Apogee Symphony I/O Mk II

User's Guide

Version 2.0 April, 2016

APOGEE

Contents

Overview

Introduction

Symphony I/O Mk II is a multi-channel audio interface featuring Apogee's newest flagship AD/DA conversion, modular I/O (up to 32 inputs and outputs), intuitive touchscreen display and optional world-class microphone preamps. Designed to deliver professional sound quality for audio recording, mixing and mastering, Symphony I/O is the ultimate music production centerpiece for any modern studio.

Features

- Best AD/DA conversion of any Thunderbolt™ audio interface
- Up to 32 channels of modular analog I/O with optional 8 mic preamps
- Best per-channel value of any interface in it's category
- Choice of Thunderbolt, Pro Tools® HD (Mac/PC) or Waves SoundGrid® connectivity*
- Ultra-low latency performance
- Intuitive touchscreen display and front panel control
- Option card slot for future platform flexibility
- Designed in California, Built in the U.S.A.

*Pro Tools HD and Waves SoundGrid connectivity coming soon!

Package Contents

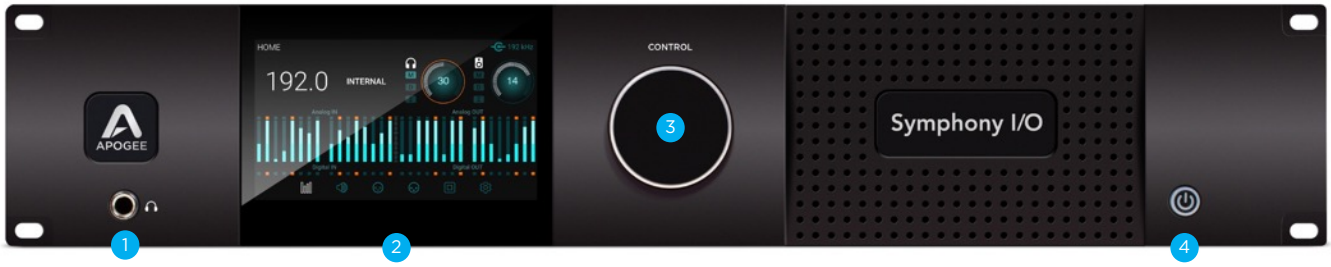
- Symphony I/O Mk II
- 3 pin-IEC power cable
- QuickStart Guide
- Warranty Booklet

Register your product : apogeedigital.com/register

- Access Apogee's expert Technical Support for free
- Receive important product update information by email
- Take the Customer Satisfaction Survey for a chance to win Apogee gear!

Symphony I/O Mk II Panel Tour

Front Panel



1. Headphone Output
   a. 1/4” TRS connection provides an assignable stereo headphone output
2. Touchscreen
   a. Symphony I/O’s front panel touchscreen offers convenient access to every setting
   b. Routing and the low latency Mixer can only be controlled in Apogee Maestro software
3. Control knob
4. Power button

Rear Panel

1. Module Slot 1
2. Module Slot 2
3. Thunderbolt ports (Symphony Mk II Thunderbolt model Only)
4. Option Card Slot
5. Word Clock I/O
6. AC Power

Getting Started

Before powering on, ensure that any speakers or amplifiers connected to Symphony's analog outputs are powered off or the volume is turned down to the minimum setting. This will prevent potential damage to your speakers and other equipment from "pops" that may occur as the unit boots up.

1. **Power off speakers**
2. **Power Symphony On**
3. **Power on speakers.**

Likewise, before powering Symphony off, ensure any speakers or amplifiers connected to Symphony's analog outputs are powered off, or the volume turned down to the minimum setting.

1. **Power off speakers**
2. **Power Symphony Off**

Thunderbolt Notes

- Symphony I/O's rear panel Thunderbolt 2 ports allow you to chain up to 6 Thunderbolt peripherals from your Mac.
- Under most circumstances, the order in which peripherals or ports are connected doesn't matter.
  - Exception: If you're connecting both Thunderbolt 1 and Thunderbolt 2 peripherals, connect the Thunderbolt 2 devices closer to your Mac in the chain.
    - i.e. Mac > Thunderbolt 2 devices > Thunderbolt devices
- Thunderbolt peripherals continue to operate when Symphony is powered off. This ensures that displays, hard drives, or other essential equipment doesn't lose connection to the computer when Symphony is not in use.
- A non-Thunderbolt device (i.e. Firewire, HDMI, DisplayPort, etc.) may be connected to the chain, but it or the adapter for the device must be placed at the end.

