

How To: SoundLab

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1 Getting Started

Before touching any equipment, please review the core rules of the Sound Lab.

- **Wrap Cables Properly.** Return cables neatly after use.
- **Leave the room as you found it (or cleaner if you want).**
- **Report any Issues.** Let the SoundLab team know if something is broken, missing, or behaving unexpectedly.

Before You Start

A few simple checks can prevent most problems:

- Keep the **monitor volume low** when first powering up or changing connections.
- Check that the correct equipment is powered on and that all required cables are connected.
- Check that the correct **input and output** are selected in your DAW before recording or monitoring.
- When using a microphone, check whether it requires **48V Phantom Power** before enabling it.
- Start playback or monitoring at a low volume and increase it gradually.
- If you are unsure about a connection or routing change, ask before unplugging or repatching equipment.

2 Powering Up and Down

2.1 How to Turn the Studio ON

Rule of thumb: Speakers turn on last.

1. **Computer:** Turn on the Mac Studio/iMac.
2. **Audio Interface:** Turn on the main audio interface as well as both Focusrite interfaces in the rack.
3. **Outboard Gear** Turn on external synthesizers if needed.
4. **Studio Monitors: Finally**, flip the power switches on the front of the left and right studio monitors (Speakers).

2.2 How to Turn the Studio OFF

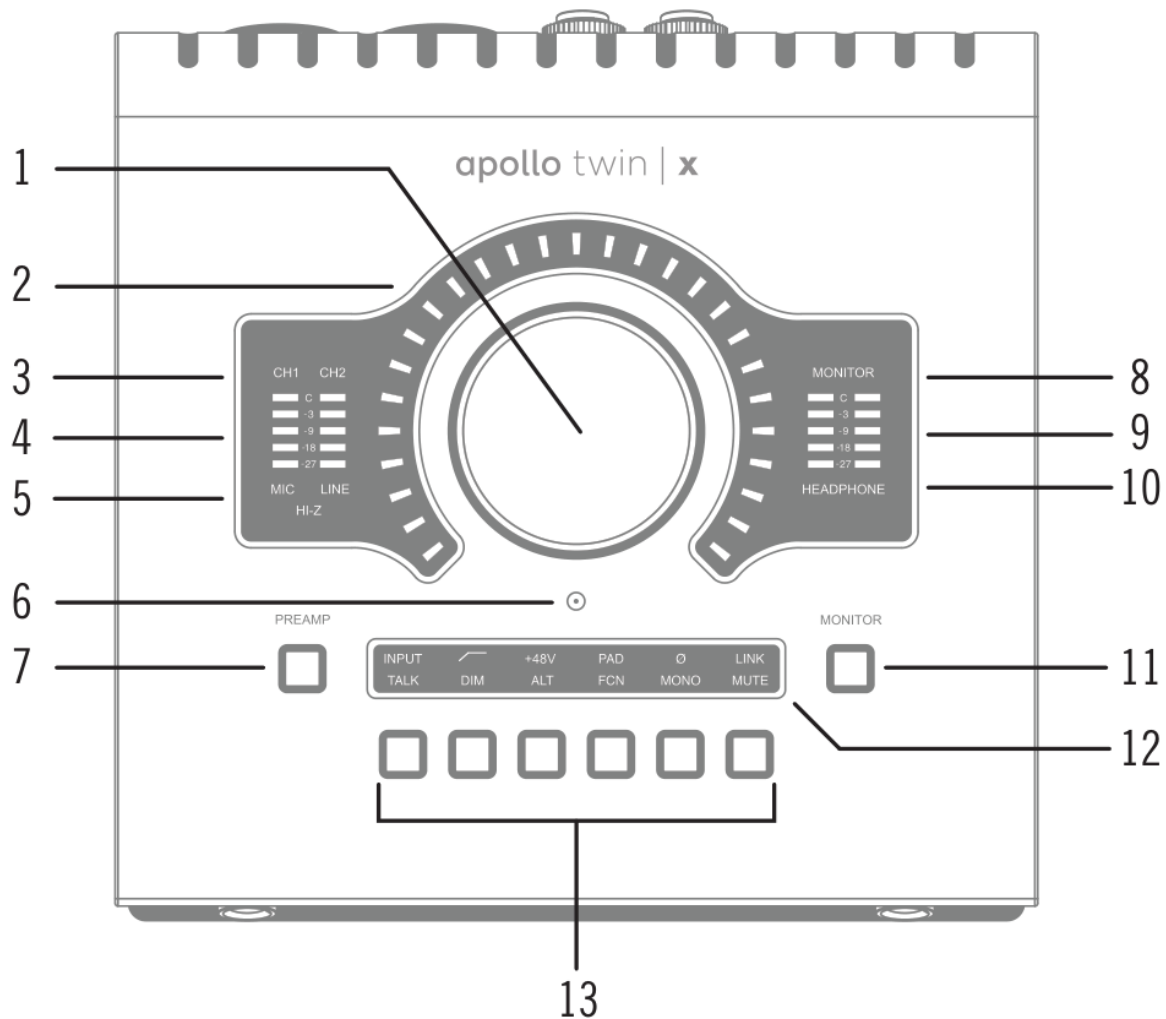
Rule of thumb: Speakers turn off first.

