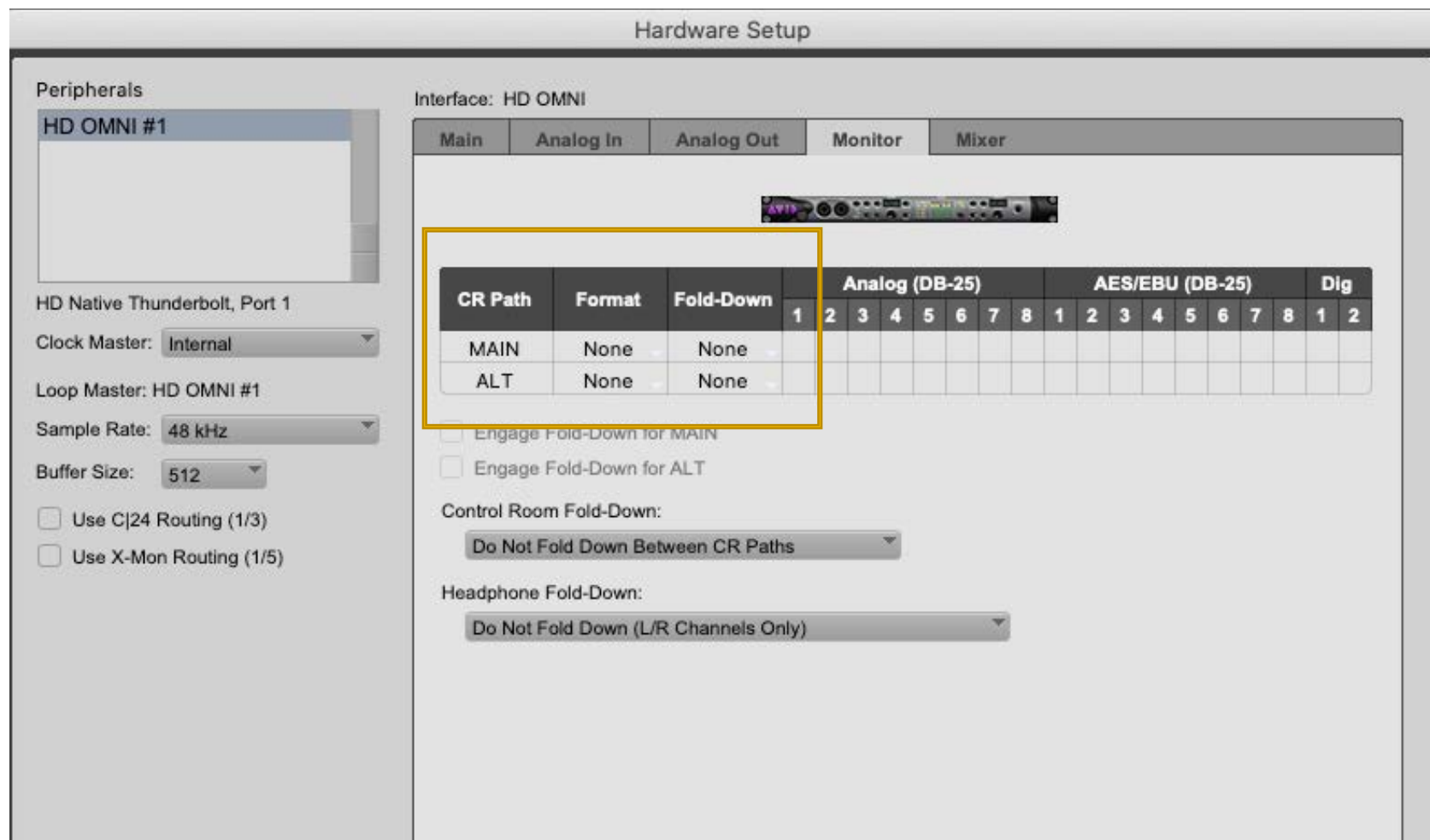


What is important is the **Output** assignments.

The connections to the speakers are analog.

The **Clock Master** should be set to Internal.

Hardware Setup/Monitor – should look like this



There is **no** Monitor set-up.

Pro Tools Channel Assignment

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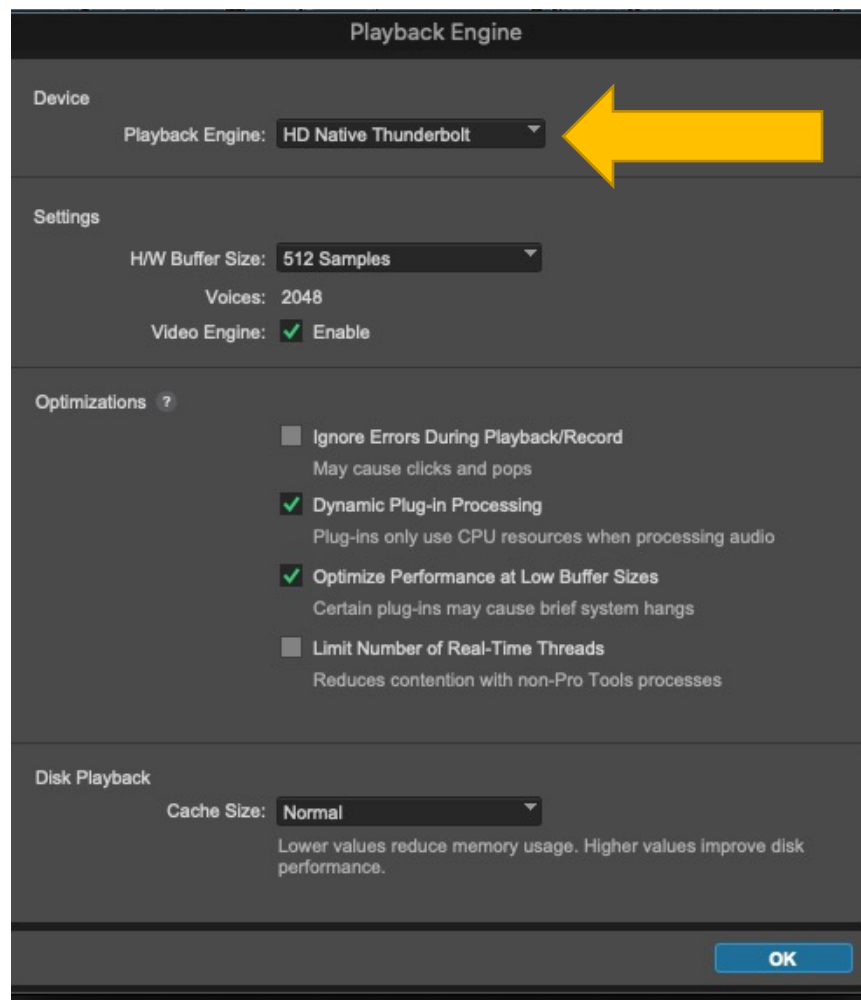
Pro Tools Ultimate

Pro Tools Ultimate has many advanced features for channel assignment.

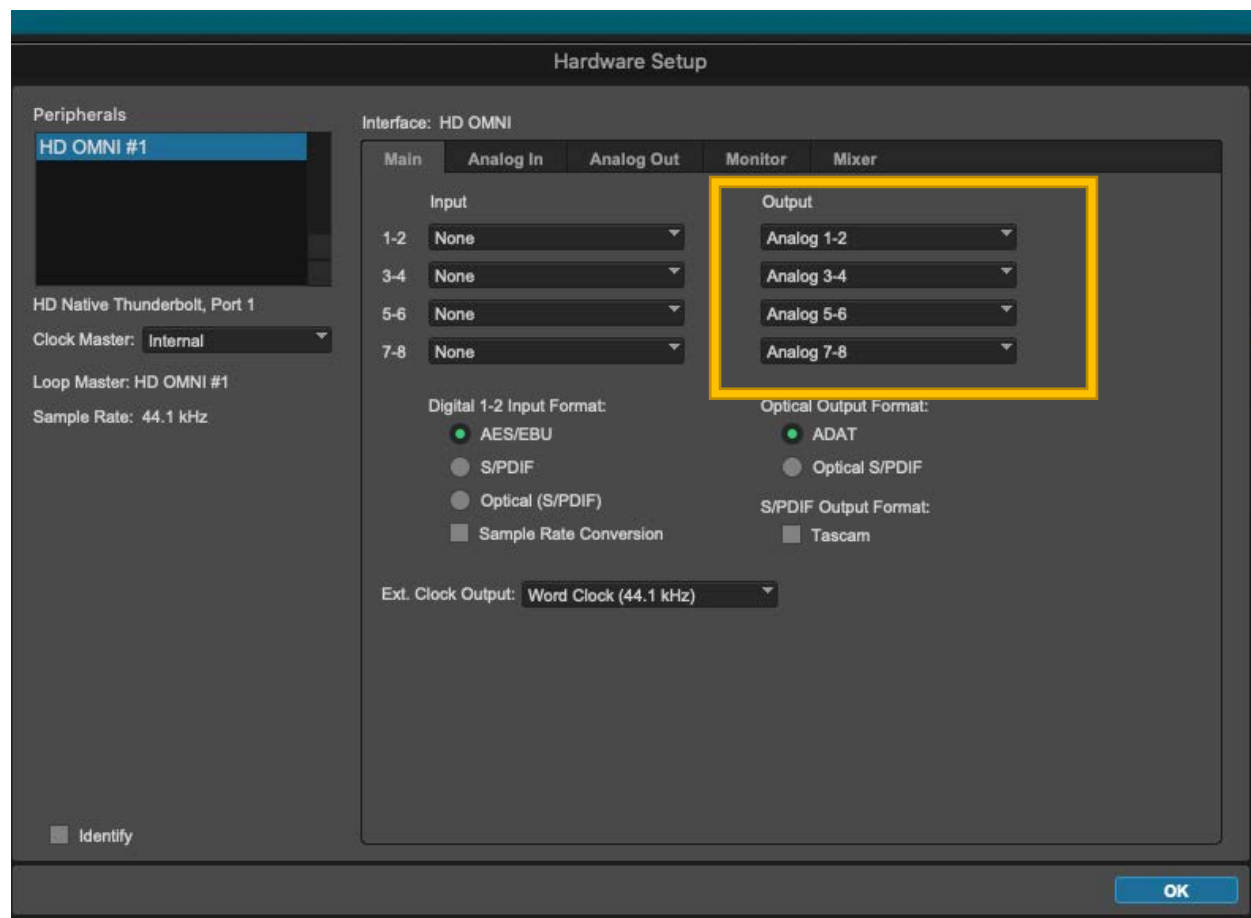
The software is flexible but complex and the terminology can be obscure.

The following method shows you the simplest way to begin constructing your own output channel assignments, without relying on Pro Tools session templates.

Pro Tools/Setup/Playback Engine: select HD Native Thunderbolt



Pro Tools/Setup Menu/Hardware/ Main tab



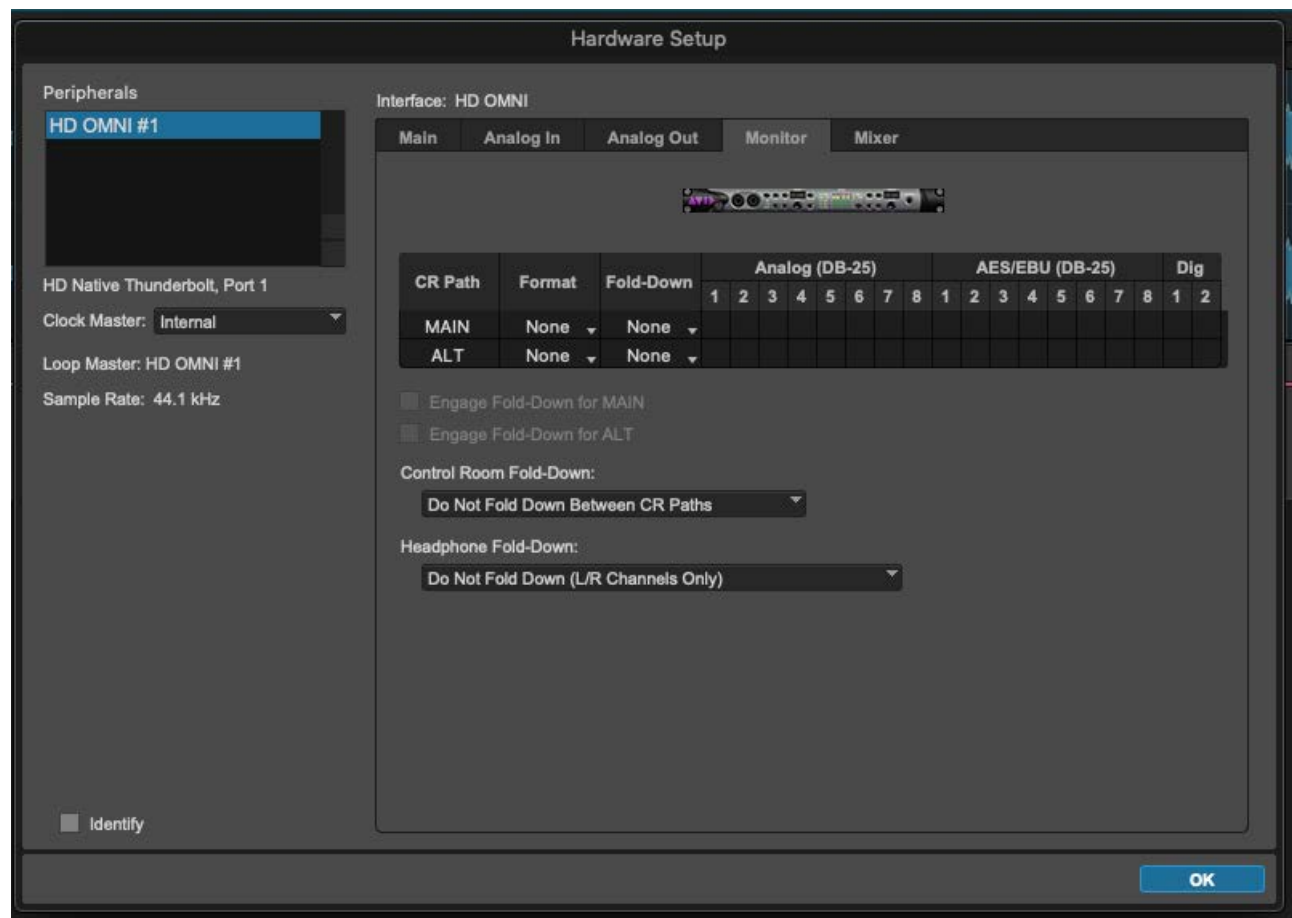
These are the same controls for the AVID OMNI interface that are available in the Audio Midi Setup application.

If you are using Pro Tools, you set them here. They should look like this.

What is important is the Output settings.

