CDA VS10
Mixing Suite Guide
EV 5.421

2026

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

About this guide

This guide explains the audio hardware and software settings required for stereo and 5.1 surround playback in the CDA mixing suite (VS 10 or EV 5.421) when using the studio computer or a laptop.

Please email Phil Hawes if you have any issues in any of the CDA AV suites:

philip.hawes@concordia.ca

Contents:

Mixing Suite Hardware

Apple Mac Studio M1 Ultra computer

Focusrite Red 16Line audio interface **for all studio computer applications**

Focusrite Scarlett 18i20 Gen.4 **used exclusively for laptops**

5 x Genelec 8341A monitors

Genelec 7370A subwoofer

Genelec 9320 (used as a volume controller not an interface)

AVID S3 (used as a control surface)

USB C dock for external hard drives

Mixing Suite Hardware

All audio applications on the studio computer use the **Red 16Line** interface, **analog outputs 1 to 6**. The stereo Monitor outputs on the Red 16Line are not connected.

The Red 16Line analog outputs are connected to the speakers in **SMPTE** order: 1. Left, 2.Right, 3.Centre, 4.LFE (subwoofer), 5.Left side, 6.Right Side.

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

The **Genelec 9320** controller is connected to the computer via USB and functions as a master volume controller for all six channels.

Mixing Suite Hardware

The second interface, the Focusrite Scarlett 18i20 (above the Red 16Line) is exclusively for laptop use.

Laptop users must connect to this interface with the supplied and marked USB cable. The audio goes from the Scarlett to the Red 16Line via ADAT connections.

When using a laptop, the studio computer **must still be used** to control the input and output settings on the Red 16Line interface via the RedNet Control software and the GLM software needs to be activated to have speaker playback.

Follow the instructions in the laptop section of this guide.

FAQ/ Troubleshooting

The most frequent problem in the suite is that audio will not play back from the speakers. This happens when the GLM software, that controls the speakers has not loaded the configuration (.sam) file.

Read the section on the Genelec software and controller settings and manually load the configuration file in the software.

Also, make sure that your audio software is using the correct audio hardware settings. The correct hardware for any application that is being used on the studio computer is the **Red 16Line**. It is the second interface from the top in the rack.

Playback from audio applications using the Studio computer

CDA Mixing Suite

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Steps to Success

The following sections will present each of these steps in detail:

1. The **GLM software** must be open and working properly and the hardware **Genelec 9320 volume controller** must be functional.

2. The **Red 16Line interface** must be turned on and the **RedNet Control** software must have the proper settings.

3. You must allow the audio application to **“use the microphone”** when launching.

5. You must select the **Red 16Line** as the audio device or hardware in the **audio hardware settings** of the audio application.

6. The **channel assignment** must be correct in your audio software.

Genelec Software and Controller Settings

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Getting sound from the speakers

In order for the speakers to produce sound, two things must happen:

1. **The GLM software must be launched and a calibration file must be loaded in the software**. This calibration file has the surround layout of the speakers and adjustments to compensate for the room: EQ calibration, volume, phase settings and the crossover of the bass frequencies.
2. **The GLM 9320 volume controller must be active.** This controller is used for adjusting the master volume for all the speakers. The Genelec controller is only used for controlling the volume. Ignore the headphone output and audio inputs and outputs on this device. Headphone monitoring and microphone input is through the Red 16Line interface.

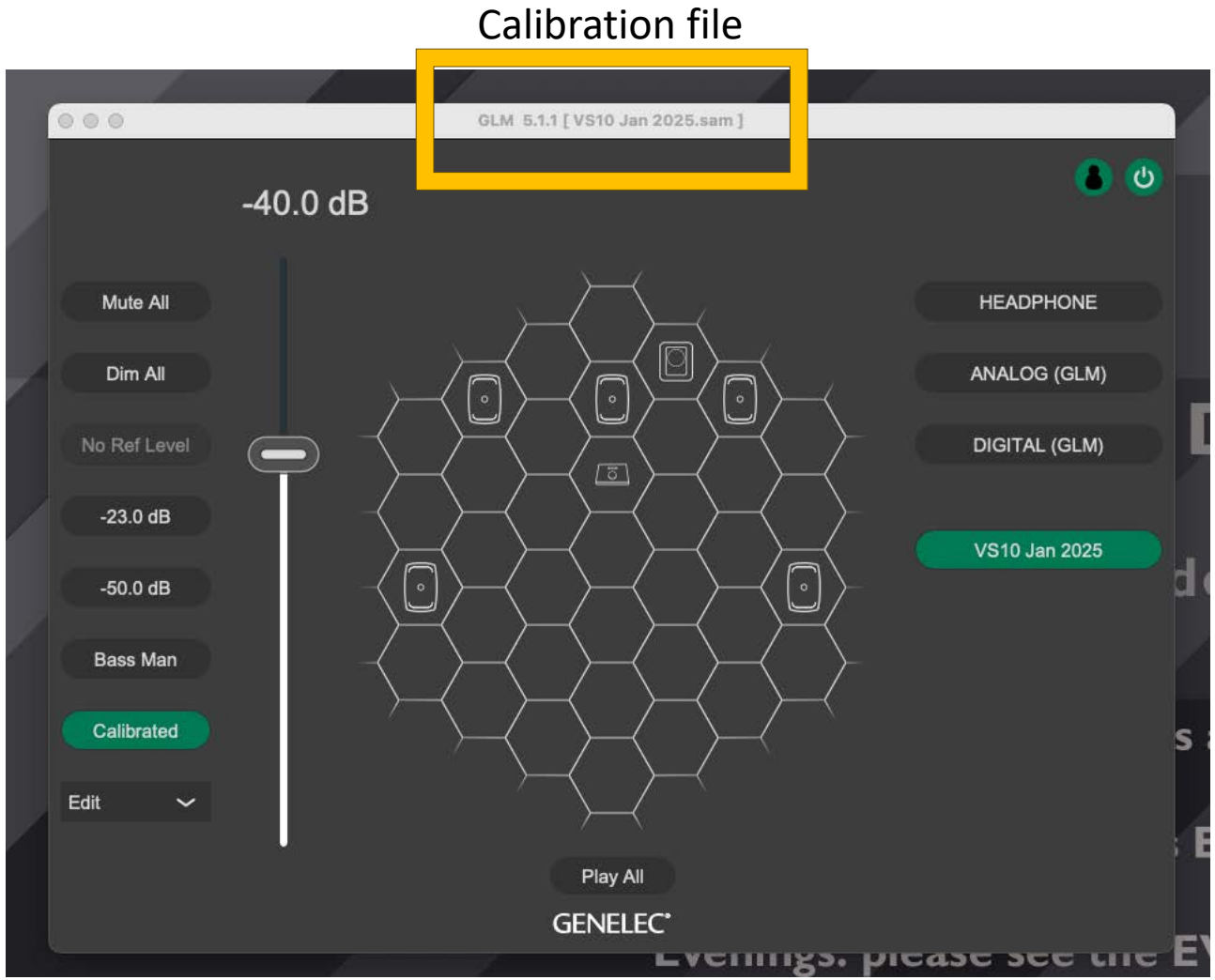
GLM software

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.

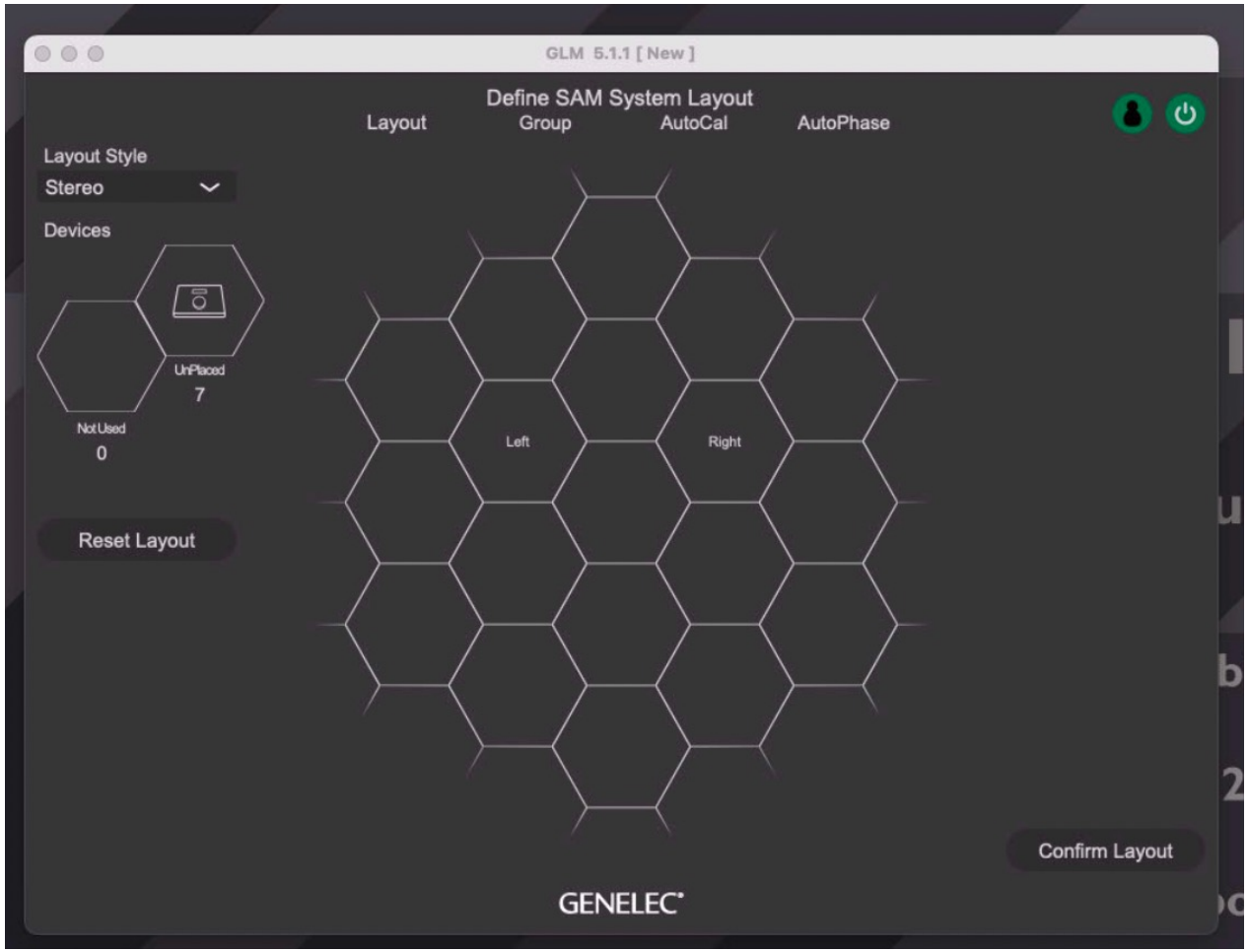
If the calibration file does not load, see the next page.



GLM software: manually loading the calibration file

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

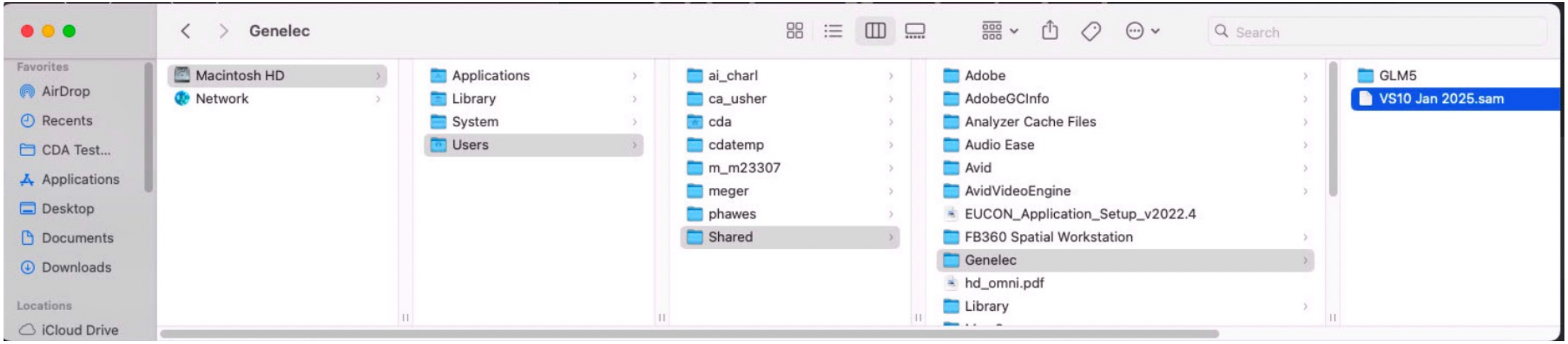
You will have to load the file manually (see next page).



GLM software: loading the calibration file

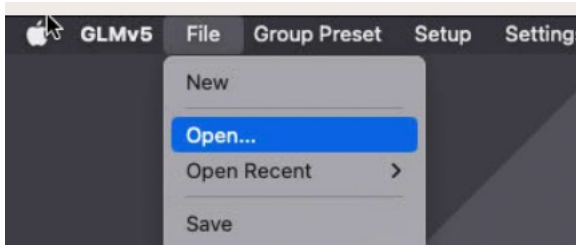
Copy the calibration file “ VS10 Jan 2025. sam” onto the desktop from this location:

Macintosh HD/ Users/ Shared/ Genelec

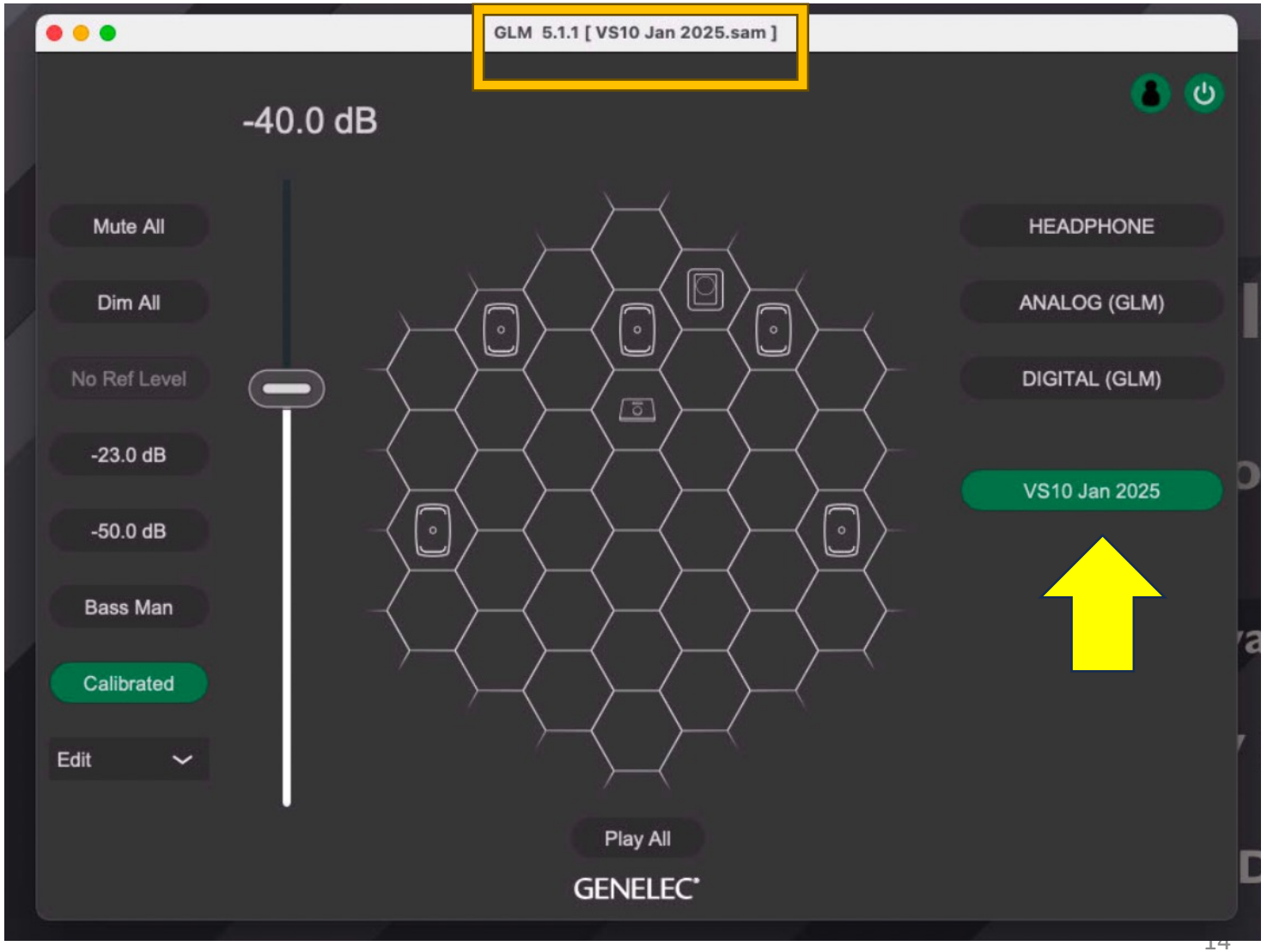


GLM software: loading the calibration file

Open the .sam calibration file in the GLM software.



Then it should look like this:



Genelec Controller Settings: Volume

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

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

If you see no numbers or lights on the controller, check the usb connection on the back of the controller.

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 listening 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 (for example Izotope Insight) on the master fader of your session.

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. The results may vary slightly depending on the software.

You don’t have to work at this level. Use the volume knob to listen at a comfortable listening level.

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.

RedNet Control 2 Software

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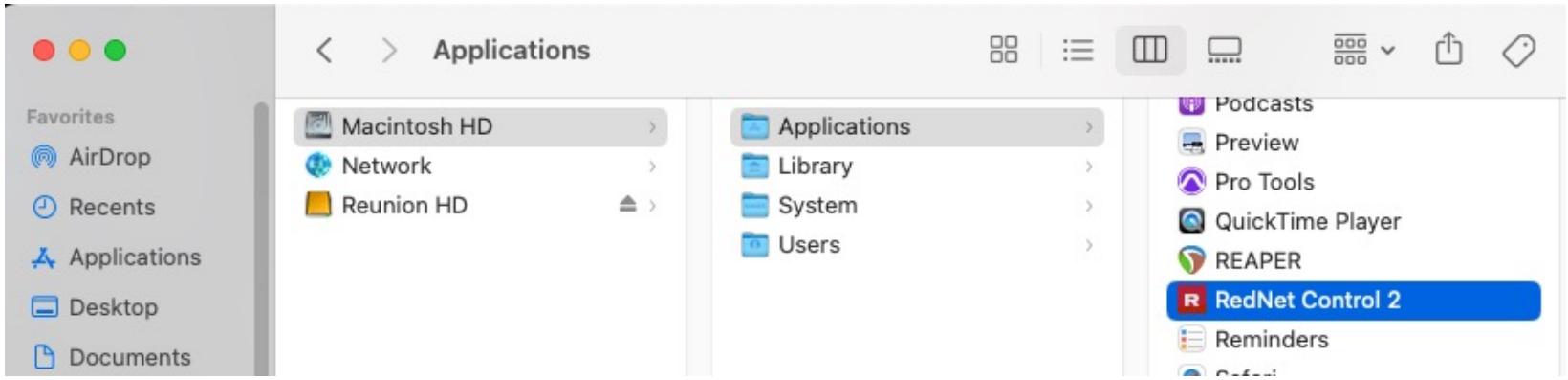
Open the RedNet Control 2 Software

This software is used to initialize, monitor and control the settings of the **Red 16Line** interface. You need to open this software once the GLM software is working.

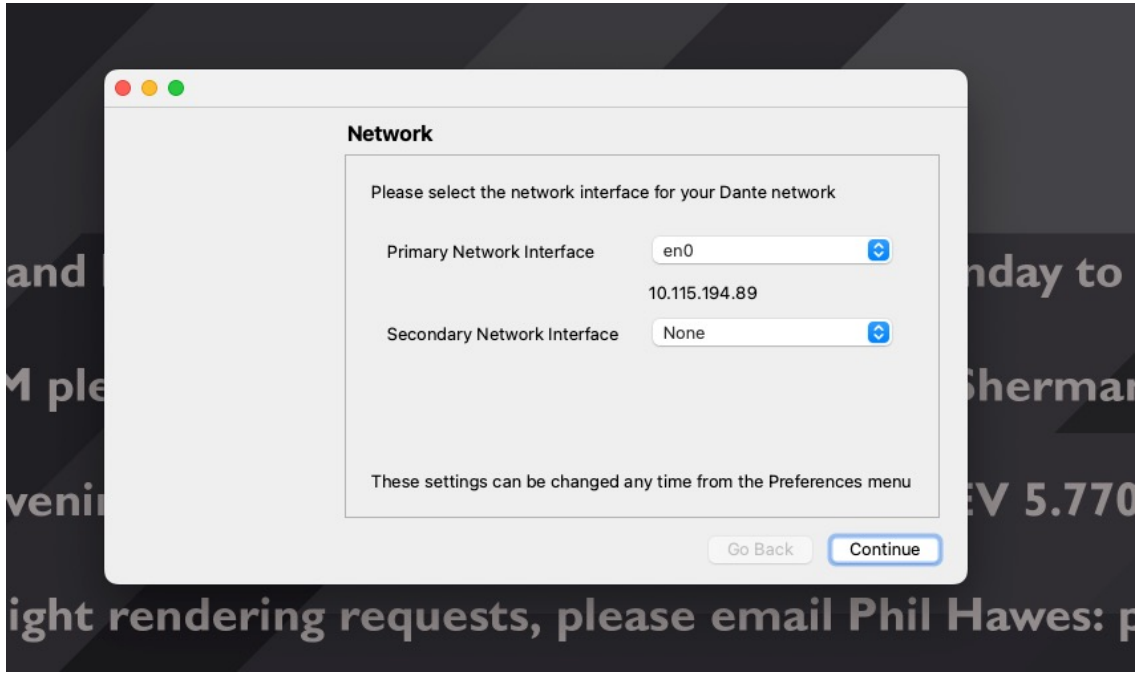
Open the software from the Applications folder.



RedNet Control 2 software

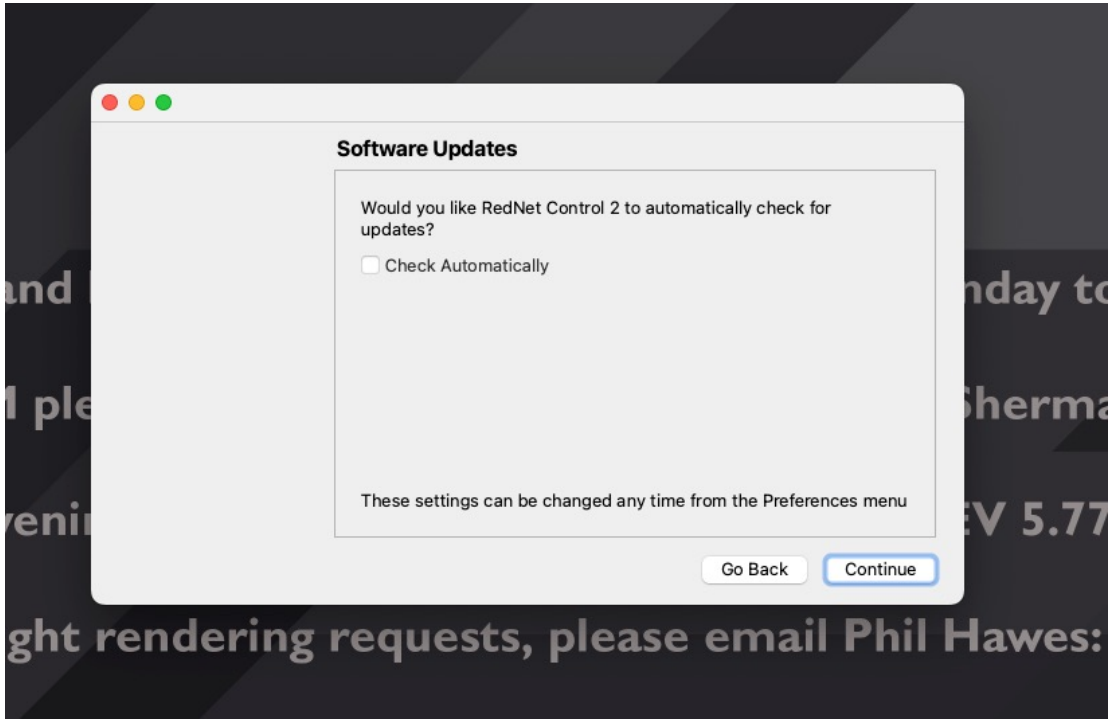
You will be prompted to select the Network Interface for your Dante network.

The studio does not use Dante, so you can simply press continue.



RedNet Control 2 software

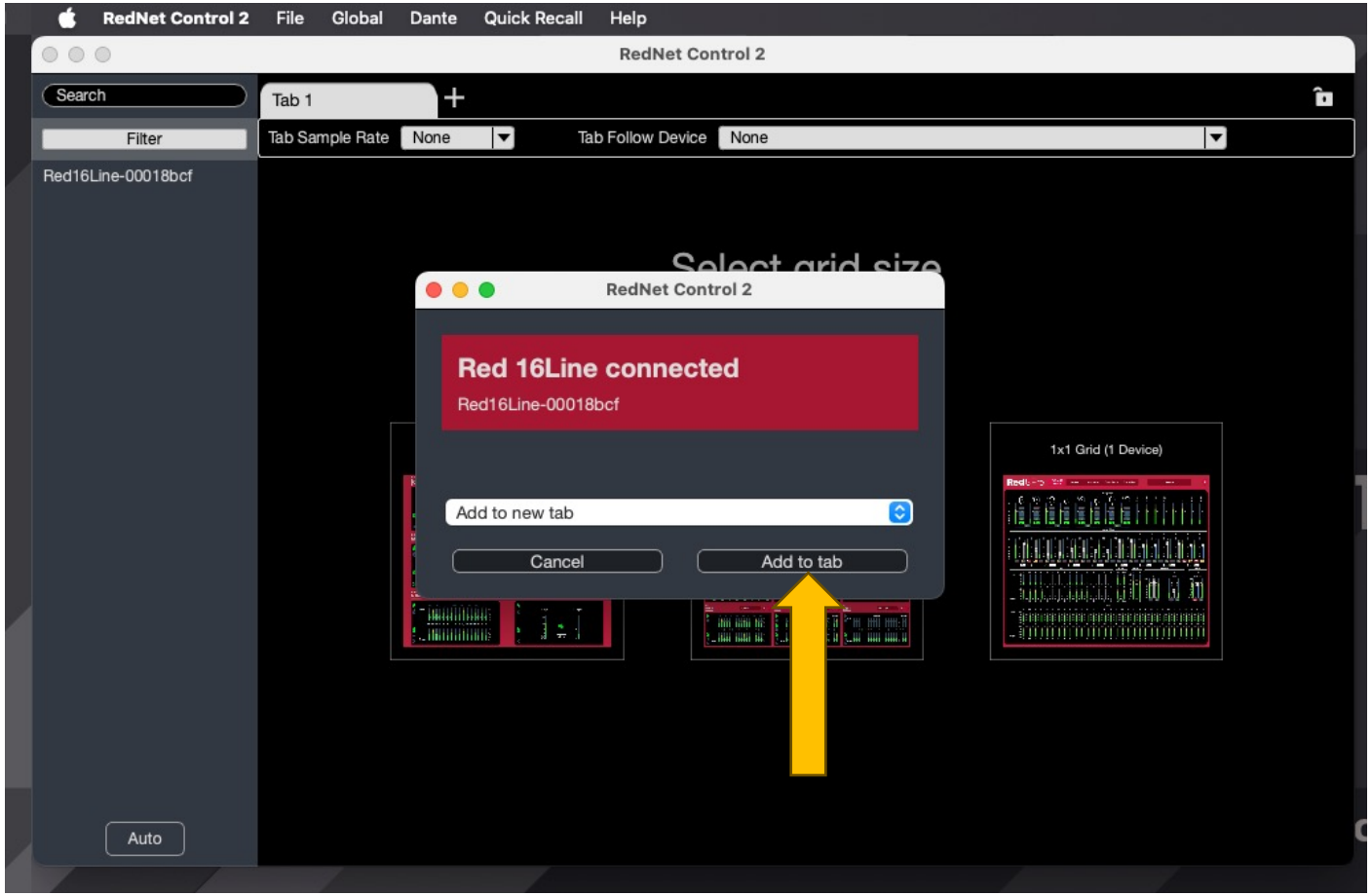
Don’t check automatically for updates.



RedNet Control 2 software

The RedNet software will automatically see the Red 16line interface.

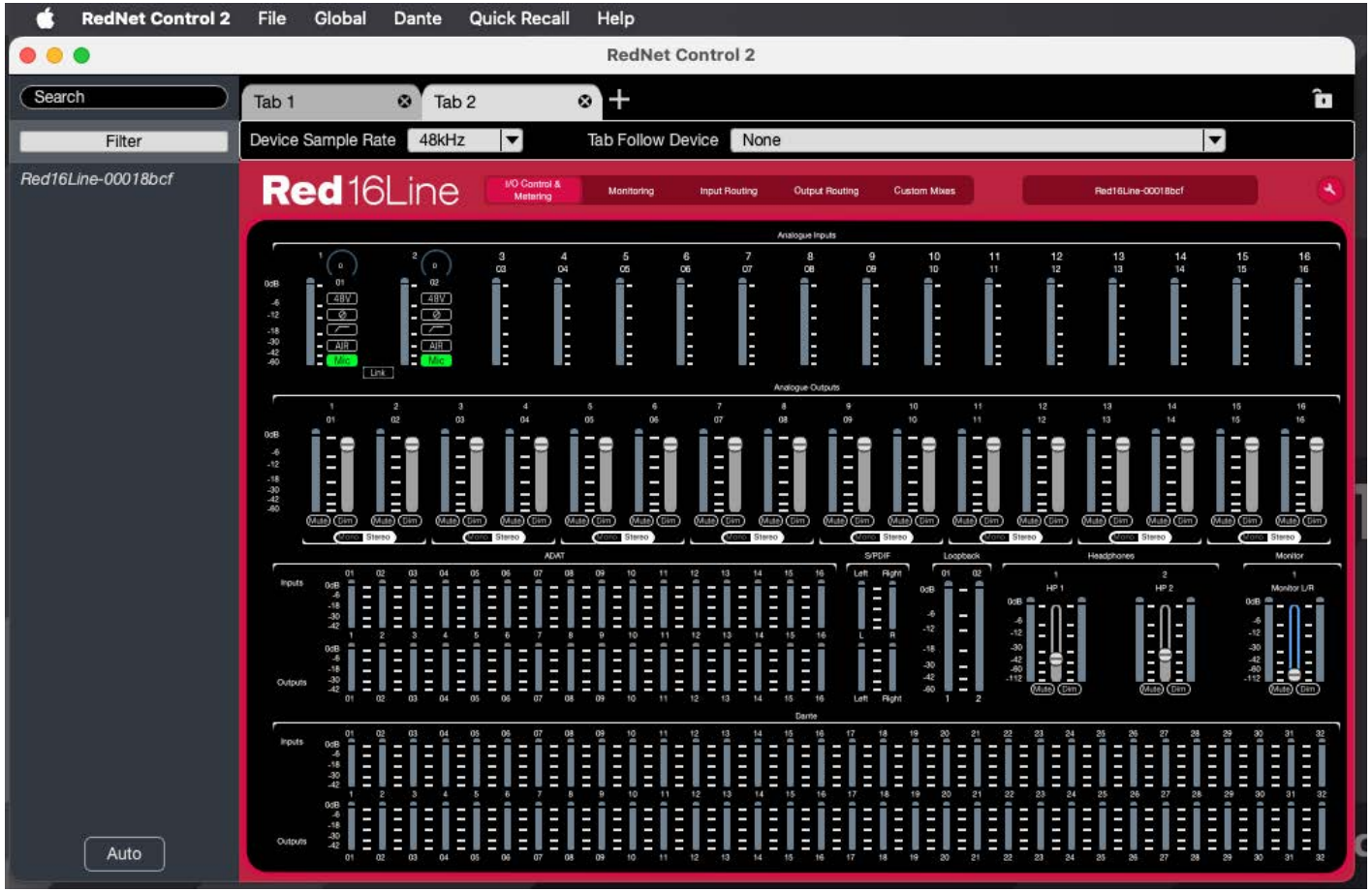
Add to tab.

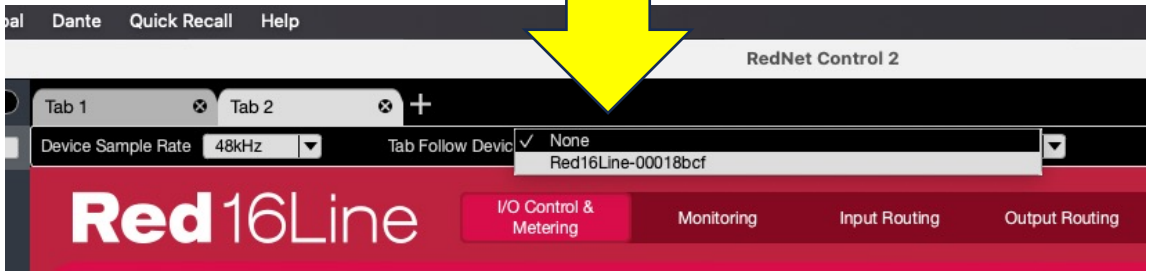


RedNet Control 2

The tab will open displaying the I/O Control and Metering window.

Under **Tab Follow Device**, select
The Red 16Line.





Essential Settings in the RedNet Control software

The following settings are essential:

1. The channel routing in the **Output Routing** window must be correct.
2. The device and setup options should be checked.

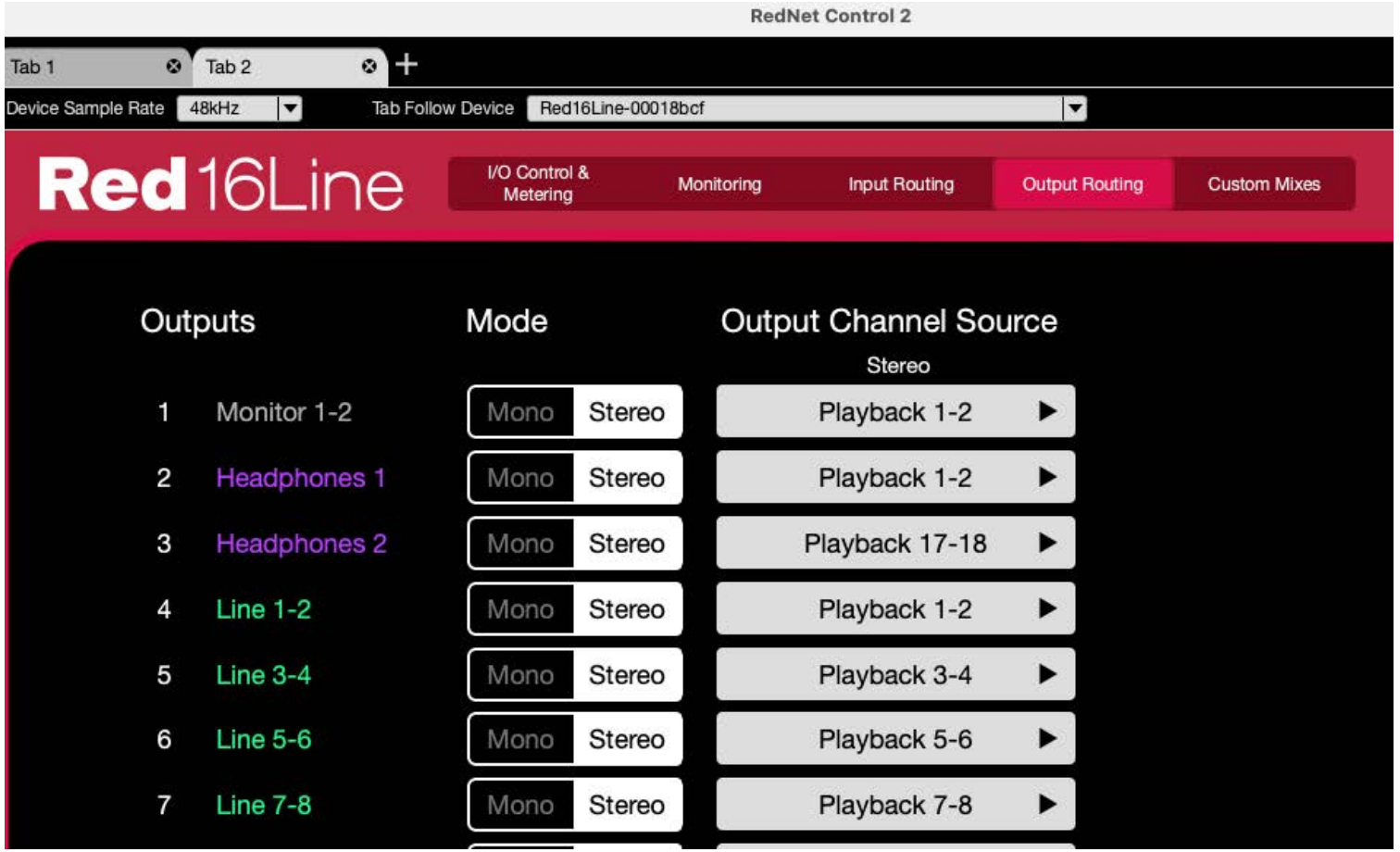
Read on.