1. **Studio Monitors:** Turn off the left and right studio monitors **before doing anything else**.
2. **Outboard Gear** Turn off the synths.
3. **Audio Interface:** Power down the audio interfaces.
4. **Computer:** Shut down the Mac (Optional)

IMPORTANT: The same applies to the DJ station, make sure to turn on the mixer before the speakers to avoid any pops.

3 Universal Audio Apollo Twin X & Sphere LX

The main interface is the **Universal Audio Apollo Twin X**. It is the main interface used for microphones, instruments, monitoring, and routing audio between the computer and the studio. Universal Audio's documentation describes the Apollo as both an audio interface and a monitor controller, with the UAD Console software handling routing and input monitoring.



Top panel elements

Figure 1: Apollo Twin X top-panel controls (from the Apollo Twin X Hardware Manual, p. 22).

3.1 Using the Apollo Twin X

The large knob on the Apollo Twin X controls input gain (when recording), output volume (to the speakers), and headphone volume.

1. **Select Preamp Mode:** Press the **PREAMP** button on the interface.
2. **Adjust Gain:** Turn the large knob to increase or decrease the microphone gain.

3. **Select Monitor Mode:** Press the **MONITOR** button until the **MONITOR** indicator is lit. The large knob now controls the volume of the studio monitors.
4. **Adjust Headphone Volume:** Press the **MONITOR** button again to toggle to Headphone mode (the **HEADPHONES** indicator will light up). The large knob now controls the volume of the headphones plugged into the front panel.

Basic Gain Staging

Gain staging means keeping the signal at an appropriate level throughout the recording chain.

- **Input Gain:** Controls how strongly the incoming microphone or instrument signal is amplified before it reaches the DAW.
- **Monitor Volume:** Controls how loudly the signal is played through the speakers. It does *not* change the recorded level.
- **Headphone Volume:** Controls the headphone listening level. It also does *not* change the recorded level.

When setting the input gain, aim for a clear signal with enough **headroom** for louder parts of the performance. Avoid clipping or red/overload indicators on the interface or in the DAW.

WARNING: Do not use the monitor or headphone volume to compensate for a recording signal that is too weak. Adjust the **input gain** instead.

A good habit is to start with a low input gain, play the loudest part of the source, and increase the gain until the signal is healthy without clipping.

Basic Recording Workflow

For most recording tasks, the Apollo can be used in the following order:

1. **Connect the source:** Connect a microphone or line-level instrument to the appropriate Apollo input.
2. **Select the input:** Press **PREAMP** and select the channel you want to adjust.
3. **Set the input type:** Select **MIC** for a microphone or **LINE** for line-level equipment. For an electric guitar or bass, use the front-panel **Hi-Z** input.
4. **Enable 48V if required:** Condenser microphones generally require phantom power. Make sure the channel is muted and the gain is low before changing phantom power.
5. **Set the gain:** Play or sing at the loudest expected level and increase the gain until you have a healthy signal without clipping.
6. **Check the DAW:** Select the corresponding Apollo input on your recording track and arm the track.
7. **Set monitoring volume separately:** Press **MONITOR** and use the Level knob to set the speaker level. Press **MONITOR** again to control headphone volume.