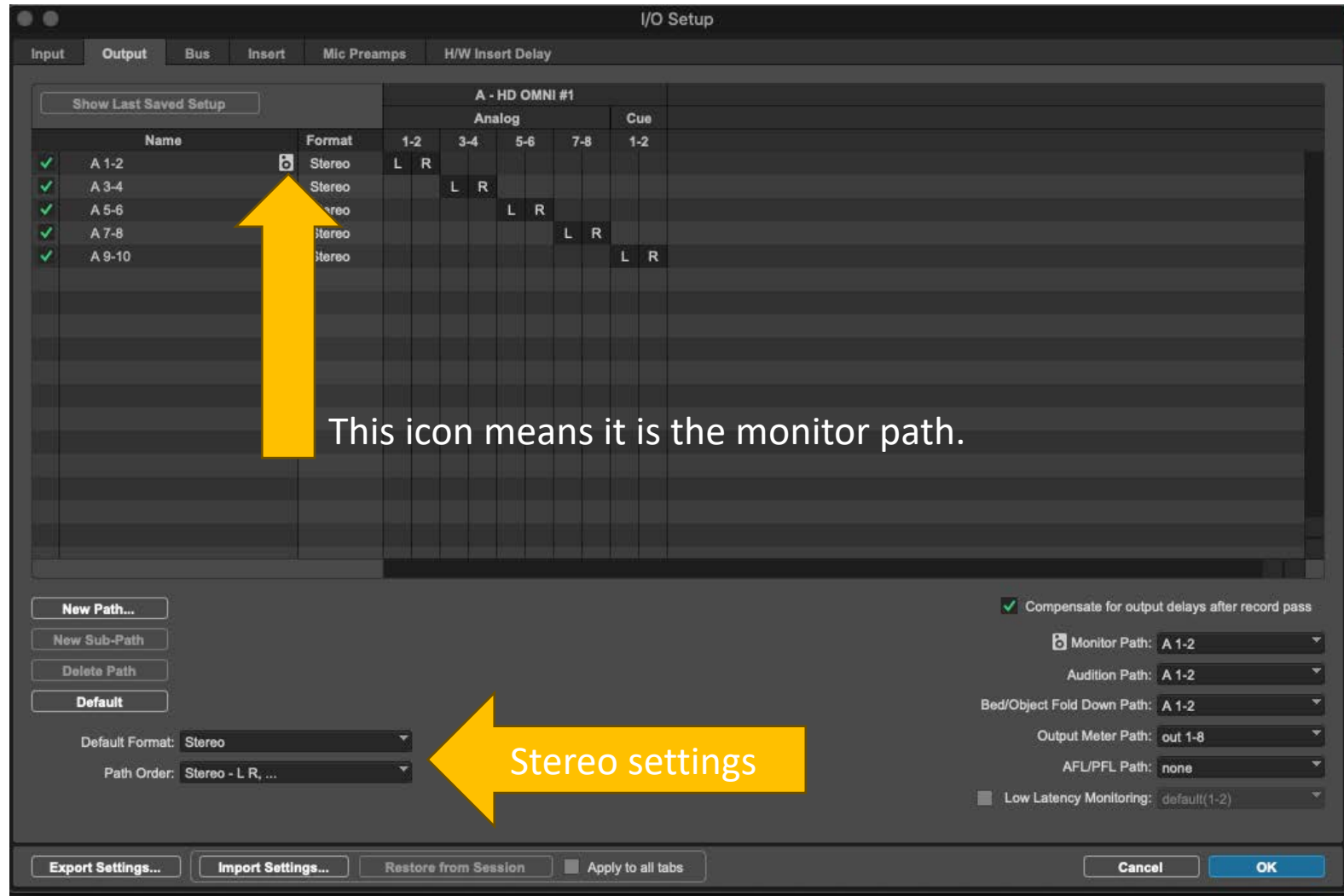
The connections to the speakers are analog.

Pro Tools/Setup Menu/Hardware



This is the Monitor output page that is set to **no monitor output**.

Pro Tools/ Setup Menu/ IO Setup



This icon means it is the monitor path.

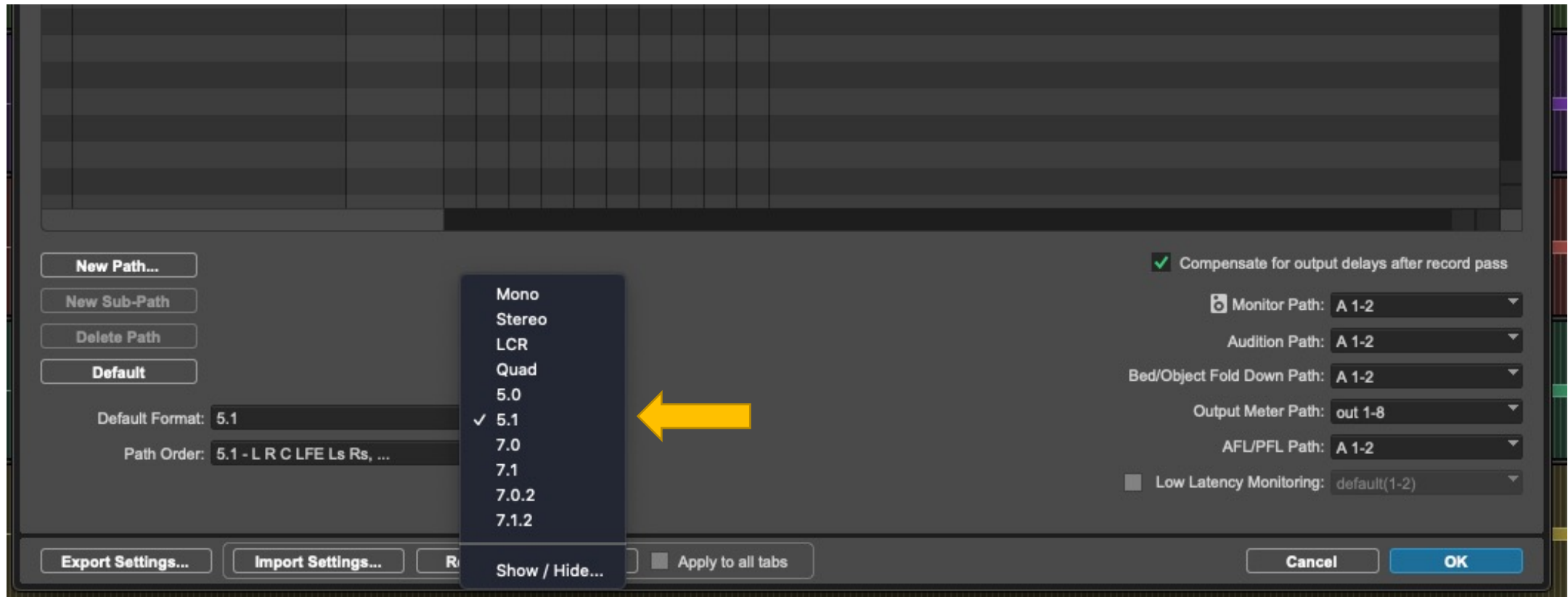
Stereo settings

By default, the outputs are set for stereo. This is how this page looks for a stereo output.

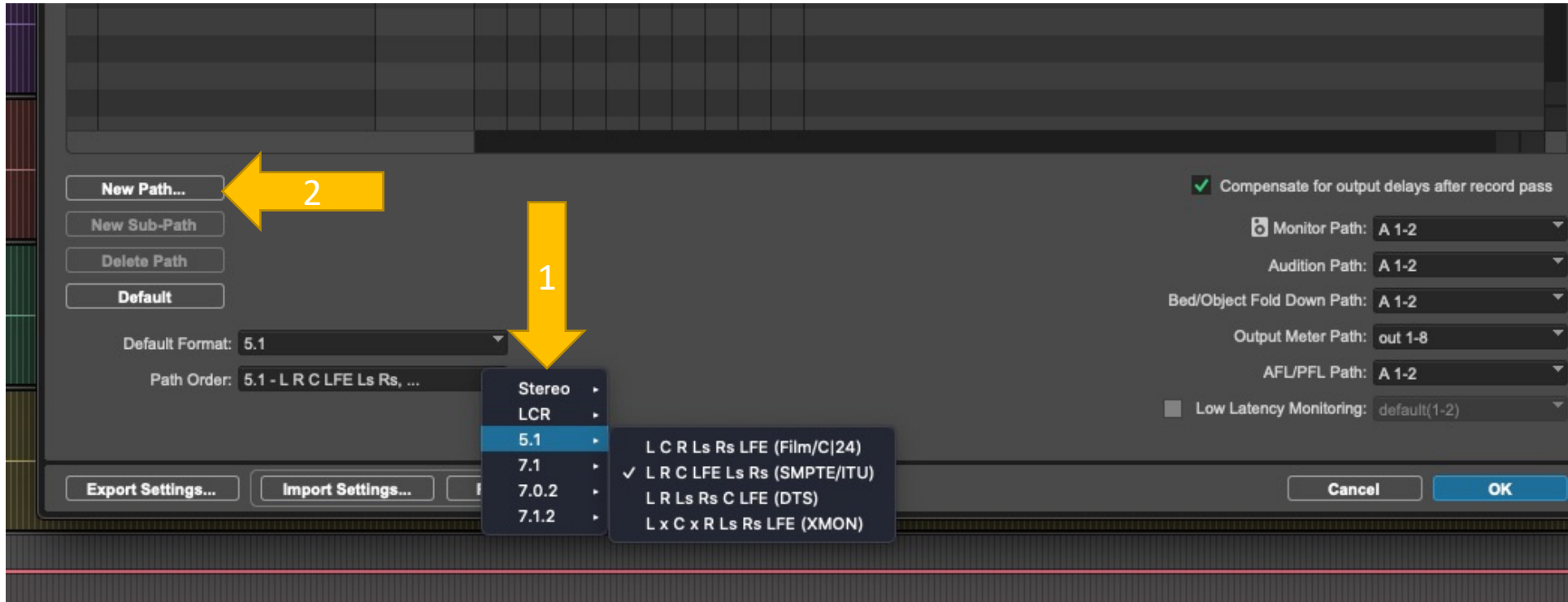
Path **A 1-2** is the default monitor path for stereo playback. Below is how that output appears on Pro Tools stereo tracks.



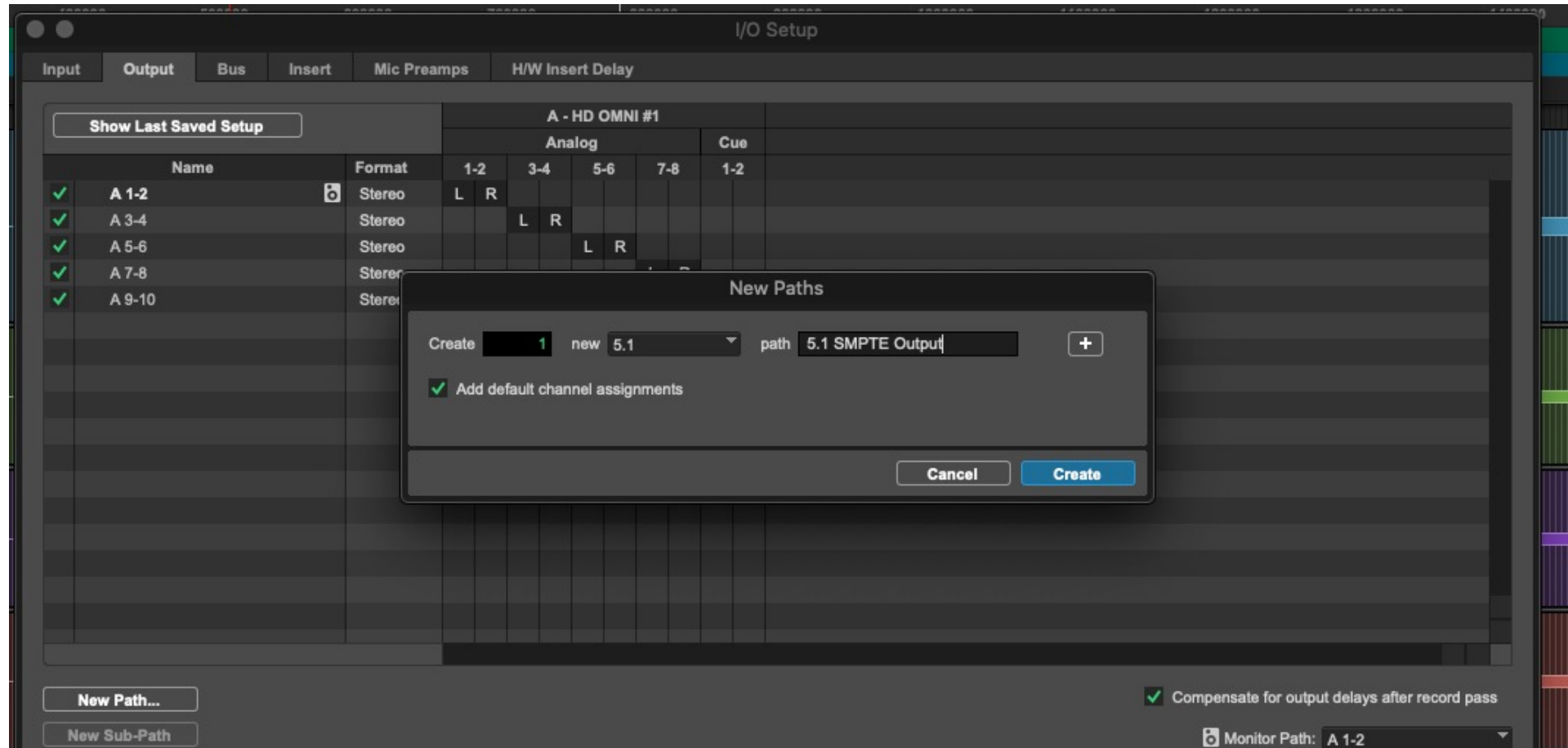
For surround sound playback you must make a new 5.1 monitor path in the output window. First, choose **5.1** as the default format.