Output Routing Window Settings

This is how the Output Routing window should look. The **Line Outputs 1 to 6** are the outputs to the speakers. Each **Line** output has the identical **Playback** number.

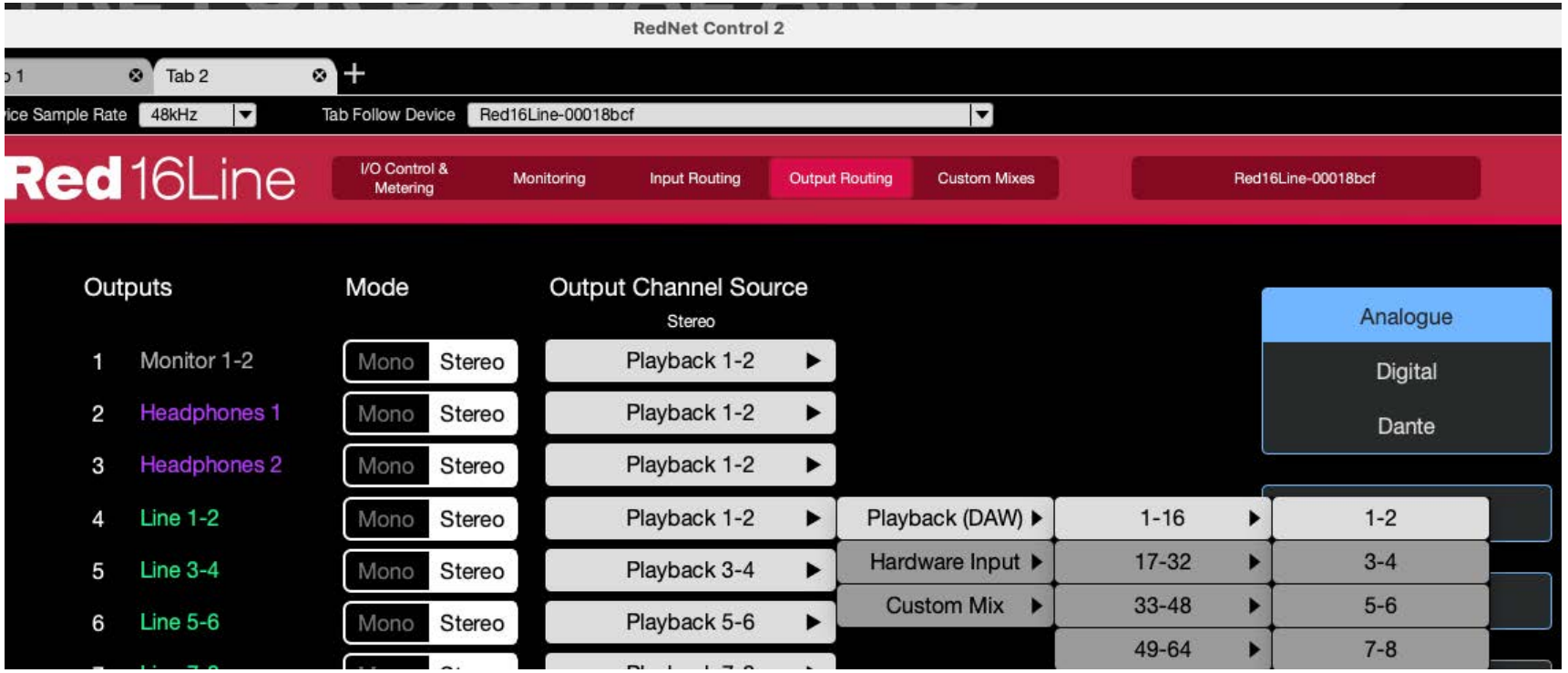
You can change the **Headphone** output settings here to monitor different output channel sources.

The **Monitor** outputs are not connected.



Output Routing for the Studio computer

Here is how you must route the outputs for Line outputs 1 to 6 for playback from any audio application on the studio computer.



Output Channel Routing

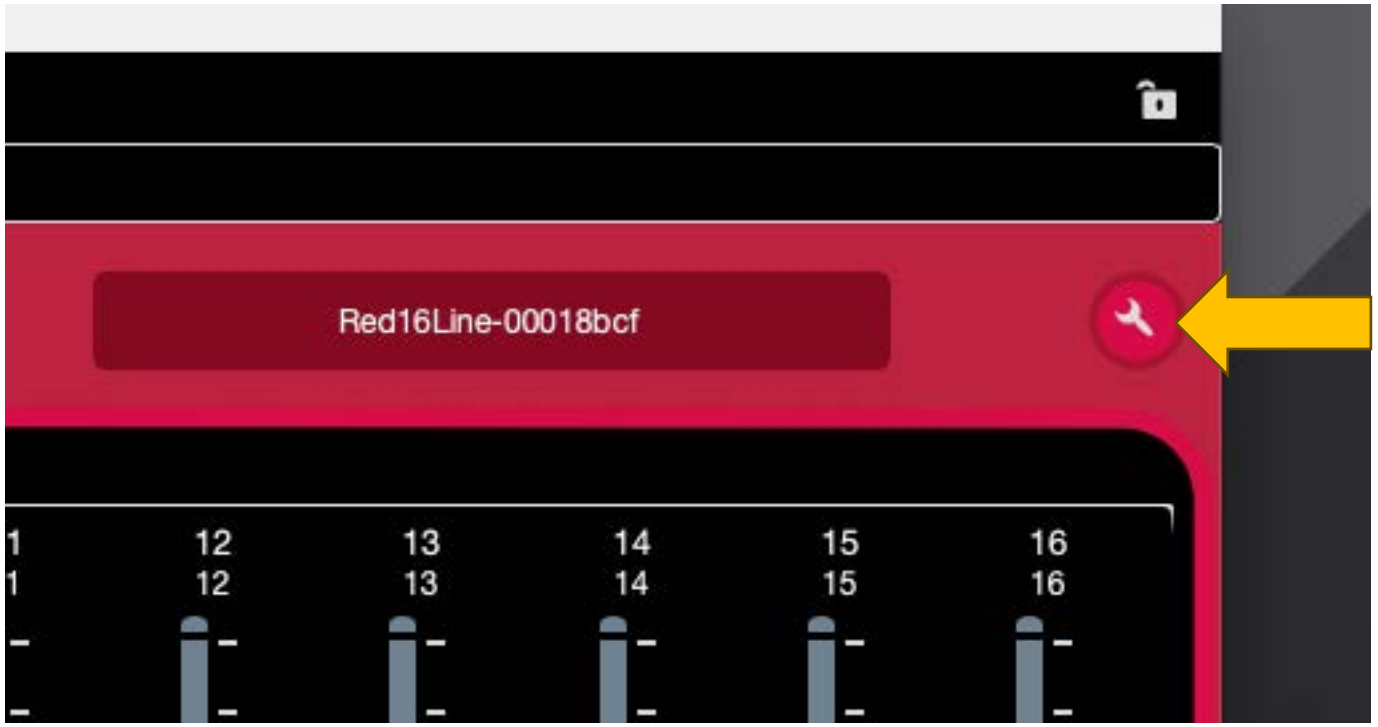
All audio applications on the studio computer use the **Red 16Line** interface **Line analog outputs 1 to 6**. The stereo Monitor outputs on the Red 16Line are not connected.

The Red 16Line Line analog outputs are connected to the speakers in **SMPTE** order: 1. Left, 2.Right, 3.Centre, 4.LFE (subwoofer), 5.Left side, 6.Right Side.

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

Settings Menu

The settings menu on the RedNet software is accessed through the **Tool** icon, upper right.

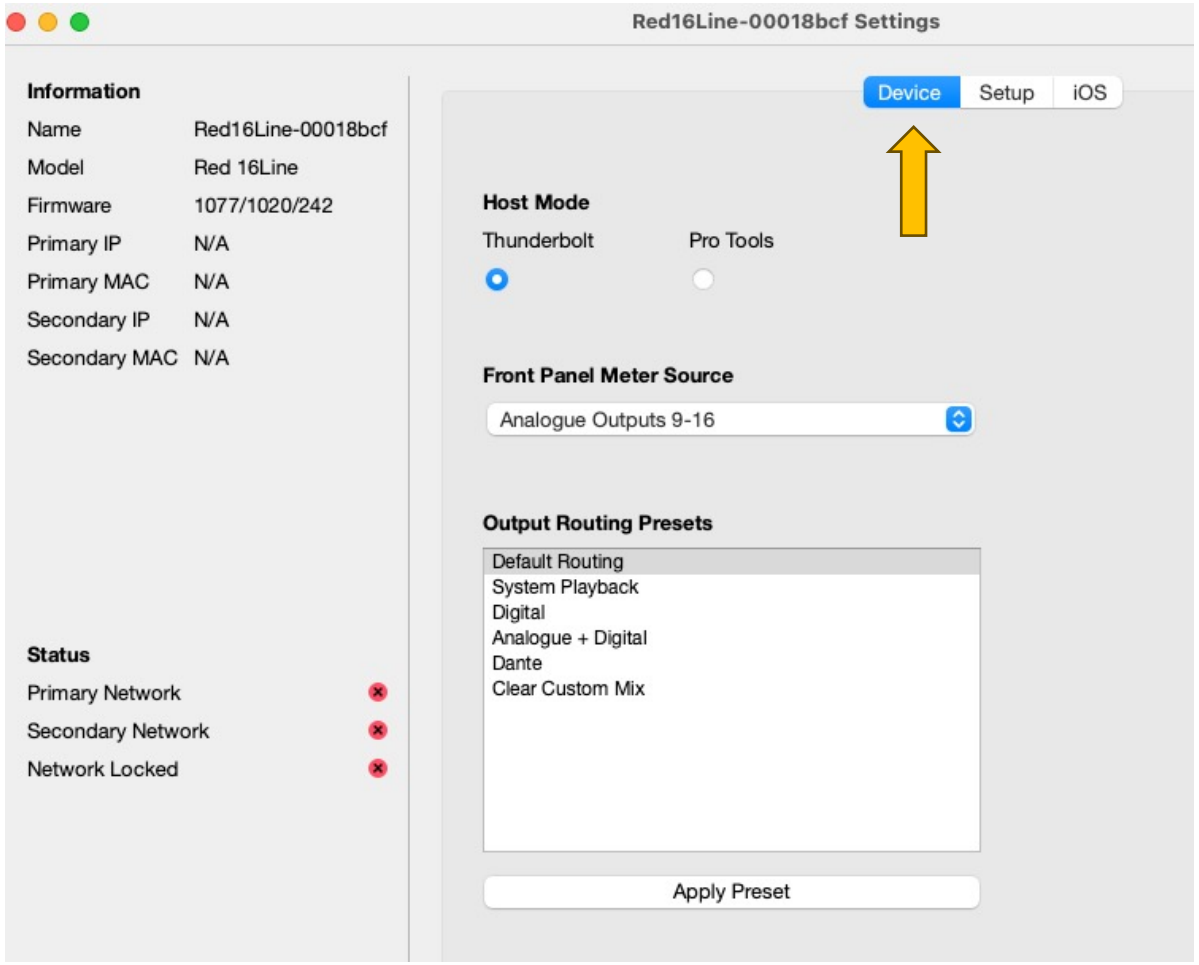


Settings/Device

The **Device** settings should look like this.

Host Mode is **Thunderbolt.** Never use the Pro Tools host mode, even if you are using Pro Tools.

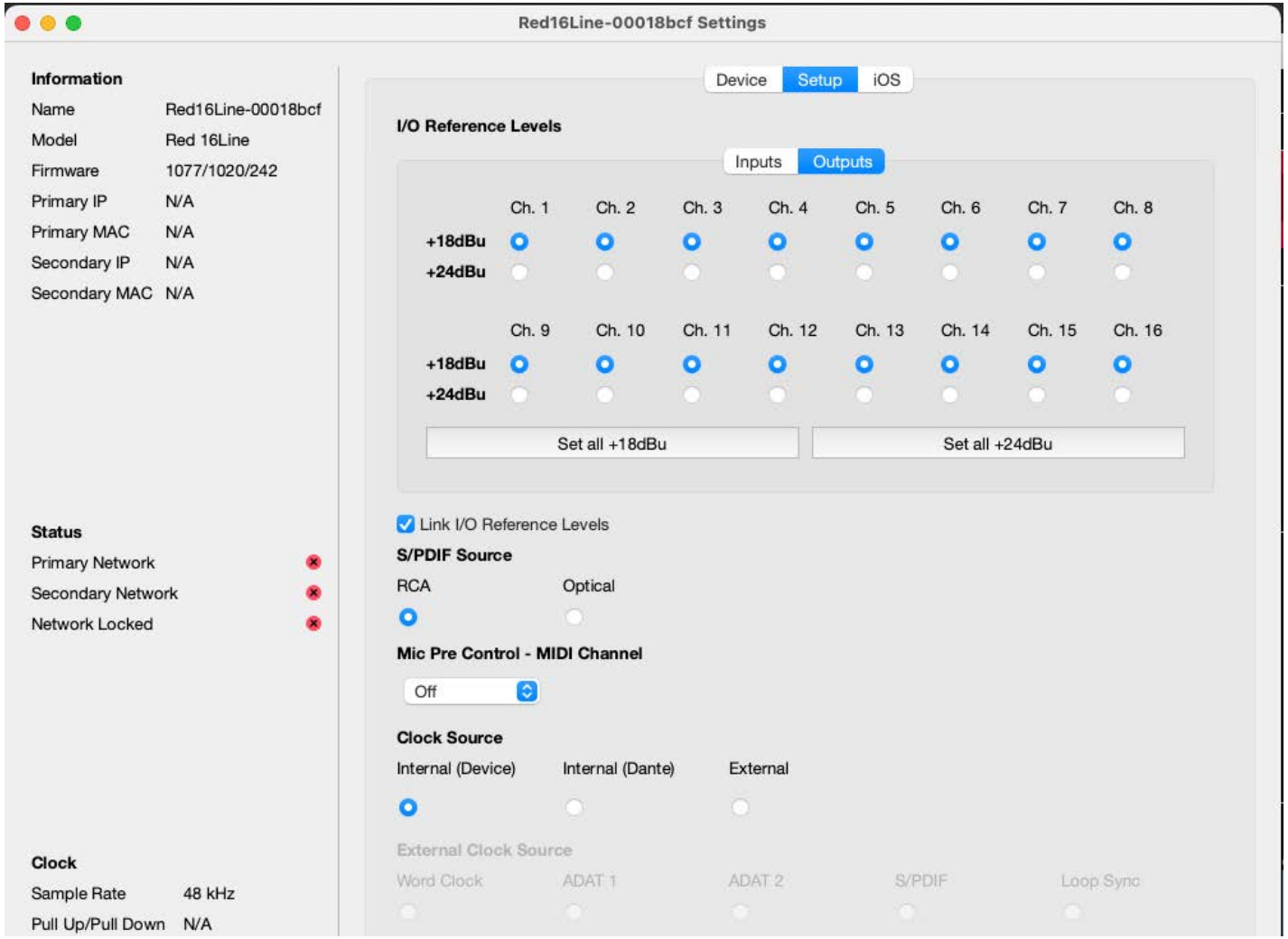
Output Routing Presets is the **Default Routing.**



Settings/ Setup

The **Setup/Outputs** settings should look like this. The device should use **+18 dBu** output.

The **Clock Source** is **Internal (Device).**



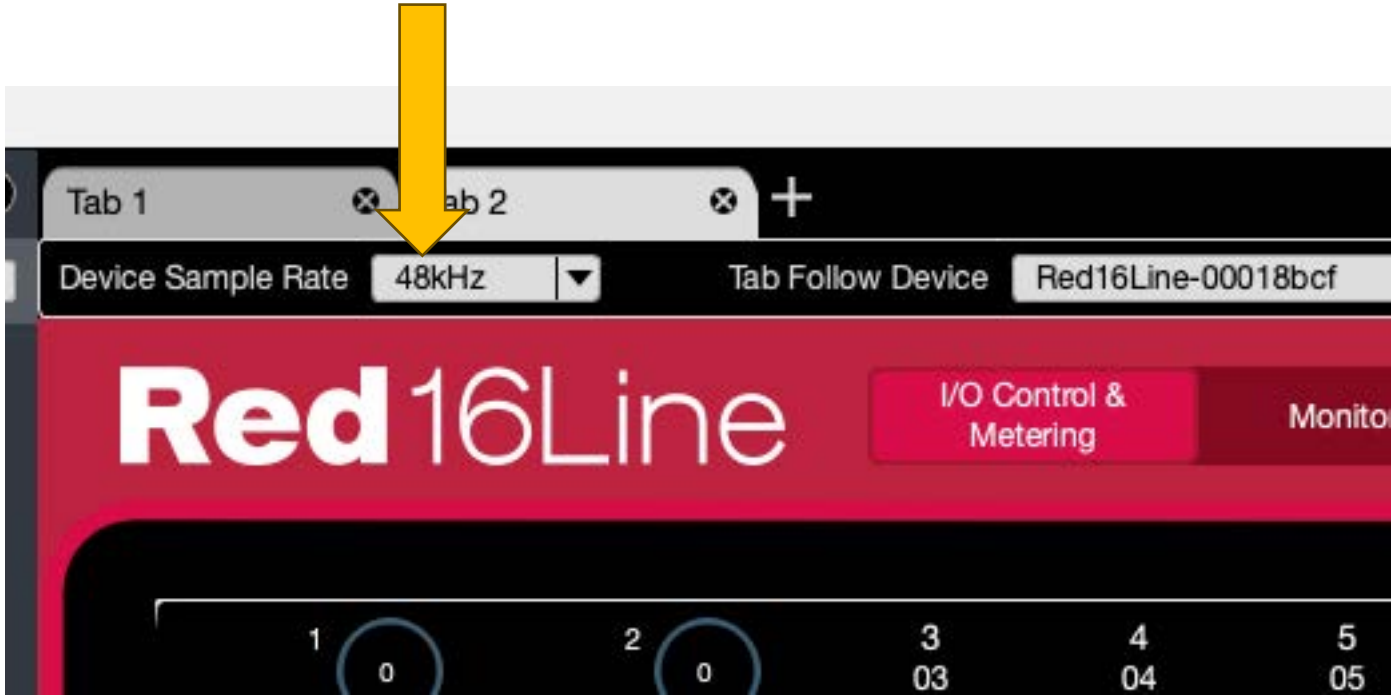
RedNet Control 2 software

The following pages show details of some of the other windows in the the RedNet Control 2 software that help monitor your output.

I/0 Control and Metering: Sample Rate

The Red 16Line should change the **sample rate** automatically to match your project.

But if you need to change the Device Sample Rate, do it here.



I/O Control and Metering: Stereo Output

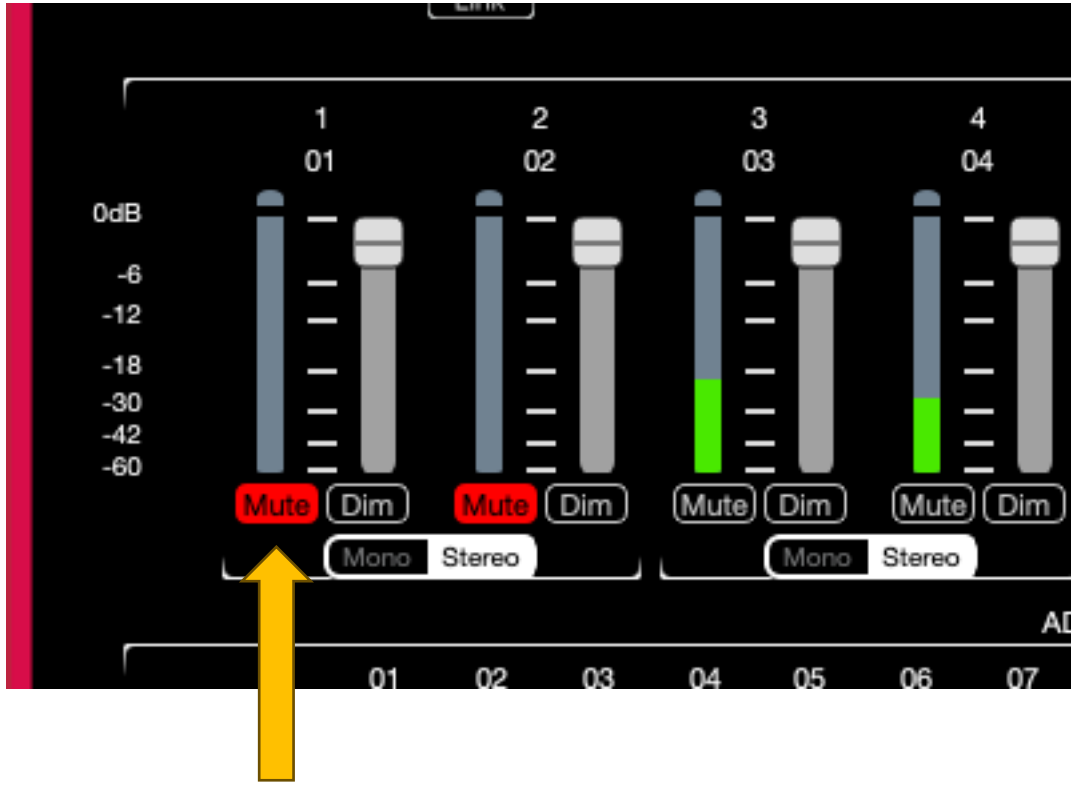
Here the **I/O Control and Metering** window is showing audio levels on analogue outputs 1 and 2. **This is stereo playback.**

I/O Control and Metering: Surround Output

This is how six channel surround output looks in the RedNet software, I/O Control and Metering window.

I/O Control and Metering: Muting Tracks

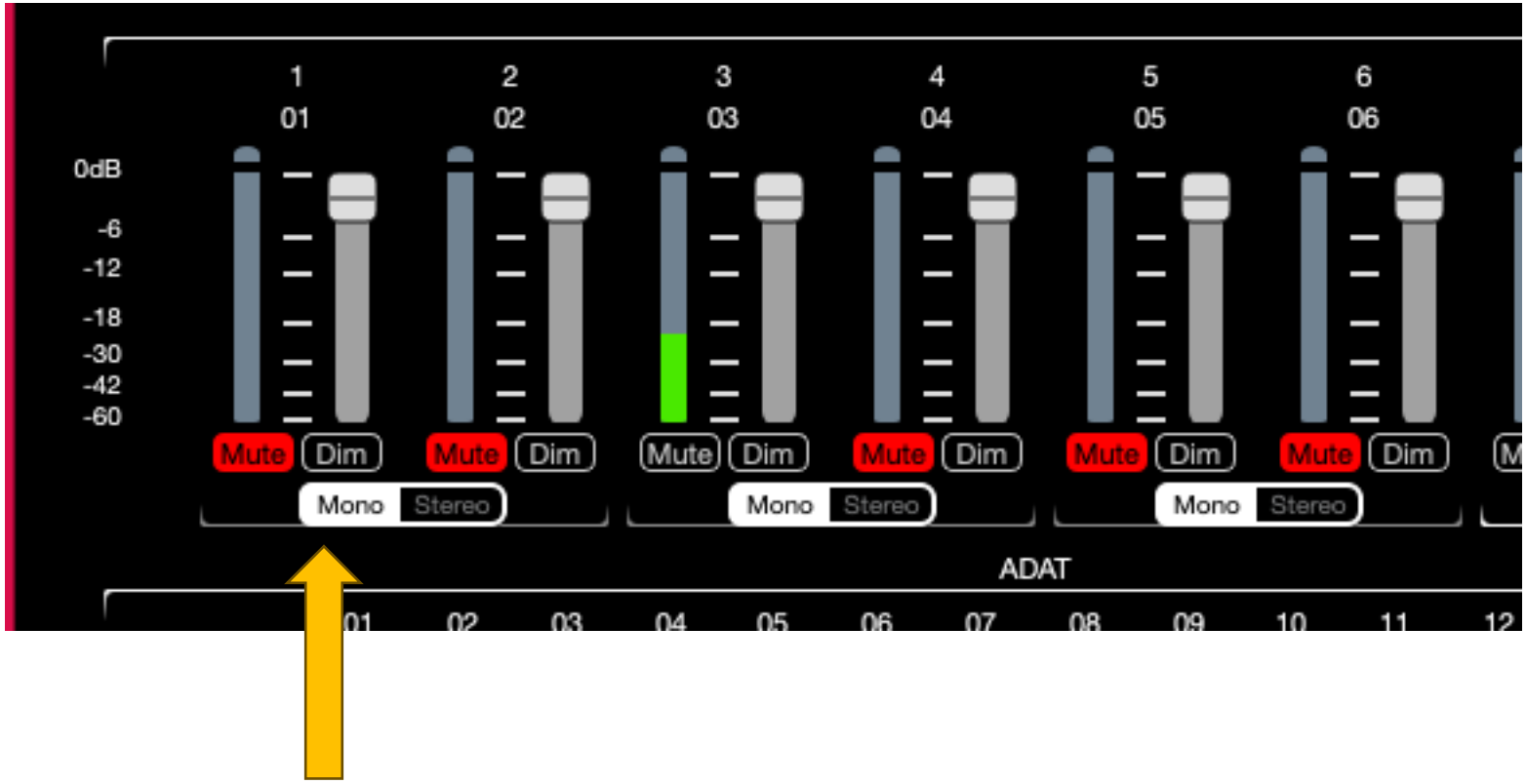
In the I/O Control and Monitoring window you can mute tracks or diminish the volume.



I/O Control and Metering: Soloing Tracks

By default, tracks are paired but you can click the **Mono** button to unpair them.

Here I have muted every track except the centre channel (output 3).



Focusrite Pro
Red 16Line
Hardware Output Controls

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Focusrite Red 16Line is the studio interface

The Red 16Line is the second interface from the top.

Output button on the left will display the analogue outputs. Here I am monitoring in stereo.

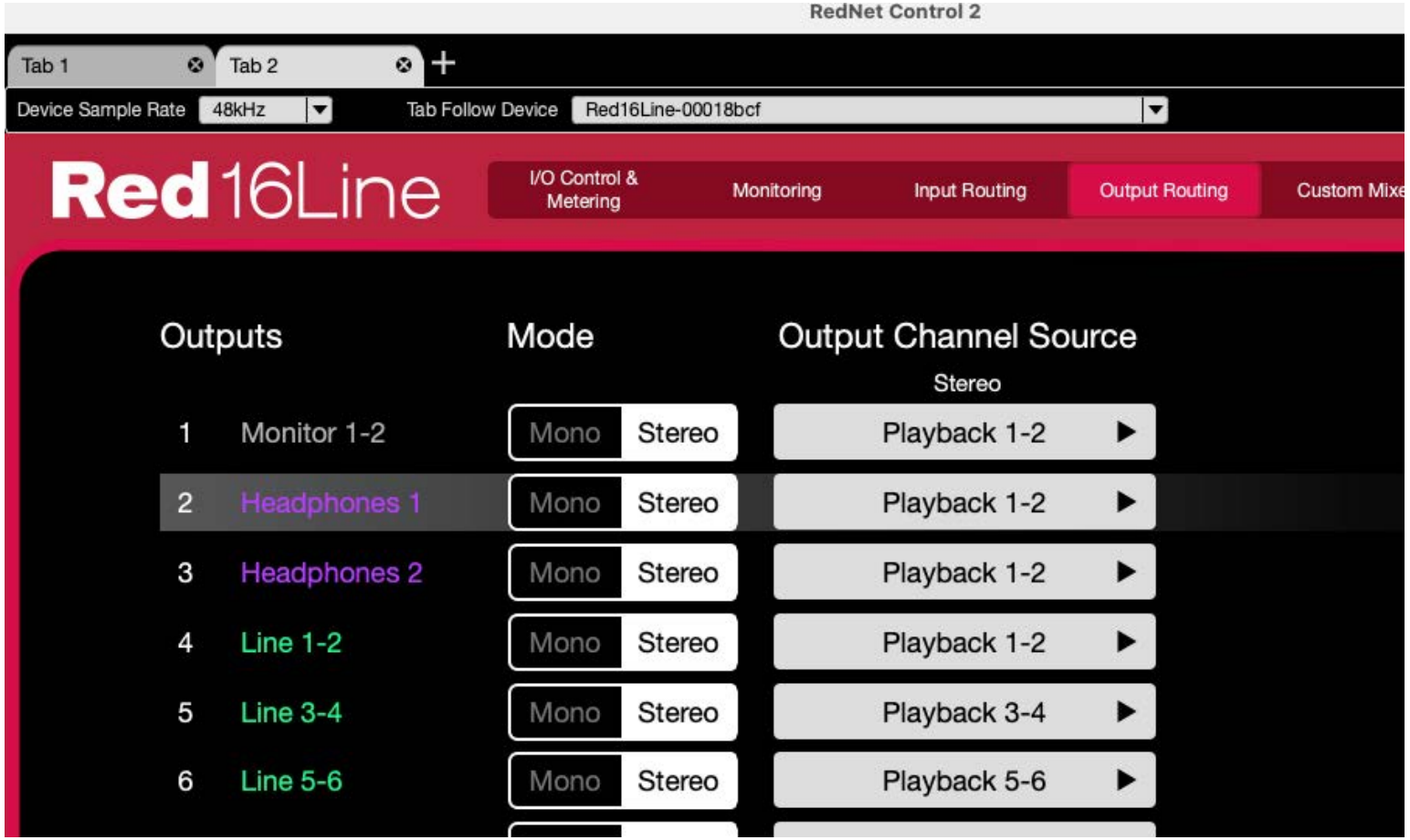
Output selection for displays

By default, the Monitor button on the right will show the Monitor 1 and 2 outputs. These are not connected to speakers.

Headphone metering and Level

When one of the two headphone outputs is pressed, you can see the headphone volume level in the third display. The rotary dial on the right controls the volume level. Channel assignment for the headphones is controlled in the RedNet Control 2 software Output Routing window.

Output Routing: Headphone Output Routing



In the RedNet Control software, I have selected Playback(DAW) 1-2 as the output channel source for the headphones 1 output.

This is the default setting.

Second Screen options

You can choose what outputs to display on the second (right hand) display by pressing the right rotary dial and scrolling through the options.

Surround Sound Monitoring

Here the Red 16Line is showing analogue output signals on Line outputs 1 to 6.

Monitoring in different audio applications

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Steps to Success in all audio applications

With any audio software on the Mac Studio computer, four things have to happen to get the correct playback.

1. The audio application must be allowed to “access the microphone”.
2. The correct audio hardware device must be chosen
3. The software must be using the correct channels on that device
4. The audio track in the software must be set to the correct output.

The next section looks at this four steps in each application. You must have already checked the correct settings in the RedNet Control 2 software and the GLM software.

Surround Plug-ins for all applications

You can work in 5.1 surround in any application except Ableton Live. Ableton Live is limited to stereo or mono playback. You can send tracks to six different outputs in Ableton, but that is a **multi-channel** setup not a **surround** sound setup where audio can be panned throughout a surround field.

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

For surround mixing in other applications (than Ableton Live) use the WAVES 360 surround plug ins. Use the VST 3 or AU versions of those plug-ins depending on the software.

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

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)

Pro Tools Monitoring

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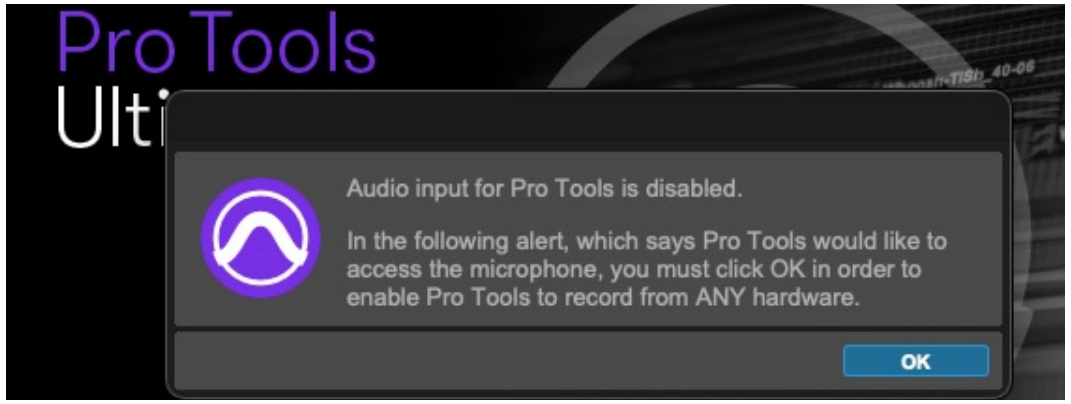
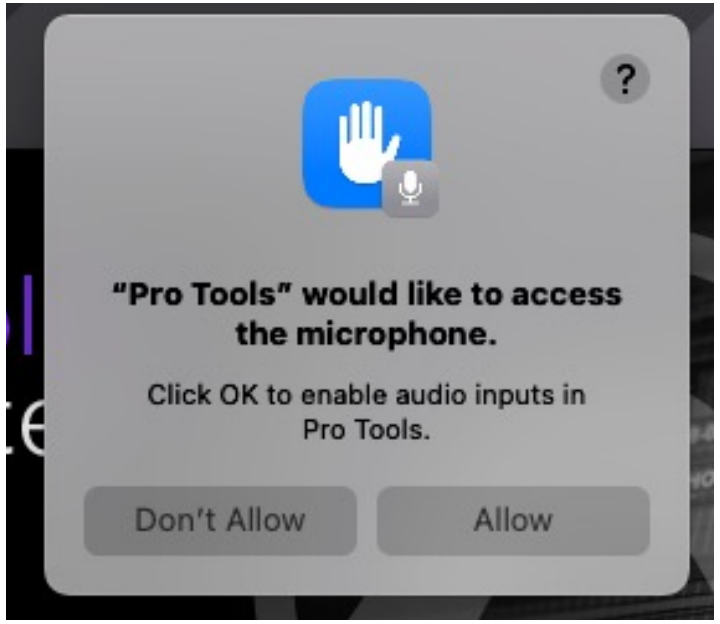
Launching Pro Tools

When you launch Pro Tools, pay attention to the prompt. Click OK.



Make sure that you allow Pro Tools to “access the microphone” otherwise it will not be able to use ANY audio hardware.

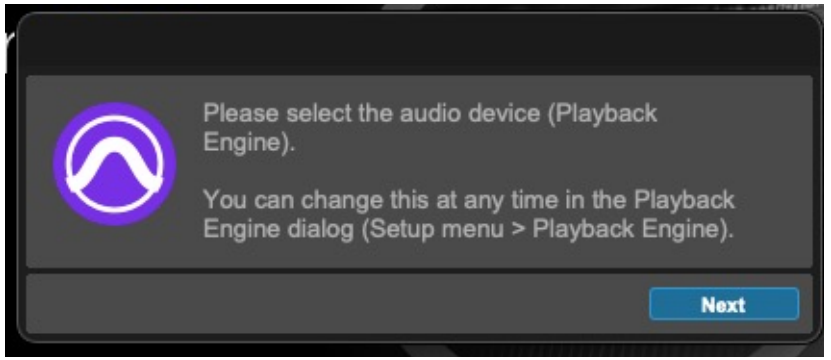


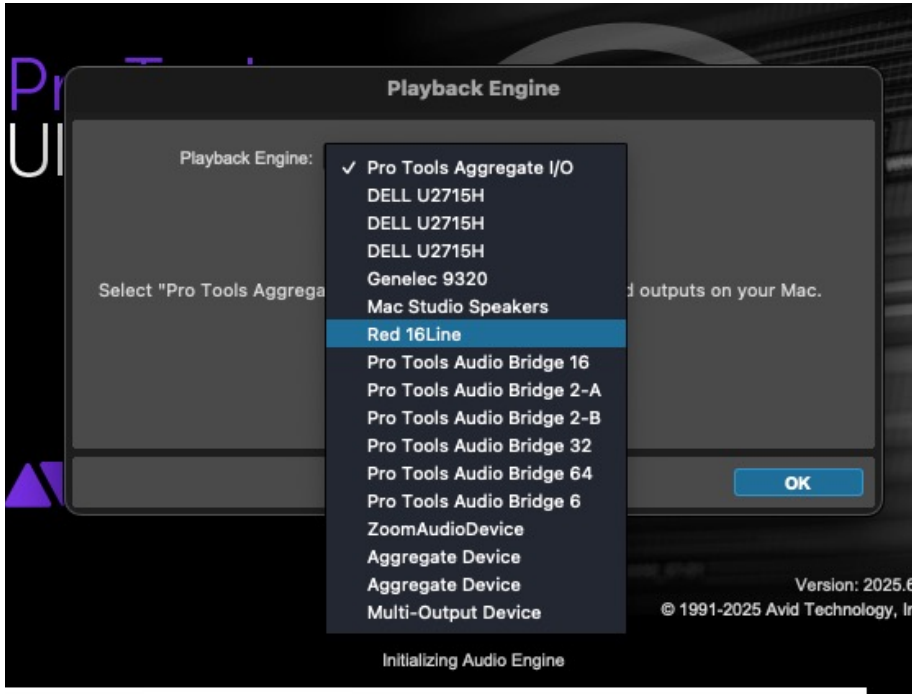
This Mac OS security lingo for allowing audio applications to use audio!