IMPORTANT: The Apollo's **input gain** and **monitor volume** are different controls. Changing the monitor volume does not change the level being recorded.

UAD Console

The **UAD Console** application is used to control Apollo's input monitoring, routing, and realtime UAD processing. It is separate from the DAW: the DAW records and plays back your project, while Console provides the Apollo-specific mixer and monitoring path.

For a basic recording session, you normally only need to check that:

- the correct Apollo input is receiving signal;
- the input is not muted;
- input monitoring is routed where you expect it;
- any UAD plug-ins used for realtime monitoring are inserted on the correct input.

Common Connections

- **Microphone:** Connect the microphone to Mic/Line Input 1 or 2 on the rear panel using an XLR cable.
- **Guitar / Bass:** Connect directly to the front-panel Hi-Z input using a 1/4" TS cable.
- **Studio Monitors:** Connect the left and right monitors to the Apollo Monitor Outputs.
- **Outboard Gear:** Line Outputs 3 and 4 can be used to send audio from the computer to external equipment, depending on the studio's patch-bay configuration.

Good to know: The front-panel Hi-Z input overrides the Channel 1 mic/line input. If you need to use a microphone on Channel 1 at the same time, use the studio's Focusrite inputs instead.

3.2 Setting up the Sphere LX Microphone

The Sphere LX is a dual-capsule modeling microphone that allows you to emulate various classic microphones after recording. Because it has two capsules, it requires **two inputs** on the Apollo interface and **phantom power**.

Crucial Step: Linking the Channels For the Sphere LX software to work correctly, Inputs 1 and 2 on the Apollo Twin X **must be linked** so their gain is exactly the same.

1. Make sure the interface is in Preamp mode (press the **PREAMP** button)
2. Press the physical **LINK** button on the front panel of the interface. This will instantly link Input 1 and Input 2 together.
3. Once linked, adjust the gain using the large knob. You will see the LED volume rings for both channels moving simultaneously.
4. **Turn on 48V Phantom Power** should be on by default, the **+48V** indicator in the interface should be glowing otherwise press the **+48V** button on the hardware interface.
5. In your DAW, place the **Sphere** plugin on the stereo track you are recording to.

IMPORTANT: On the Apollo Twin X, if an instrument is connected through the front jack the Mic will be disabled. It is recommended to use the Focusrite inputs, so to not have to plug and unplug so much if you're using the microphone as well.

4 Setting up the DAW

The SoundLab computers are equipped with Logic Pro and Ableton Live. When you start a new session, you must ensure the DAW is communicating with the studio's audio interface.

4.1 Logic Pro Setup

1. Open Logic Pro from the dock.
2. Create an "Empty Project".
3. When prompted to create a new track, select **Audio** for microphones/instruments, or **Software Instrument** for MIDI keyboards.
4. Go to the top menu bar: **Logic Pro** → **Settings** → **Audio...**
5. Make sure both the **Output Device** and **Input Device** are set to Use This Audio Device.
6. Click **Apply Changes** and close the window.

To record enable a track, click the small **[R]** button on the track header so it flashes red. Click the **[I]** button (Input Monitoring) to hear yourself before you press record.

4.2 Ableton Live Setup

1. Open Ableton Live from the dock.
2. Go to the top menu bar: **Live** → **Settings...** (or press Cmd + ,).
3. Navigate to the **Audio** tab on the left.
4. Set the **Driver Type** to CoreAudio.
5. Make sure the **Audio Input Device** and **Audio Output Device** are set to Use this Audio Device.
6. Close the preferences window.