Some older Macs have mini **DisplayPort** *connections that, while identical in appearance to a* **Thunderbolt** *port, don't support* **Thunderbolt** *peripherals. Verify that the* **Thunderbolt** *logo is present on your Mac's ports.*

X Mini DisplayPort

✓Thunderbolt Port

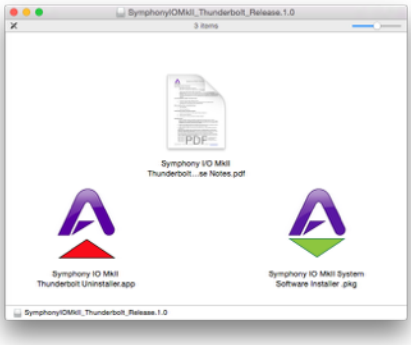
Symphony I/O Mk II Software

System Requirements

Symphony I/O Mk II Thunderbolt
Thunderbolt port-equipped Apple Mac, 4GB memory required, 8GB recommended
Mac OS X Mavericks 10.9.5 or greater

Download and Install Software

Before using your Symphony I/O, you must download the latest Symphony I/O Mk II Software Installer from Apogee's website here: www.apogeedigital.com/support/symphony-io-mk-ii



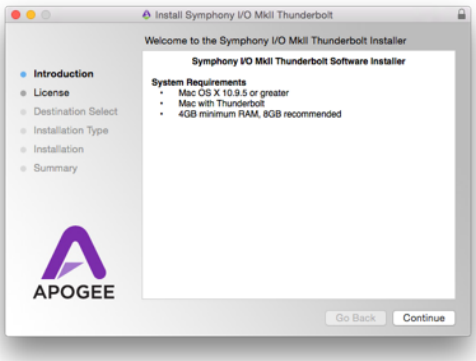
The download comes in the form of a .dmg image file. Open it to view the contents.

Inside you will find these items:

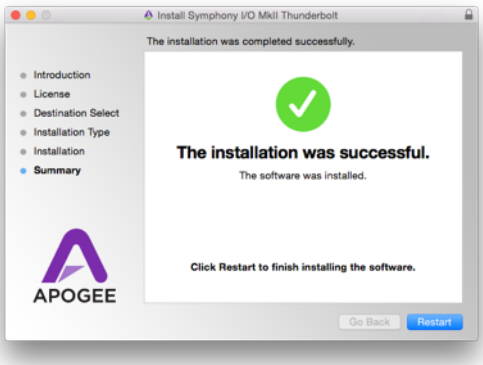
- Symphony I/O MkII Thunderbolt Release Notes
- Symphony IO MkII System Software Installer.pkg
- Symphony IO MkII Uninstaller

Double-click to launch the Symphony IO MkII System Software Installer.pkg

A dialog box will appear with a series of steps
Follow the prompts to complete the installation



Once complete you will be required to restart your computer

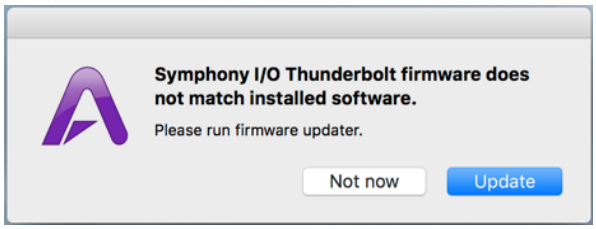


As a result of the software install:

- Apogee Maestro controller software is placed in the Mac's Applications folder
- When connected, Symphony Thunderbolt appears as an audio input/output device in Mac Sound System Preferences
- Symphony Thunderbolt Firmware Updater.app is placed in the Mac's Utilities folder

Update Symphony Firmware

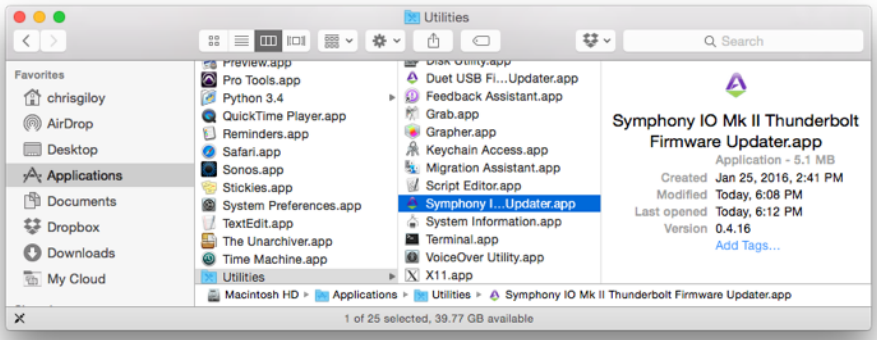
The first time Symphony is used after the software installation, you will likely need to update the firmware.