The Red 16Line is the audio device

Choose the **Red 16Line** as the Playback Engine.

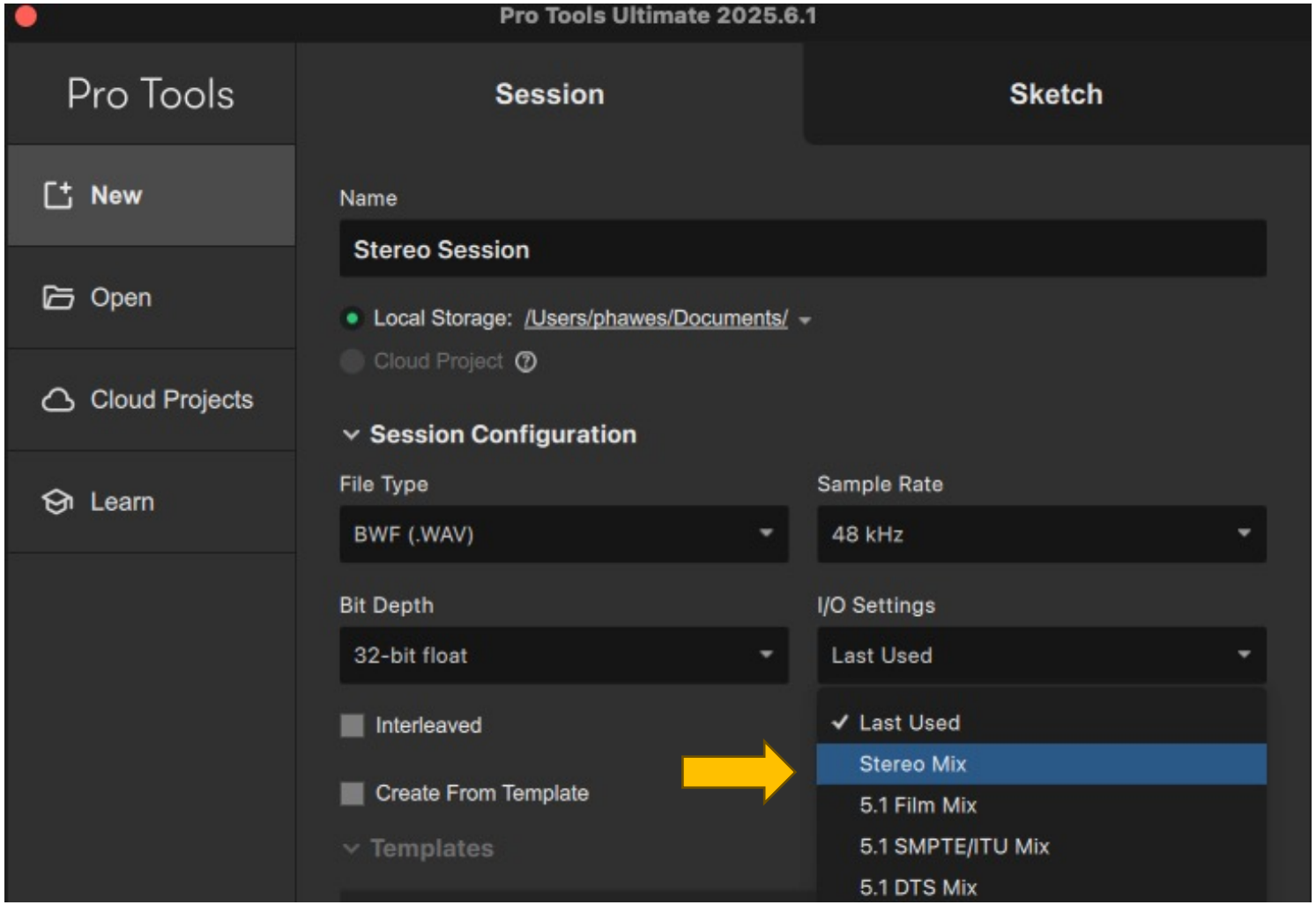
DO NOT use the
Pro Tools Aggregate I/O.





Creating a new Stereo Session

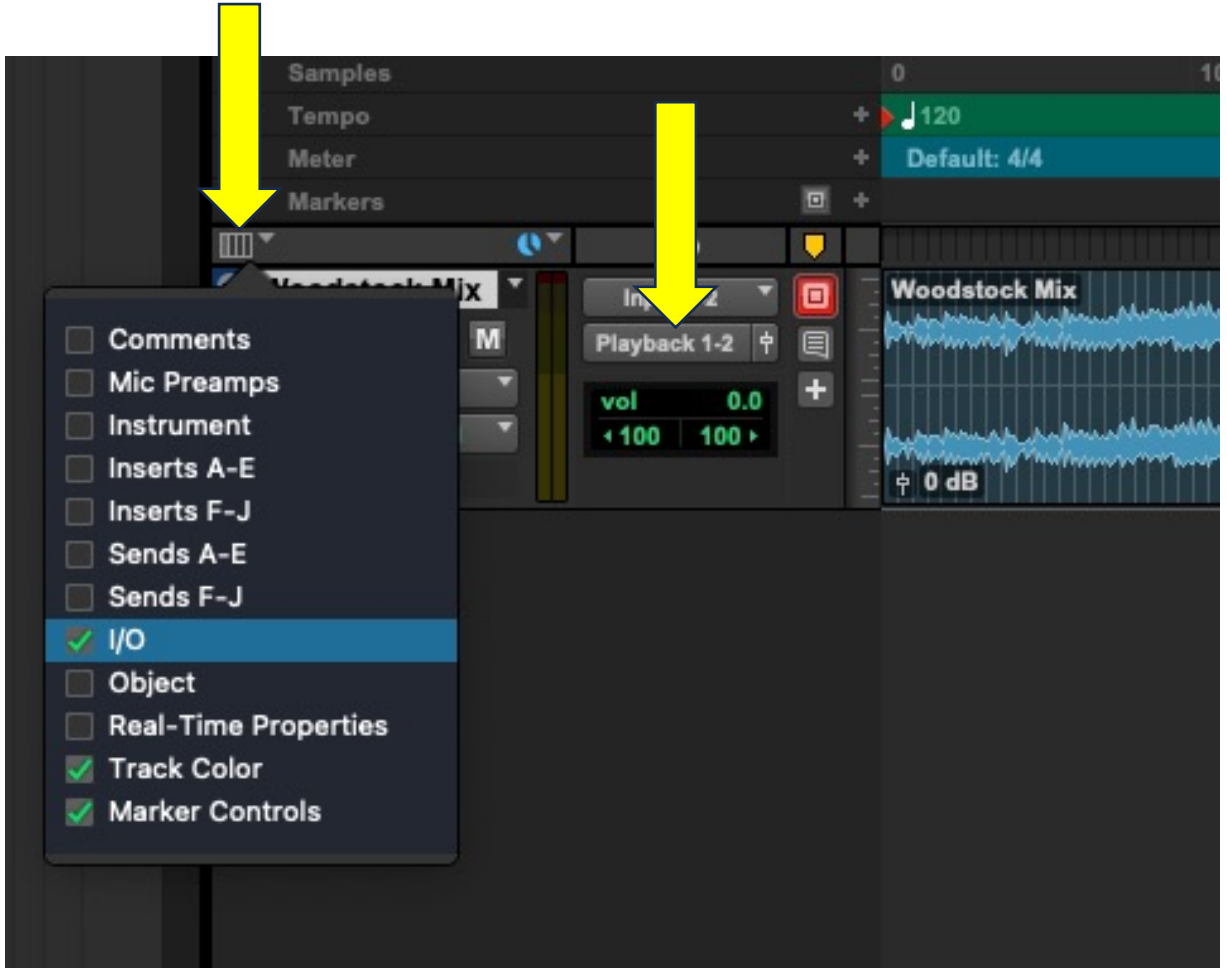
If you are creating a new project, choose **Stereo Mix** in the I/O Settings.



Choose the right output on the track

In your Pro Tools stereo session, enable the I/O view for the track.

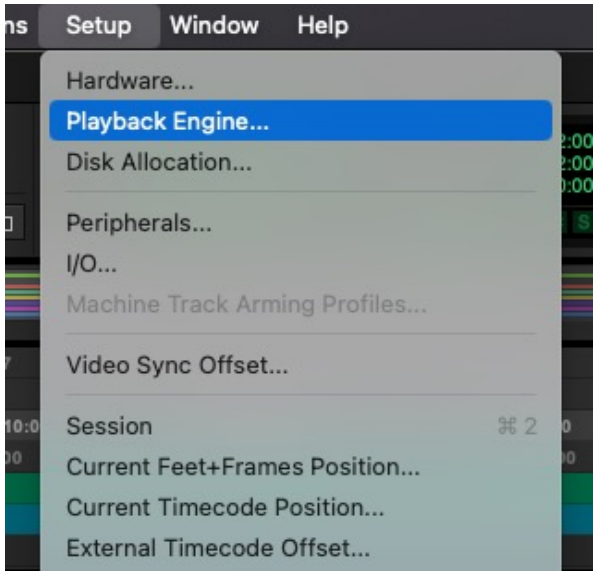
Choose **Playback 1-2** as the output.

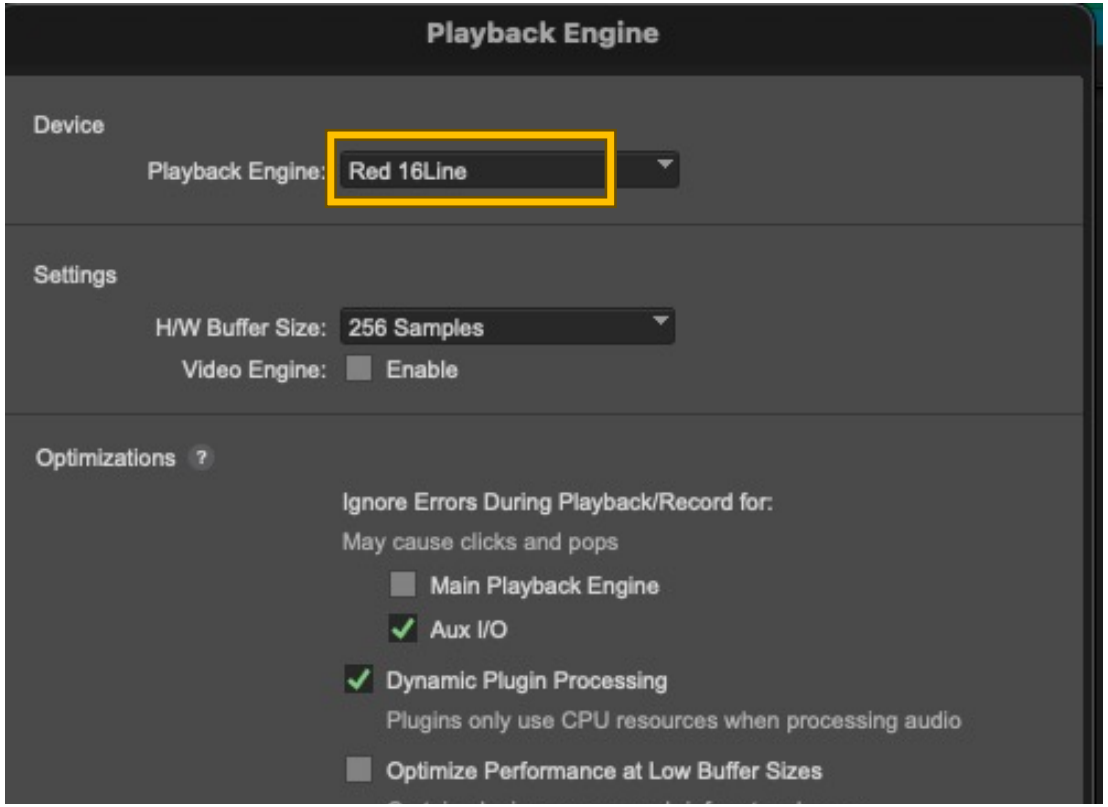


Checking the Playback Engine

If you don't hear audio from Pro Tools, first check the **Playback Engine** settings. In the top menu go to **Setup/Playback Engine**

It should be the **Red 16Line**.

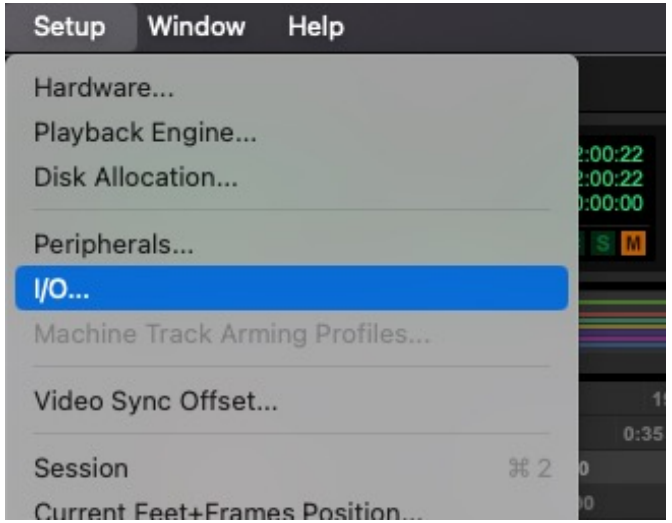




Checking Pro Tools I/O Setup Output Settings

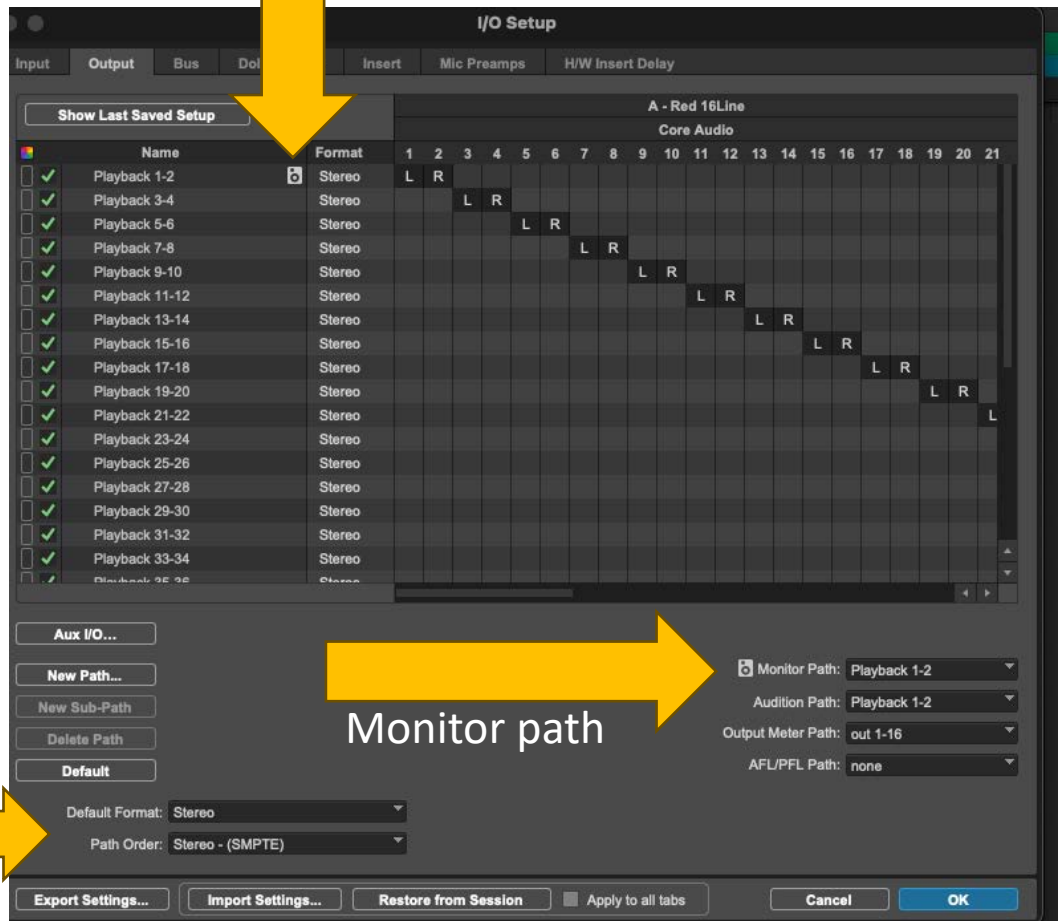
Then check the I/O settings. Go to the top menu **Setup/ I/O**. Go to the **Output** settings.

For stereo playback, **Playback 1-2** should be the monitor path. The **Default Format** should be **Stereo**.



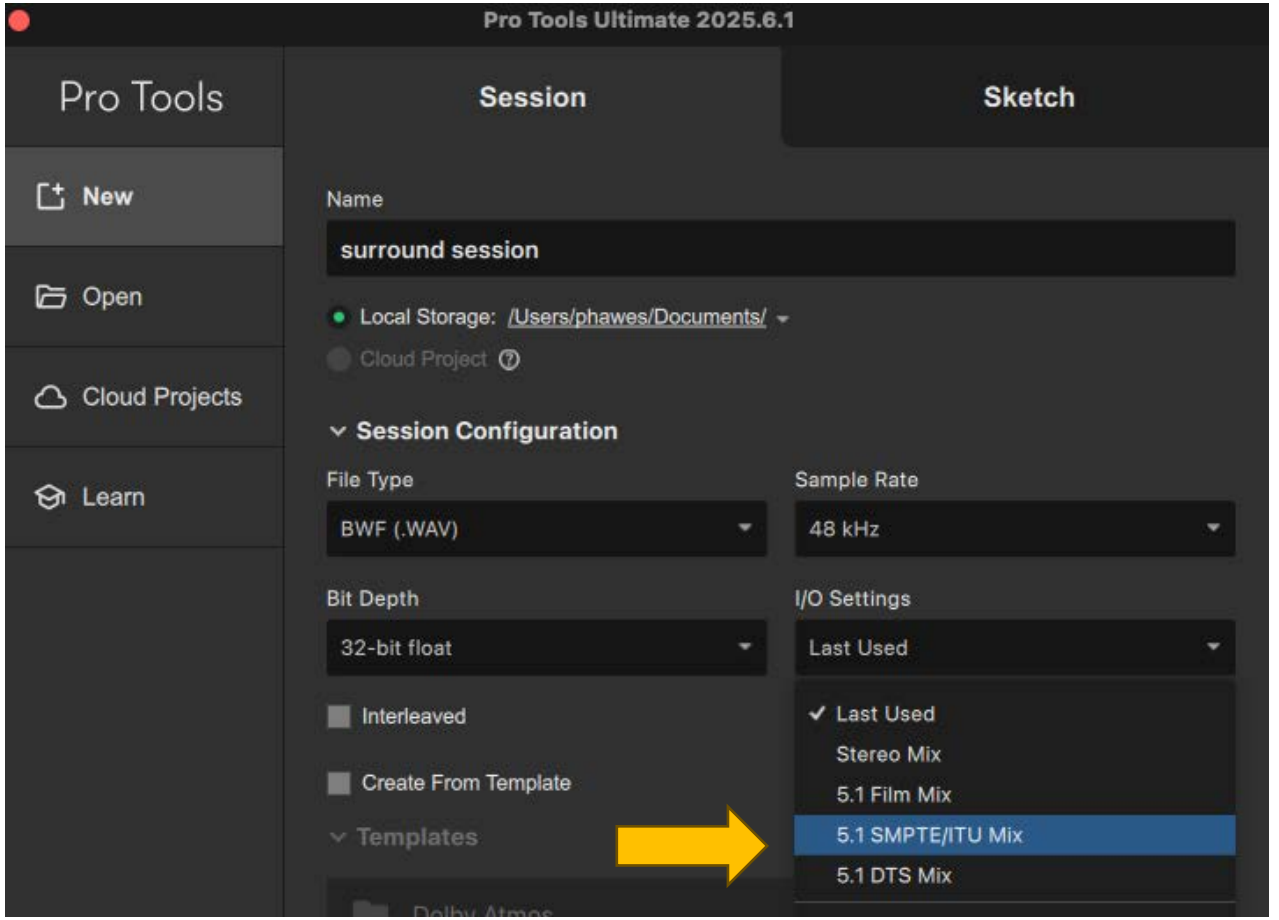
These are the stereo settings.

This icon means it is the monitor path



Creating a new Surround Session

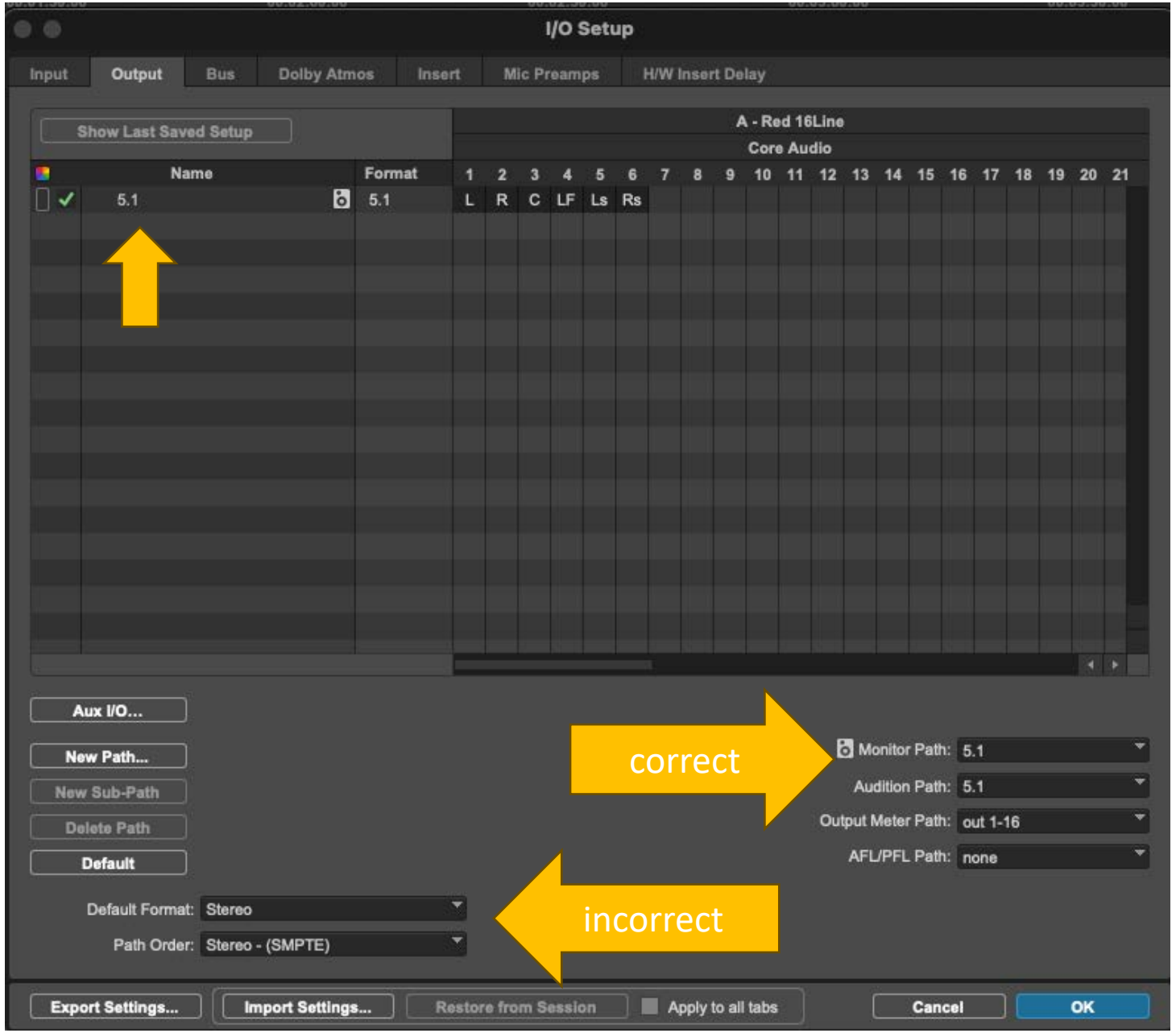
To create a new surround session in Pro Tools, use the **5.1 SMPTE/ITU Mix** I/O setting.



Adjusting the I/O Setup Outputs

When you open the I/O setup in a Pro Tools surround session. You may need to make some changes.

Here the **Monitor Path** is **5.1.** That is correct but the **Default Format** and **Path Order** are not. They have remained in the stereo format.

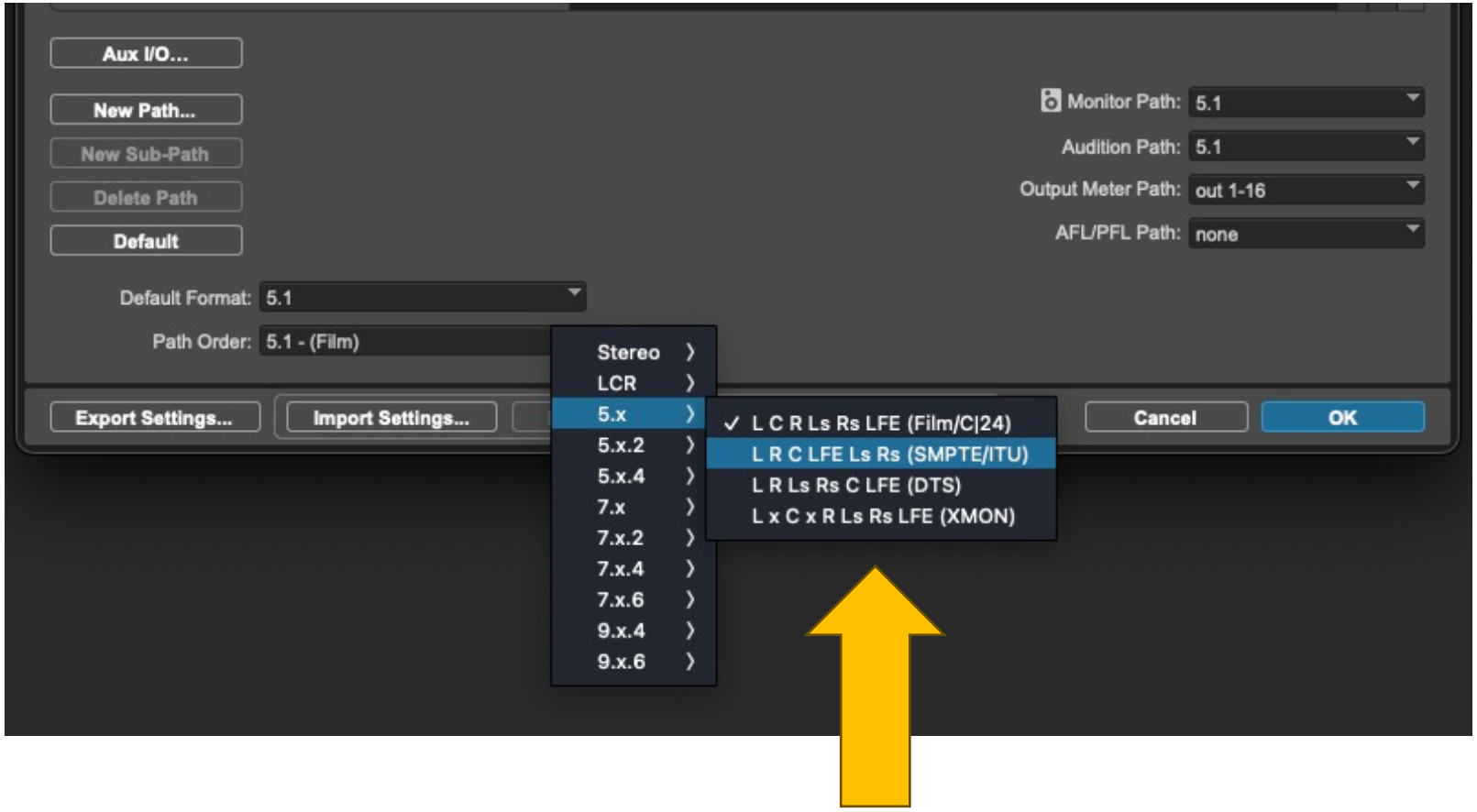


Adjusting I/O Setup Output Settings for 5.1

The **Default Format** should be **5.1**.

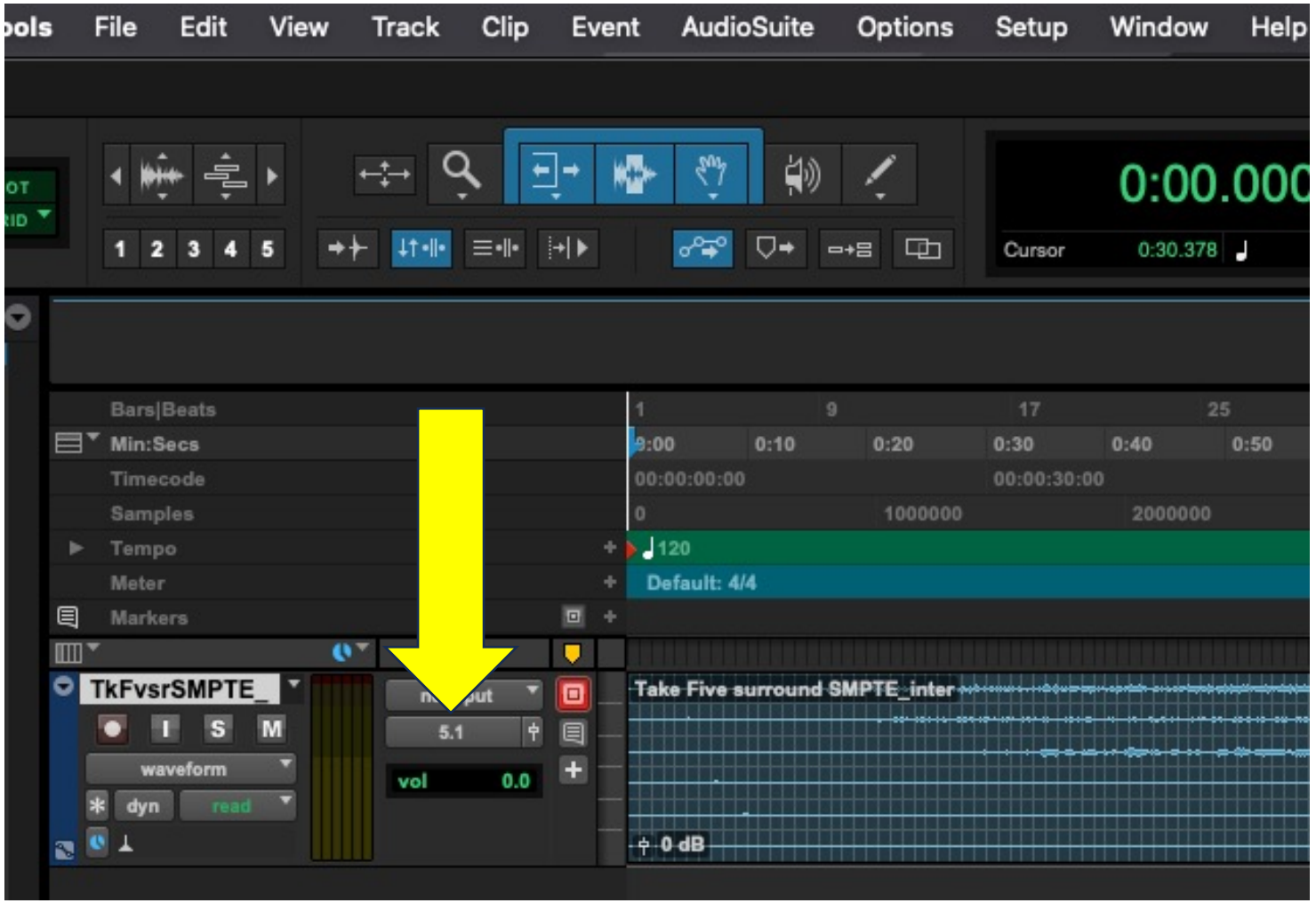
The **Path Order** should be **5.1 SMPTE/ITU**.

L R C LFE Ls Rs



Set the correct output on the track

The output for the track should be the **5.1 monitor path**.

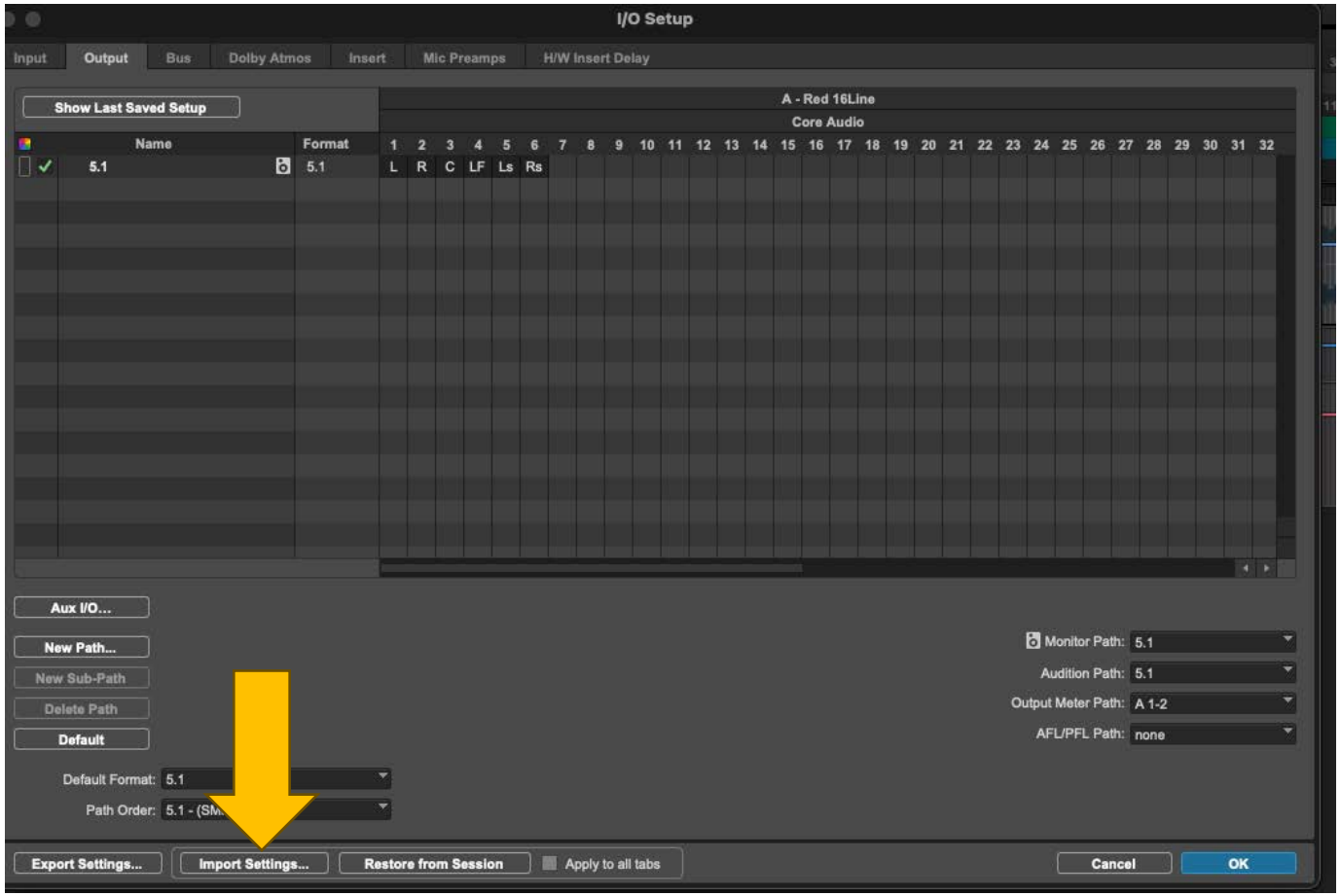


Importing I/O Settings for existing sessions

Pro Tools Sessions can carry the I/O settings with them. So, you may have routing problems when you open up a session that was used in a different suite.

To quickly map all your outputs for the EV5 VS10 mixing room, import one of the I/O templates provided for you.