To record in Ableton, ensure you are in the Session or Arrangement view. Click the **Arm Session Recording** button (the small circle on the right side of the track) so it turns red. Make sure the track's Monitor setting is set to **Auto** or **In** to hear your signal.

5 Studio Audio Input Reference

This section is a general reference for choosing the correct studio input. The table documents the current SoundLab source-to-channel routing. The two Focusrite units are identified by their rack positions: **Top** is the upper unit and **Bottom** is the lower unit.

When recording, select the input channel or stereo pair listed for the source. The exact menu layout can differ between DAWs, so use the channel number(s) and whether the source is mono or stereo as the main reference. Make sure the DAW is using the studio's configured audio input device.

Connecting an Instrument to a Front Input

You can connect an instrument to either of the two front-facing inputs on either Focusrite interface in the rack. Use the rack position to identify the unit: **Top** is the upper Focusrite and **Bottom** is the lower Focusrite. In the DAW, select the matching input listed in the table below.

Check the input level before recording: Play the instrument at its loudest expected level and watch the indicator for the relevant Focusrite input. The input indicator should not turn red. If it turns red, lower the gain using the knob for that channel until the signal no longer clips and the indicator stays green during normal playing. Repeat for the other channel if you are using both inputs.

Input channel(s)	Source label	Physical source / notes
1	Input 1 (Top)	Input 1 on the front of the upper Focusrite unit; mono.
2	Input 2 (Top)	Input 2 on the front of the upper Focusrite unit; mono.
3/4	Rytm MK2	Elektron Analog Rytm MKII; stereo pair. The Digitone is connected to the Rytm's external input, so both instruments share this DAW input pair under the current routing.
5	Mother 32	Moog Mother-32; mono.
6	Minilogue	Korg Minilogue; mono.
7	Model D	Behringer Model D; mono.
8	SubPhatty	Moog Sub Phatty; mono.
9/10	Sphere LX Mic	Sphere LX microphone; stereo pair using two input channels.
17	Input 1 (Bottom)	Input 1 on the front of the lower Focusrite unit; mono.
18	Input 2 (Bottom)	Input 2 on the front of the lower Focusrite unit; mono.
19/20	Octatrack	Elektron Octatrack; stereo pair.
21	Reverb	Reverb unit; mono input as labelled in the current routing.
22	TD-17 Drumset	Roland TD-17 electronic drum kit; mono audio input. The kit also sends MIDI data for use with drum plugins; pad-to-note mapping is not guaranteed to match every plugin 1:1.
23/24	MPC One+	Akai MPC One+; stereo pair.

Table 1: SoundLab input channel reference for the current routing configuration.

Digitone routing note: To conserve interface inputs, the Digitone is currently connected to the external input of the Analog Rytm MKII. Its audio therefore reaches the DAW together with the Rytm through inputs 3/4. With this routing, the Digitone and Rytm are not available as separate DAW input sources.

MIDI keyboard note: The Akai MPK88 is a MIDI-only controller and is therefore not listed as an audio input. Use a MIDI track with a software instrument in Ableton Live, or a Software Instrument track in Logic Pro.

Important: This table documents the current routing, not a permanent hardware guarantee. If cables or routing are changed, update the table. If you do not receive a signal, check the physical connection and the selected DAW input before changing other settings.

6 MIDI Routing with the Arturia KeyStep Pro

The Arturia KeyStep Pro can send MIDI notes and control messages to hardware instruments. MIDI channels are separate from the audio input numbers in the previous section: MIDI determines which instrument receives performance data, while audio input numbers determine which sound reaches the DAW.

6.1 MIDI Channel Reference

In the SoundLab setup, each instrument is assigned its own intended MIDI receive channel. This makes it possible to address devices separately, provided the sending track is set to the destination's channel and the receiving device is configured accordingly.