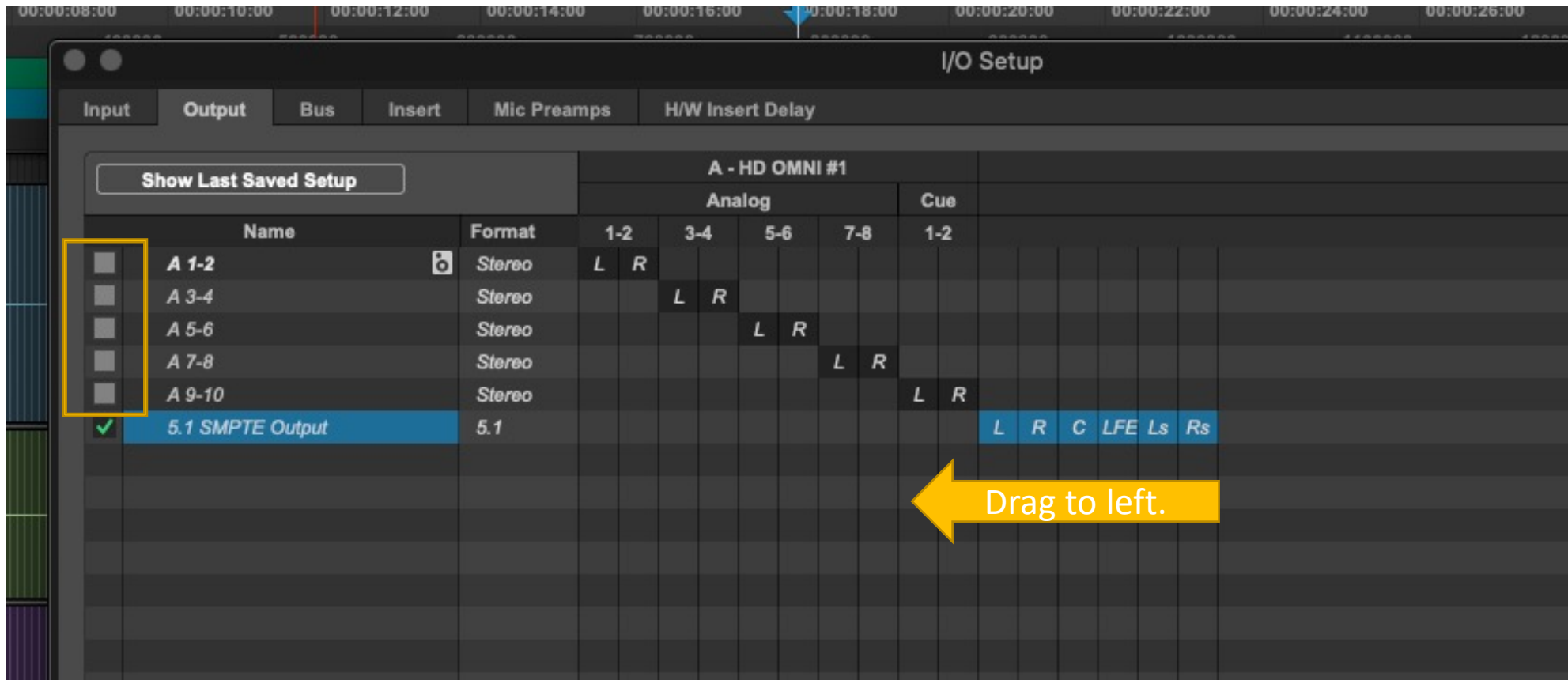
Then choose 5.1 SMPTE/ITU as the path order.
Then create a New Path.



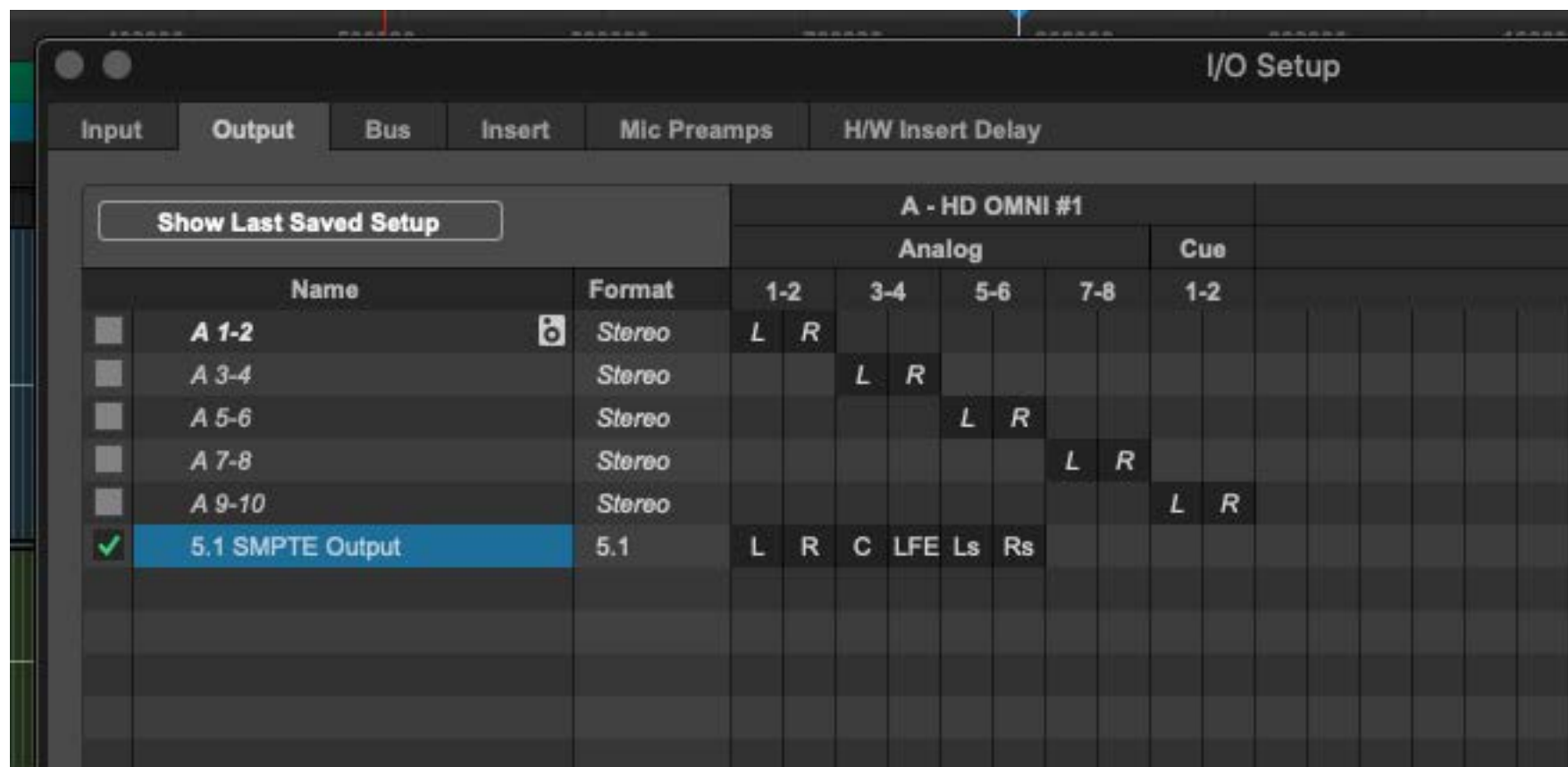
Create a 5.1 path. Call it what you like.



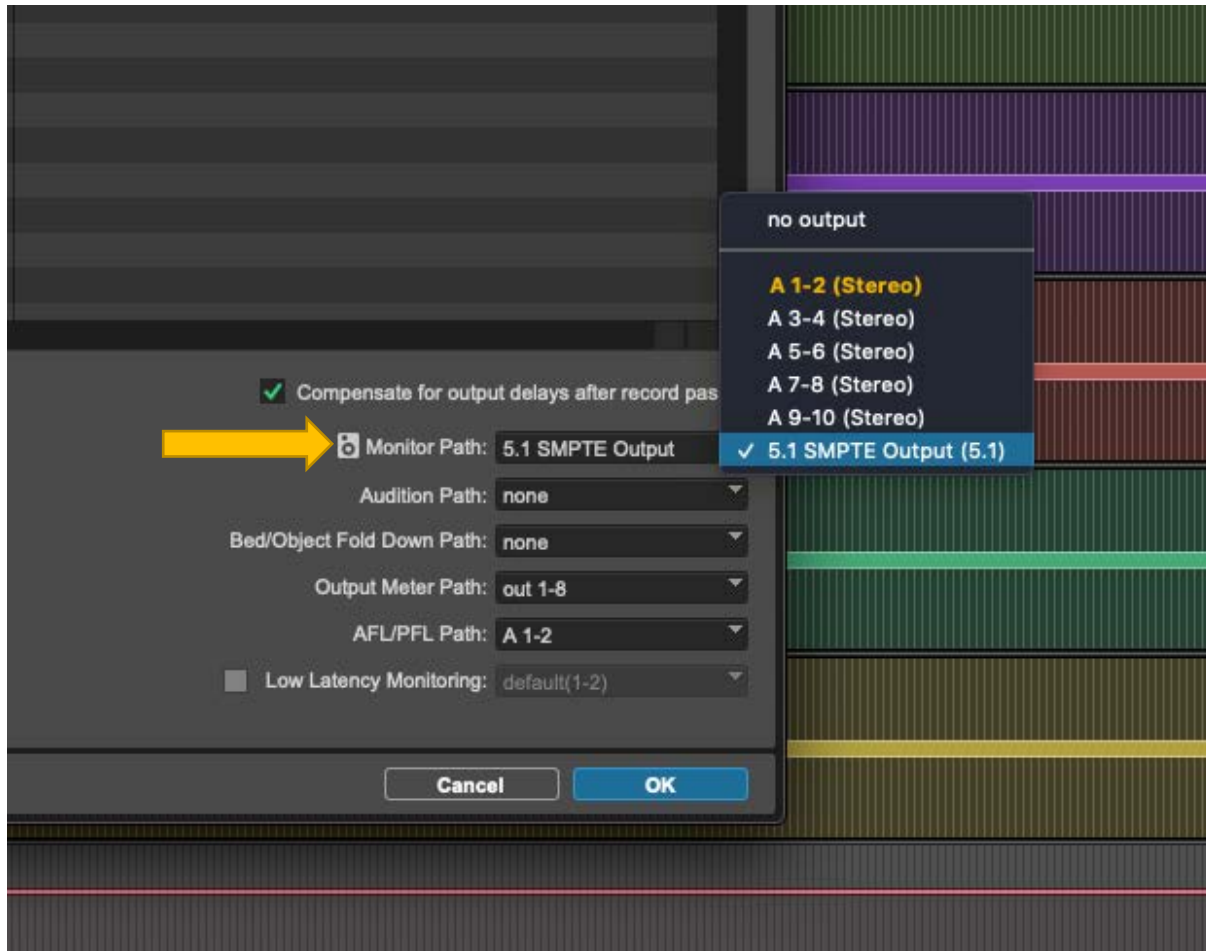
Deactivate all other output paths and enable the new path.
Then drag the channel assignments to tracks 1 to 6 (see next slide).



It should look like this:



Enable the new path as the monitor path.



Below is how that output path will appear in Pro Tools tracks in the session.



Moving to a new computer or user:

Pro Tools IO Output Paths stay in your User folder.

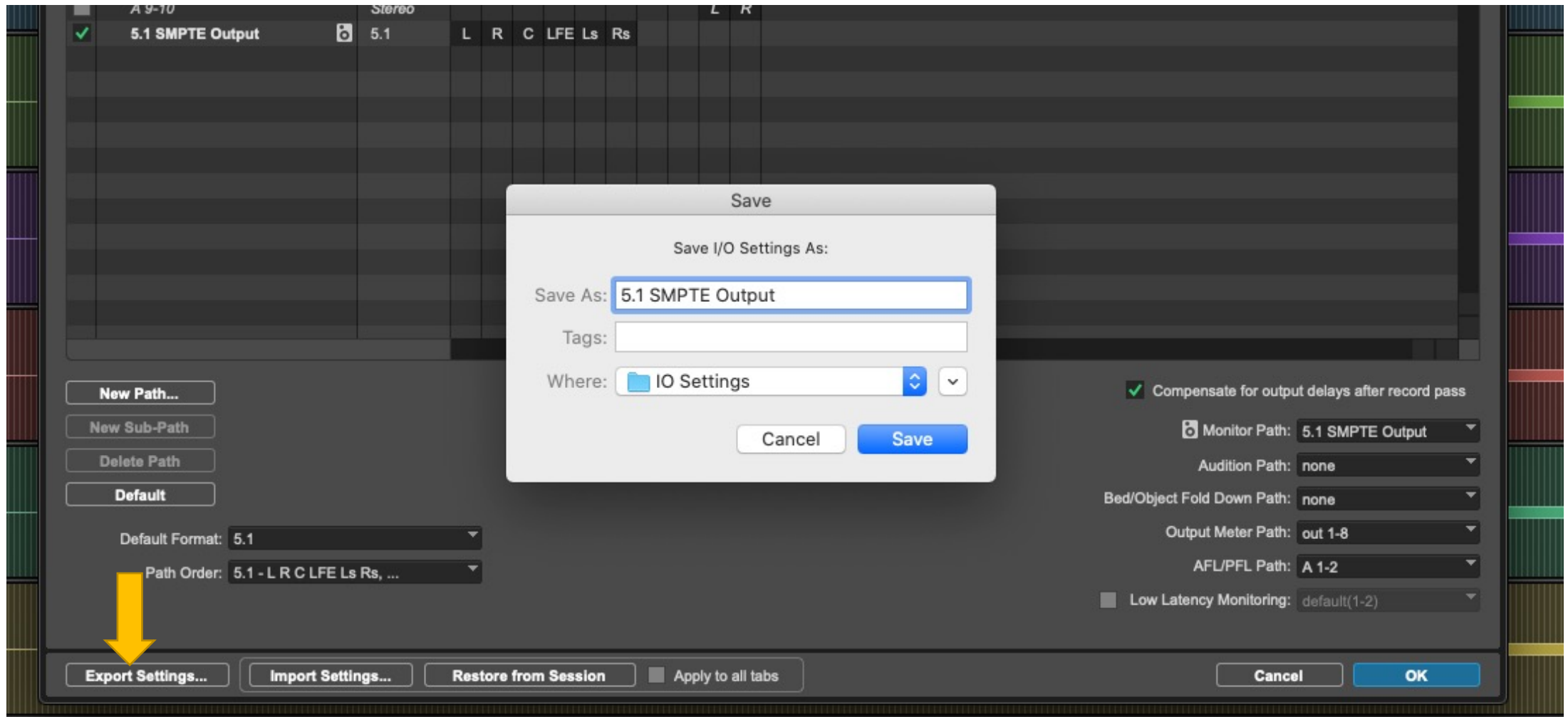
They do not travel with the Pro Tools project.

You must recreate these output paths in Pro Tools if you change User accounts or move to another computer. Your local User account deletes every week (Friday mornings) on the CDA AV suite computers.

The easiest way to do this is to export your IO settings before finishing.

Then import the IO settings in the new account or machine.

Choose **EXPORT SETTINGS** from the IO output tab before finishing your mixing. Then **IMPORT** the settings into the IO output tab the next time you begin in a new user account or computer.



Note about Pro Tools Ultimate and surround sound:

You may notice that when you import a 5.1 interleaved audio file into Pro Tools Ultimate that it will appear in the region list and on the 5.1 audio track as film order (L,C,R,Ls,Rs,LFE).

This is a Pro Tools idiosyncrasy (or bug?).