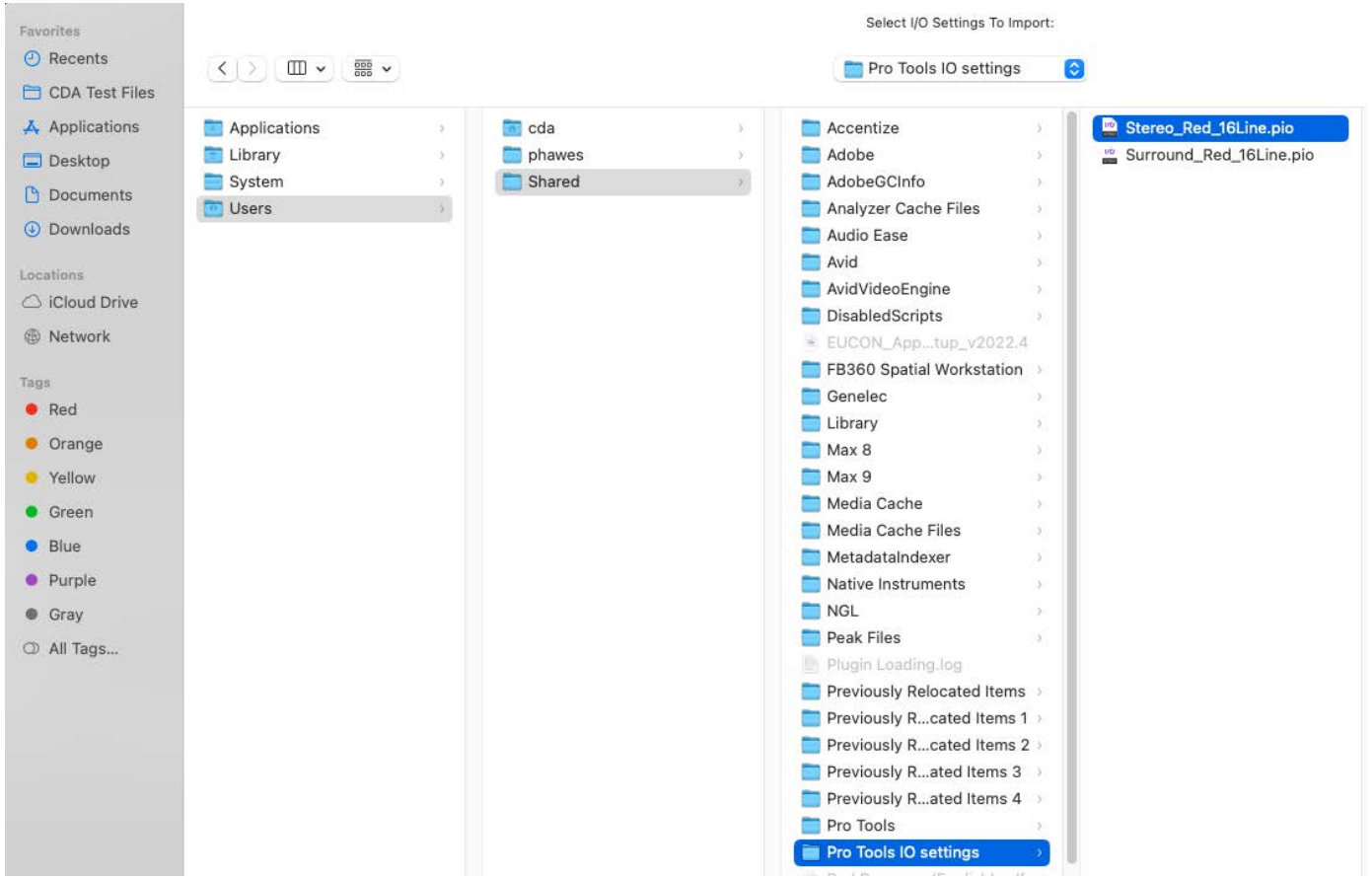
Go to **Setup/ I/O Outputs** and then **import settings.**



Importing Pro Tools I/O Settings

There are two Pro Tools I/O settings templates in: **MacintoshHD/Users/Shared/ Pro Tools IO settings**.

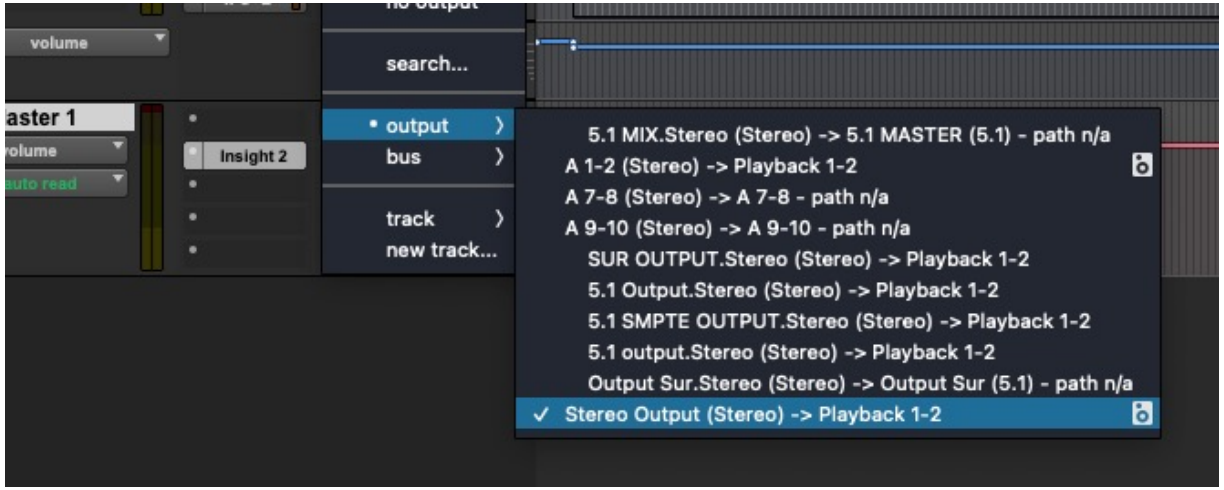
Choose either the stereo or 5.1 surround template.



Import I/O Settings

After importing the template, depending on whether you chose to keep your existing monitor path and map the outputs to a new path, you may have to change the outputs for individual tracks.

Here I am using the standard stereo monitor path: **Playback 1-2**.



Pro Tools and surround interleaved files:

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 5.1 film order (L,C,R,Ls,Rs,LFE).

This is a Pro Tools idiosyncrasy or software bug.

This does not mean that the file was created in film order. It could be a 5.1 SMPTE interleaved file. Pro Tools simply displays 5.1 interleaved files as film order. That is all.

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

Adobe Audition Monitoring

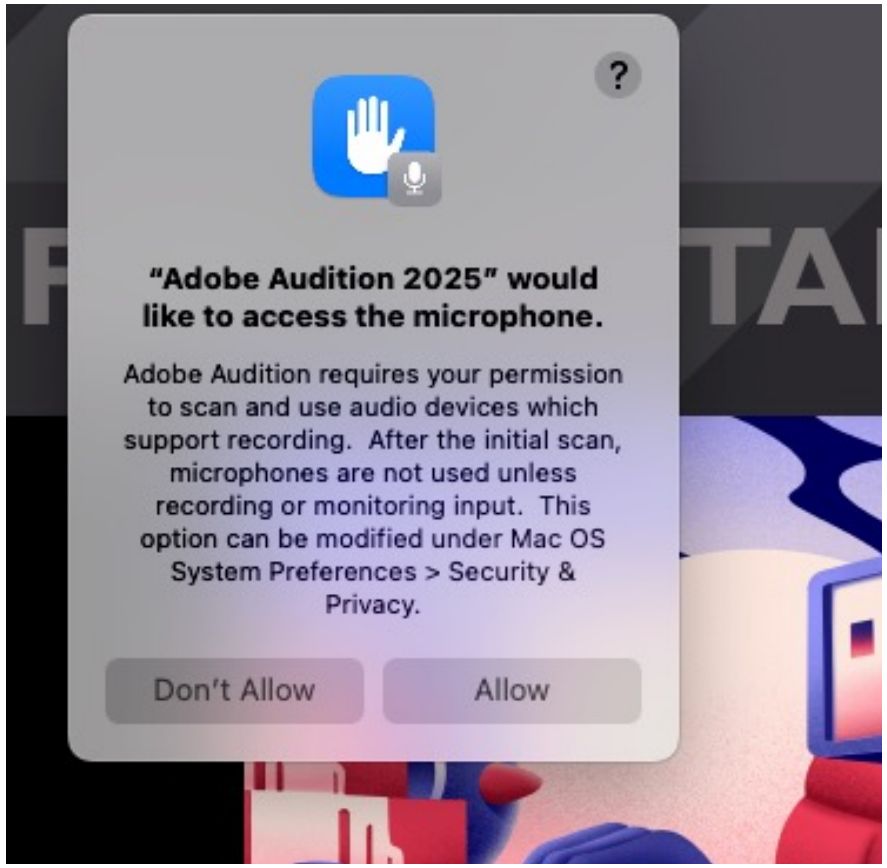
CDA Mixing Room

2026

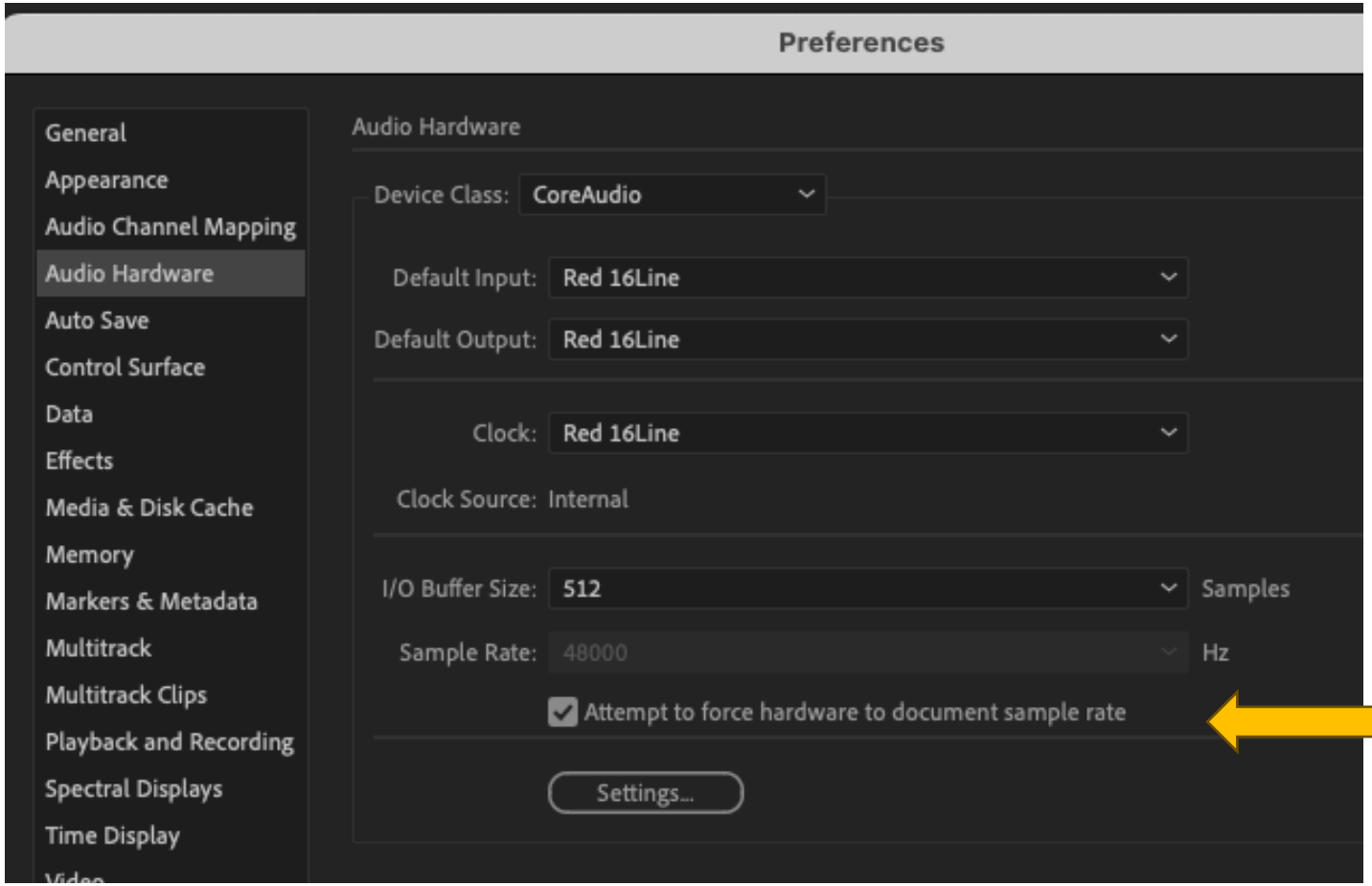
Launching Audition

Allow Audition to access the microphone. This is Mac OS speak for “allow this application to use audio hardware”.

If you don’t allow this access then Audition will not be able to use any audio hardware.



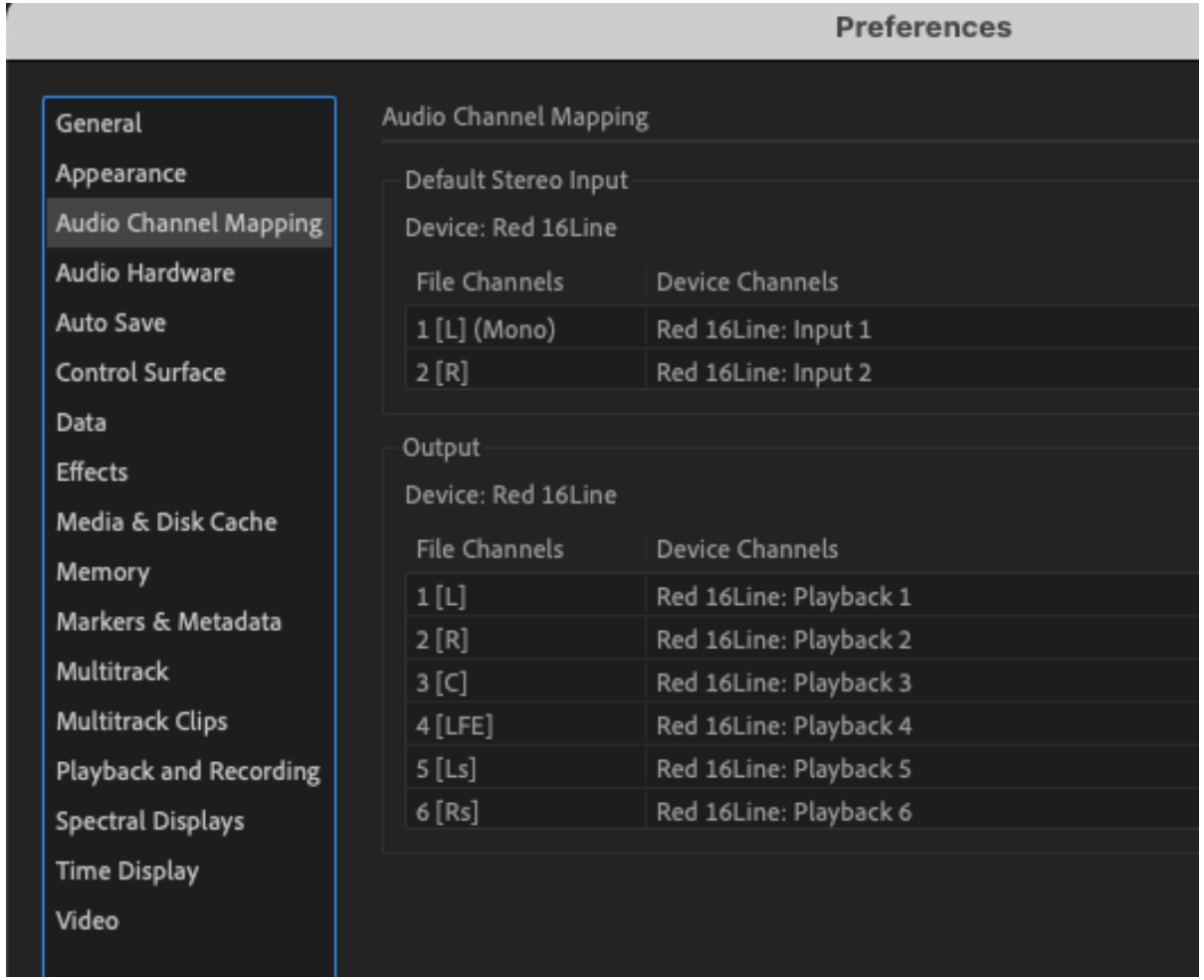
Adobe Audition/Preferences/Audio Hardware
Audition should be using Core Audio and the Red 16Line.



Red 16Line for input and output and clock.

Checkmark **Attempt to force hardware to document Sample rate.**

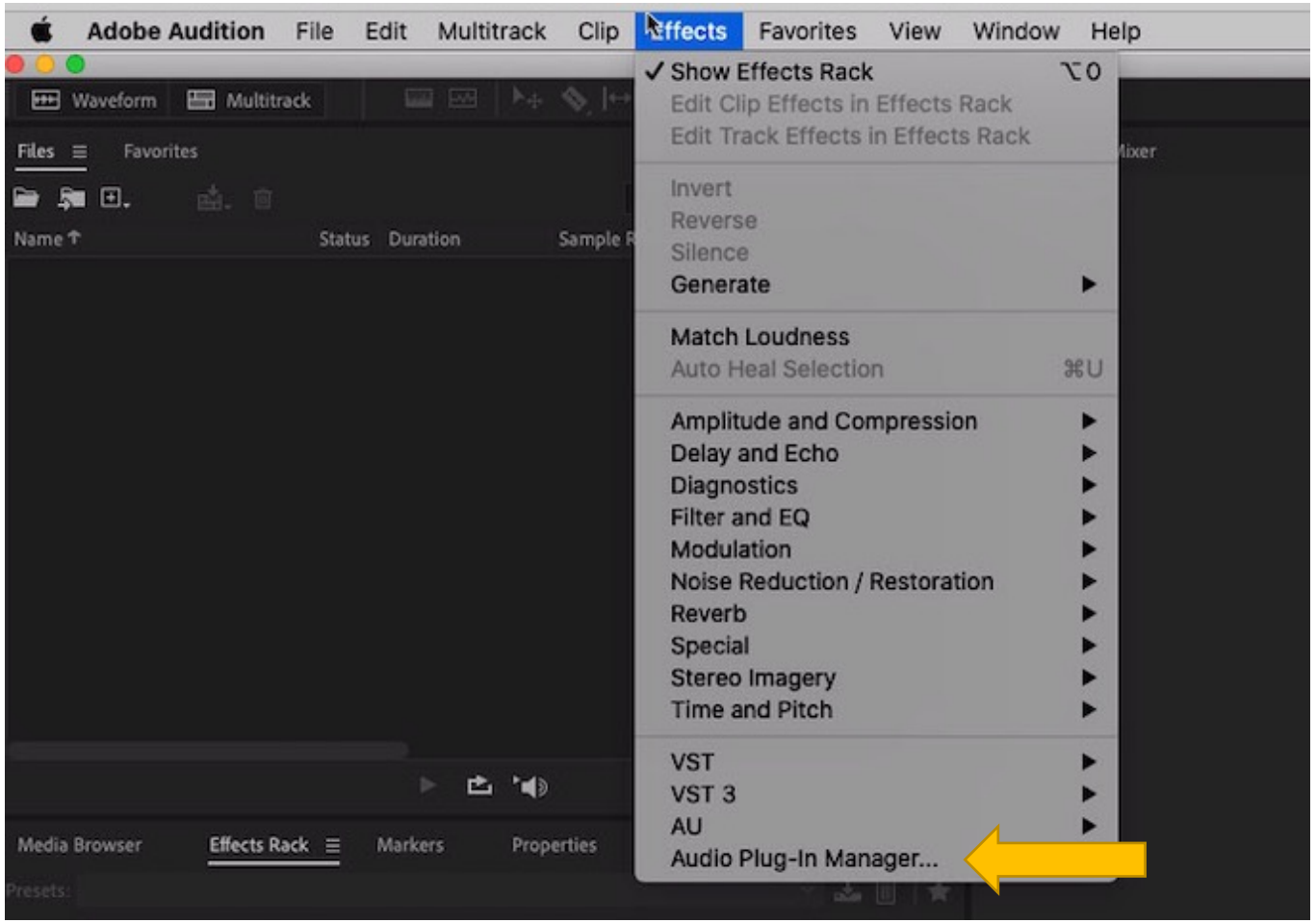
Adobe Audition/ Preferences/ Audio Channel Mapping



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

Keep it like that.

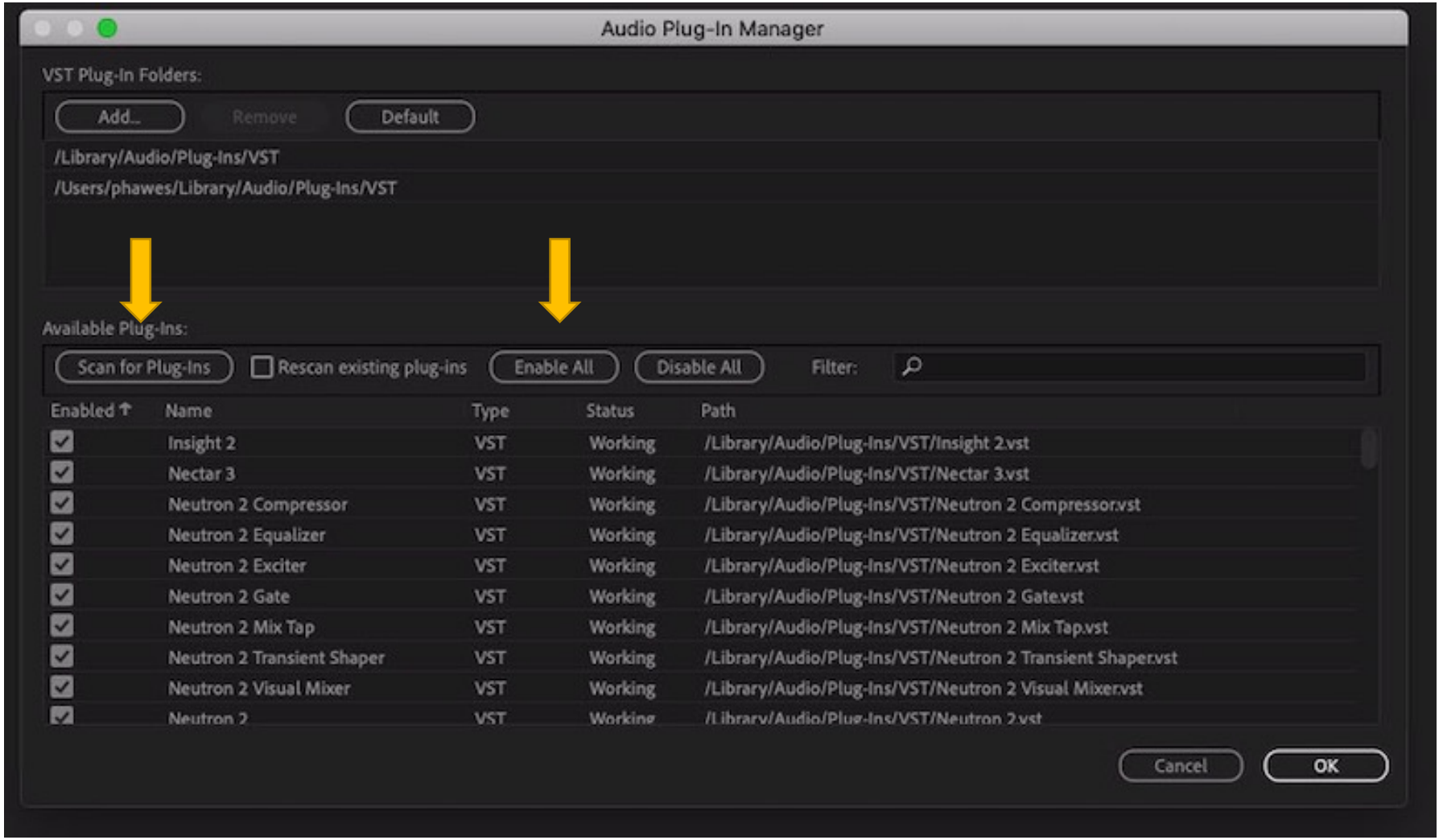
Enabling Plug Ins in Audition



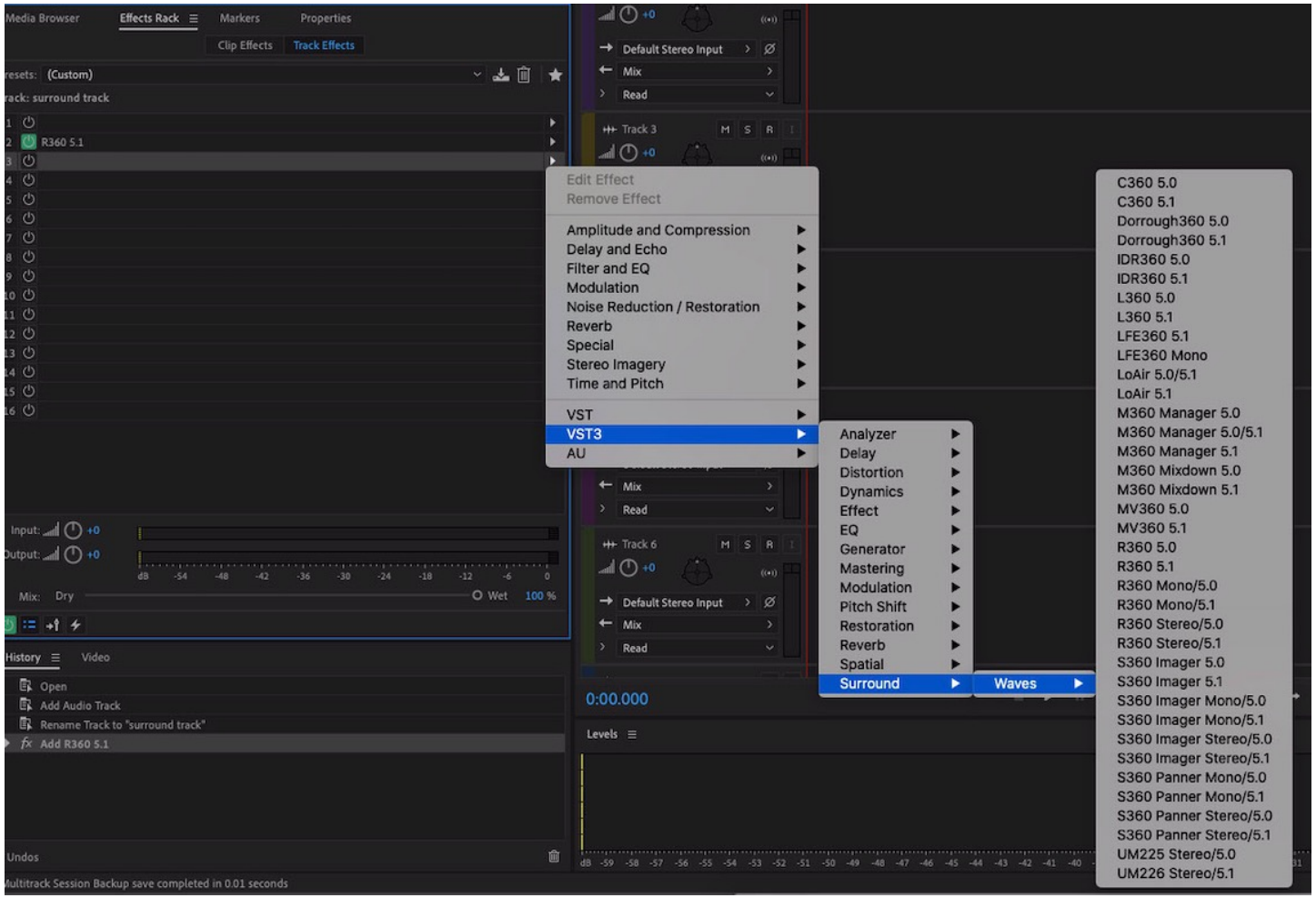
When you first launch Audition, you must scan and activate available plug-ins.

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

Monitoring in Logic

CDA Mixing Room

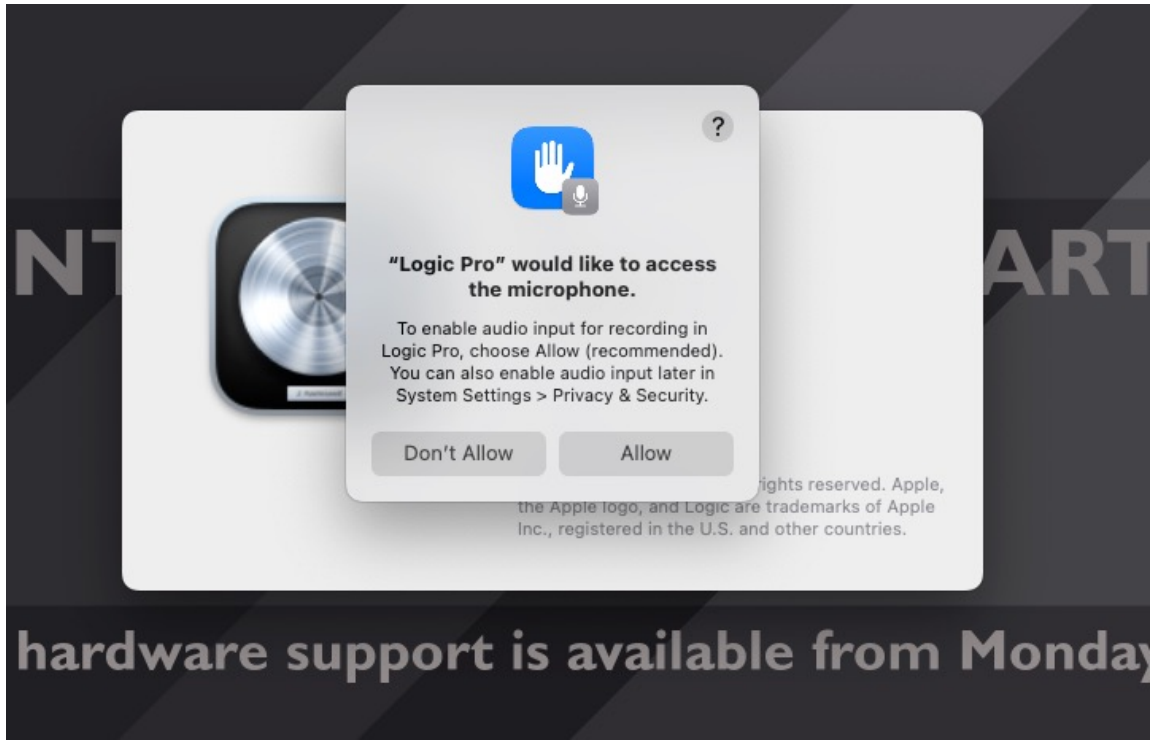
2026

Launching Logic

Allow Logic to access the microphone.

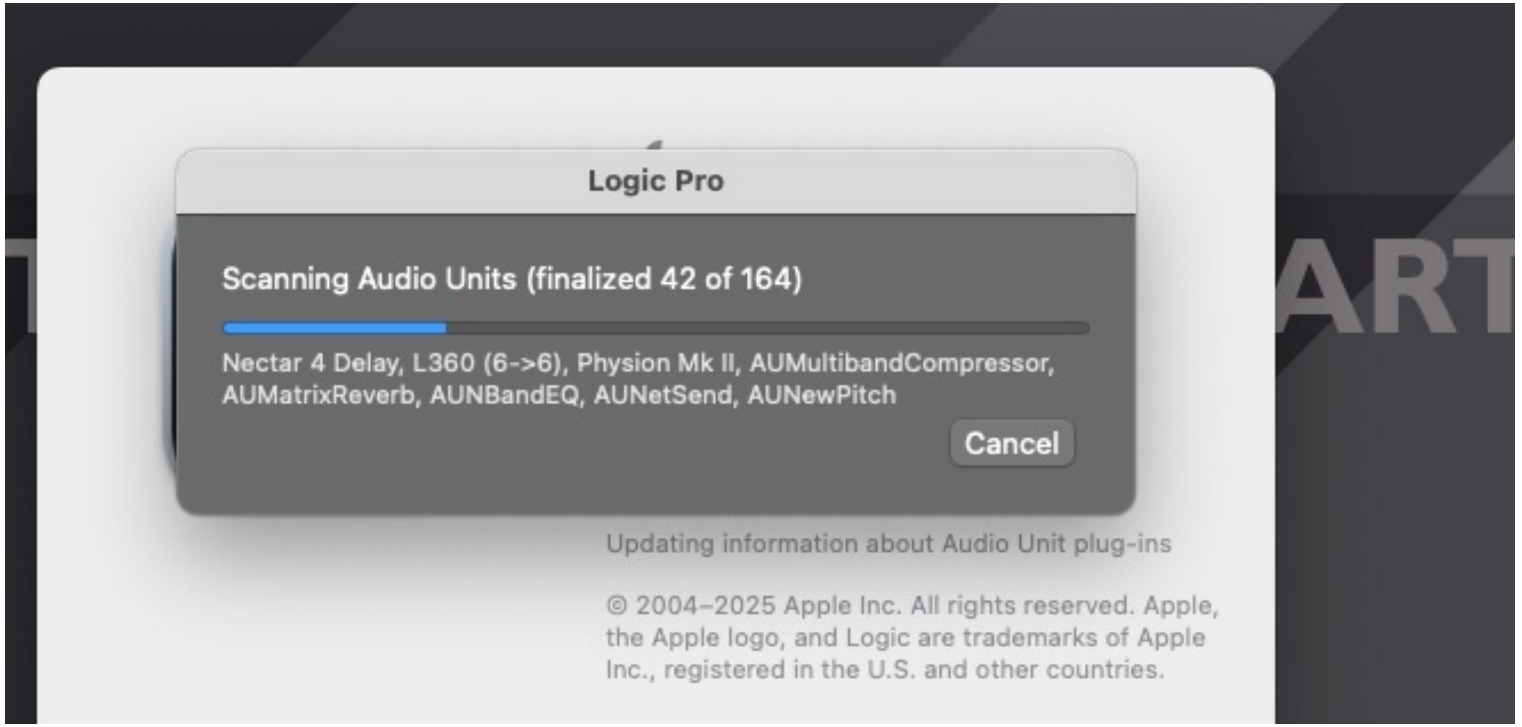
This is Mac OS speak for allowing Logic to use any audio hardware.

If you do not allow, then it cannot use the Red 16Line audio hardware.



Scan Plug-ins

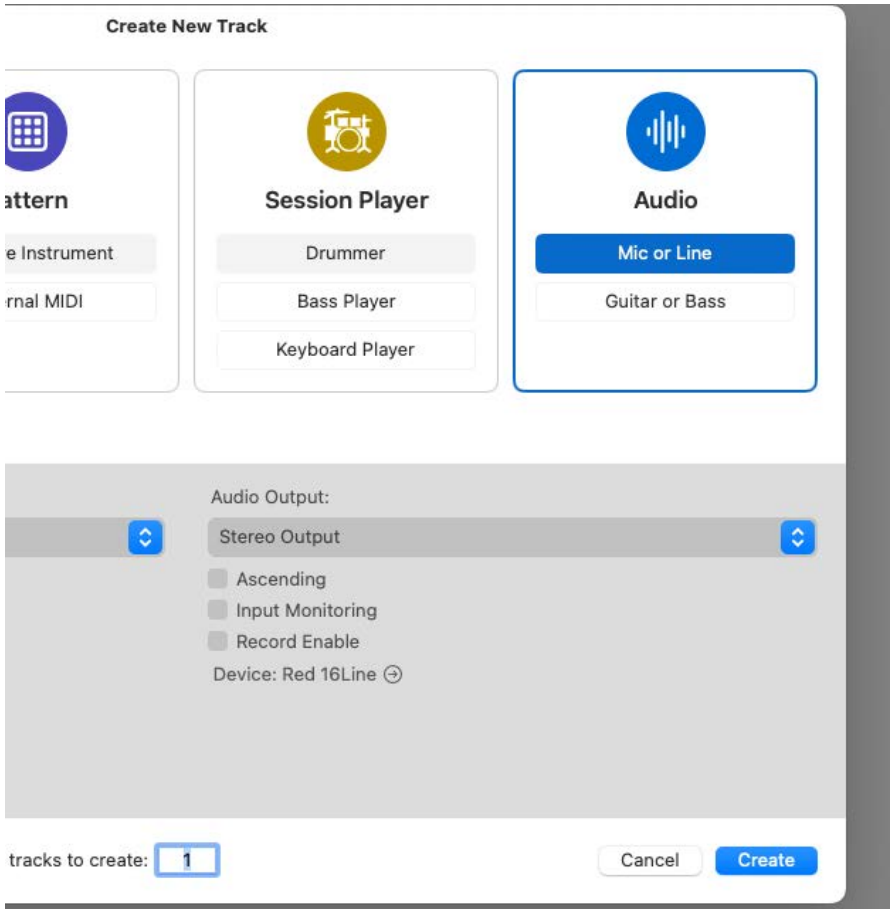
Let Logic scan the list of audio unit plug-ins.