Destination	MIDI channel	Notes
Moog Sub Phatty	1	Intended channel for controlling the Sub Phatty.
Elektron Digitone	2	Intended channel for controlling the Digitone.
Korg Minilogue	3	Intended channel for controlling the Minilogue.
Moog Mother-32	4	Intended channel for controlling the Mother-32.
Behringer Model D	5	To control this device from the KeyStep Pro, assign a KeyStep Pro track to MIDI channel 5.
Akai MPC One+	15 (Drum mode)	On the KeyStep Pro Drum track, the first 16 notes correspond to the MPC's 16 pads.

Table 2: SoundLab MIDI destination channels. Confirm the receiving device is set to the listed channel.

6.2 KeyStep Pro Track Numbers and MIDI Channels

By default, KeyStep Pro tracks 1–4 transmit on MIDI channels 1–4 respectively. The track number and MIDI channel are not permanently linked: a track can be assigned to a different MIDI channel. In the current SoundLab setup, the Drum track sends on MIDI channel 15 for the MPC One+.

To change a track's MIDI channel:

1. Press and hold the relevant **Track** button.
2. While holding the button, turn the encoder to the left of the LED screen until the desired MIDI channel is selected.
3. Press down on the encoder to confirm the selection.

Important: Changing a track's MIDI channel changes which MIDI-channel destination it controls; it does not create an additional sequencer track. The KeyStep Pro has a limited number of tracks, so controlling more instruments than there are available tracks may require changing track assignments, using a different saved setup, or using another sequencer such as the MPC One+ or Ableton Live. The Analog Rytm MKII and Octatrack can also be used with their own sequencers; they do not need dedicated KeyStep Pro tracks in the default setup.

Restoring the default setup: In the current SoundLab setup, testing confirmed that switching the KeyStep Pro off and on restores the default track-to-channel configuration. By default, melodic Tracks 1–4 correspond to MIDI channels 1–4. If you change a track’s channel for a session, check the assignment again after restarting the KeyStep Pro. If an instrument does not respond, check both the sending track’s MIDI channel and the receiving device’s MIDI channel.

6.3 MIDI Clock and Synchronisation

The SoundLab has two MIDI clock presets. MIDI clock determines which device acts as the timing master; compatible devices can follow that clock so their sequencers stay in time with one another. Use the preset that matches the sequencer you want to control the session.

- **KeyStep Pro clock:** The KeyStep Pro sends the MIDI clock. Use this preset when the KeyStep Pro is the master sequencer and the other connected devices should follow its tempo and transport.
- **PC Clock (DAW master):** Ableton Live or Logic Pro sends the MIDI clock. Use this preset when the DAW is the master. Once MIDI clock and sync output are configured in the DAW, pressing **Play** in the DAW can start the connected devices’ sequences and keep them synchronised.

How to select the PC Clock preset: The **mioXM** is the box with blinking lights underneath the right studio monitor. The LEDs in its bottom row are touch-sensitive preset controls. Touch **MEM 2** to select the PC Clock preset. To return to the KeyStep Pro as clock master, select the KeyStep Pro clock preset instead.

Important: Selecting the PC Clock preset does not by itself configure Ableton Live or Logic Pro to send MIDI clock. Enable MIDI clock/sync output for the relevant MIDI destination in the DAW, and make sure the receiving devices are configured to respond to external clock and transport. If devices do not start or stay in time, check that the PC Clock preset is selected on the mioXM, the DAW’s MIDI sync settings, and the receiving devices’ external-sync settings.

MIDI versus audio: MIDI carries performance information; it does not carry the instrument’s sound. To record a hardware instrument, connect its audio output to the studio’s audio routing and select the corresponding audio input in Ableton Live or Logic Pro.

7 Gear, Cables & Connections

7.1 Where to find the cables

- **XLR (Microphone Cable):** A 3-pin cable used primarily for microphones. It carries a balanced audio signal and can transmit 48V Phantom Power (required for condenser mics).
- **1/4" TRS (Balanced/Stereo):** Looks like a guitar cable but has two black rings on the tip. Used for patching outboard gear, connecting monitors, and headphone extensions.
- **1/4" TS (Instrument/Unbalanced):** Has only one black ring on the tip. Used for electric guitars, bass guitars, and older synthesizers. Keep these cables short to avoid noise interference.