This does not mean that the file was created in film order.

You will notice that the interleaved file will play back correctly in a 5.1 Pro Tools session with the SMPTE/ITU path order (L, R, C, LFE, Ls, Rs)

Pro Tools simply displays 5.1 interleaved files as film order. That is all.

Adobe Audition Channel Assignment

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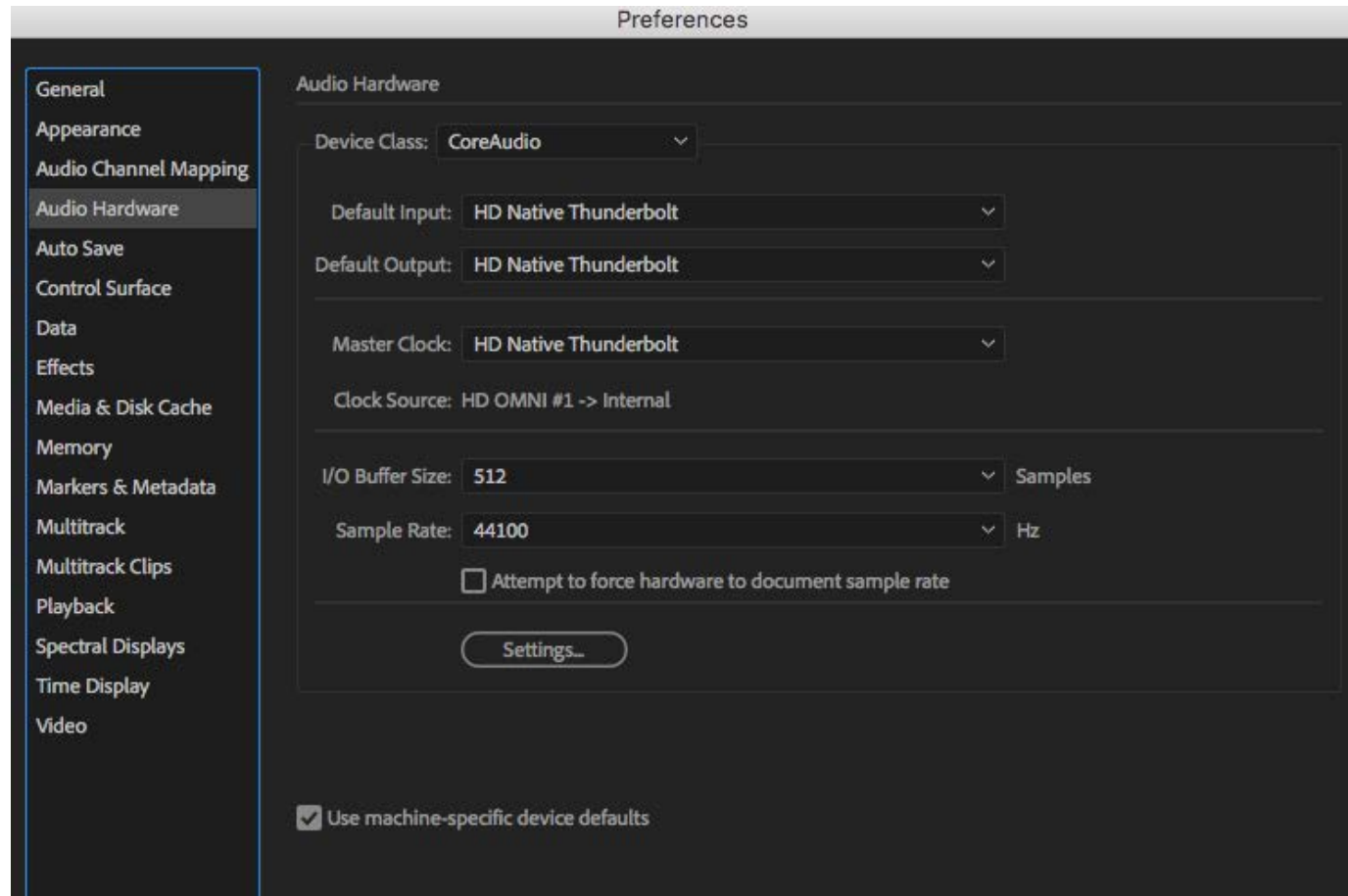
2025

Adobe Audition Channel Assignments

Audition does not have the complicated IO settings of Pro Tools
The choices are simple (and also limited).

Adobe Audition/Preferences/Audio Hardware

Audition should be using Core Audio and the HD Native Thunderbolt.

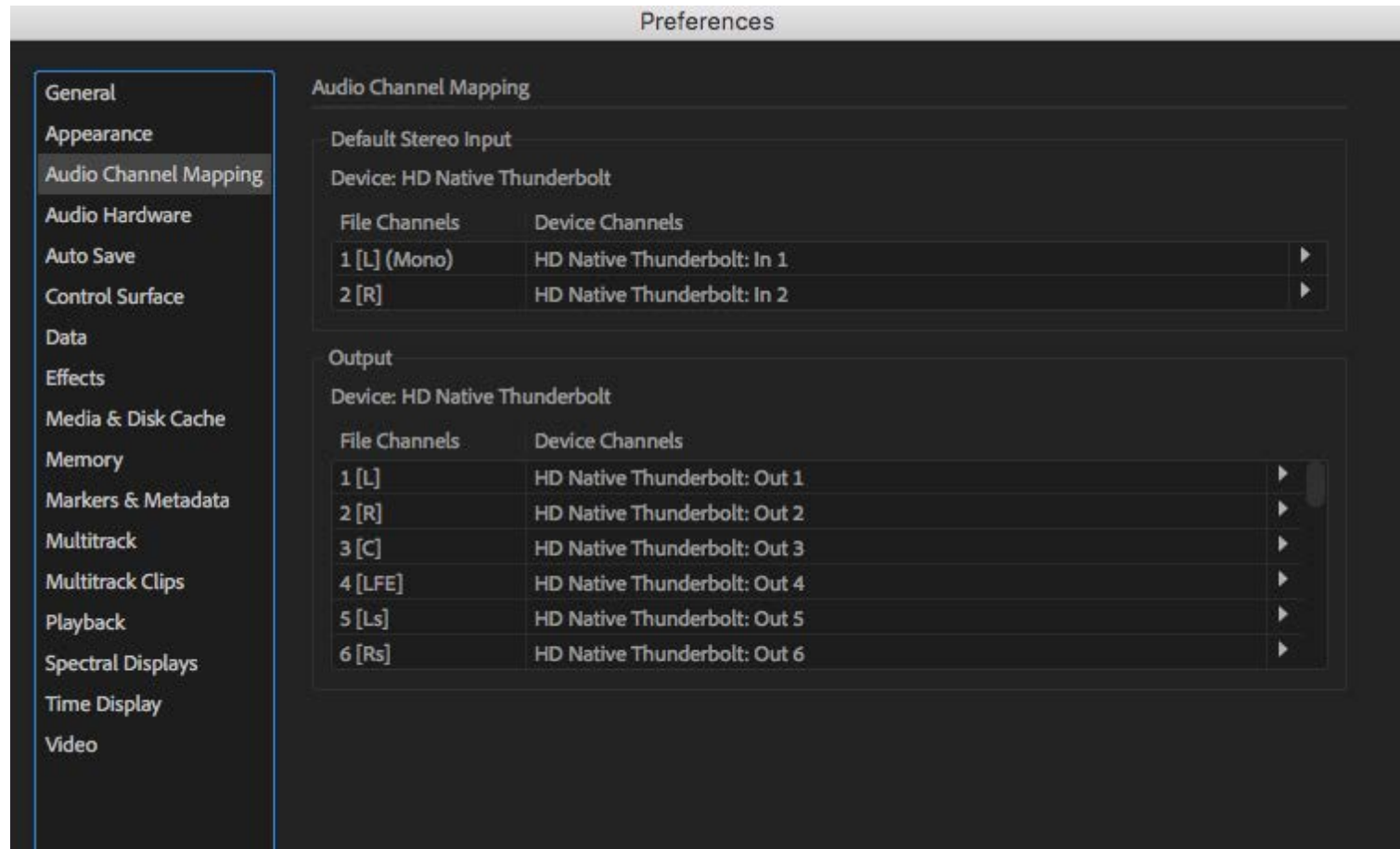


Also checkmark the **Attempt to force hardware to document Sample rate** otherwise you have to verify in Applications/Utilities/Audio Midi setup that the HD Native Device has the same sample rate as your Audition session.

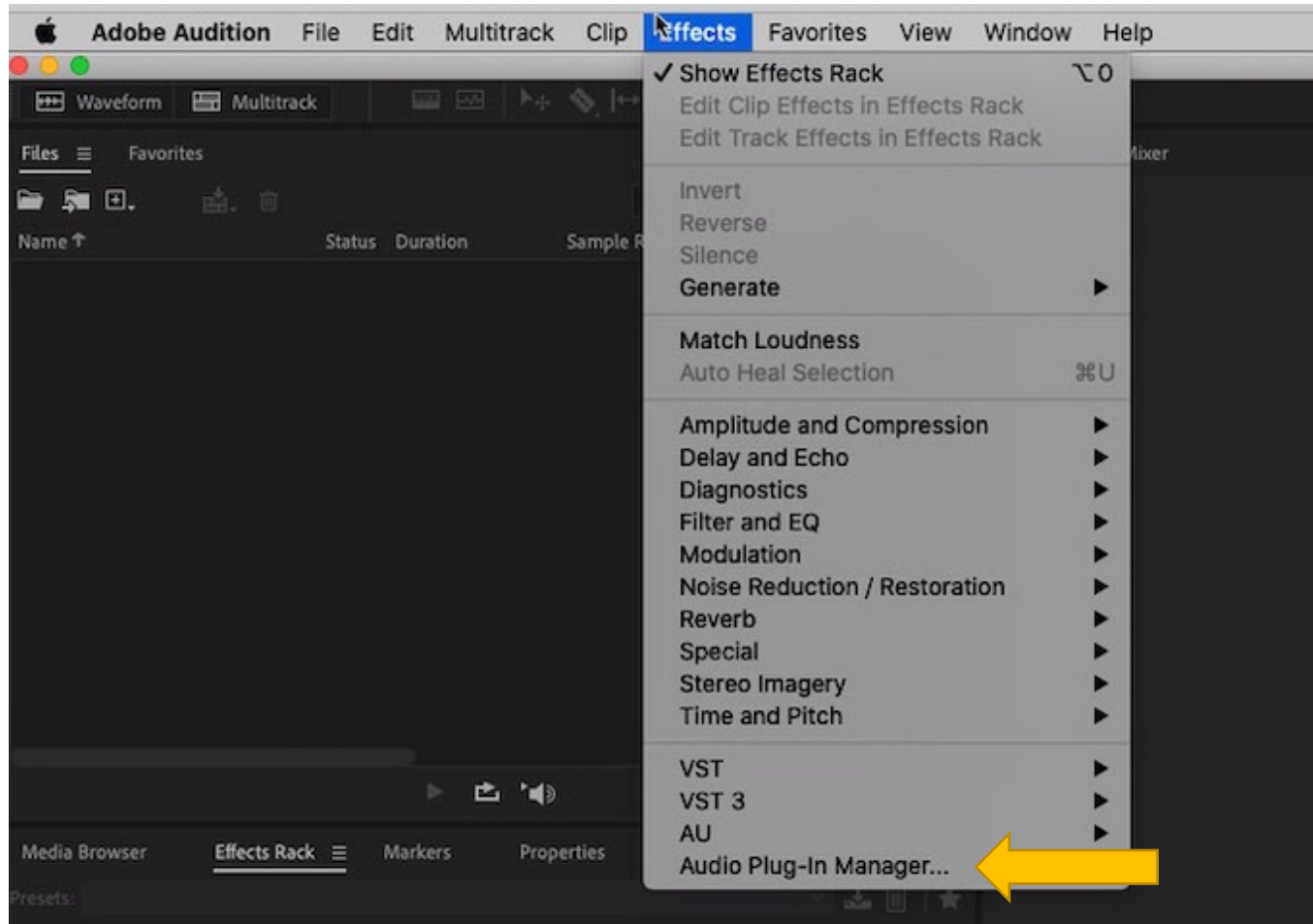
Adobe Audition/ Preferences/ Audio Channel Mapping

The default channel mapping is in SMPTE order: L, R, C, LFE, Ls, Rs

Keep it like that. That's it!