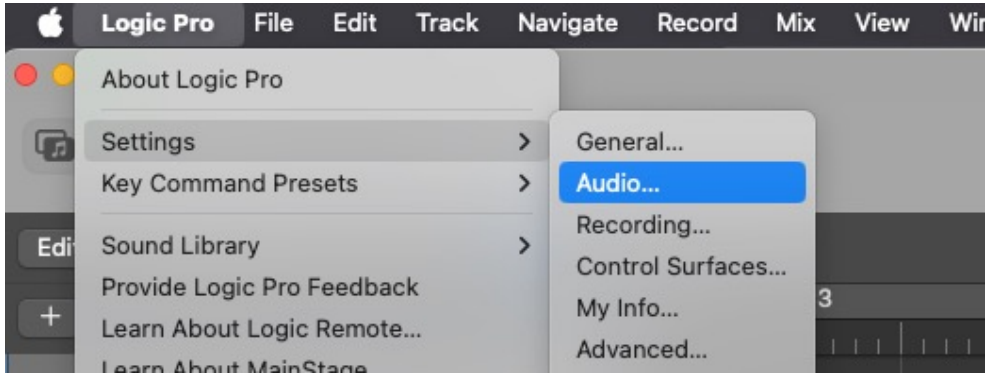
Create a Stereo Session

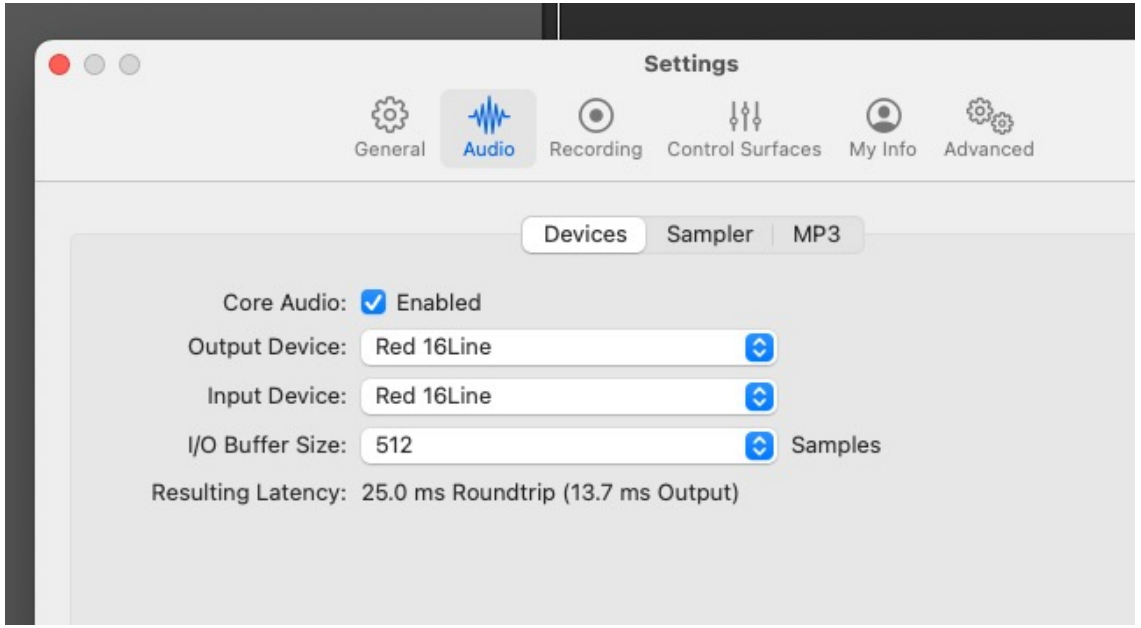
By default, Logic opens in a simplified version that is stereo only.

You will first have to create a stereo session in Logic, enable the advanced features, and then, if you wish, create a surround session.



Logic Audio Settings

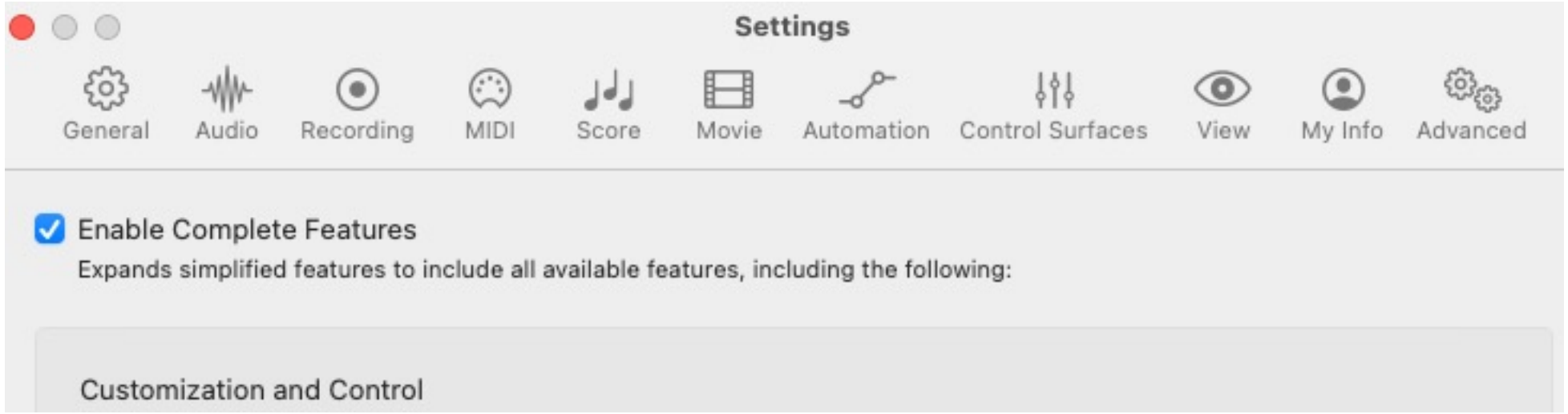




First, in Settings/ Audio set the audio device to the **Red 16Line**.

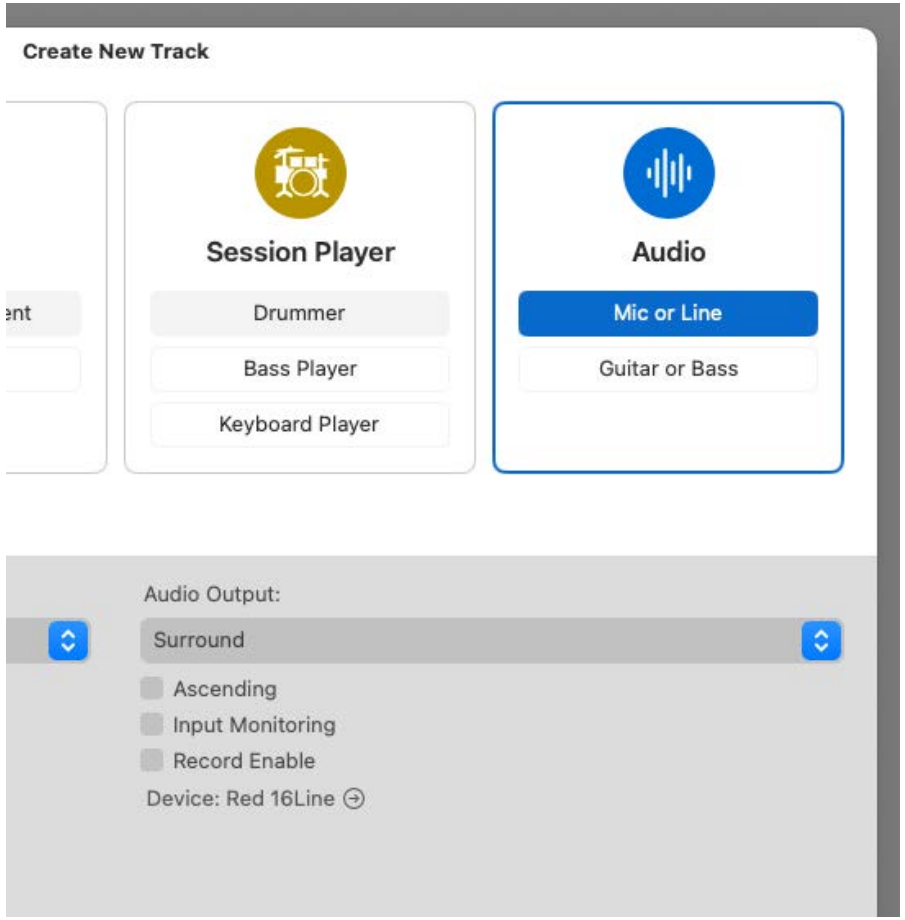
Enable Complete Features

Then under Settings/ Advanced enable the complete features. You do not have to do this if you are working in a stereo session, but I recommend it.



Create a Surround Session

Once the advanced features are enabled, then you can create a surround session (or a session with a surround output).

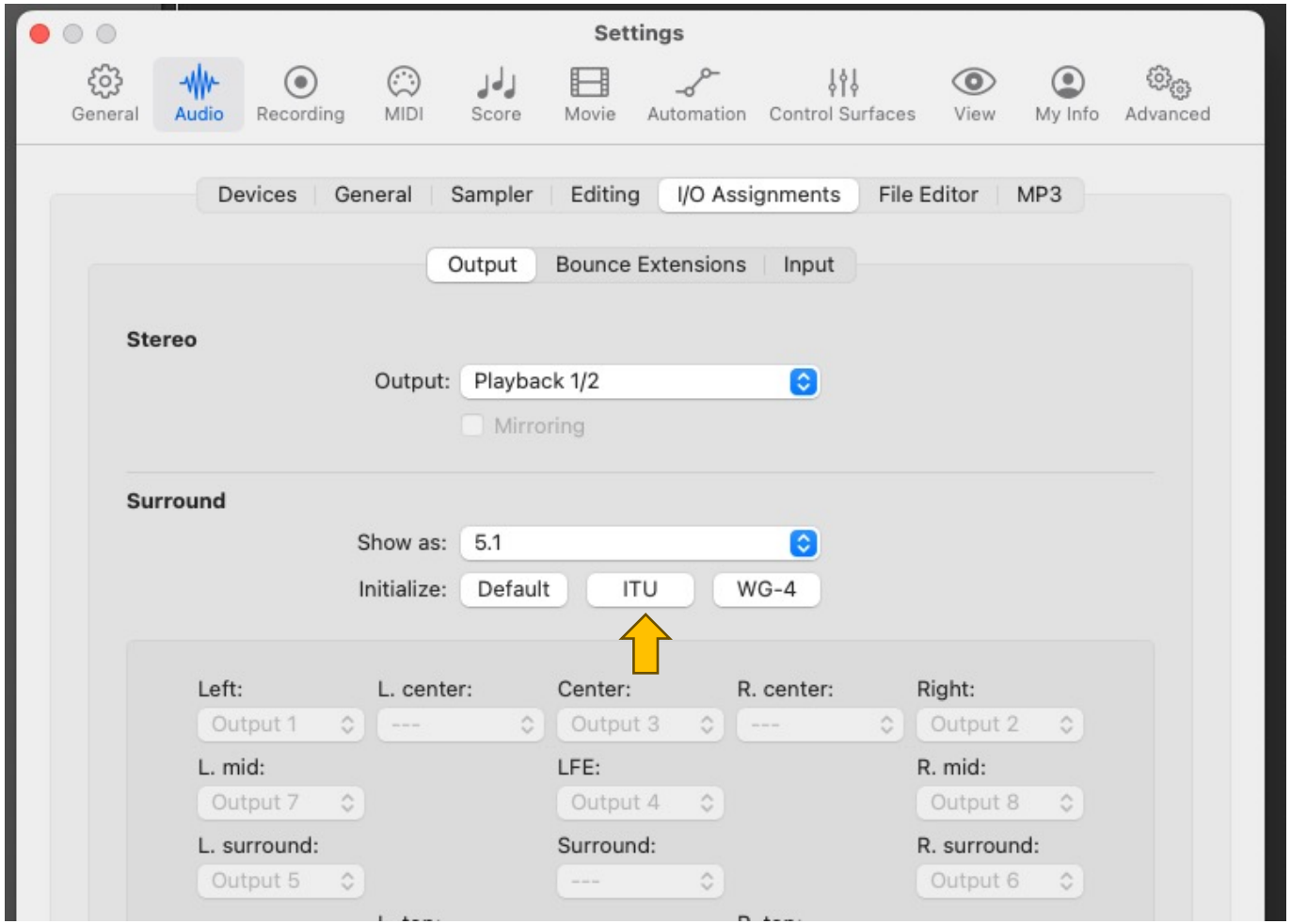


Settings/ Audio/ I/O Assignments

In Settings/ I/O assignments, stereo playback is set to **Playback 1/2.**

For surround select **5.1** and then initialize the **ITU** setting.

The channels should be in **SMPTE** order:
Left: output 1
Right: output 2
Centre: output 3
LFE: output 4
LS: output 5
RS: output 6



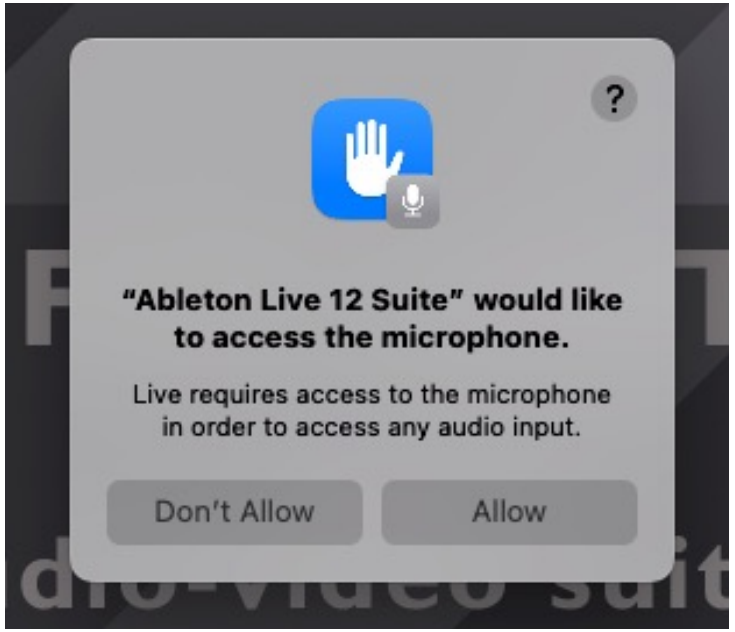
Ableton Live Monitoring

CDA Mixing Room

2026

Launching Ableton Live

Allow Ableton Live to access the microphone or it will not be able to use any audio device.



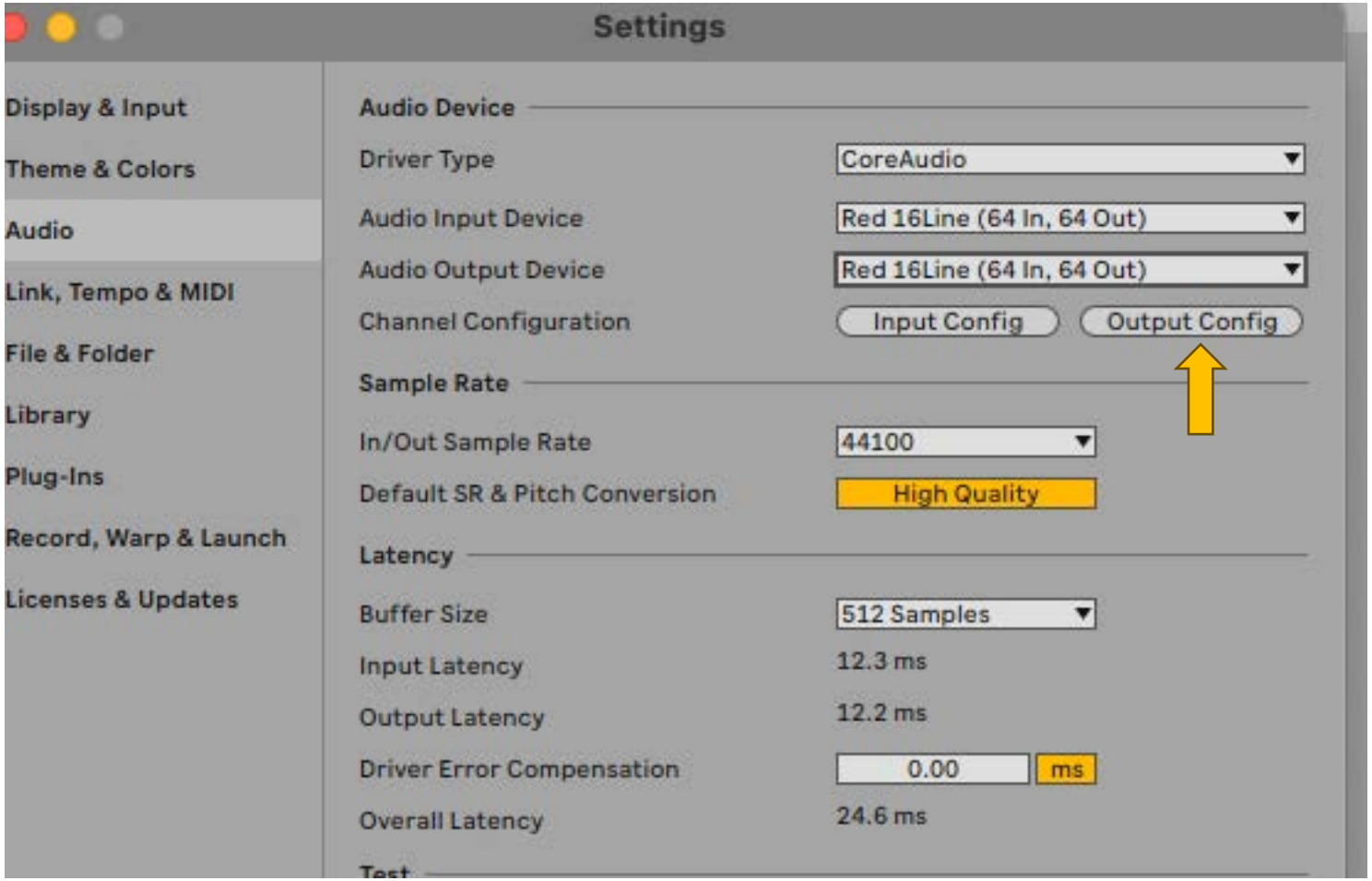
Ableton Live

Settings/Audio:

Driver Type is **Core Audio**

Input and Output Device is the **Red 16Line.**

Then select **Output Config**.

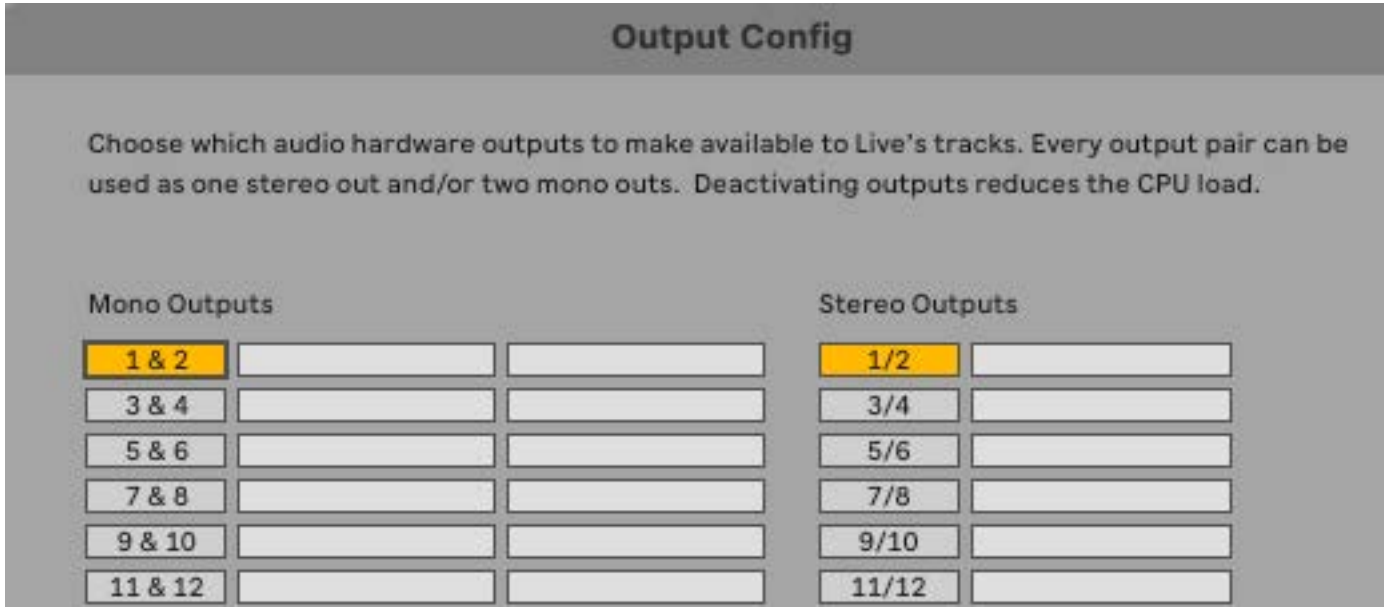


Ableton Output Config

Ableton Live is a mono or stereo only application. The stereo outputs are the standard **outputs 1 and 2**.

You can enable outputs 3 to 6 as well to use all the speakers in the studio but this is not a surround audio session, it is multi-channel. Audio cannot be panned throughout a surround field in Ableton Live.

If you want to work in 5.1 surround, I recommend using Pro Tools or Logic. Adobe Audition is OK as well.



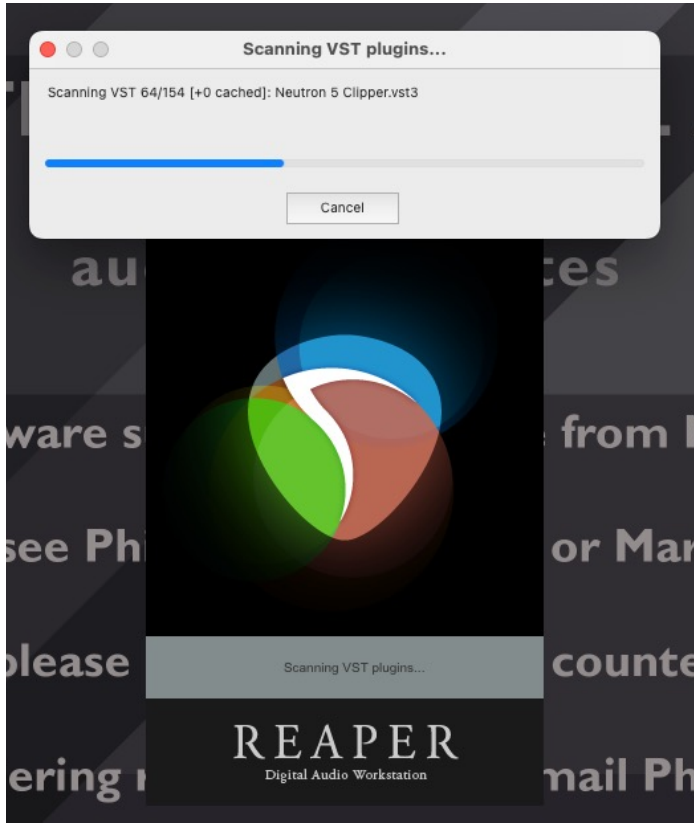
Reaper Monitoring

CDA Mixing Room

2026

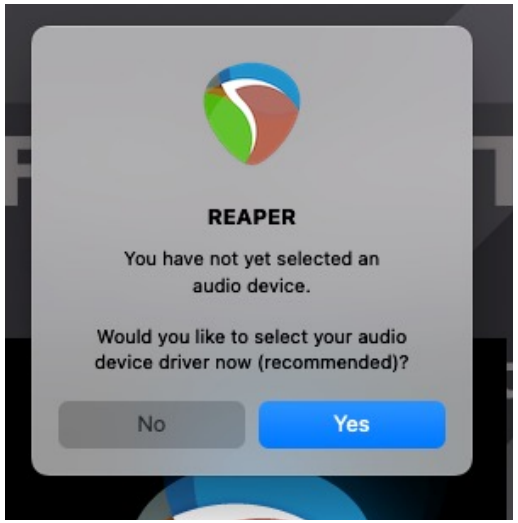
Launching Reaper

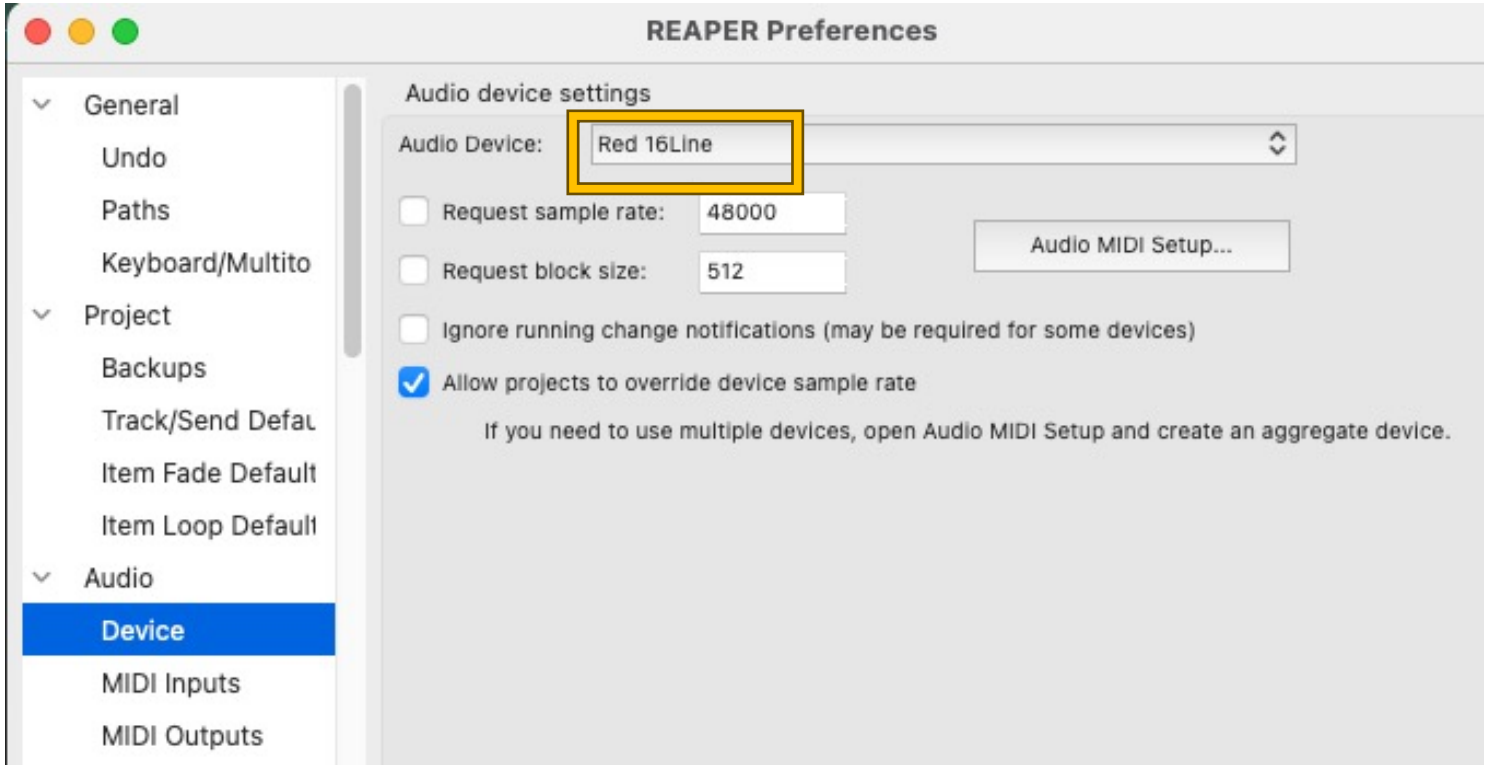
Allow reaper to scan the VST plug-ins.



Selecting the audio device

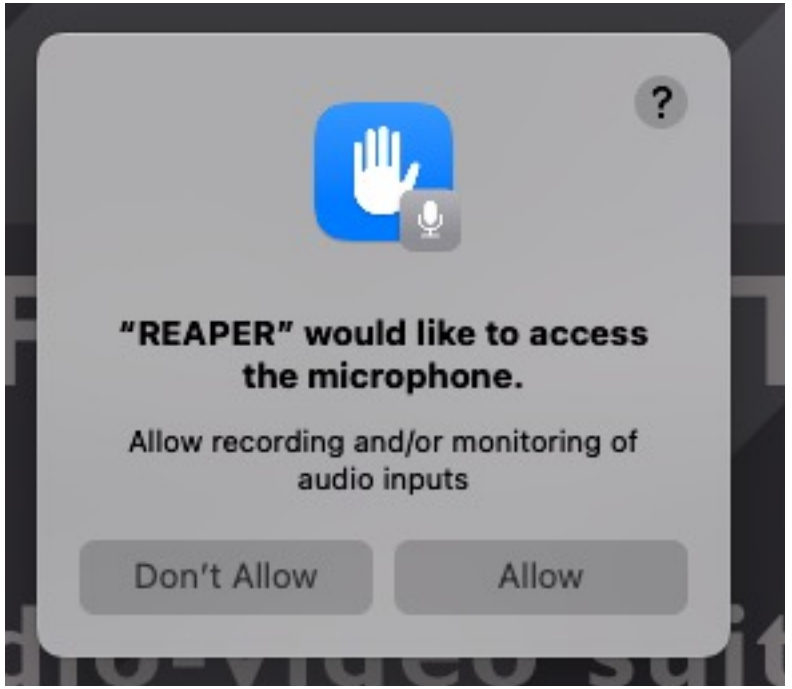
Say **YES** to selecting an audio device.
Select the **Red 16Line**.





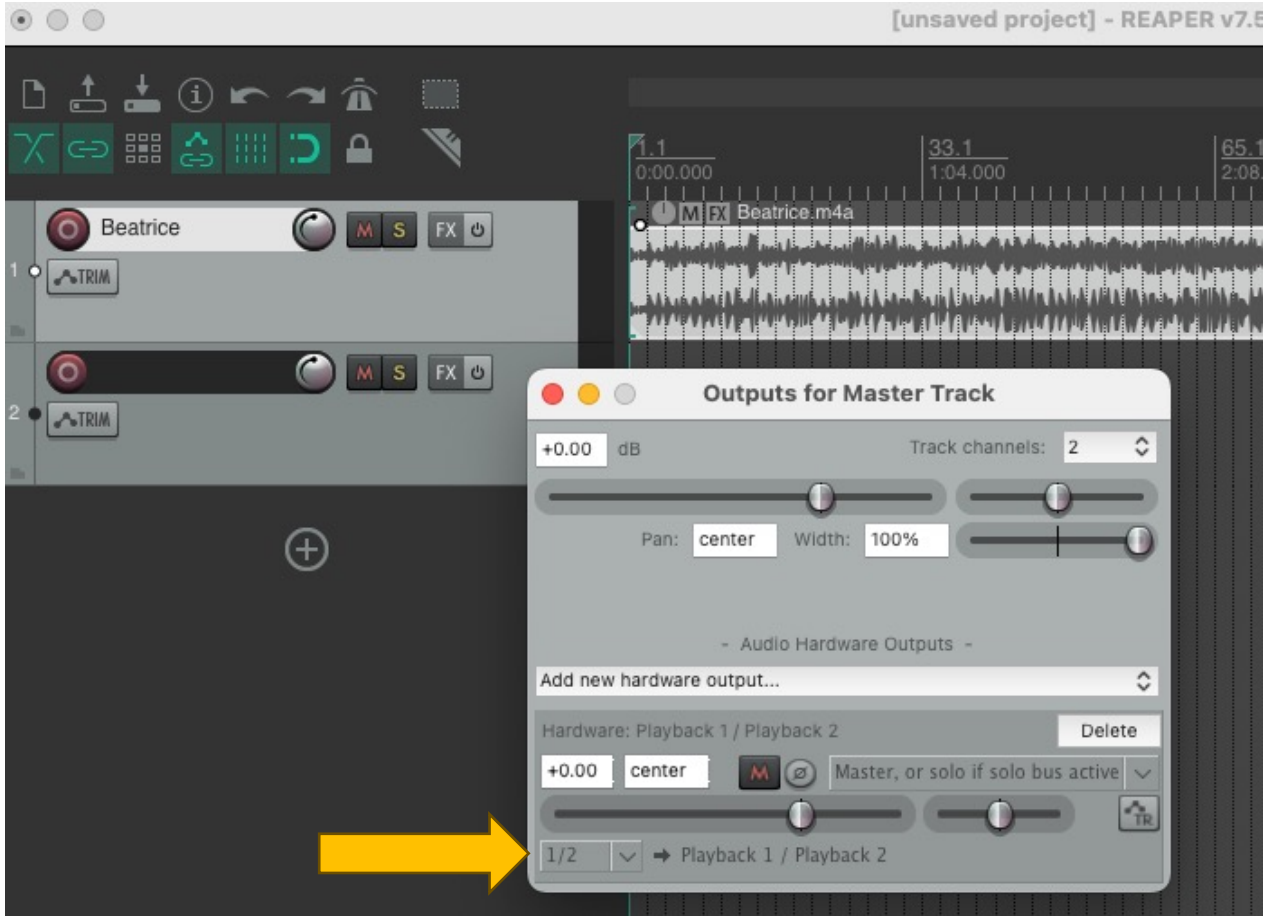
Allow Access to the microphone

Allow Reaper to “access the microphone” or it will not be able to use the audio device.



Stereo Master Track Outputs

The outputs for a stereo master track in Reaper should be **Playback 1 and 2**.



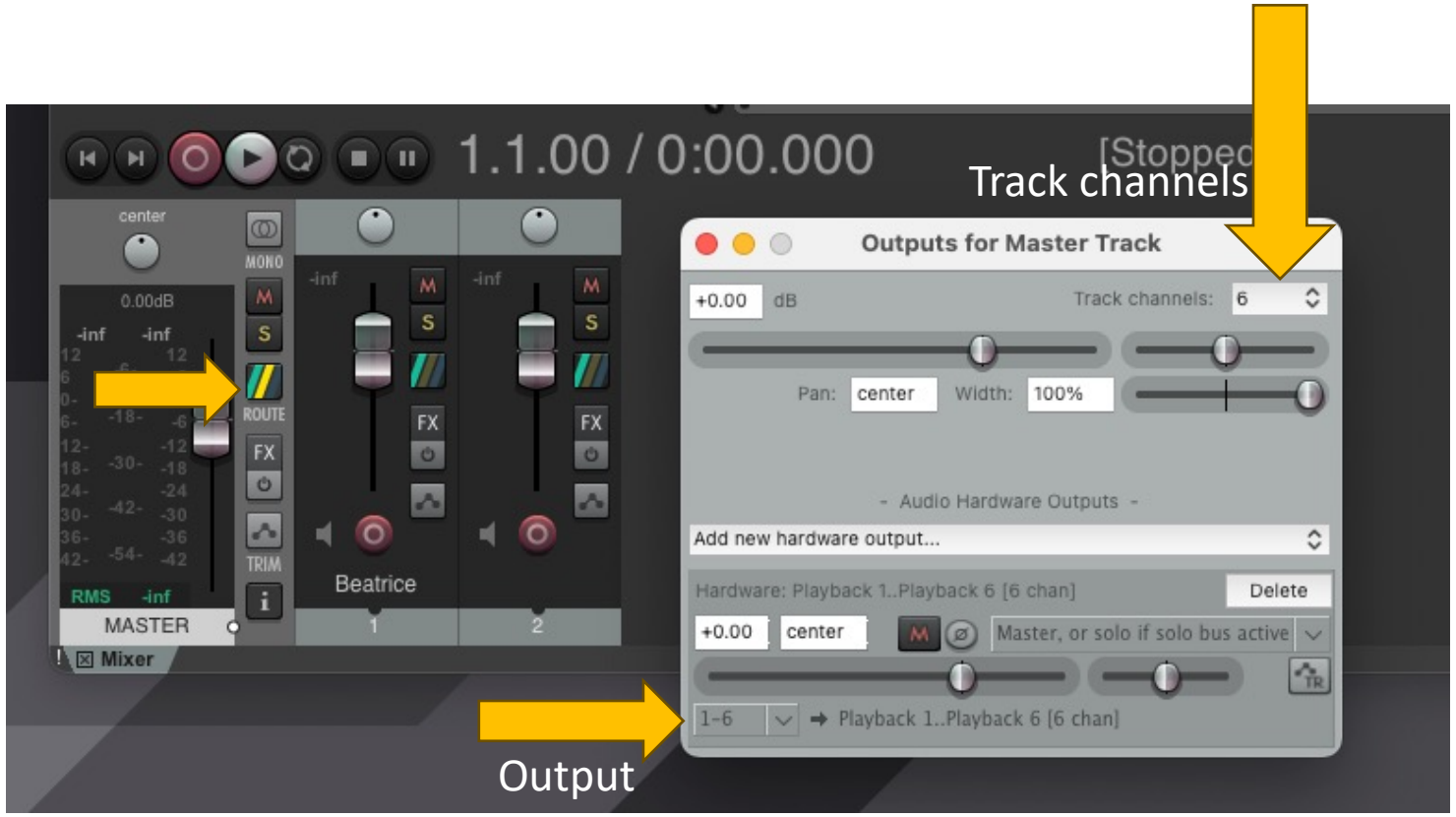
Surround Master Track Outputs

To create a 5.1 surround master in Reaper, click in the Route button on the master track.

Change the number of track channels to 6.

Change the output to Playback 1 to 6.