7.2 Microphones & Phantom Power (48V)

The studio contains both Dynamic and Condenser microphones.

7.3 Available Synthesizers & Drum Machines

The SoundLab is equipped with a diverse range of hardware synthesizers and drum machines. Please treat them with care.

MIDI controller: The **Akai MPK88** is the large keyboard controller in the studio. It is MIDI-only and must be used with a software instrument in Ableton Live or Logic Pro; it is not recorded through an audio input.

- **Korg Minilogue**
- **Elektron Digitone**
- **Moog Mother-32**
- **Moog Sub Phatty**
- **Behringer Model D**
- **Elektron Octatrack**
- **Elektron Analog Rytm MKII**
- **Akai MPC One+**
- **Roland TD-17** It can also send MIDI to trigger drum plugins in the DAW; plugin drum maps may require adjustment because pad-to-note mappings are not guaranteed to match 1:1.

7.4 Using the Akai MPK88 Keyboard (MIDI Only)

The **Akai MPK88** is a MIDI controller, not an audio source. It sends MIDI performance data to the computer and does not send its own instrument audio into the audio interface. To hear sound, use it to play a software instrument in the DAW.

- **Ableton Live:** Create a **MIDI Track**, load a software instrument onto it, and make sure the MPK88 is selected or enabled as a MIDI input if needed.
- **Logic Pro:** Create a **Software Instrument** track and load a software instrument. Play the MPK88 to trigger it.

8 Using the Patch Bay

The patch bay is the central nervous system of the studio. It allows you to route audio between the outboard gear, the audio interface, and the DAW without needing to crawl behind the racks or disconnect anything.

8.1 How It Works

- **Top Row:** Outputs (Signals coming *from* a source, like a microphone or DAW output).
- **Bottom Row:** Inputs (Signals going *to* a destination, like a preamp input or DAW input).

8.2 Patching

If you want to send audio from a synth to the Octatrack or reverb pedal for example you would:

1. Plug one end of a patch cable into the Top Row.
2. Plug the other end into the Bottom Row of your desired destination.

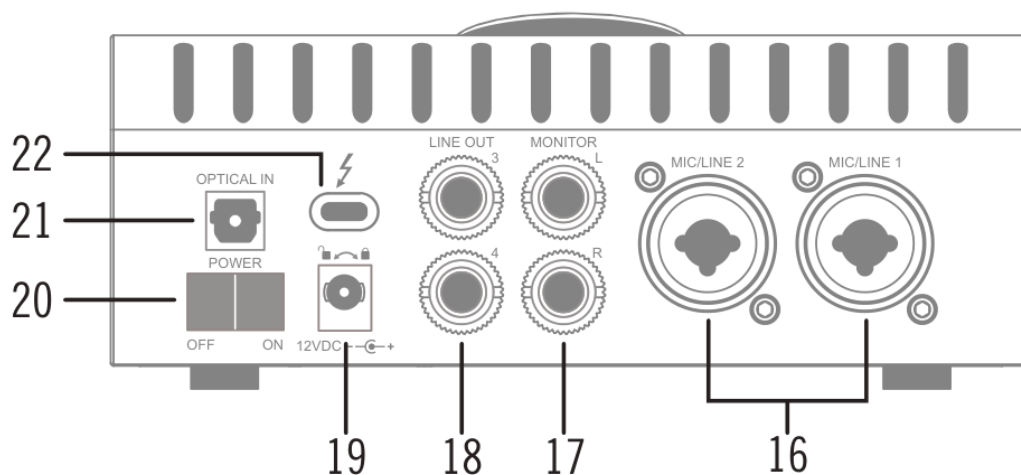
GOOD TO KNOW: Columns 2-8 can be used as additional Inputs, they are connected to the Focusrite Interface. Line 3 and 4 can be used to send audio from the mac to the outboard Gear.

9 Using Your Own Laptop with the Apollo (Optional)

The Apollo Twin X is normally connected to the SoundLab Mac. You do not need to change this connection for a regular studio session. Follow this section only when you specifically need to use the Apollo with your own laptop.