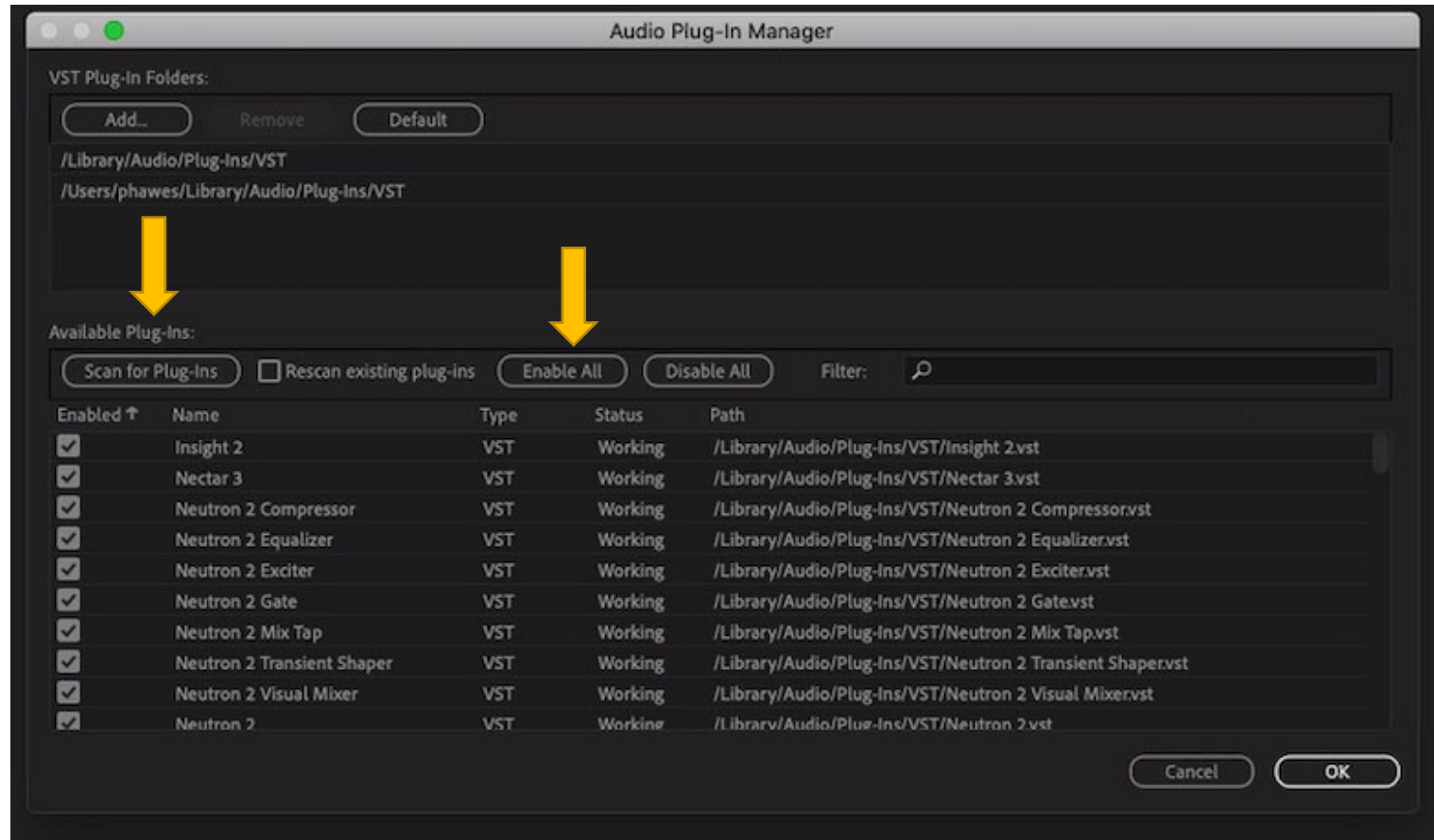
Enabling Plug Ins in Audition



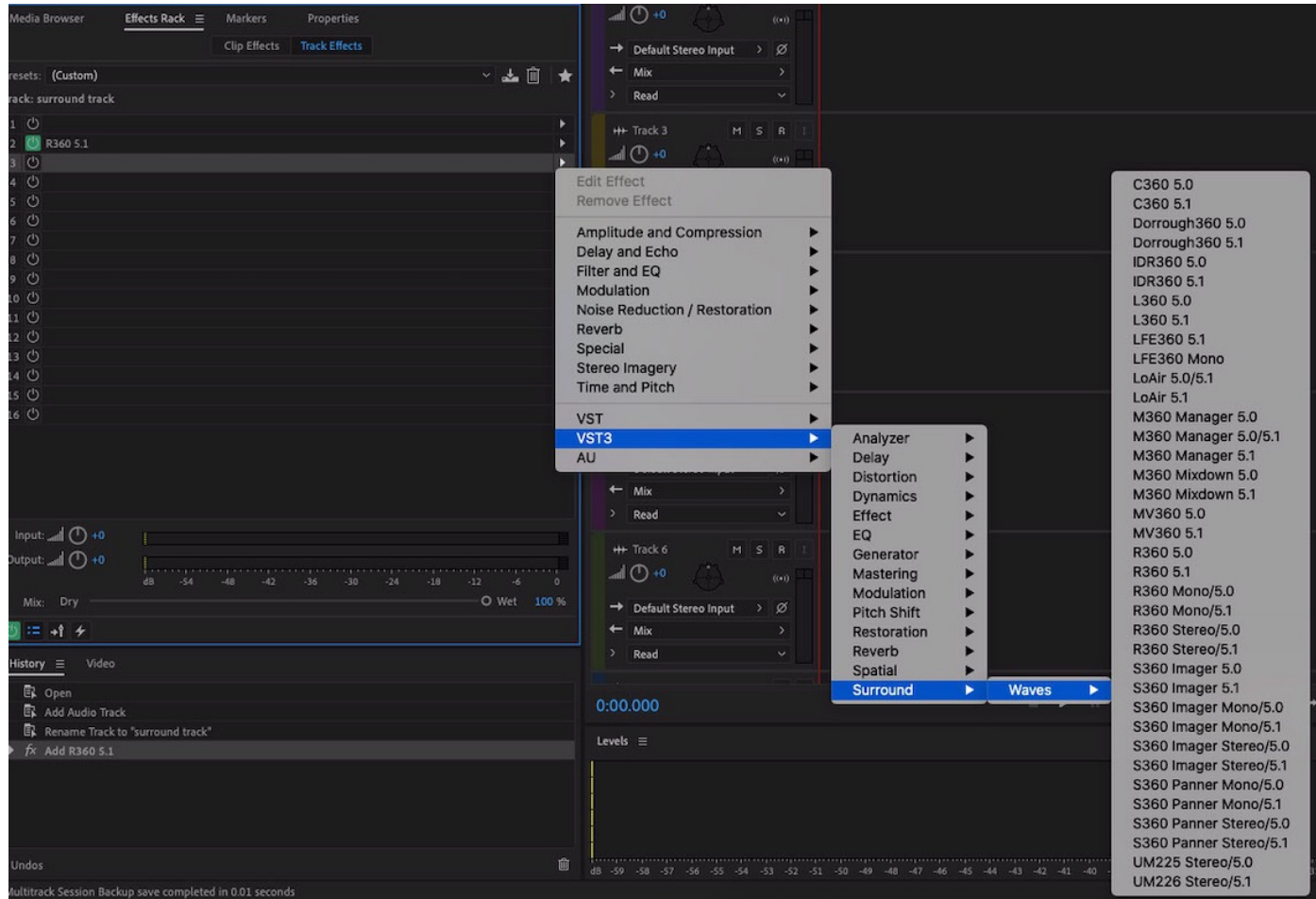
When you first launch Audition, you must scan and activate available plug ins.

In Audition, go to the Effects menu/
Audio Plug-In Manager.

Scan for Plug-ins and Enable All.



The plug ins will appear in the Effects Rack.



Use the VST 3 version of the WAVES surround plug ins. They can be found in this path:
VST 3/ Surround/ Waves

Surround Plug Ins for all applications

Both Pro Tools and Logic have surround plug-ins that come with the software

Pro Tools has AVID surround plug ins in the proprietary AAX format.

Logic has Apple surround plug ins AU format.

Other applications can use the most common format: VST or VST3.

Some applications like Adobe Audition can also use the AU format.

For surround mixing in applications other than Logic and Pro Tools use the WAVES 360 surround plug ins. Use VST 3 or AU versions.

Use the Izotope Insight metering plug in on the master fader of a surround sessions.

WAVES 360 Surround Plug Ins:

- C360 (surround compressor)
- IDR360 (Bit Re-Quantizer)
- L360 (surround limiter)
- LFE360 (low-pass filter)
- M360 (surround manager and mixdown to Quad, LCR, stereo or mono)
- MV360 (dynamics processor)
- R360 (surround reverb)
- S360 (surround imager and panner)
- Durrough Surround (surround metering)
- Lo-Air (surround subharmonic enhancer)
- UM225/226 (stereo to surround)

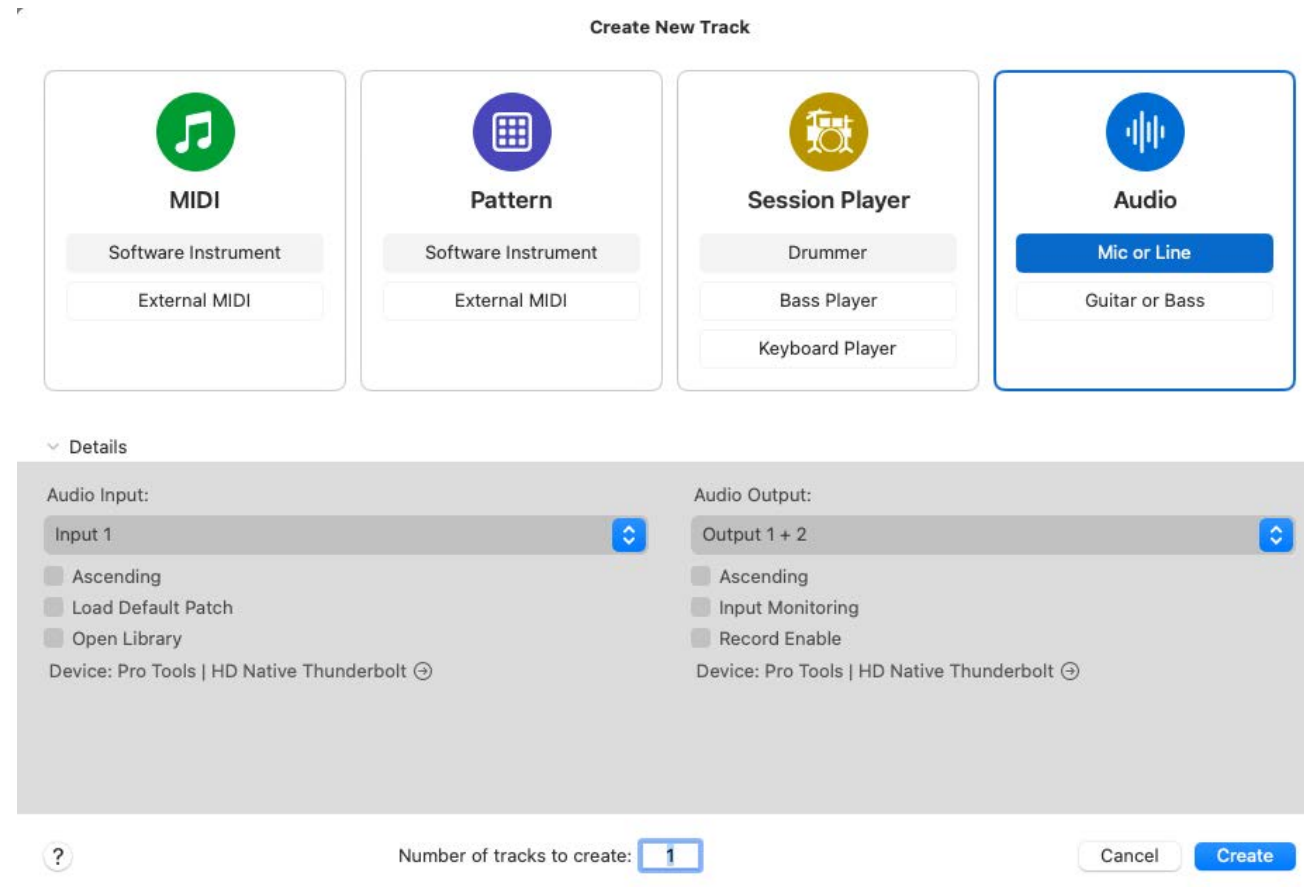
Logic Channel Assignment

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Make an Audio Session In Logic

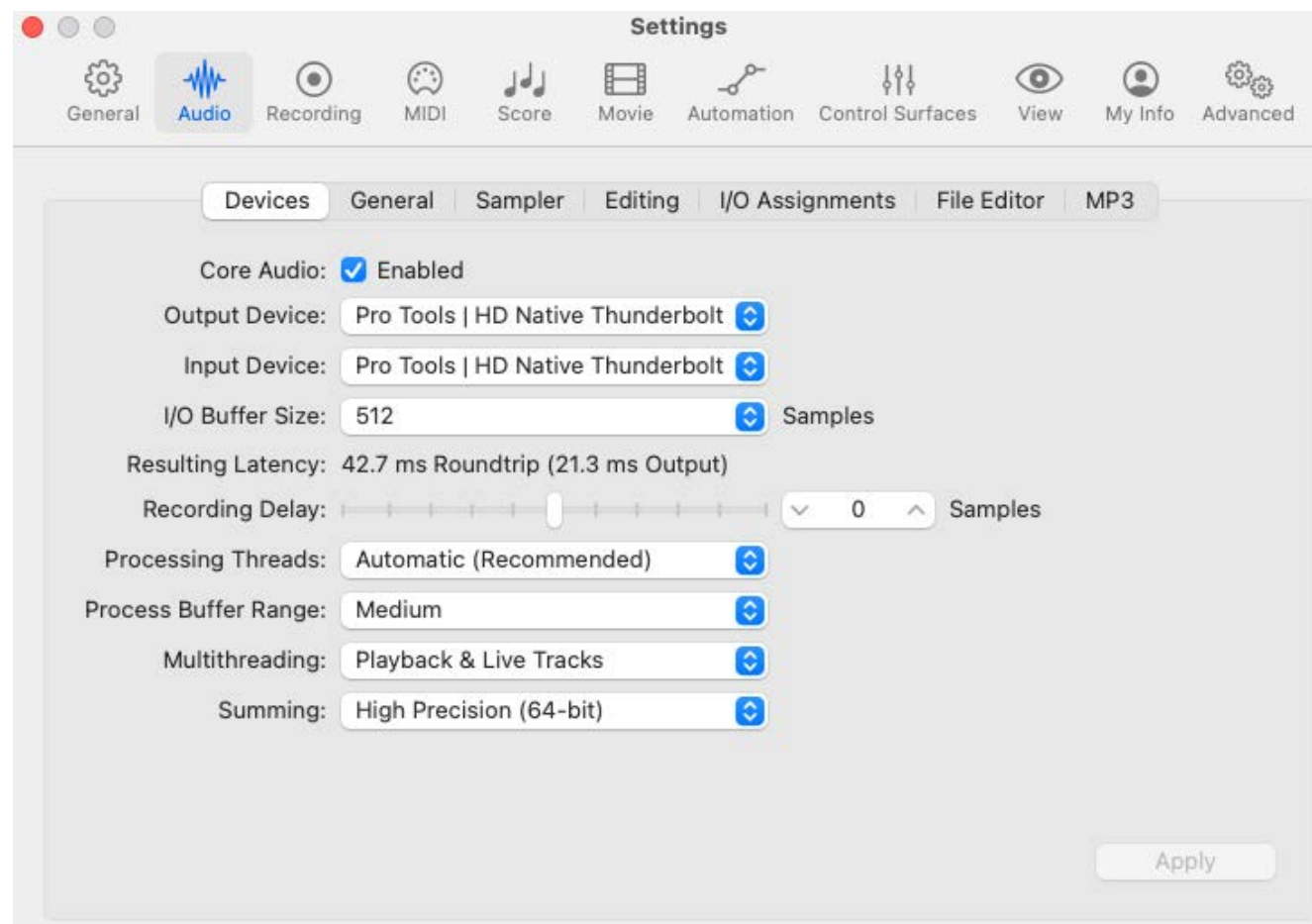
Even if you want to create a surround session, you will first have to create a stereo session in Logic.