By default, it is **SMPTE** order: L, R, C, LFE, Ls, Rs



Enabling the AVID S3 Control Surface

CDA Mixing Room

2026

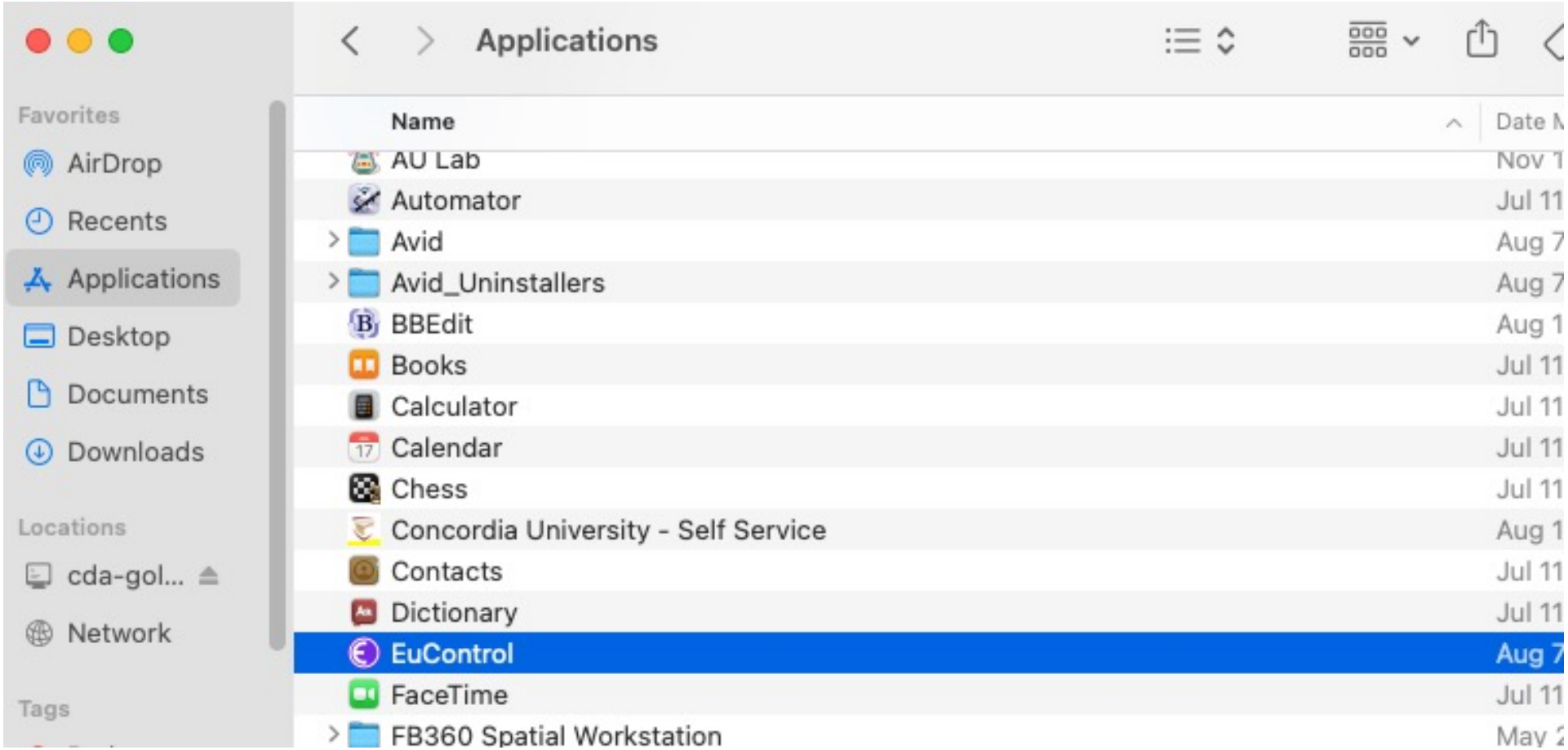
Applications that can use the S3

The AVID S3 control surface can be used by Pro Tools, Logic and Audition.

It has full functionality with Pro Tools and limited functionality with the other two applications.

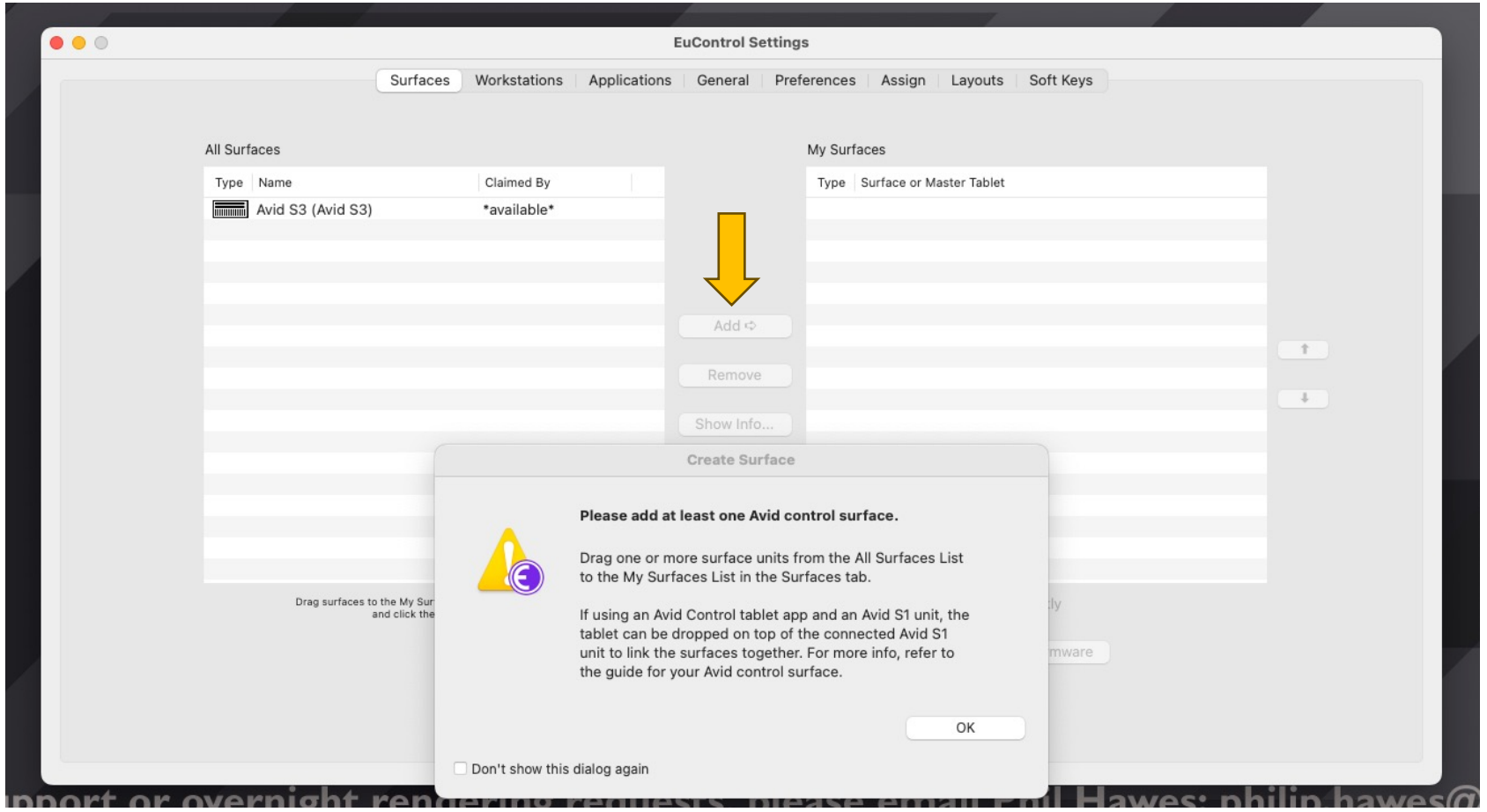
The S3 is an audio interface but in the CDA mixing suite we are using it exclusively as a control surface for volume, panning and plug-in automation.

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

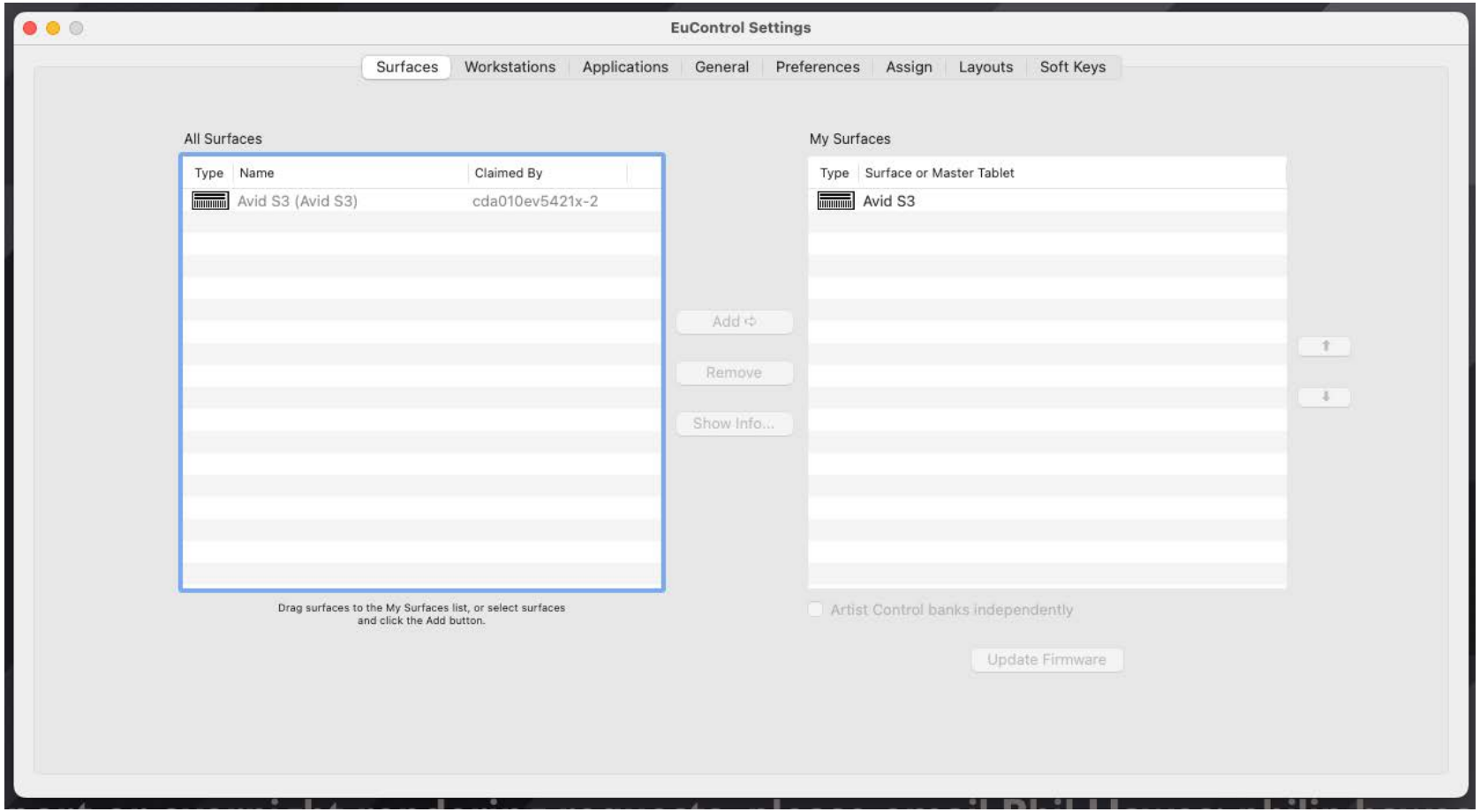


Eu Control Settings

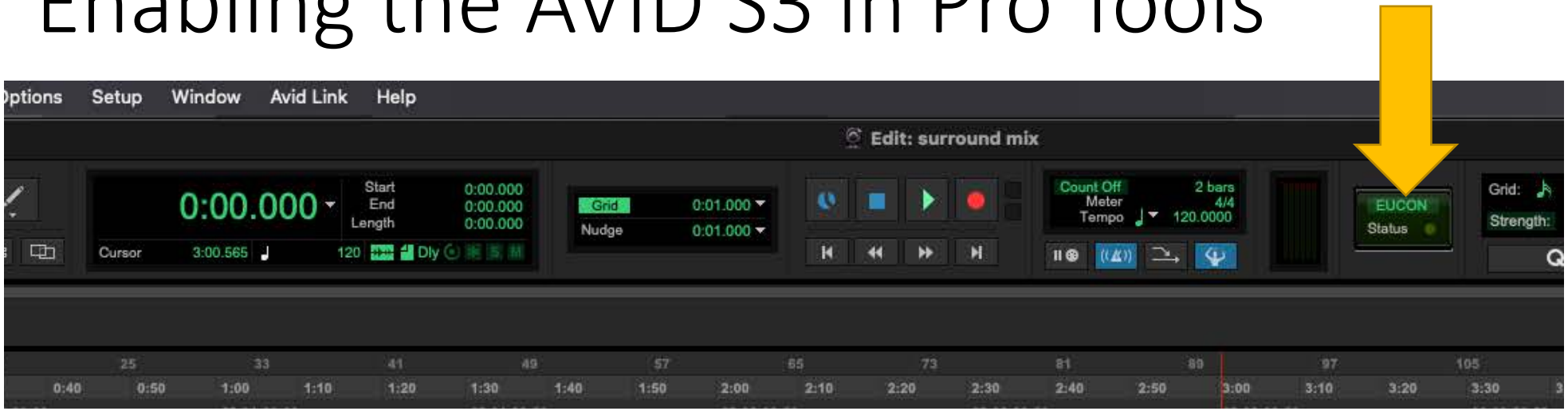
In EuControl Settings, Add the AVID S3 to the right hand “My Surfaces” column by selecting the surface in the left column and then pressing **ADD**.



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



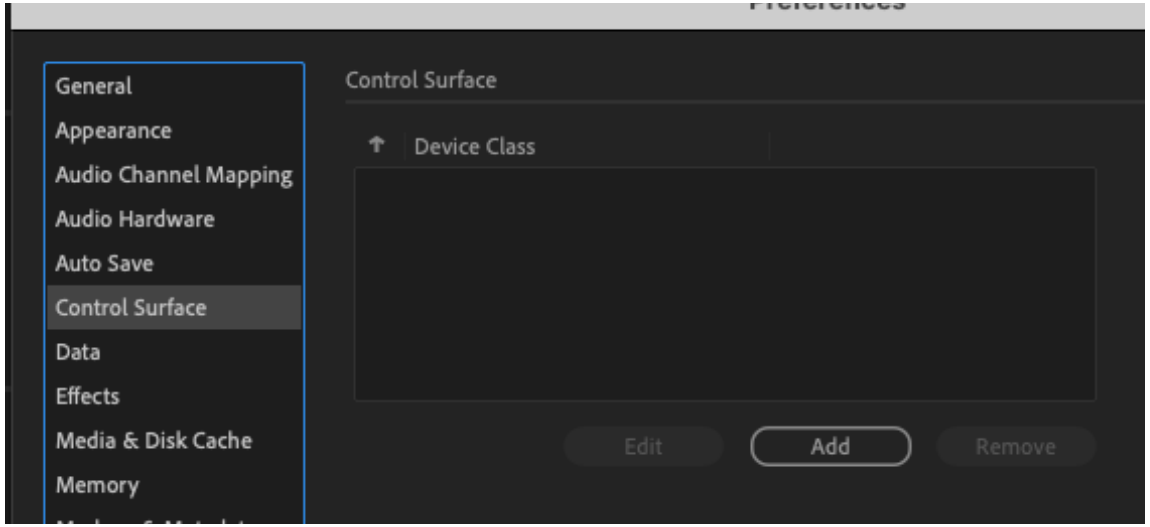
Enabling the AVID S3 in Pro Tools



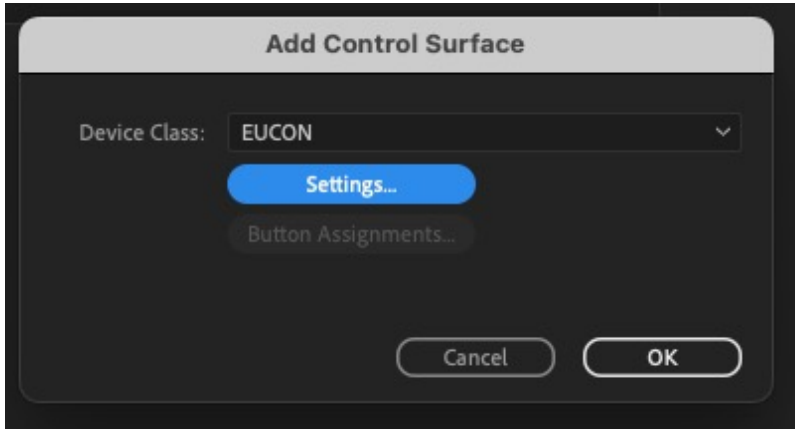
Click on the EUCON symbol at the top right of the Pro Tools edit window.
The status light should be green when the surface is recognized.

Enabling the AVID S3 in Adobe Audition

Go to Audition/Preferences/ Control Surface

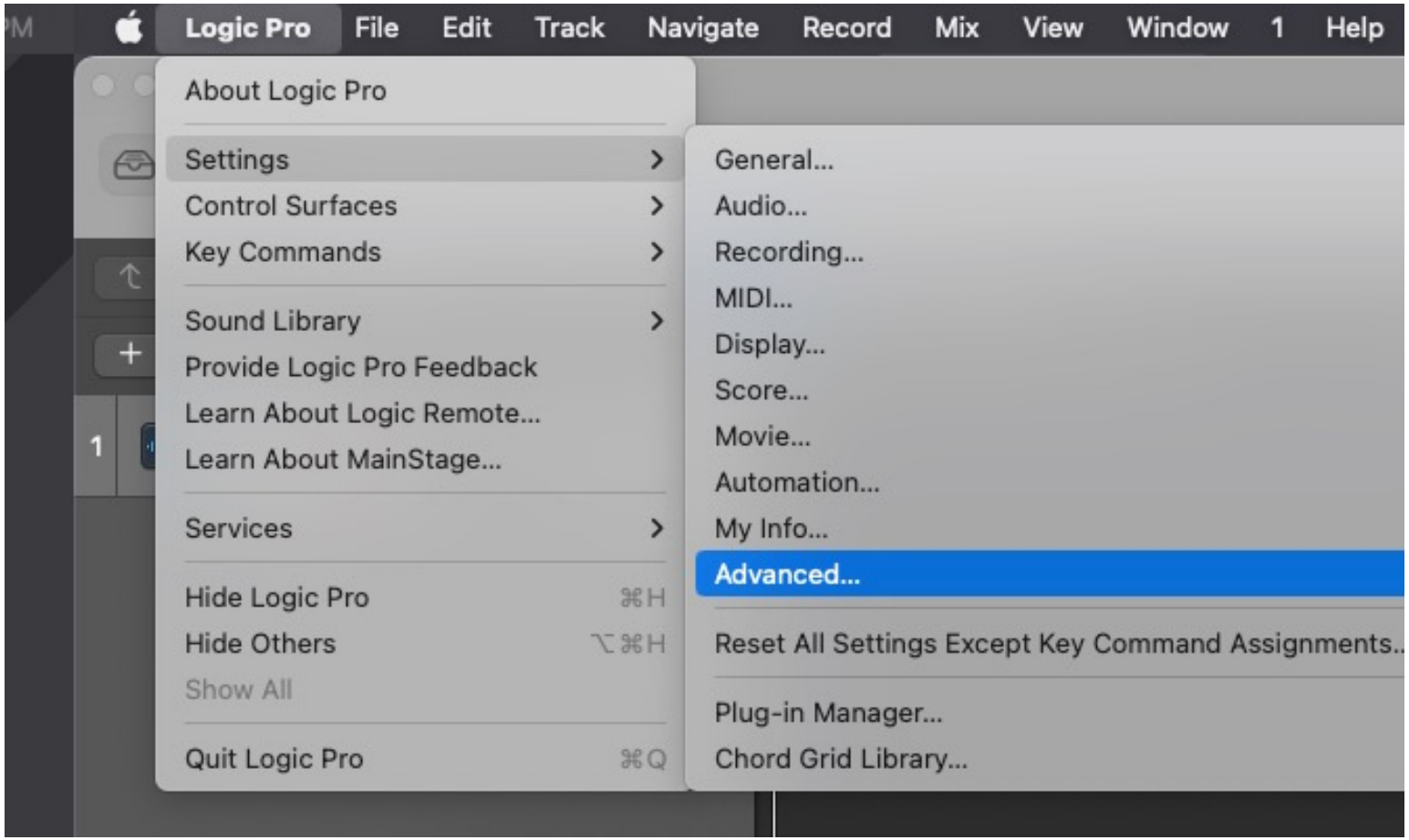


Select ADD.



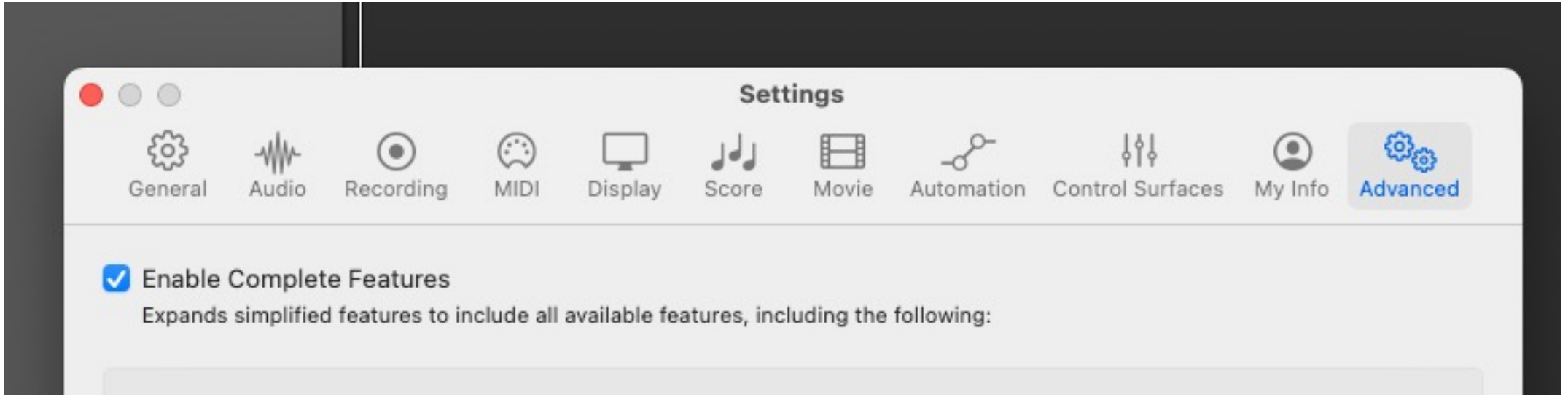
Add EUCON.

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.

Laptop connection and playback

CDA Mixing Room

2026

Laptop monitoring uses a digital connection

Your laptop will be connected with the USB cable to the Scarlett 18i20 interface (top interface on the rack).

The Scarlett sends the audio signals to the Red 16Line studio interface (second interface from the top on the rack) through two digital ADAT connections.

The Red 16Line sends the audio to the speakers. You control listening levels with the Genelec GLM controller.

The following number of channels are supported at these sample rates:

16 channels at 44.1/48 kHz

8 channels at 96 kHz

About the ADAT connections

There are two ADAT ports, two ADAT connections between the Scarlett interface and the Red 16Line interface.

Because the CDA mixing room has only six channels, 5.1 surround, you will only use one ADAT port when working at 44.1 or 48 kHz. At these sample rates each ADAT port supports eight channels of audio.

However, if you are working in a 5.1 surround session at 96 kHz. You will be using both ADAT ports. Audio channels 1 to 4 on the first ADAT port and channels 5 to 6 on the second ADAT port. At 96 kHz, each ADAT port supports four channels of audio.

Steps to Success for Laptop Use

1. Download the Focusrite Control 2 software on your laptop.
2. Connect your laptop with the supplied and labelled USB cable to the Focusrite Scarlett 18i20 hardware.
3. Select the Scarlett 18i20 as the audio device in the audio software on your laptop.
4. Make the appropriate routing in the Focusrite Control 2 software.
5. On the studio computer, make sure the Genelec speakers are initialized with the GLM software and that the controller is active.
6. On the studio computer, make the appropriate routing and settings in the RedNet Control 2 software.

The laptop will be using the Focusrite Control 2 software. The Studio computer will be using the Focusrite Pro RedNet Control 2 software.

Download the software

https://focusrite.com/software/focusrite-control-2

Download the Focusrite Control 2 software for desktop.

Install it on your laptop.

Connect your laptop

Connect your laptop to the Scarlett interface with the supplied and labelled USB C cable.

If your laptop does not have a USB C connection, a USB C to USB A adapter for the cable is also provided for you.

Power on the Scarlett 18i20

The Scarlett is the interface above the studio interface the Red 16Line.

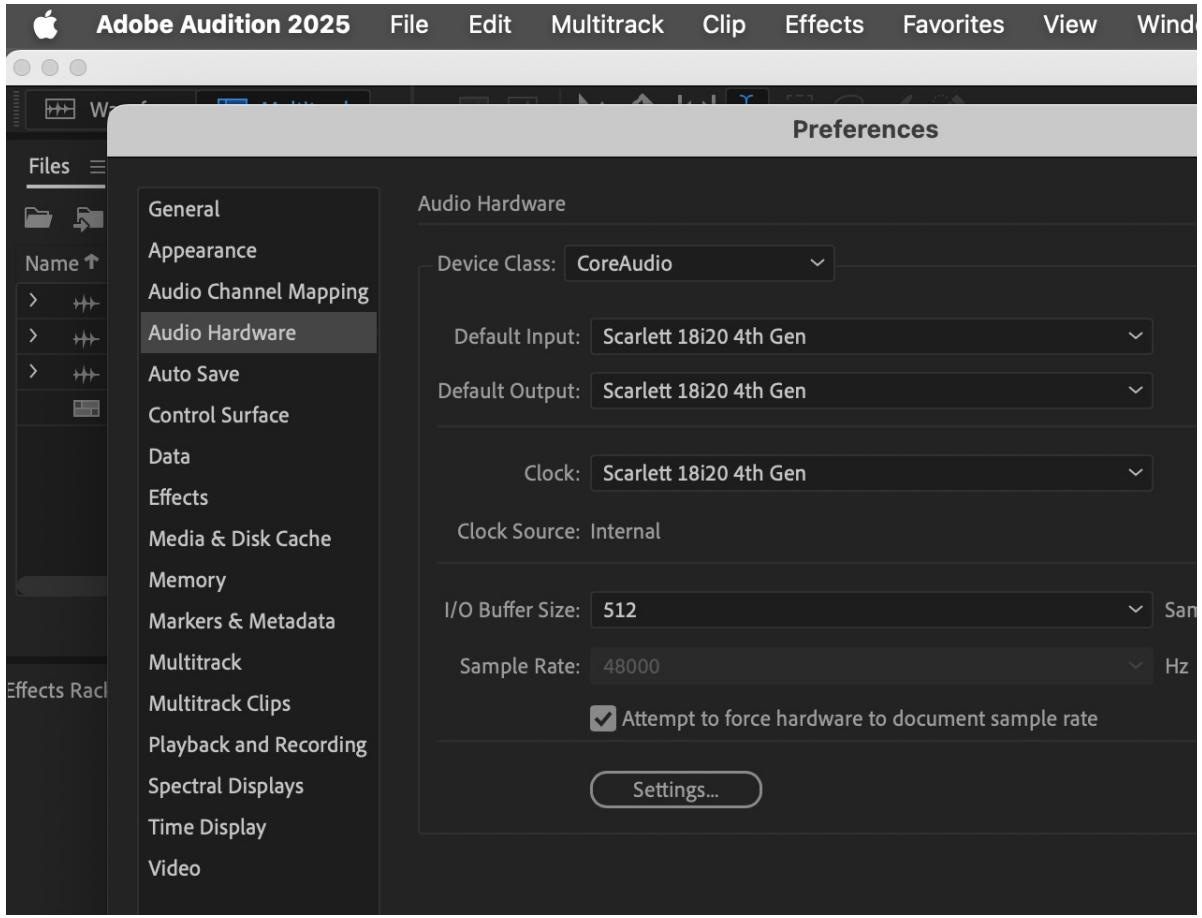
You can power it off when you're done.

Audio Hardware/ Device settings

Now that you have the laptop connected and the Focusrite Control 2 software installed, open your audio software on your laptop.

In that software, the audio hardware or device should be the **Scarlett 18i20**.

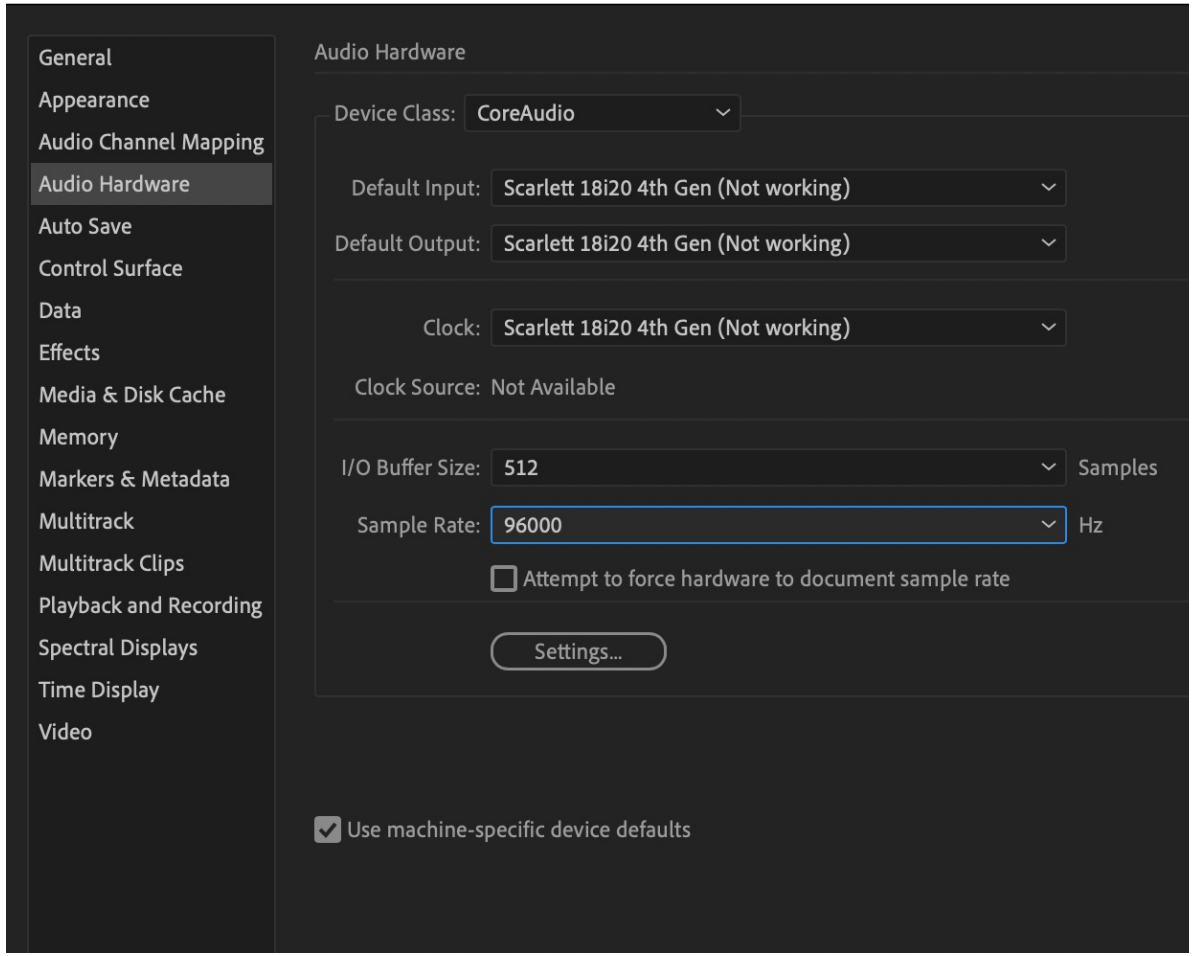
Here I am using Adobe Audition.



Sample rate warning

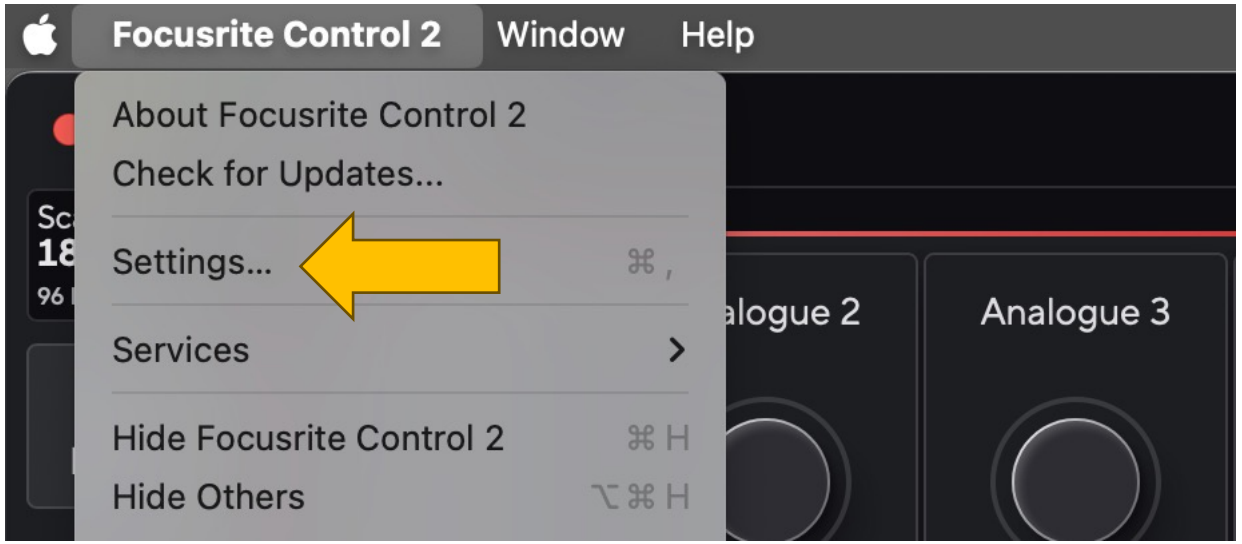
You may get a message that the audio device is not working. This is a sample rate issue. Make sure the sample rate of your audio project and the hardware match.

On the Scarlett you have to change the sample rate manually in the Focusrite Control 2 software settings. Read on.

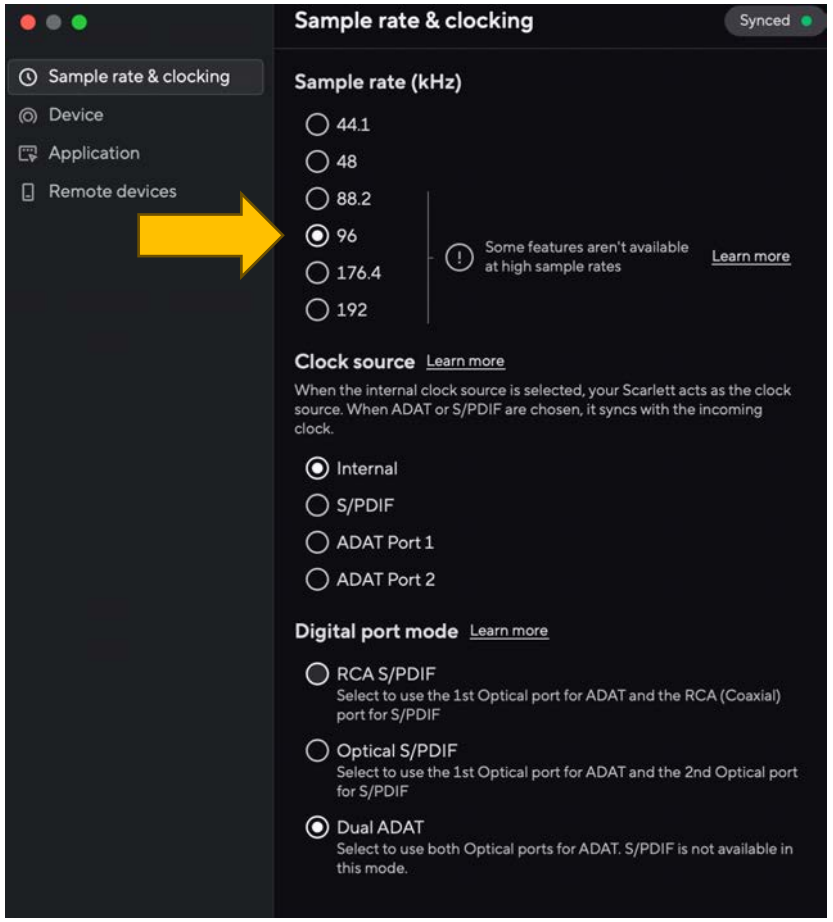


Changing sample rate in the Focusrite Control 2 software

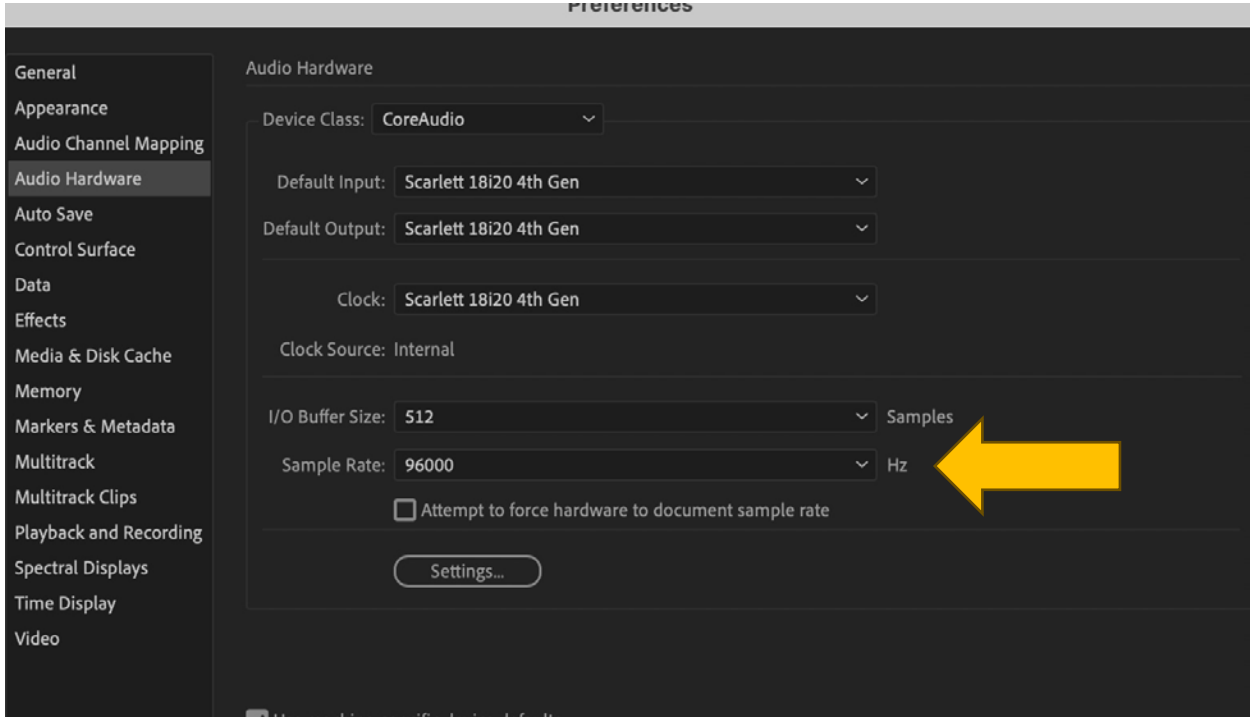
Go to the Focusrite Control 2 software and open the **Settings**.