1. Switch the Apollo from the Studio Mac to Your Laptop

1. Close any DAW or UAD Console session running on the SoundLab Mac.
2. Disconnect the Apollo's Thunderbolt cable from the SoundLab Mac.
3. Connect that Thunderbolt cable to a Thunderbolt port on your own laptop. On the Apollo Twin X, the computer connection is the rear-panel port marked with the Thunderbolt symbol (label 22 in the illustration below).



Rear panel elements

Figure 2: Apollo Twin X rear panel, cropped from the Apollo Twin X Hardware Manual, p. 28. The Thunderbolt computer port is indicated by the lightning-bolt symbol (label 22).

2. Install Universal Audio Software

If Universal Audio software is not already installed on your laptop:

1. Download the current UAD software for your operating system from [Universal Audio Downloads](#).
2. Run the installer and follow any on-screen instructions, including any restart or registration prompts.
3. Open **UAD Console** and confirm that the Apollo Twin X appears in the device list.

3. Enable the Existing ADAT Input

On your laptop, enable the digital input in UAD Console:

1. Open **Settings** and select the **Hardware** panel.
2. Select **Apollo Twin X** in the device list.
3. Find **Digital Input** and change the dropdown from **OFFLINE** to **ADAT**. Leave the other hardware settings unchanged.
4. In your DAW, select the Apollo as the audio device. To record gear connected to the Focusrite, select the corresponding Apollo digital/ADAT input channel.