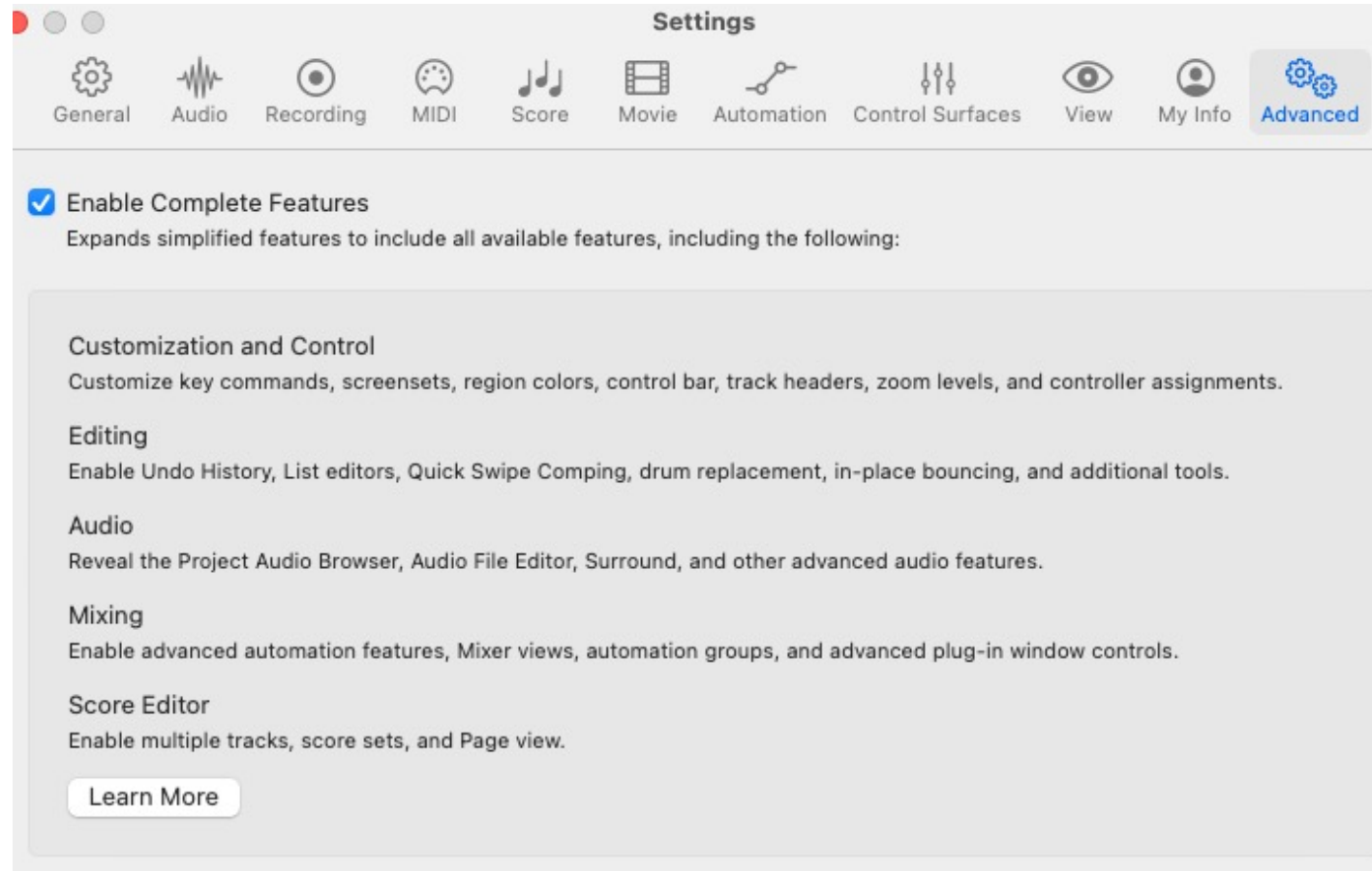
Logic

- Apple has hidden all the surround features in Logic.
- The first step is to enable these features and then do your channel mapping correctly.

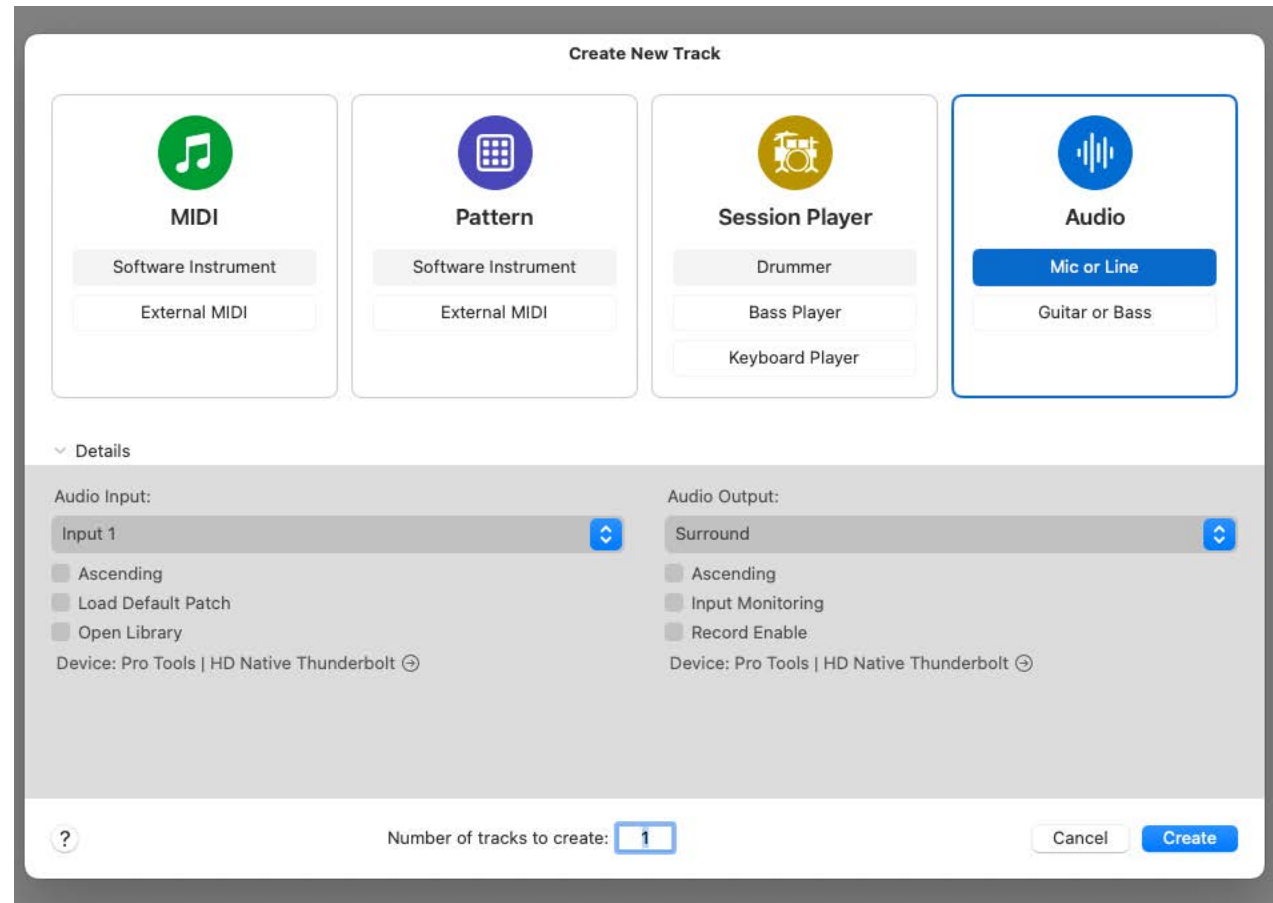
When Logic Pro opens it will create a stereo session. Ignore this for now. First go to Logic Pro/Settings/Audio/Devices and select the **HD Native Thunderbolt** as the Input and Output Device.



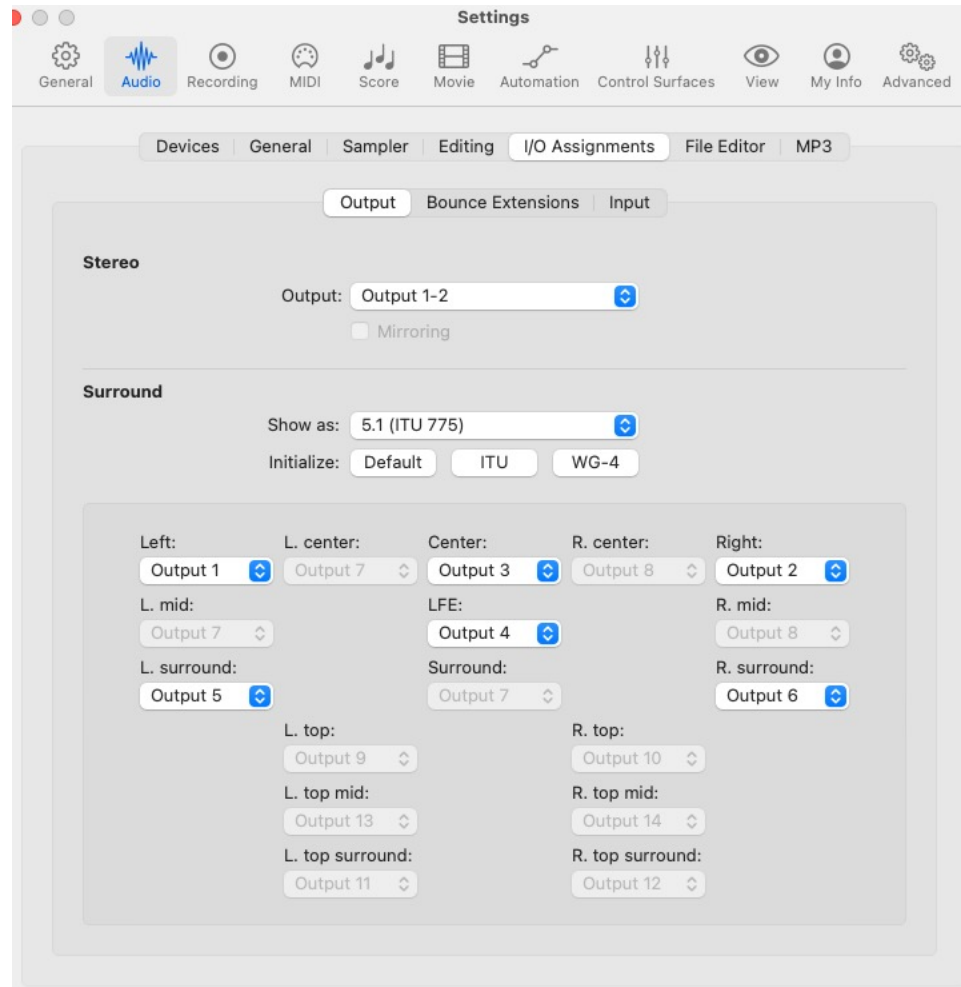
Then enable the Surround Sound options by going to Logic Pro/Settings/Advanced and checkmark **Enable Complete Features**.



Then create a new project (**File/New**) and make a surround project. Make sure that the Output is **Surround**.



In Settings/ Audio/ I/O Assignments choose Surround 5.1 ITU as your Output channel assignments. This is SMPTE order.



Ableton Live Audio Settings

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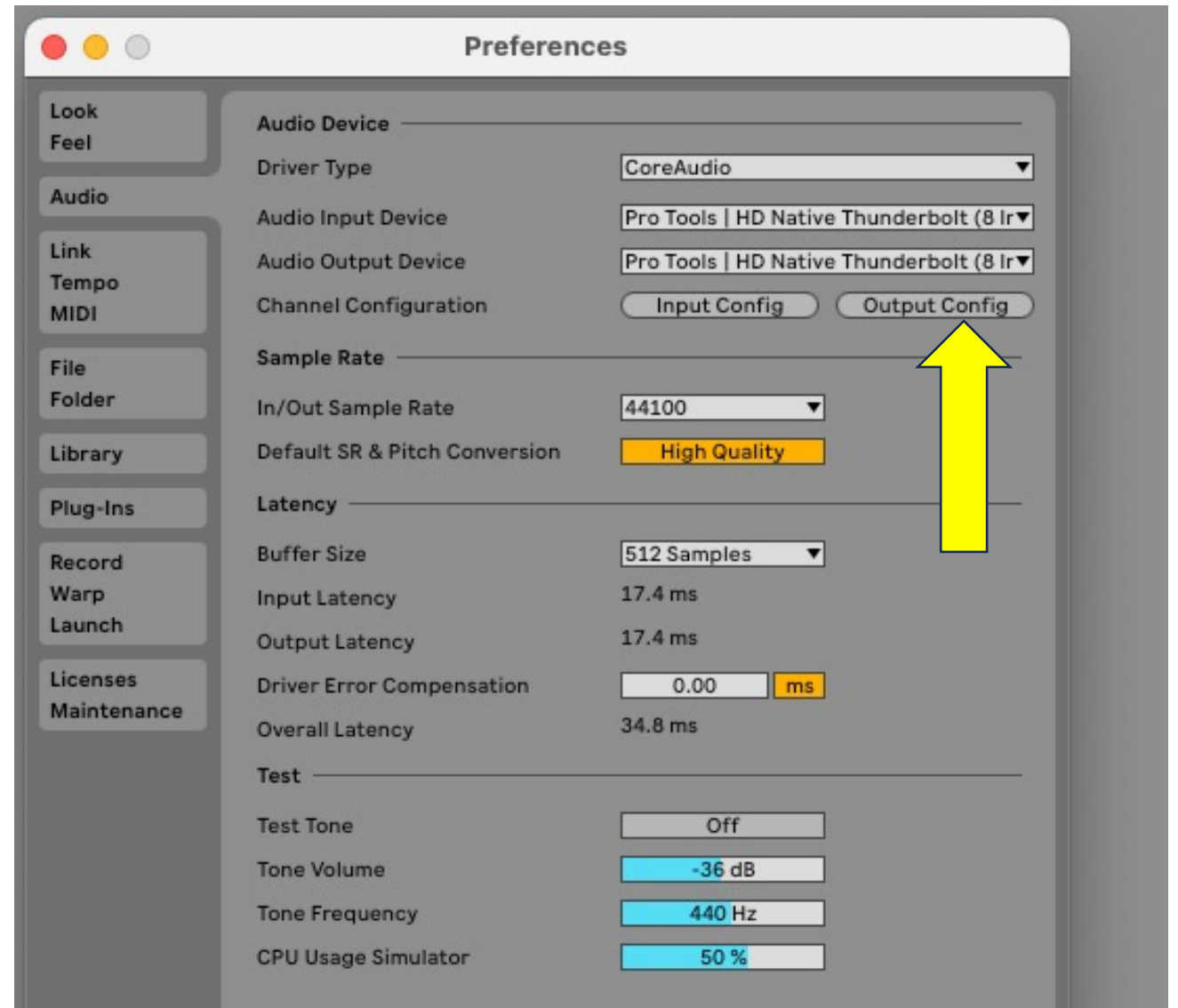
Ableton Live

Preferences/Audio:

Driver is Core Audio

Device is Pro Tools HD Native Thunderbolt

Then select Output Config.