Changing the Scarlett sample rate



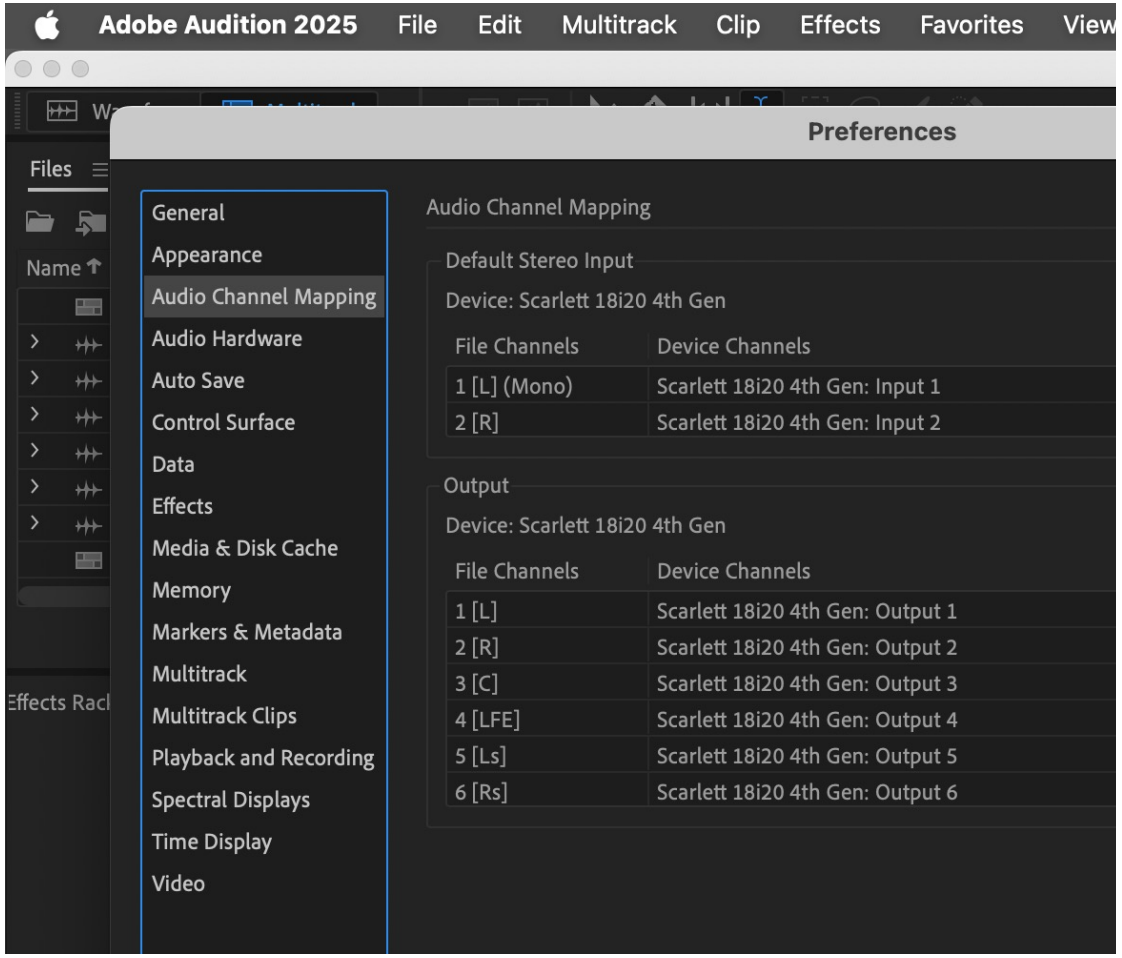
Change the sample rate in the Focusrite Control 2 software under **Settings/Sample rate and clocking**. Match it to your audio project. Here I am using a sample rate of 96 kHz.

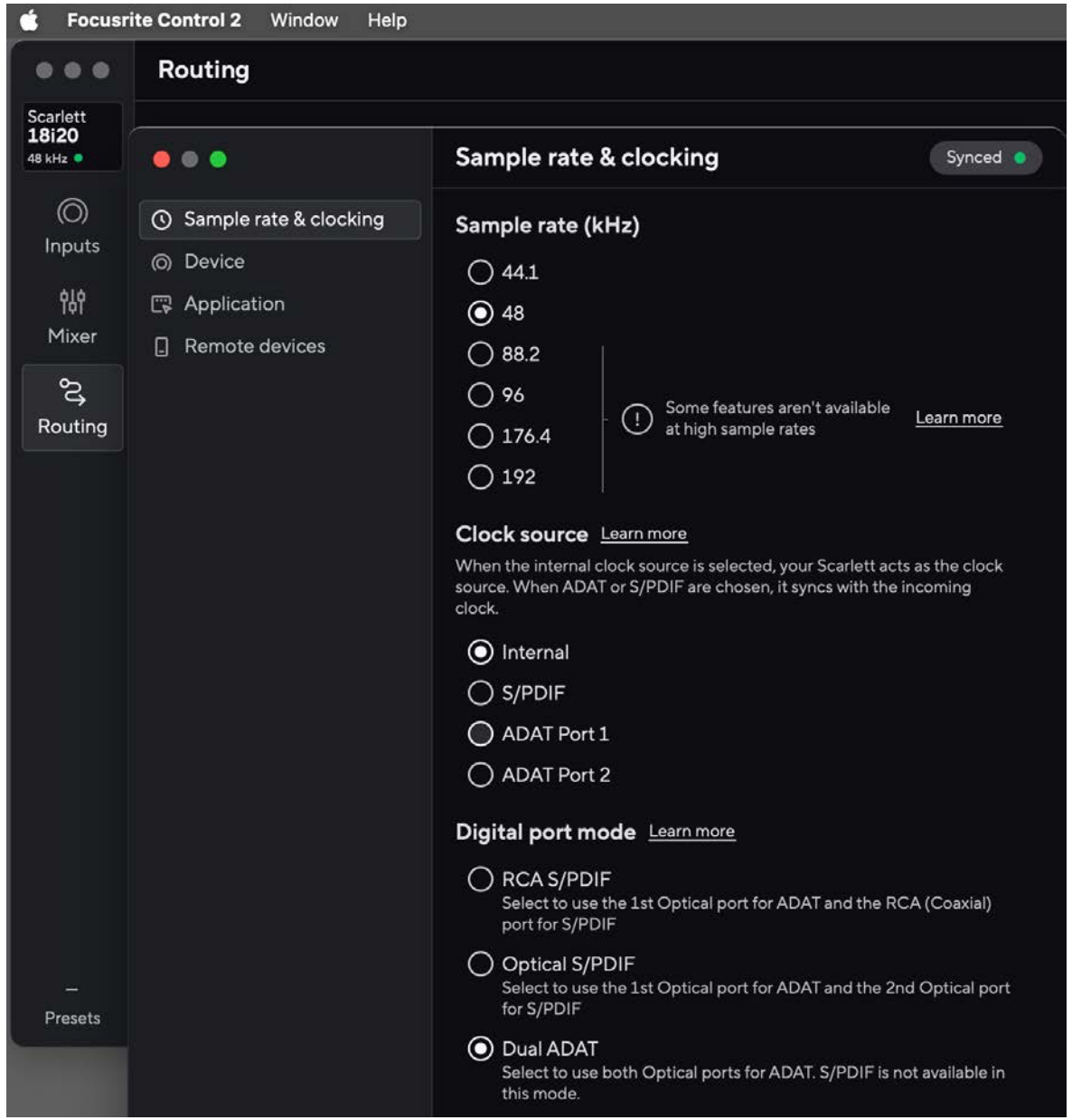


Audio Output Channel Mapping

In your audio software, the channel output mapping should be the **SMPTE** standard.

1. Left
2. Right
3. Centre
4. LFE
5. Left side
6. Right side





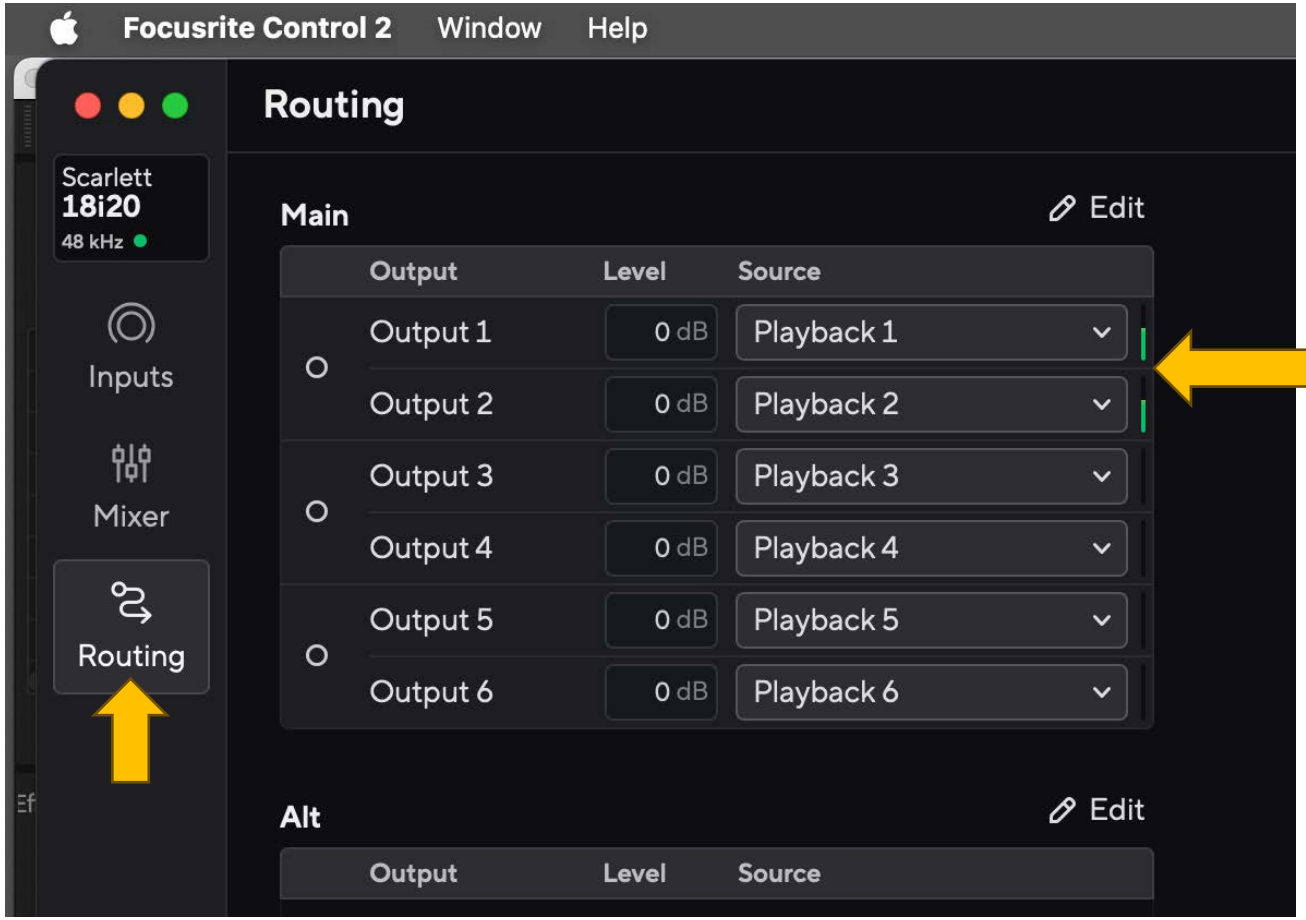
In the Focusrite Control 2 software Settings, the **Sample rate and clocking** settings should look like this.

First, pick the **sample rate** that matches your audio project.

Second, choose **internal** as the clock source.

Third choose **Dual ADAT** as the digital port mode.

Control 2 Software Routing Window

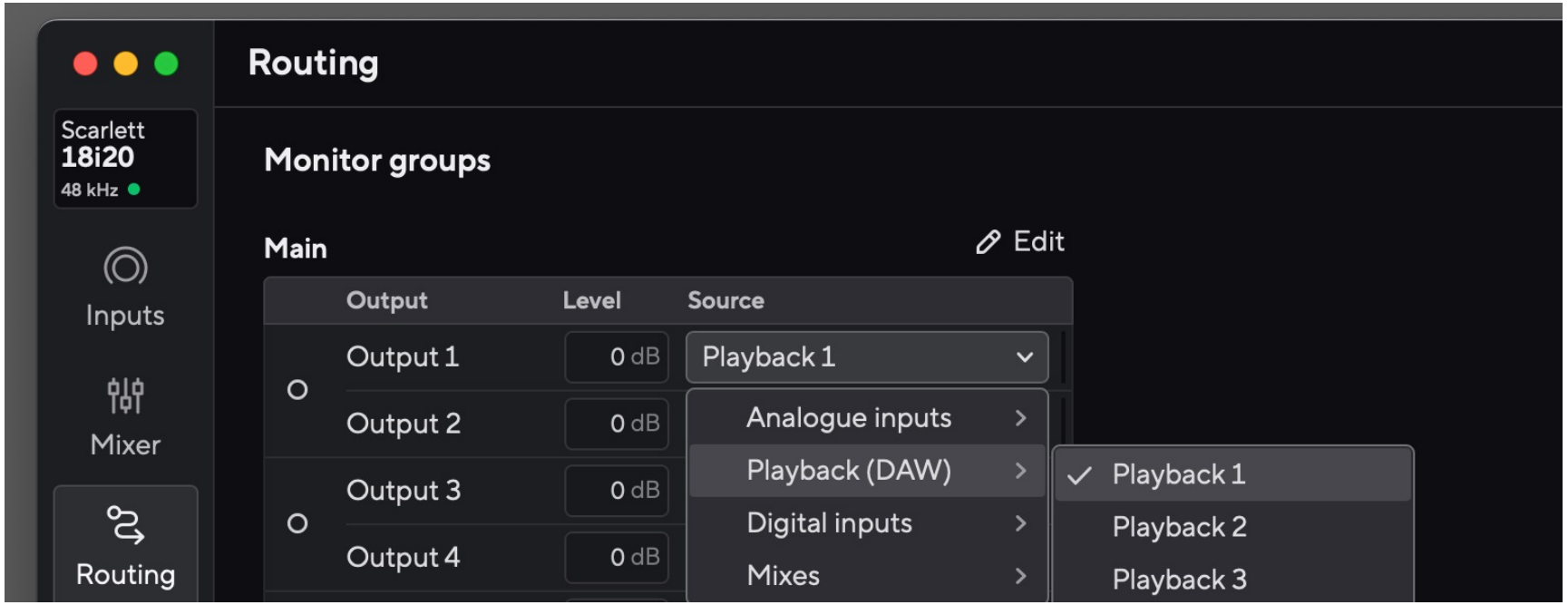


In the Control 2 software, the **Main** routing should look like this. Make these selections.

Here we have stereo playback from an audio project from the **Playback 1 and 2** sources.

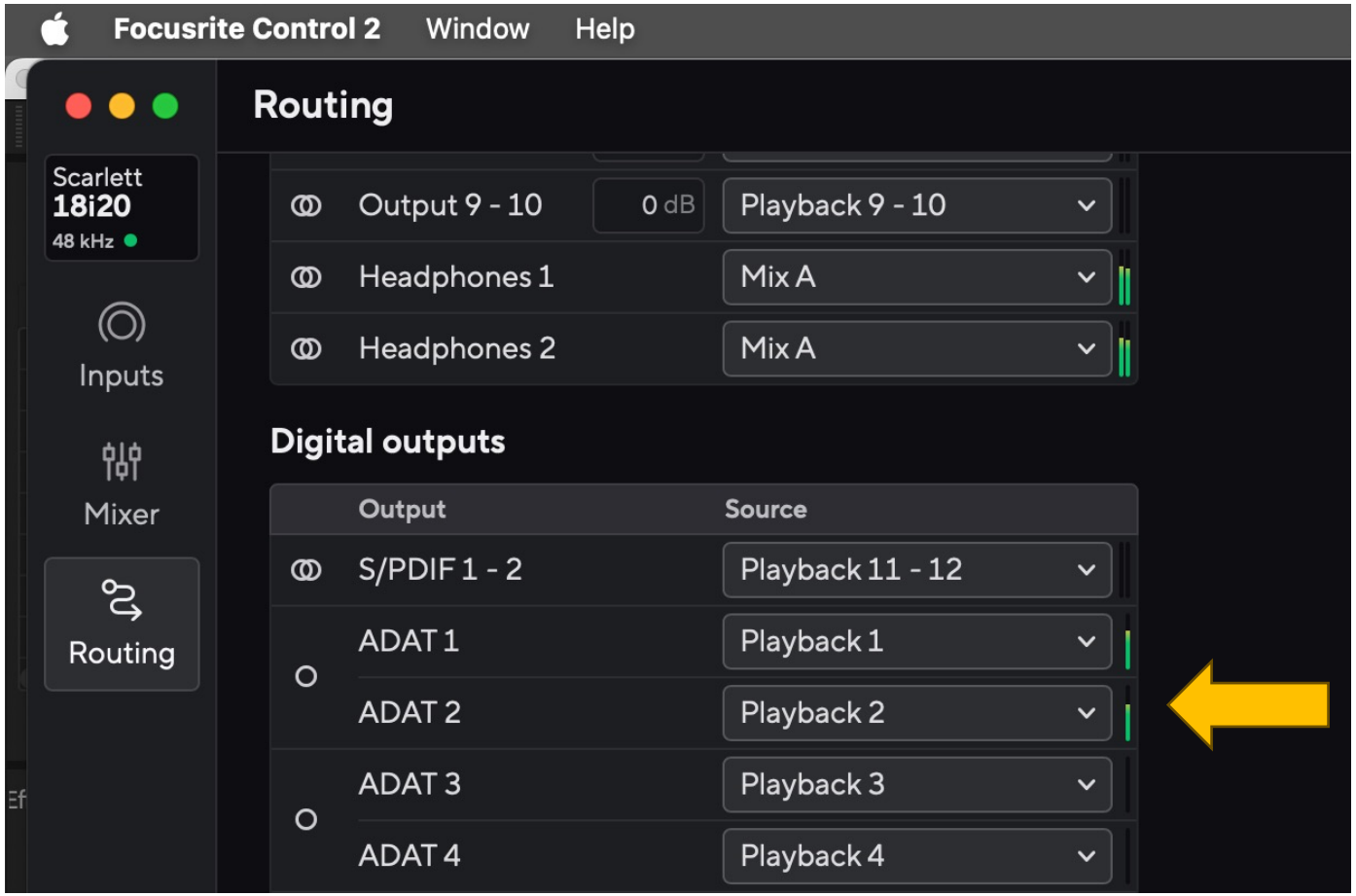
The **Outputs** should match the **Source** Playback numbers. If you don't see six outputs you can add outputs with the **edit** button.

Control 2 Routing Window



Here is how you select the source for each Main output. You must select the Playback(DAW) and the corresponding number.

ADAT Routing



Further down on the **Routing** window, you will see the same signal being played from the **ADAT 1 and 2 digital outputs** because they are set to **Playback 1 and 2**.

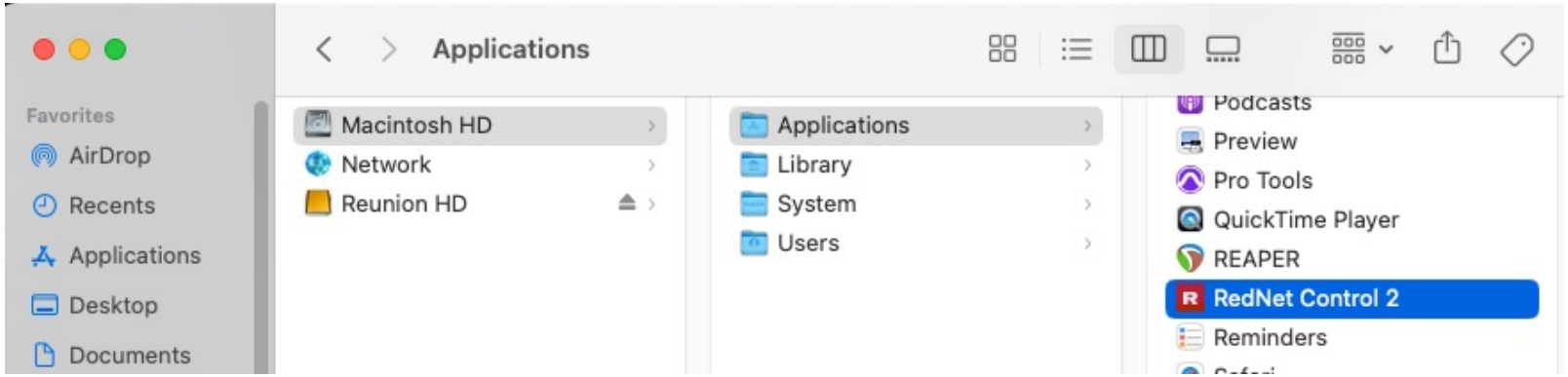
The Playback signal will be sent to the Red 16Line interface via ADAT.

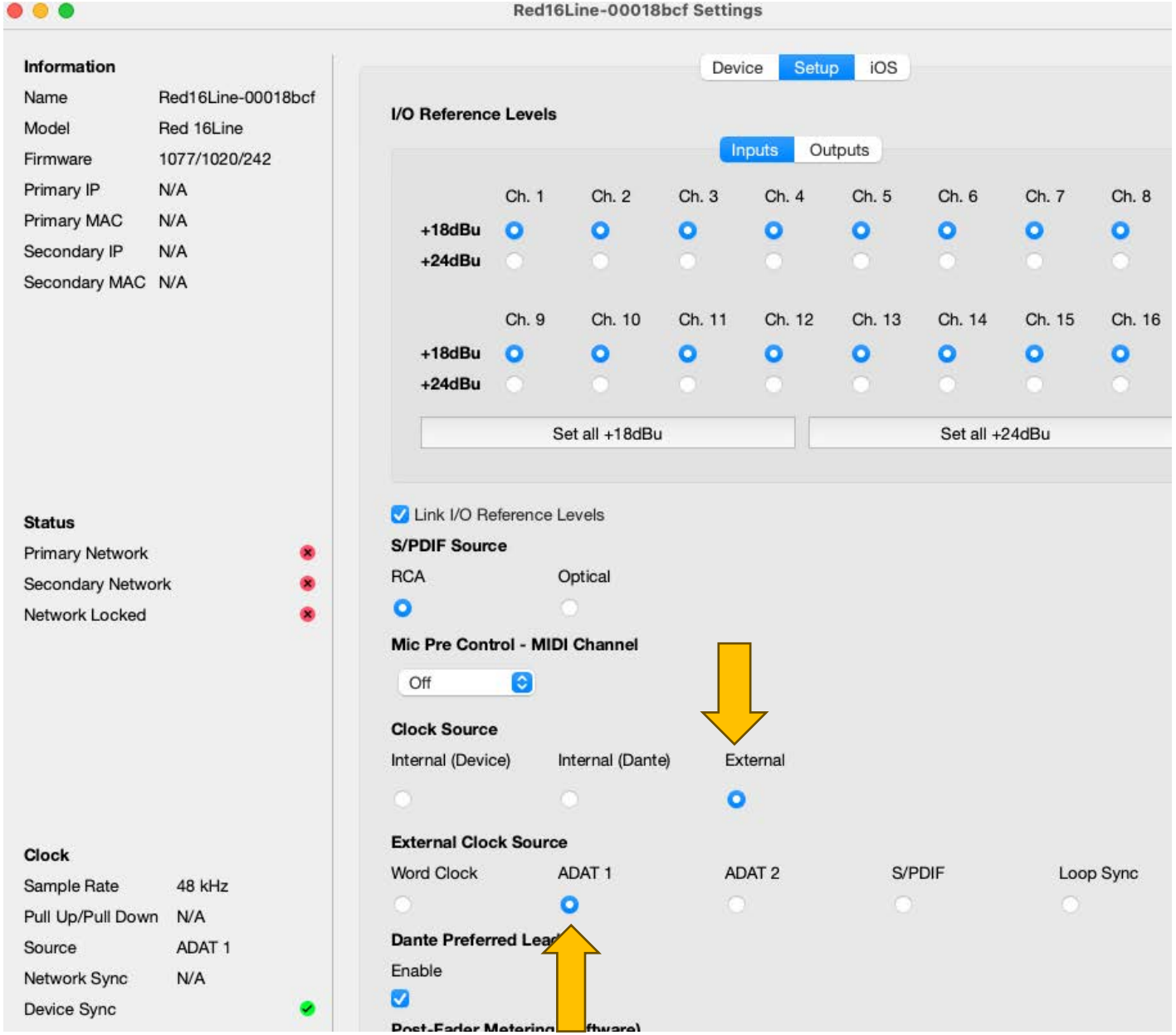
Once again, the ADAT **Output** numbers should match the **Source** Playback (DAW) numbers.

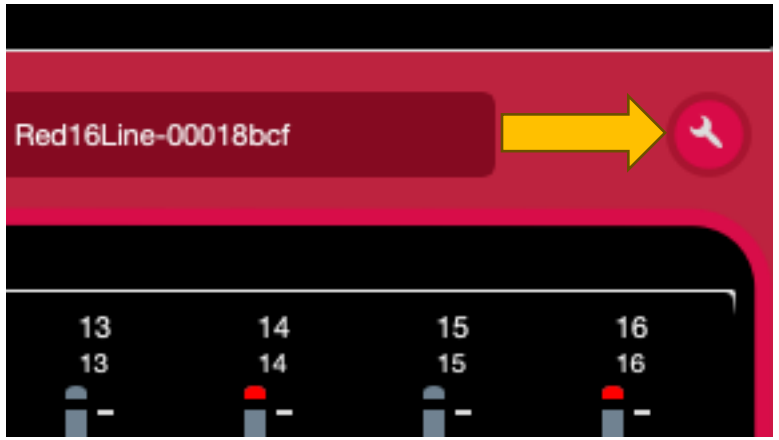
On the Studio computer:

On the studio computer, open the RedNet Control 2 software. This is the software that controls the Red 16Line interface. If you have never used this software before, look at the section of this guide on how to use it.

You must not be running any audio playback software on the studio computer that may want to use the Red 16Line. Only the GLM software and the RedNet Control software should be open.





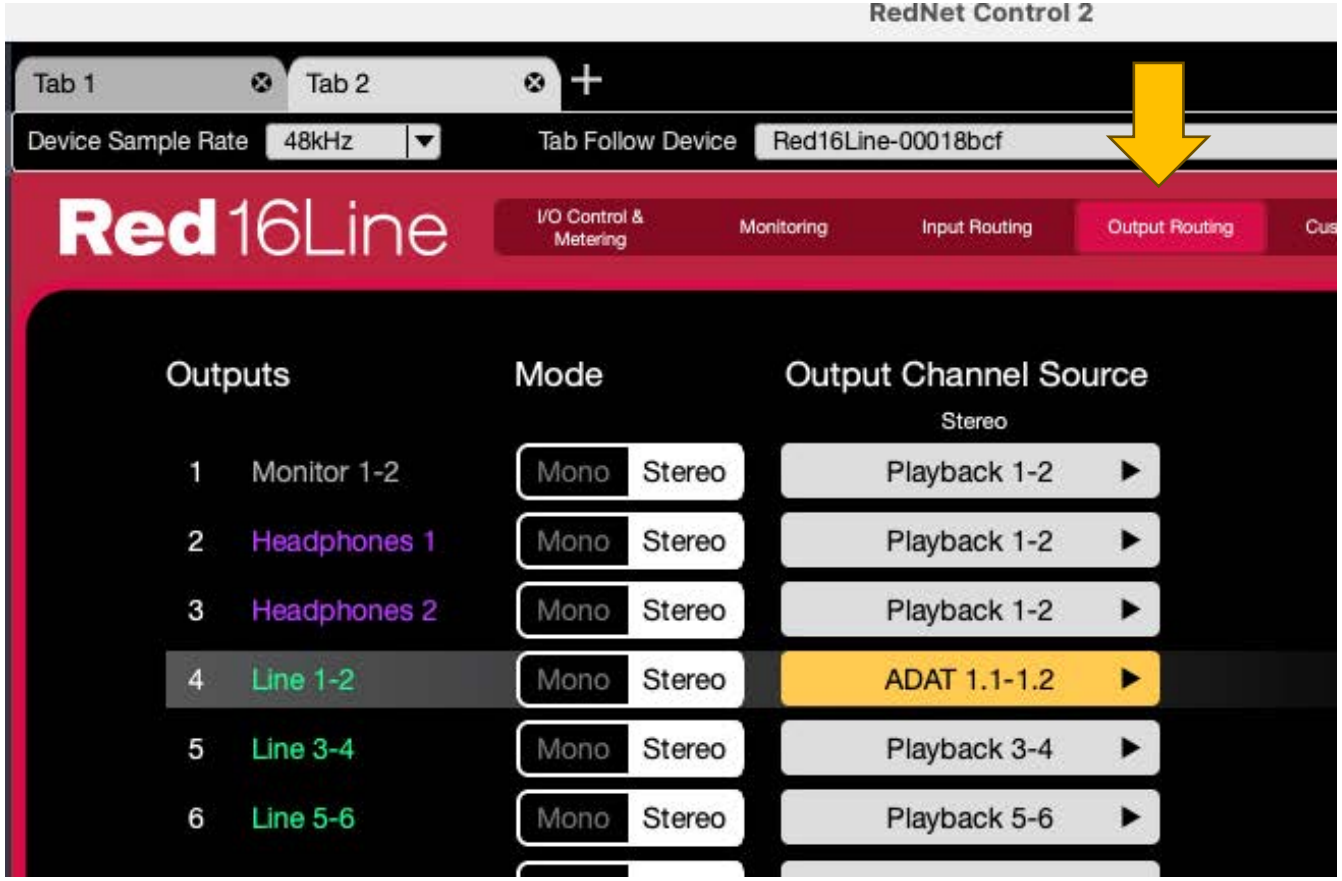


In th RedNet Control software, go to the settings with the tool icon in the top right. Go to **Settings/Setup/Inputs.**

Change the Clock Source to **External.**

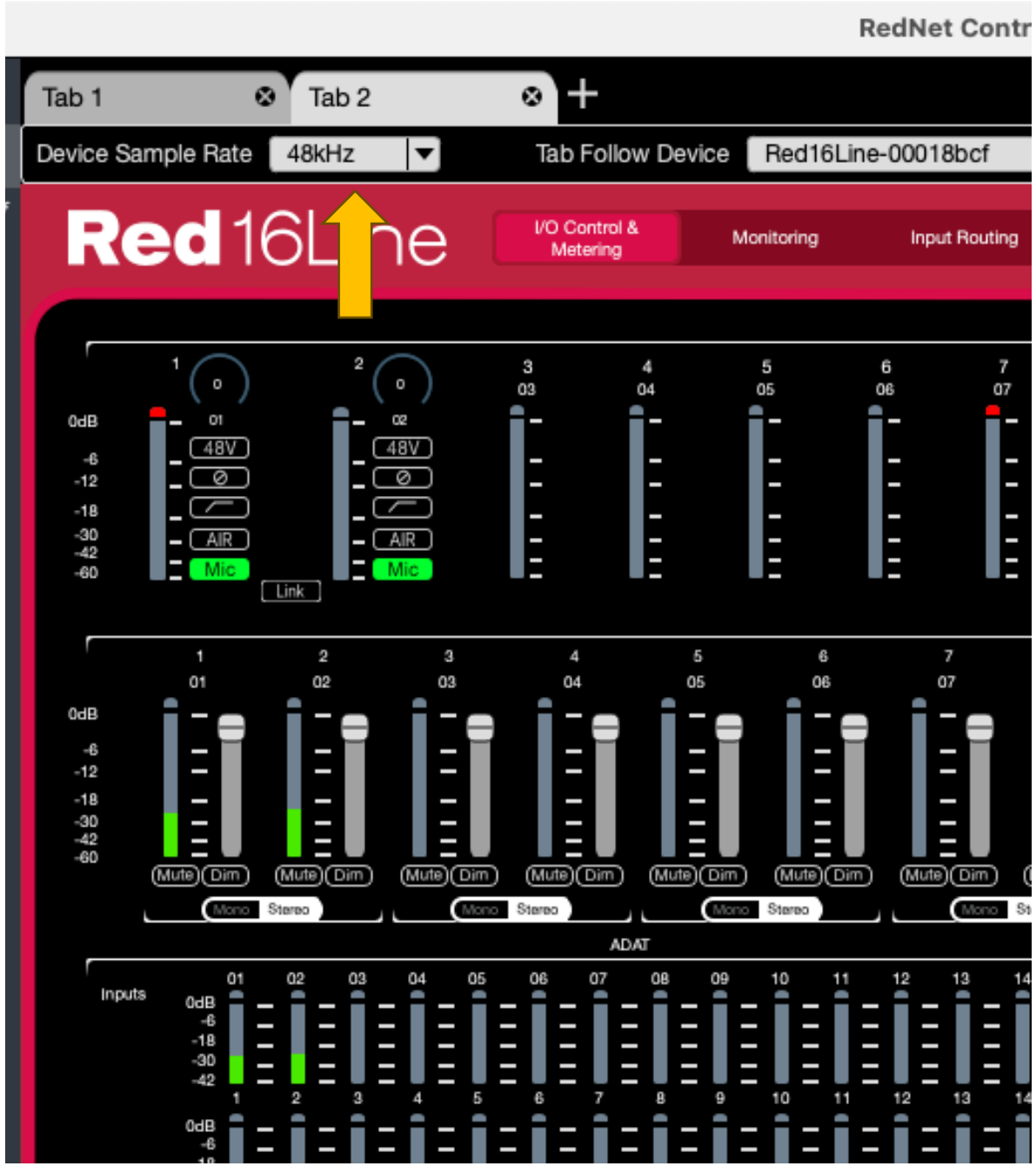
And the External Clock Source to **ADAT 1.** This is for stereo and surround.

RedNet Control Stereo Laptop Routing



Continuing in the RedNet Control 2 software, in the **output routing** window, change the output channel source for **Line 1-2** to **ADAT 1.1 -1.2.**

This will route your stereo laptop output directly to the speakers.