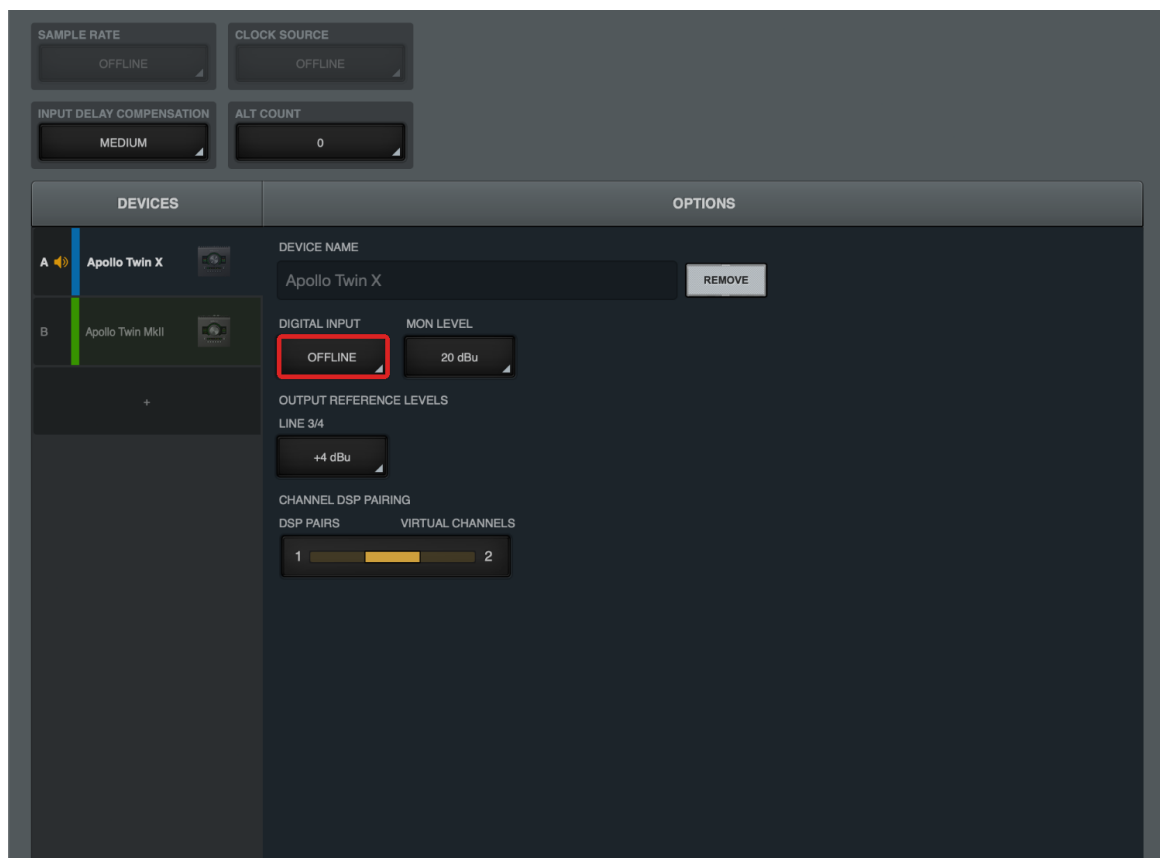


Figure 3: UAD Console Hardware settings, based on the SoundLab screenshot. Change the highlighted Digital Input dropdown from OFFLINE to ADAT.

When you finish: Close your audio applications and reconnect the Apollo's Thunderbolt cable to the SoundLab Mac, restoring the usual studio configuration.

If the Apollo does not appear in Console: Check that the Thunderbolt cable is connected correctly and that the Universal Audio software installation completed. If the Apollo is detected but the Focusrite inputs do not appear after selecting ADAT, ask the SoundLab team before changing any other hardware, clock, or routing settings.

Official reference. The [Apollo Twin X Hardware Manual](#) explains Thunderbolt connection requirements on pages 14–15 and identifies the rear-panel connectors on page 28.

10 Troubleshooting

When something is not working, follow the signal path from the **source** to the **output**. Find the first point where the signal disappears, becomes distorted, or behaves unexpectedly.

“I’m playing an instrument but I don’t hear anything!”

- **Check the source:** Is the instrument turned on and turned up?
- **Check the interface:** Is the input connected correctly? Is the preamp gain turned up? Do you see a signal on the physical hardware?
- **Check the DAW:** Is the correct input selected? Is the track armed for recording or input monitoring?
- **Check the output:** Is the DAW Master Fader turned up? Is the correct output selected? Is the monitor knob on the physical interface turned up? Are the speakers or headphones actually on?

“I see signal, but I don’t hear anything.”

The input is reaching the interface or DAW, so check the part of the signal path after the input:

- Check track monitoring and mute/solo status.
- Check the DAW Master Fader and output device.
- Check the physical monitor or headphone volume.
- Check that the speakers or headphones are connected to the expected output.

“The sound is distorted or clipping.”

- Check whether the source itself is clipping.
- Check the input gain on the interface or preamp and reduce it if necessary.
- Check the signal level in the DAW for clipping.

Feedback / Unexpected Loud Noise

EMERGENCY: If the system suddenly produces loud feedback or an unexpectedly loud signal, **turn down or mute the monitor output immediately**. Do not try to diagnose the problem while the speakers are producing a loud signal.

1. **Reduce the output level immediately:** Turn down or mute the monitor output.
2. **Stop playback or recording** if necessary.
3. **Check microphones:** Move away from the speakers and check whether a microphone is feeding back.
4. **Check the DAW:** Look for unexpected input monitoring, routing, or feedback loops.
5. **Check the patch bay:** Look for an unintended connection sending an output back into an input.

6. **Restore the monitor level gradually** only after the signal path is understood and the problem has been resolved.

General rule: If you cannot identify the problem, keep the monitor level low and ask for help. It is safer to troubleshoot from a quiet signal than from a loud one.

11 Helpful Links & Resources

For advanced techniques and detailed software manuals, please refer to the following official resources:

- **Logic Pro User Guide:** <https://support.apple.com/guide/logicpro/welcome/mac>
- **Ableton Live Manual:** <https://www.ableton.com/en/manual/welcome-to-live/>
- **Universal Audio Apollo Twin X Hardware Manual:** <https://media.uaudio.com/support/manuals/hardware/Apollo%20Twin%20X%20Hardware%20Manual.pdf>

Happy Recording! – The SoundLab Team