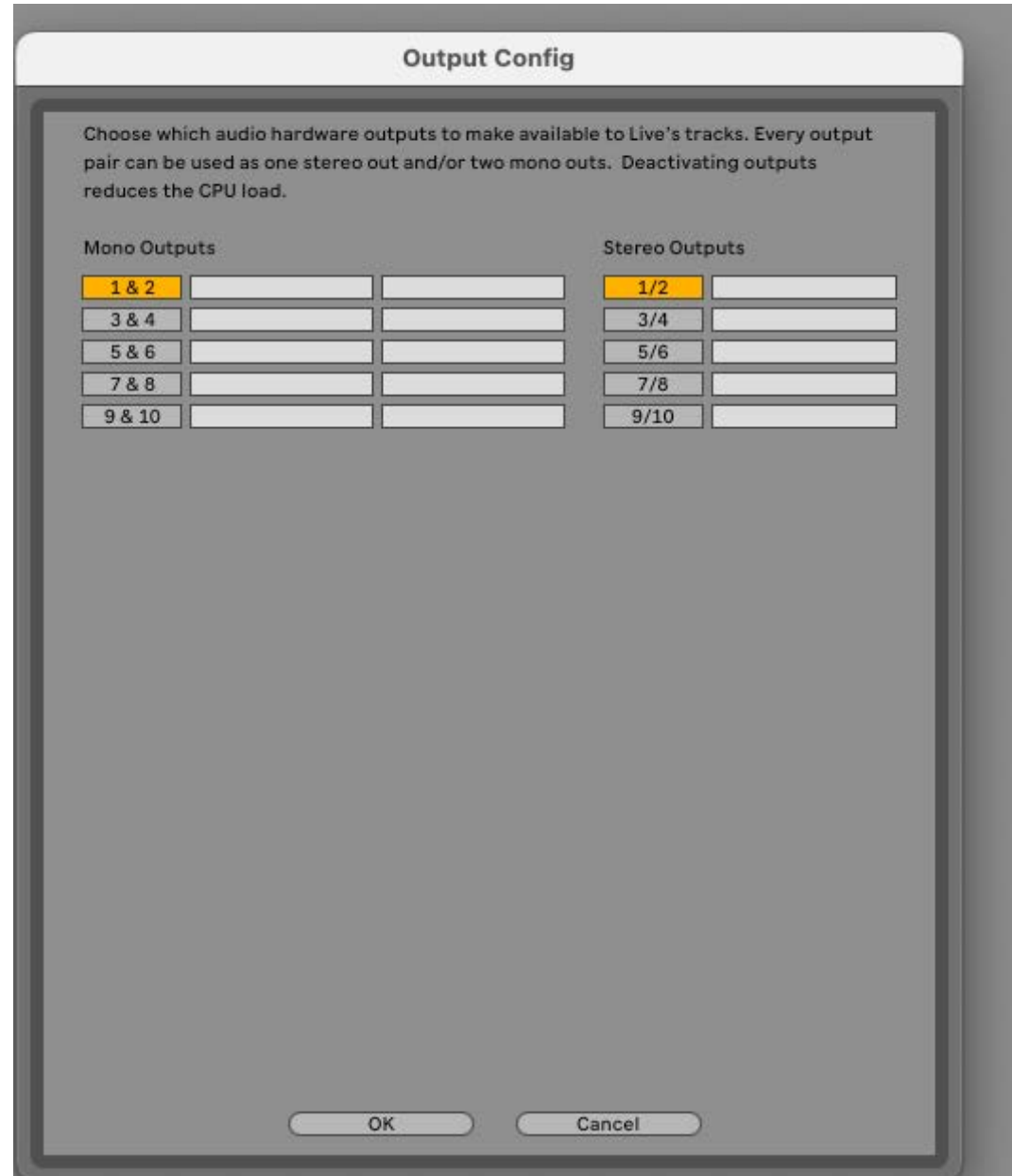


Ableton Live

Enable the correct number of tracks.

Stereo sessions will only require outputs 1 and 2

Surround sessions will require outputs 1 to 6

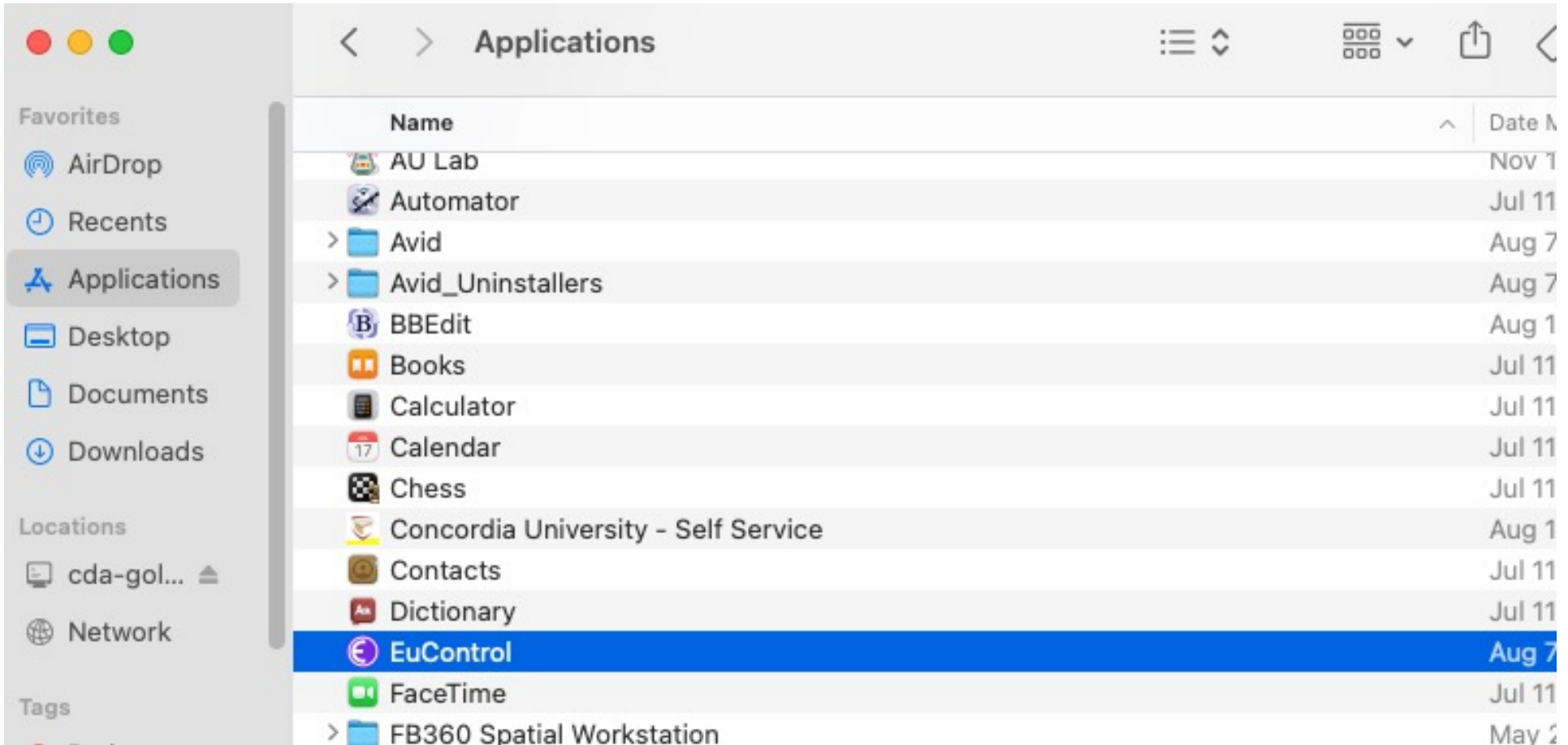


Enabling the AVID S3 Control Surface

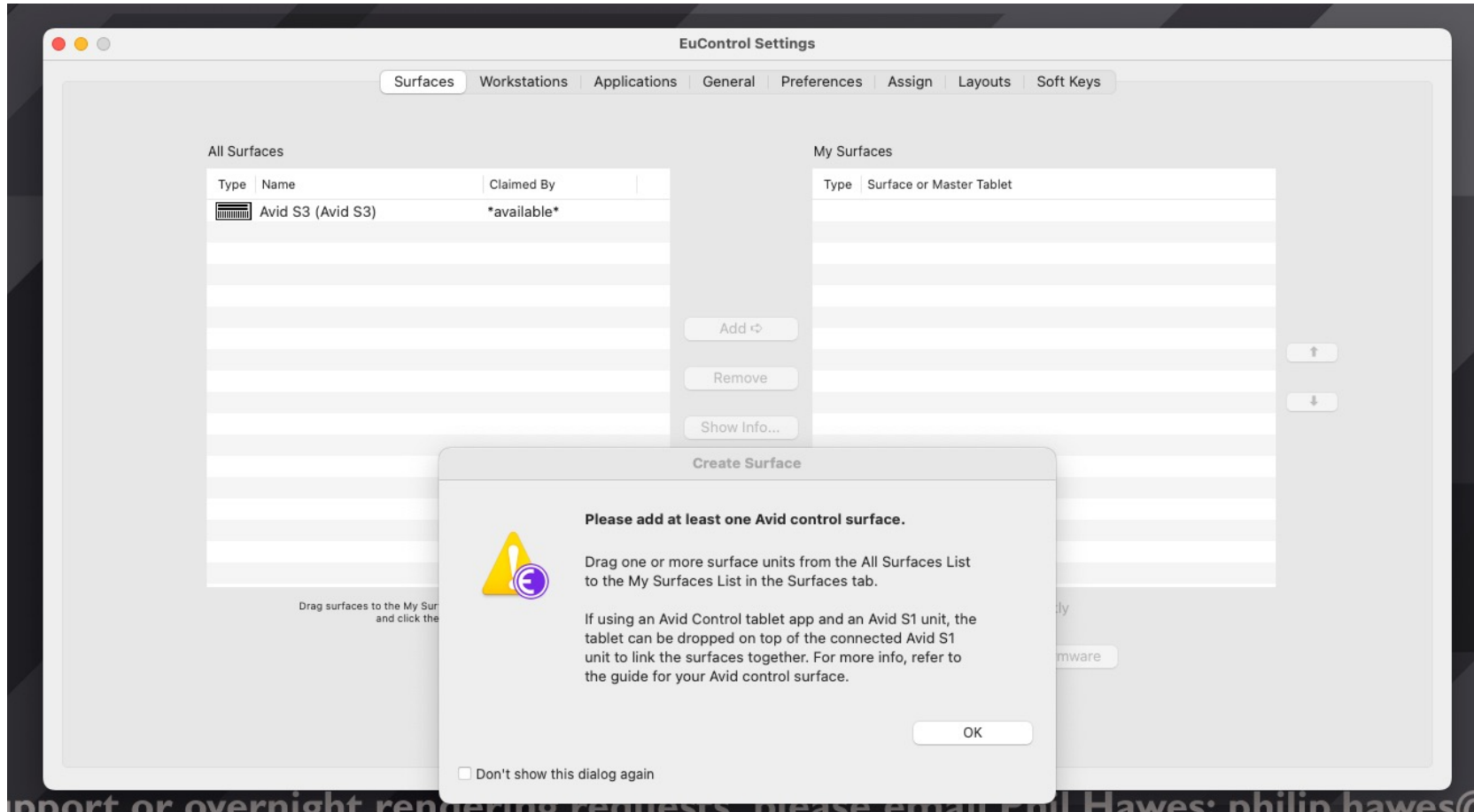
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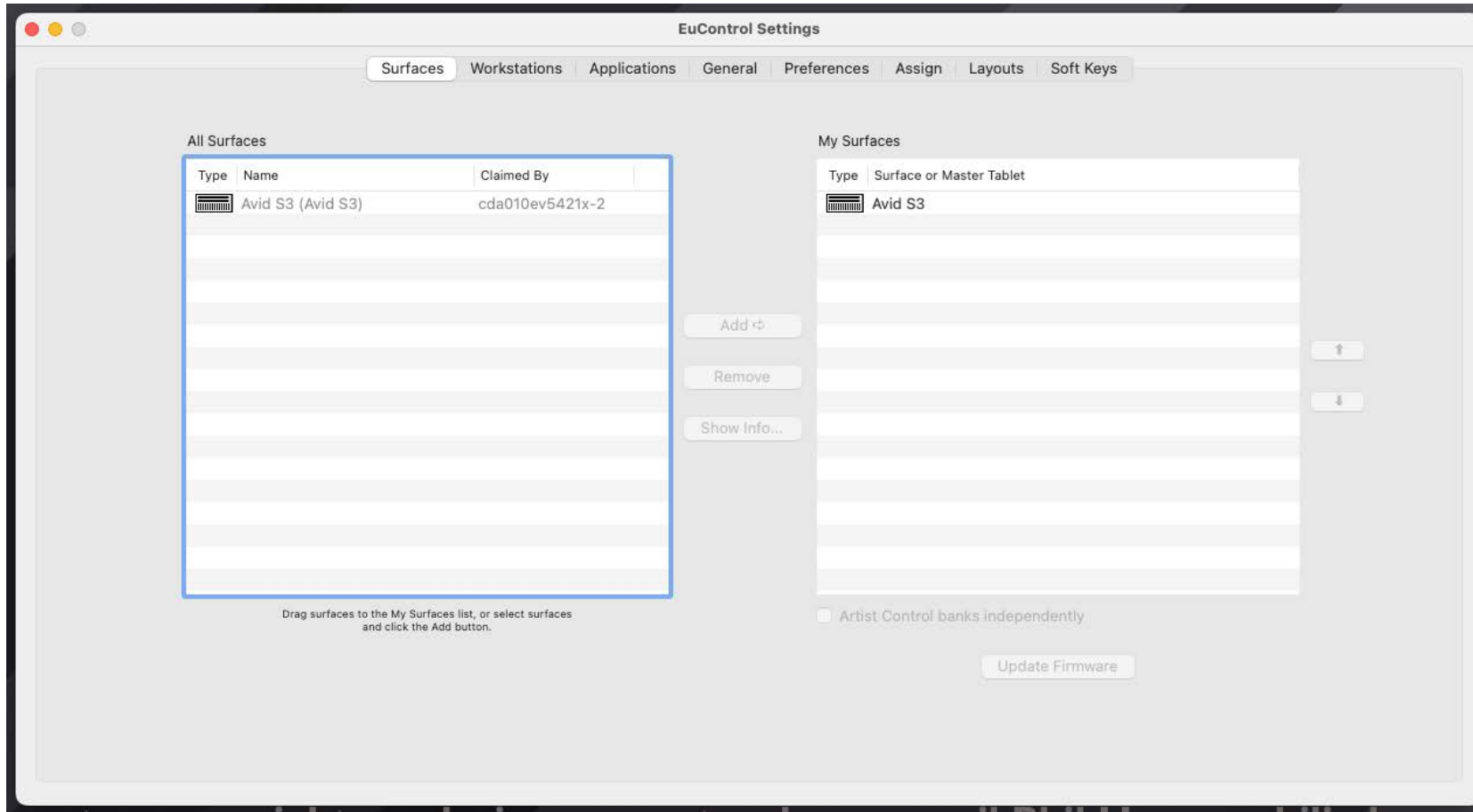
The EuControl software should launch automatically. If it does not, launch it from Applications.