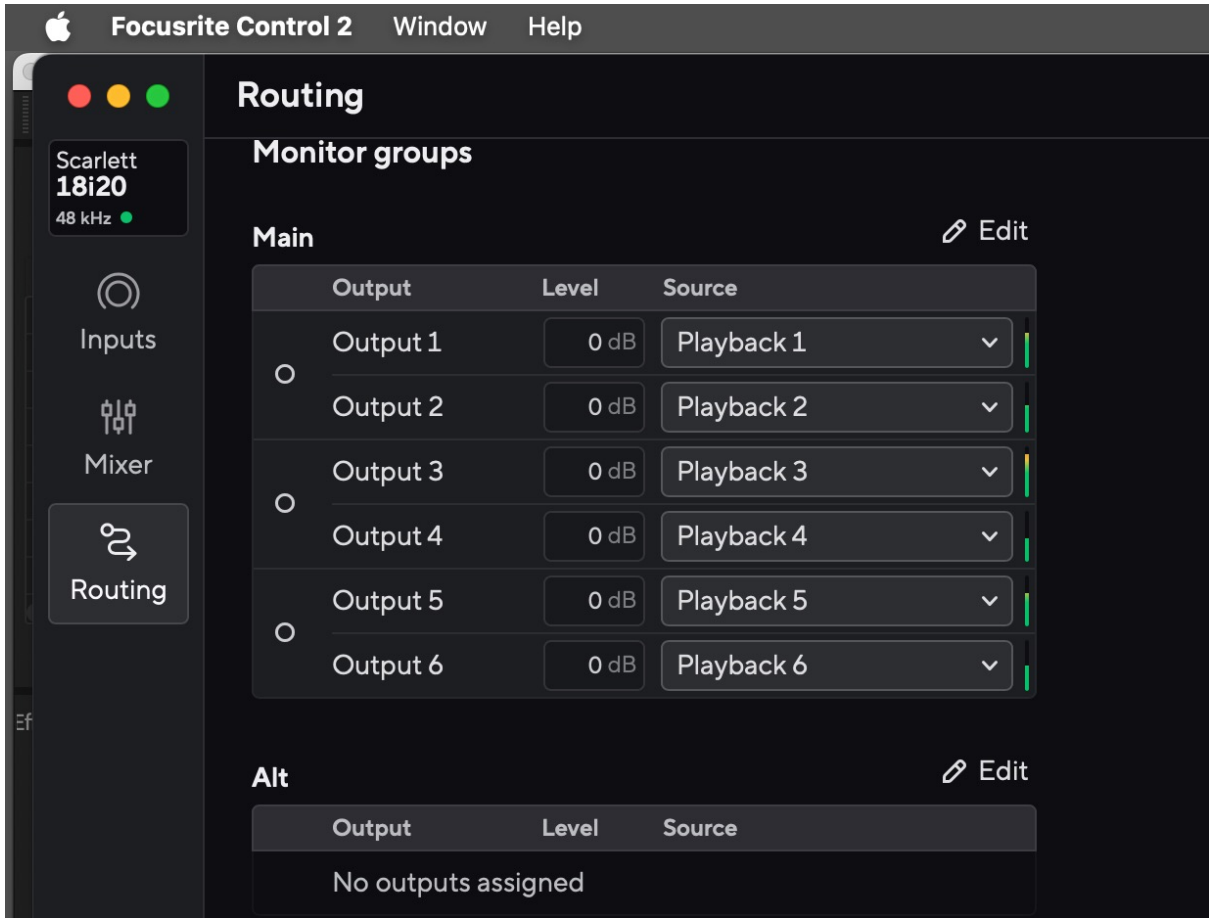


In the I/O Control and Monitoring window, make sure the sample rate matches the sample rate of your audio session on the laptop.

Here you can see the signal on the **ADAT inputs** 1 and 2 and then directed to the **analogue outputs** 1 and 2.

You should now be hearing audio on the studio speakers if the volume is up on the Genelec controller.

Surround Playback from a laptop

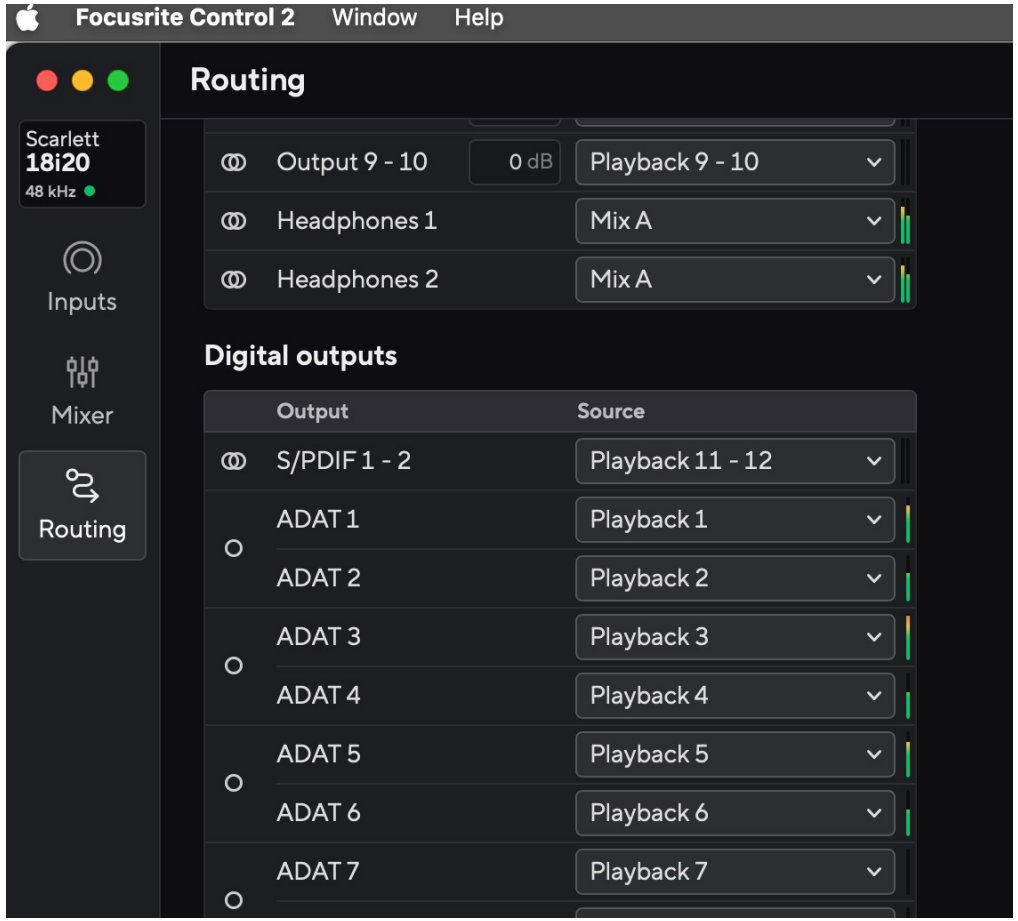


The procedure is the same for surround playback.

In the Focusrite Control 2 software on your laptop here are main **routing** settings showing signals on playback 1 to 6.

The **Output** numbers match the **Source Playback** numbers. You can add outputs with the edit button.

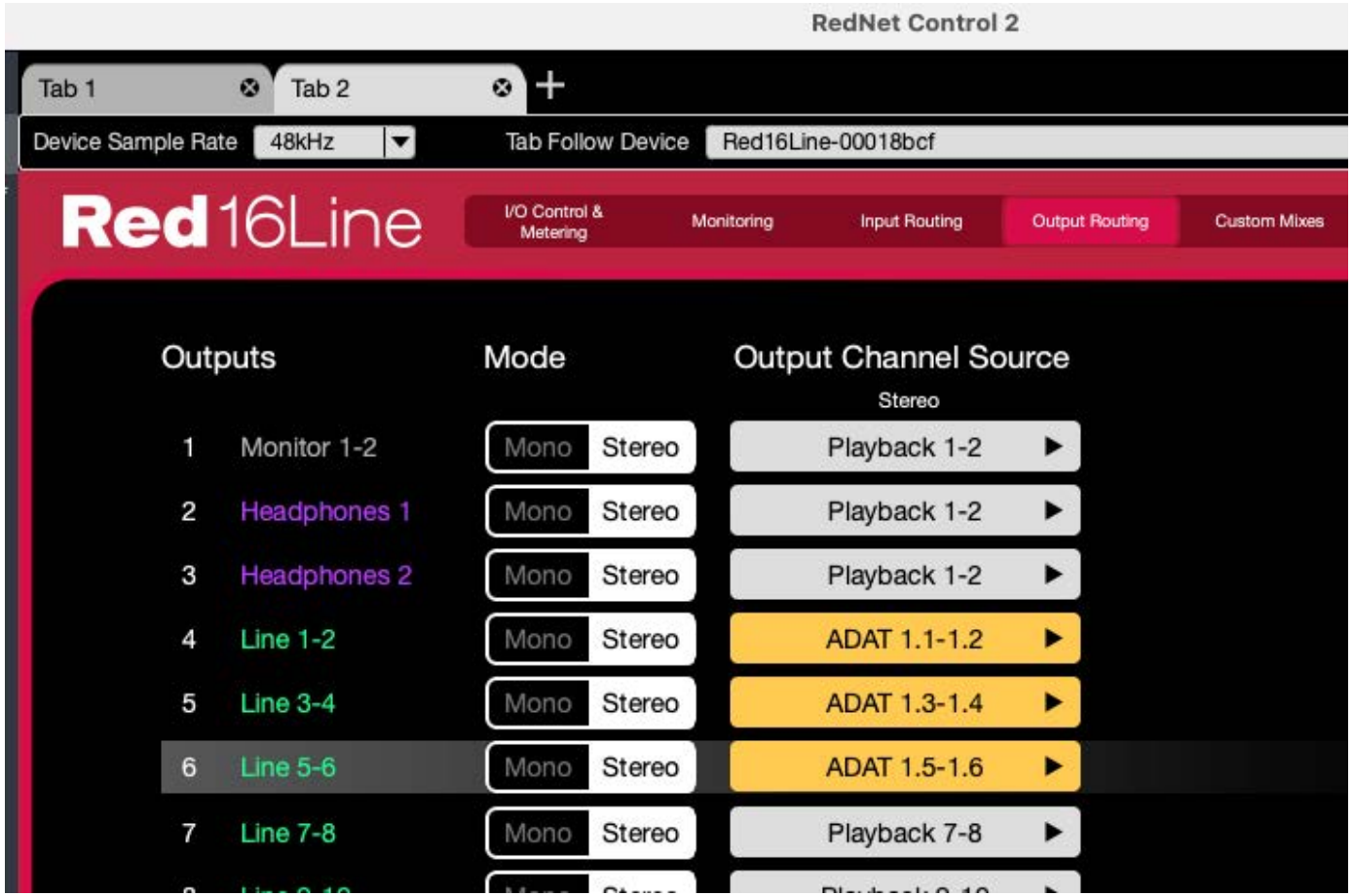
Surround Playback from a laptop



Further down that same **routing** page, the ADAT digital outputs show a signal being routed from Playback (DAW) 1 to 6 to the corresponding ADAT outputs.

Once again, the numbers of the **ADAT outputs** and the **Source Playback** correspond.

RedNet Control Laptop Surround Routing 48kHz

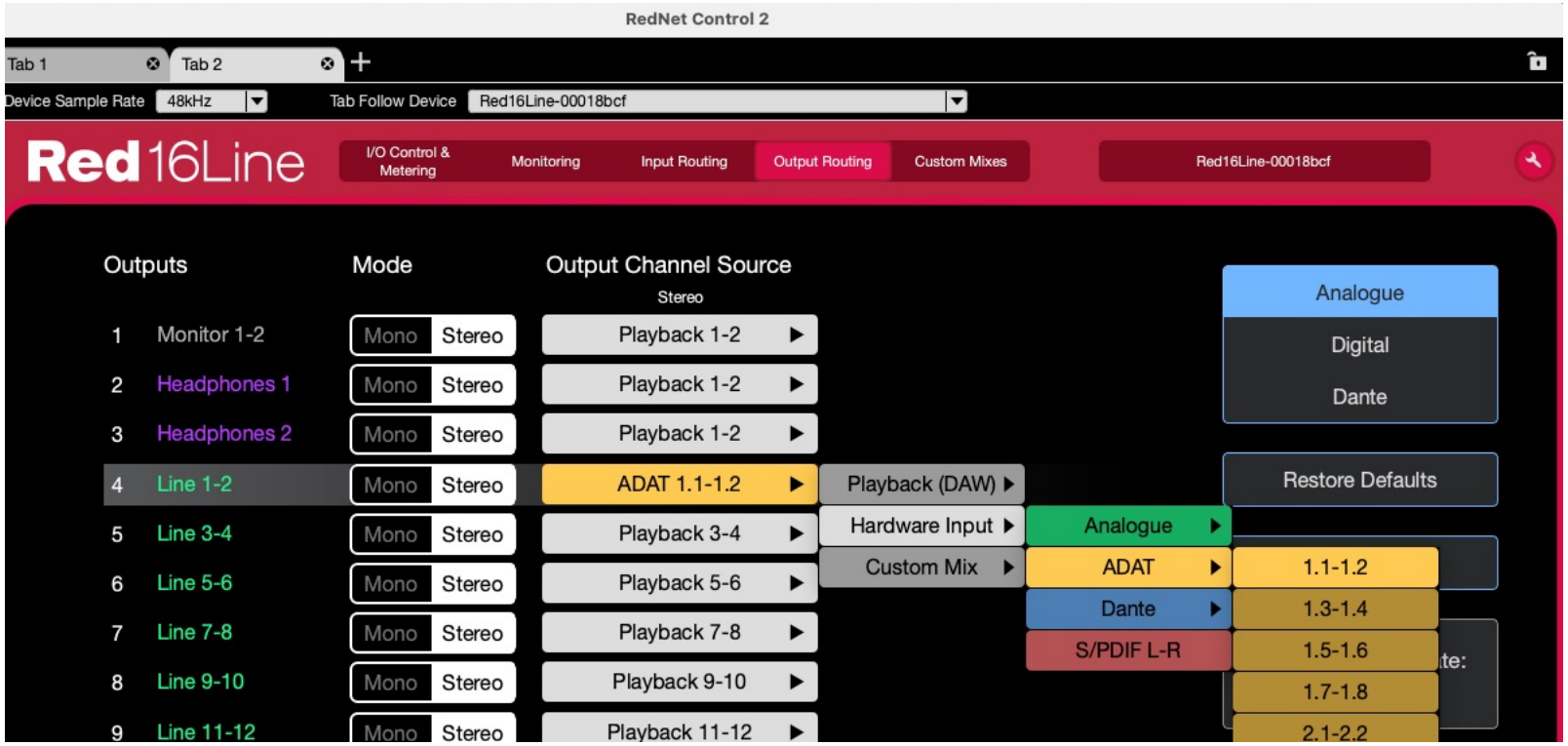


On the studio computer, in the RedNet Control software go to **Output Routing**.

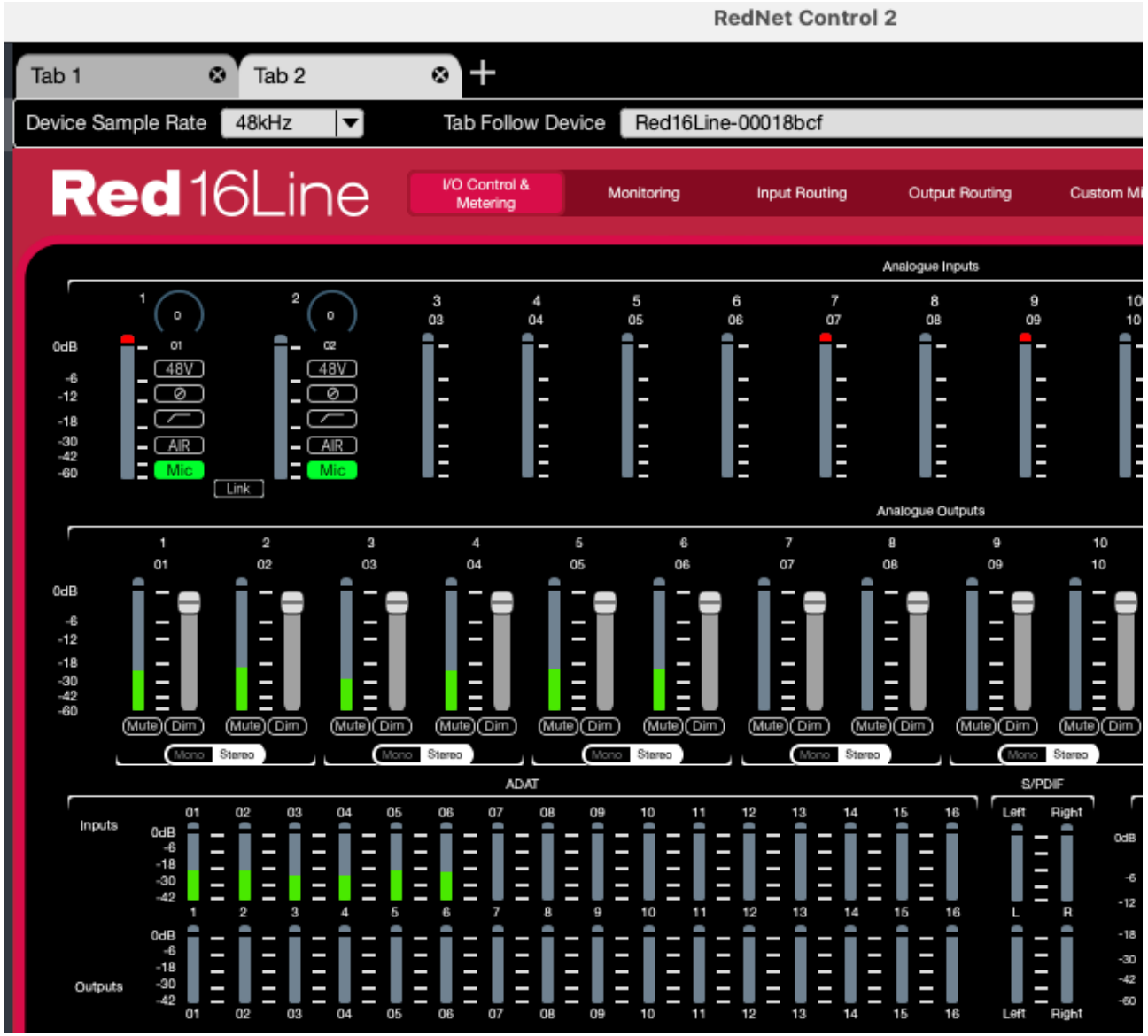
If you are working in Surround at **44.1 or 48 kHz** then the Output Routing should look like this. At these sample rates you are only using one ADAT port.

The next page shows how to make this selection.

RedNet Control Laptop Surround Output

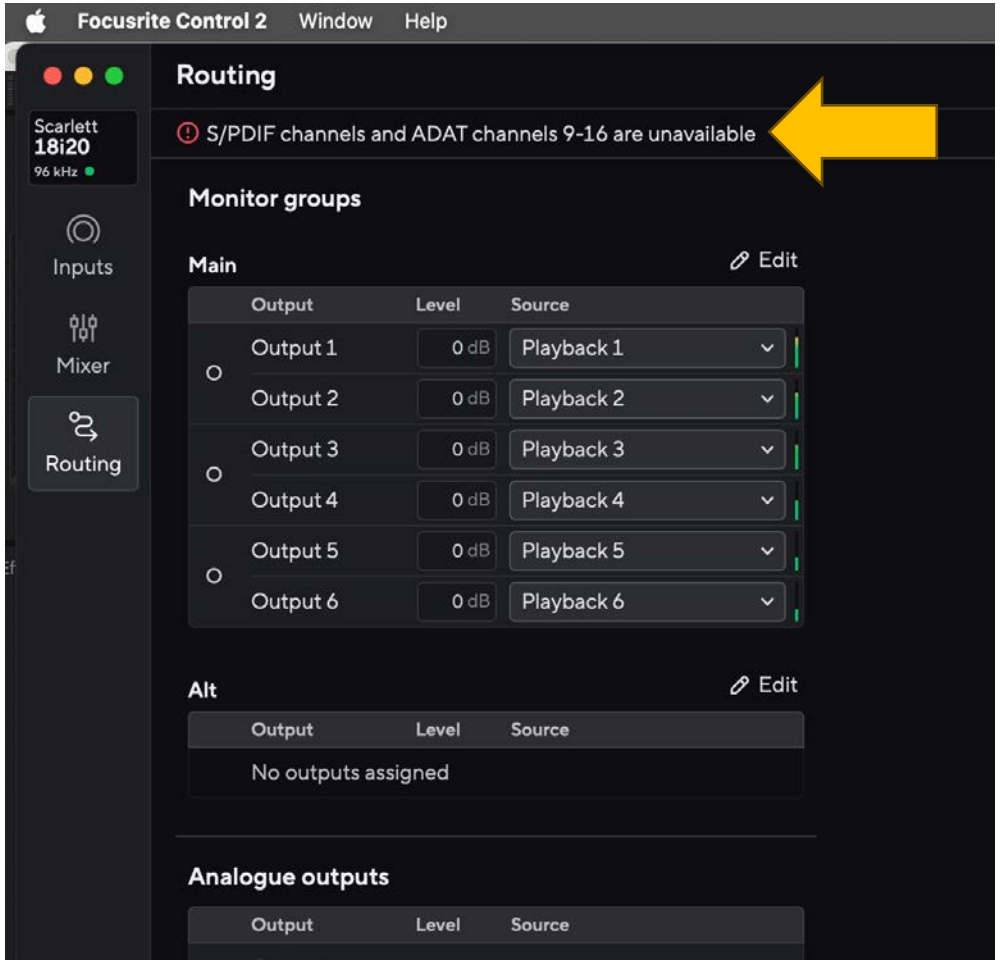


Each Line Output should be Hardware Input/ ADAT/ and the corresponding number. The first number is the ADAT port and the second number is the channel on that port. At 44.1 or 48 kHz you will be using channels 1.1 to 1.6.



And you should see the six channels of **ADAT input** being routed to the six **analogue outputs**.

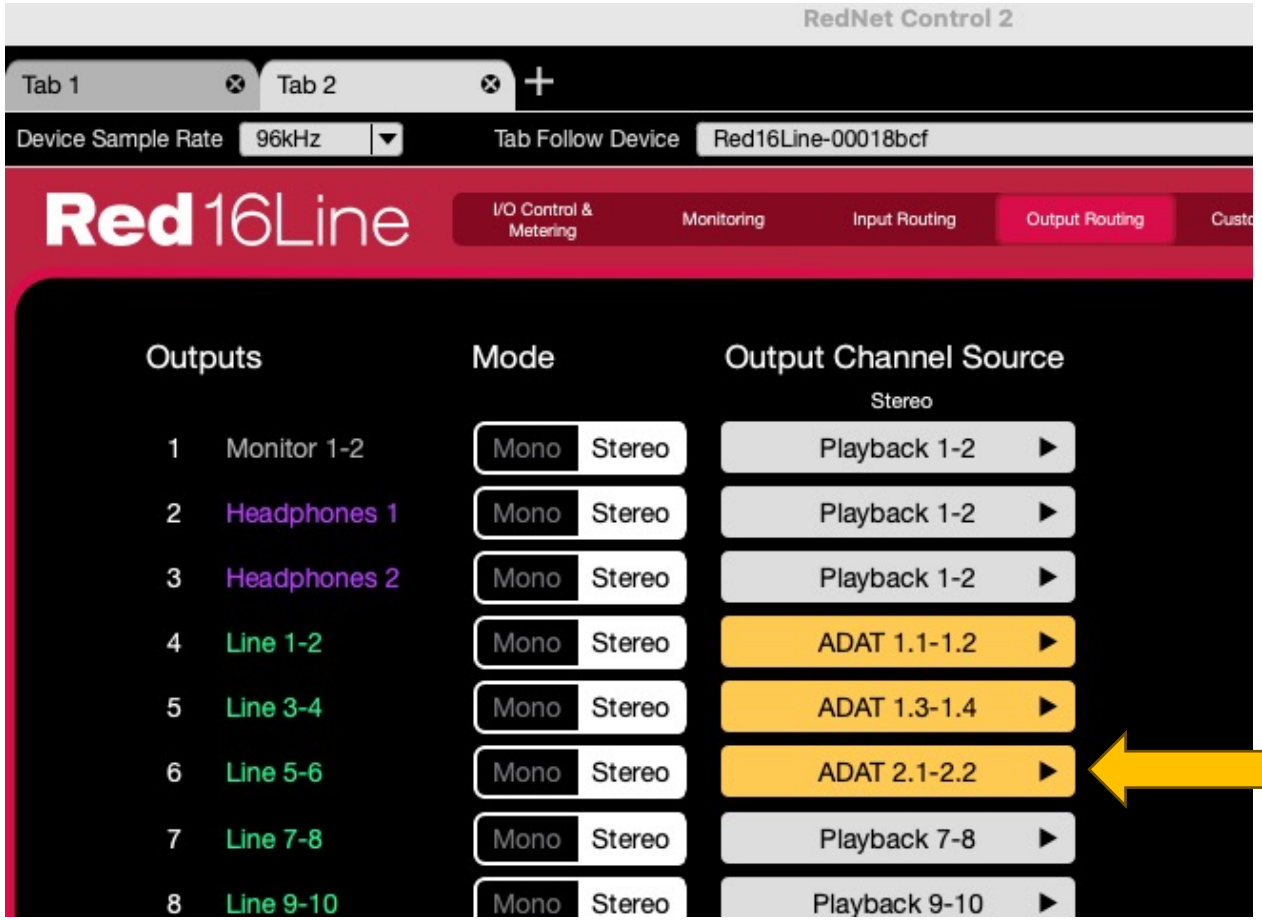
Surround Sound at 96 kHz



If you are working in a surround 96 kHz session, on your laptop, you will see a message at the top of the **routing** window in the Focusrite Control 2 software indicating that you are limited to 8 channels (4 per ADAT port).

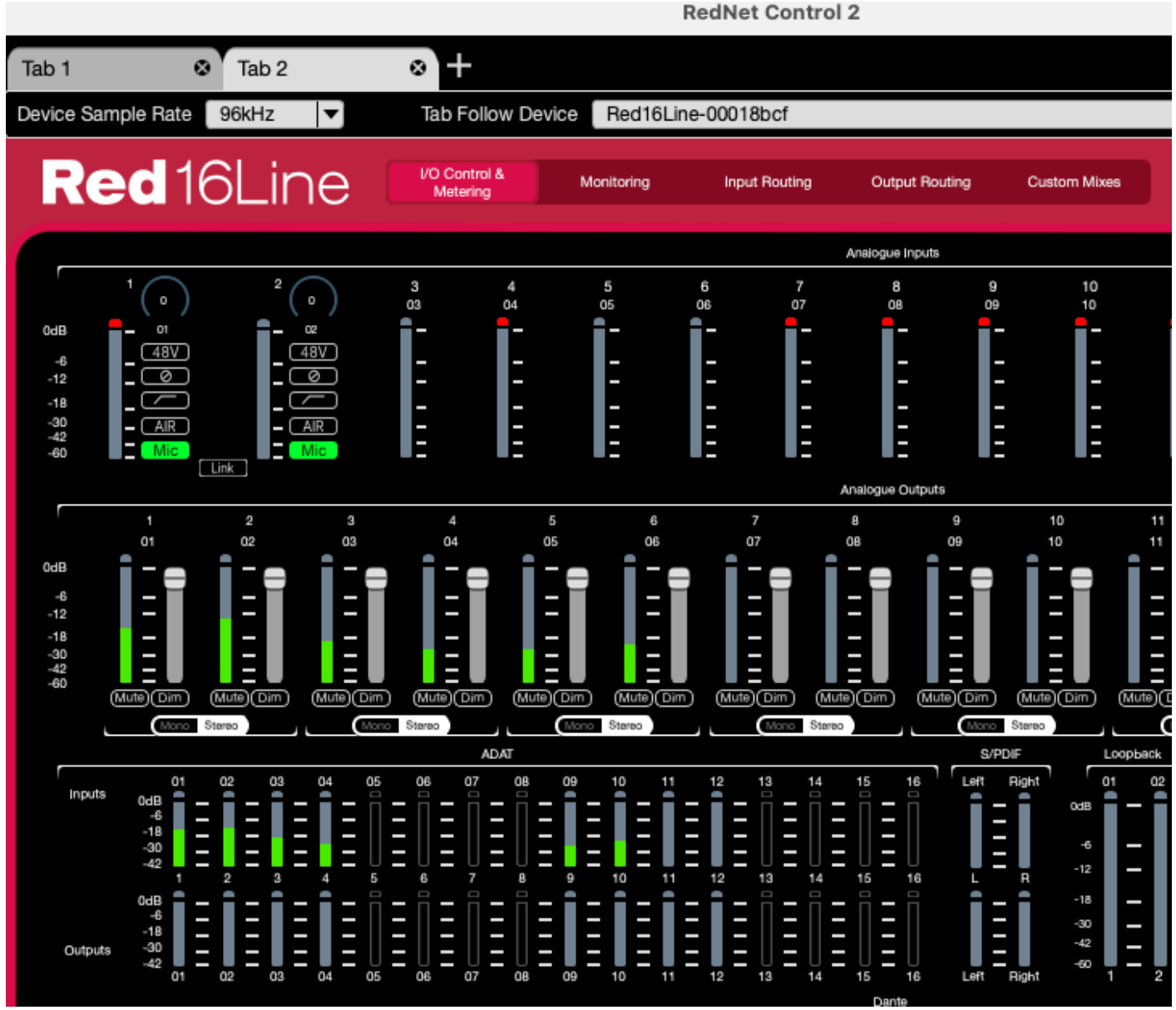
Otherwise, the **routing** page should have the same settings as explained in the previous section on surround at lower sample rates.

RedNet Control Laptop Surround Routing 96 kHz



On the studio computer, when working in surround at 96 kHz, select these **output channel source** settings in the **Output Routing** window of the RedNet Control software.

Line outputs 5-6 are using ADAT port 2: **channels 2.1 and 2.2.**



At 96 kHz, the input of the ADAT channels looks different. There is input on channels 1 to 4 and **9 and 10.**

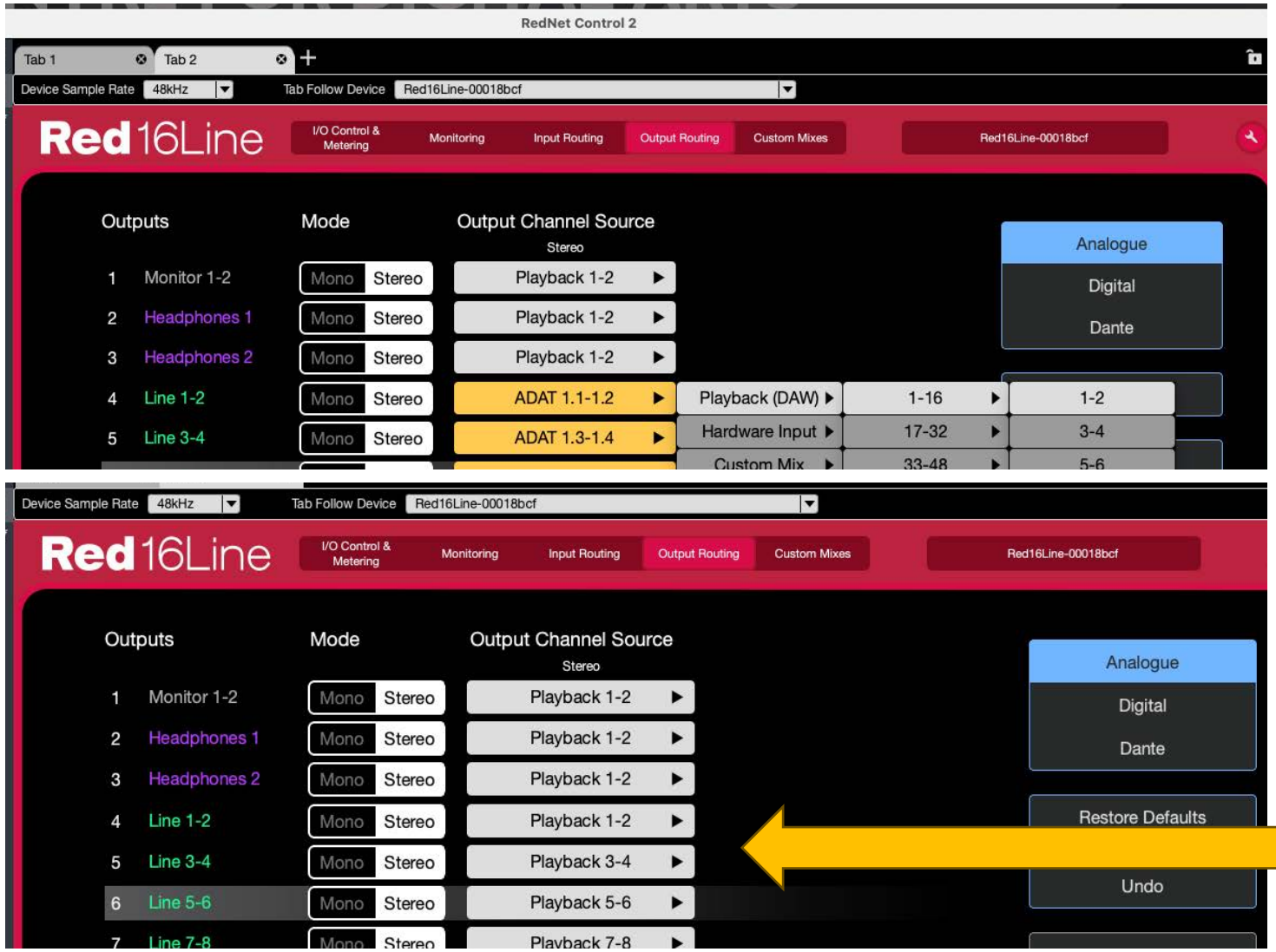
That is because at 96 kHz there is only four channels of input per ADAT connection.

The Red 16Line ADAT inputs 9-10 are the audio playback channels 5-6 from your laptop.

Hardware Monitoring ADAT input

You can monitor the ADAT inputs and Analogue outputs on the Red 16Line front windows. On the left side, press the OUTPUT button to see analogue outputs 1 to 8 in the first window. On the right side press the METER button and use the knob to scroll down to ADAT inputs 1 to 8. Those inputs will appear in the second window.

Reset the output routing when you are finished

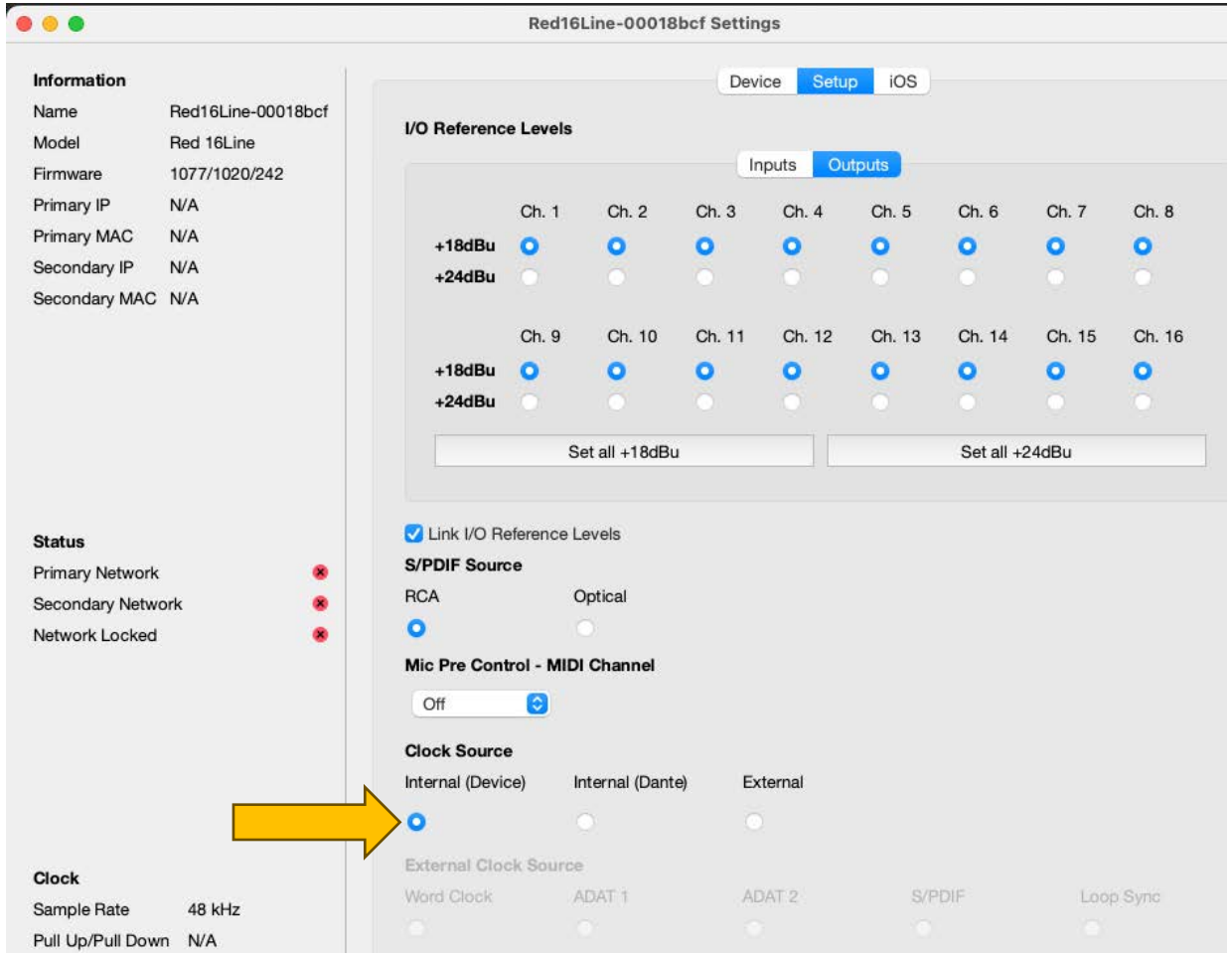


Be considerate of the next user.

Reset the Output Routing back to the default Output Channel Sources when you are finished.

These are the defaults for studio computer playback. Line outputs 1 to 6 have the corresponding Playback(DAW) channel sources.

Reset the Clock Source when finished



In Settings/Setup reset the **clock source** to **Internal (Device)**.

Thank you!

Thank you for reading this guide!

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