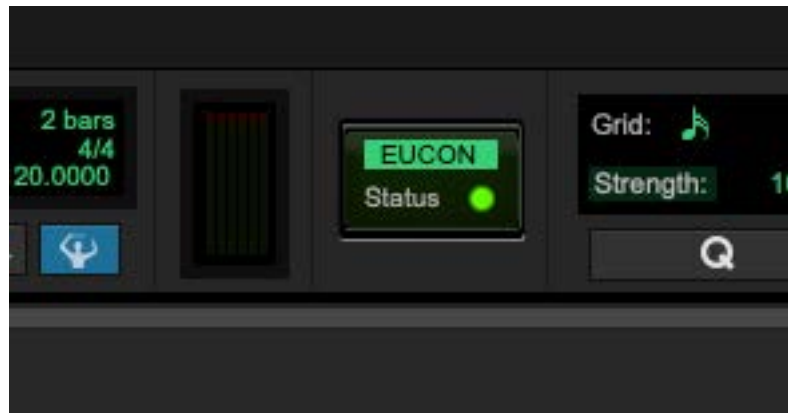
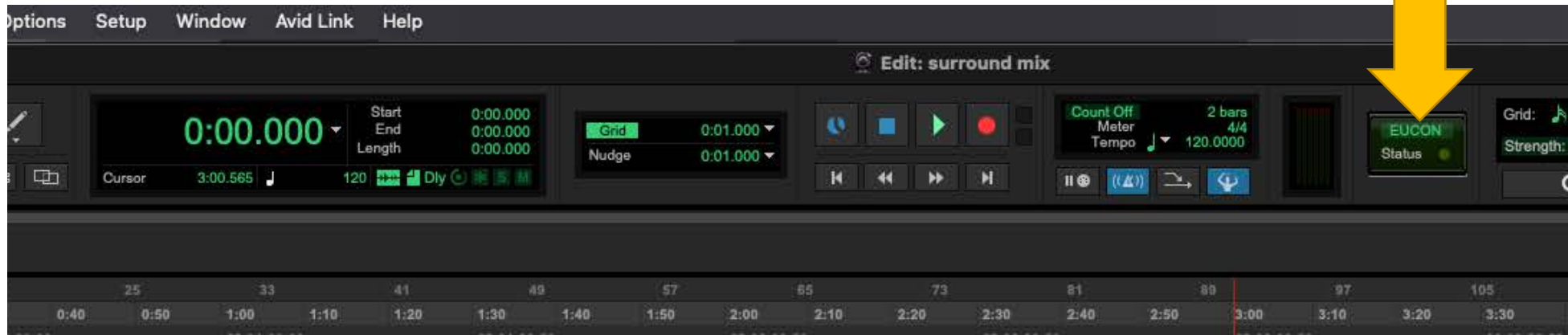
Add the AVID S3 by selecting the surface in the left column and then ADD.



The AVID S3 will appear in the right column to show that it is recognized.



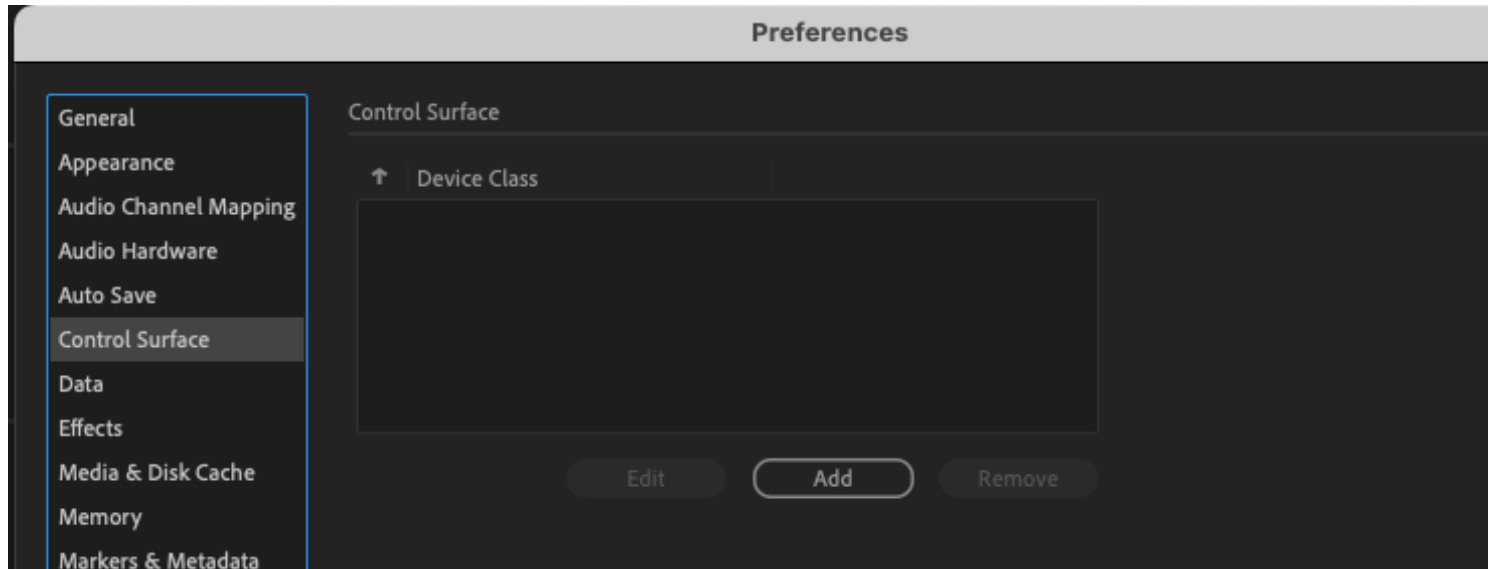
Enabling the AVID S3 in Pro Tools



Click in the EUCON symbol at the top of the Pro Tools interface.

The status should be green when the surface is recognized.

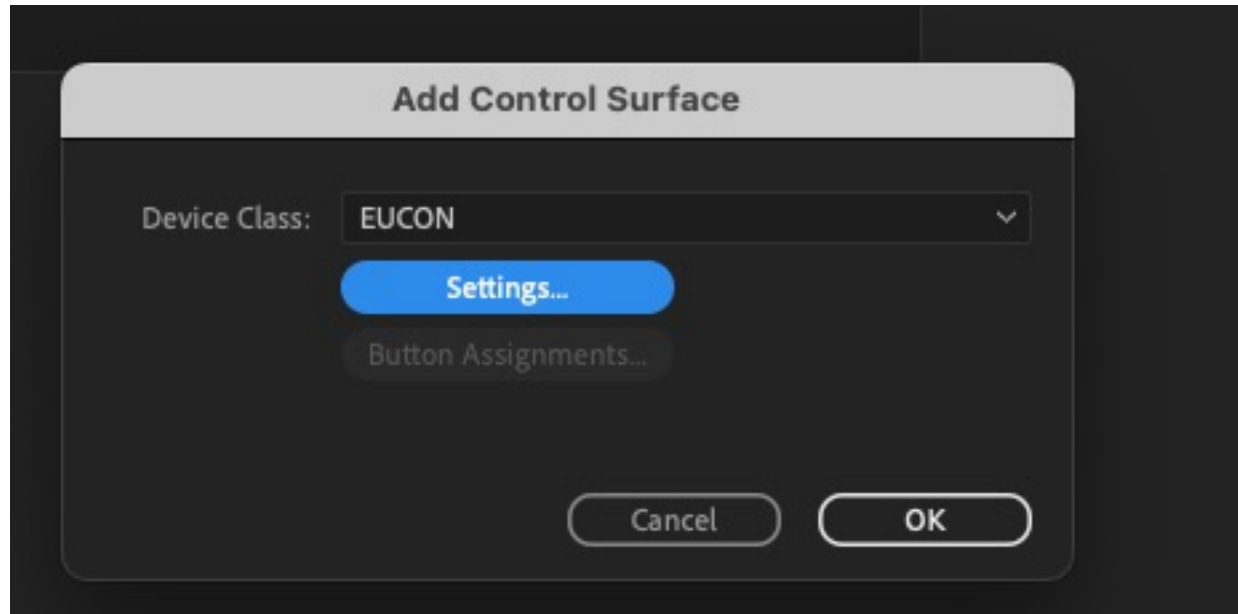
Enabling the AVID S3 in Adobe Audition



Go to
Audition/Preferences/
Control Surface

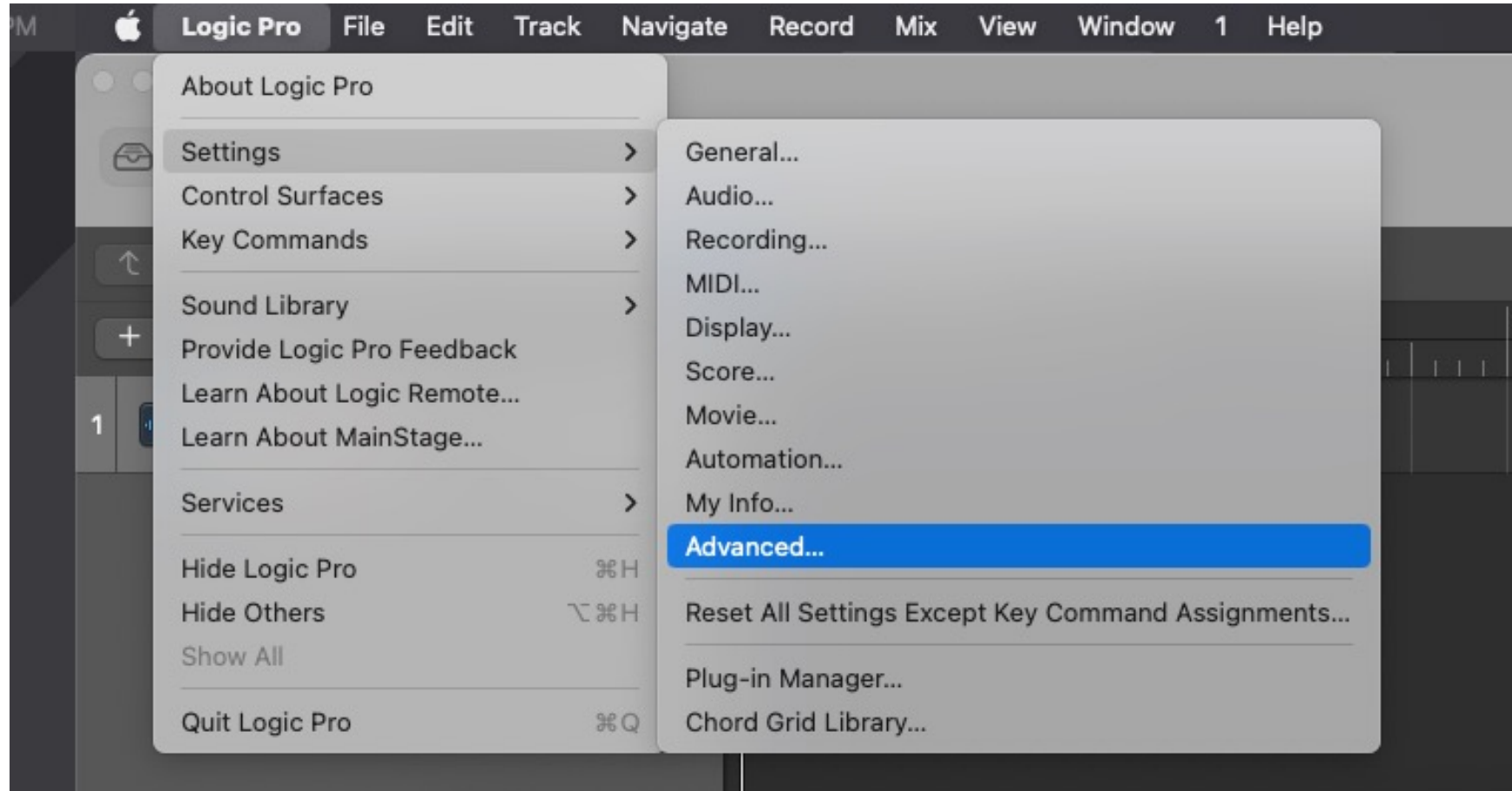
Select ADD.

Enabling the AVID S3 in Adobe Audition



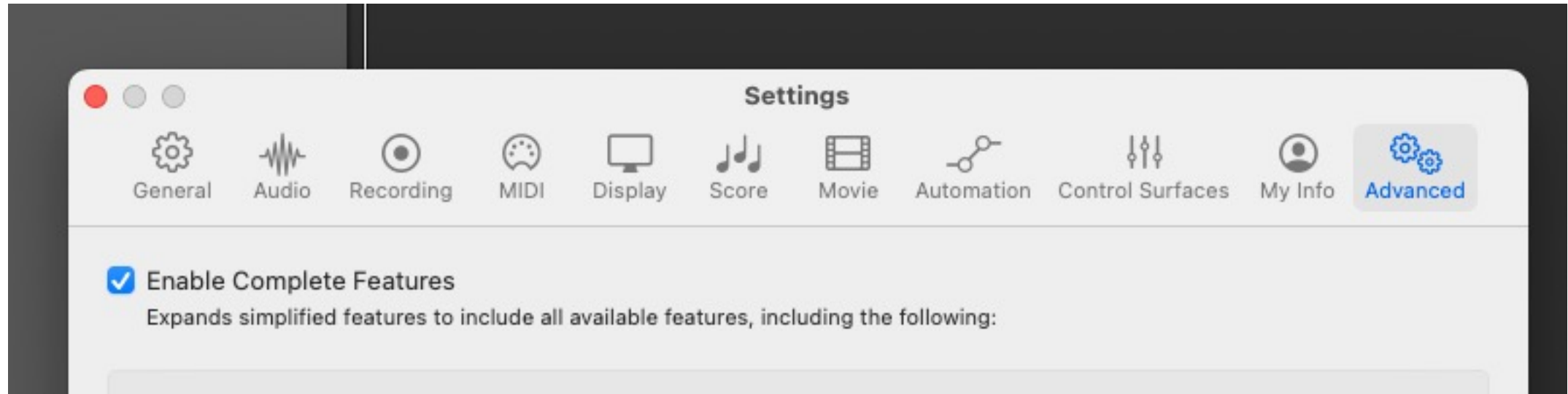
Add EUCON.

Enabling the AVID S3 in Logic Pro



Go to Logic
Pro/Settings/Advanced

Enabling the AVID S3 in Logic Pro



In the Advanced menu checkmark “Enable Complete Features”. This will automatically recognize the S3 Control Surface as well as making Logic more useful.

Thank you!

Thank you for reading this guide!

If you have any issues in the CDA AV suites, please email
philip.hawes@concordia.ca