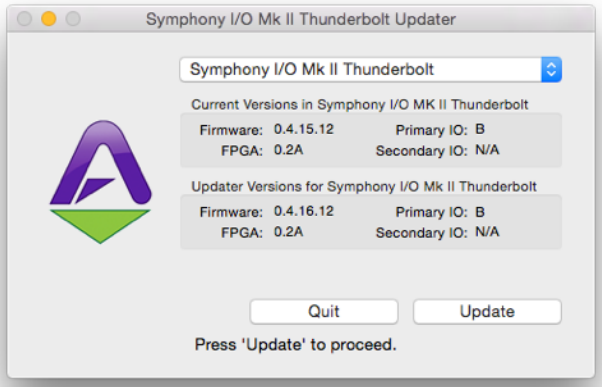
Warning: Do not disconnect power or interrupt the firmware update process before it is complete as this may damage the unit.

1. Make sure Symphony is connected to the computer and is powered on.

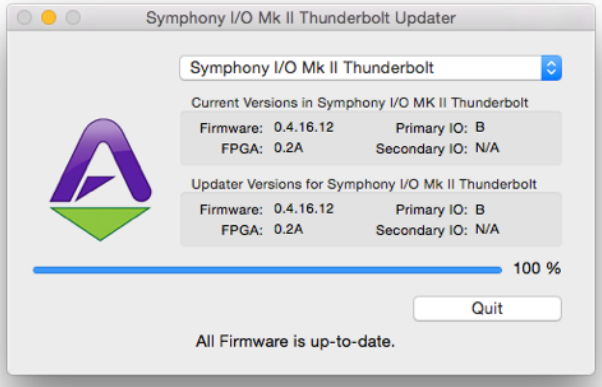
2. Open the Symphony Firmware Updater.app which is located in the Mac's Applications > Utilities folder.



3. Select "Update" and follow any prompts that may appear.
   Symphony may reboot several times - this is normal.

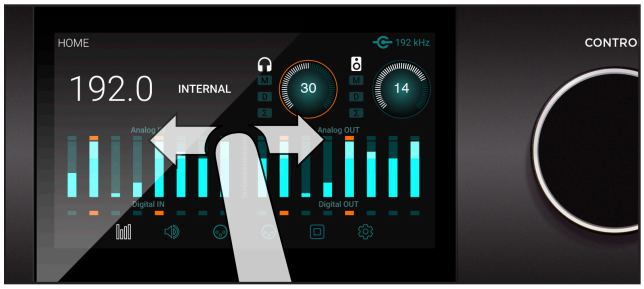


4. When the progress reaches 100% and says "Update Complete", you are done and can quit the updater.



Navigating The Front Panel Touchscreen

Most Symphony I/O settings can be controlled from the front panel. For full control over all settings, use the Maestro software.



Swipe to navigate

You can swipe the screen left or right to access any of the main sections; HOME, MONITOR, INPUT, OUTPUT, DIGITAL I/O, SETTINGS.

Swiping can be disabled in SETTINGS.

Tap section icons to navigate

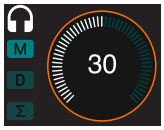
You can also directly select any of the section icons on the bottom of the screen to jump directly to a section.

Symphony I/O Mk II's front panel touchscreen offers convenient access to nearly every setting.

Control knob focus selection

Settings that may be controlled using the front panel control knob are displayed as a circle; i.e. Speaker and Headphone, Input calibration and Gain levels

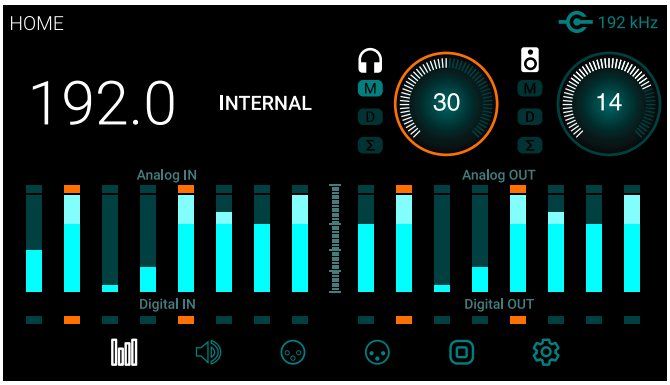
To "focus" the control knob to the desired setting, tap the circle; an orange ring indicates that the control knob is currently focused on the setting.



Muting with the control knob

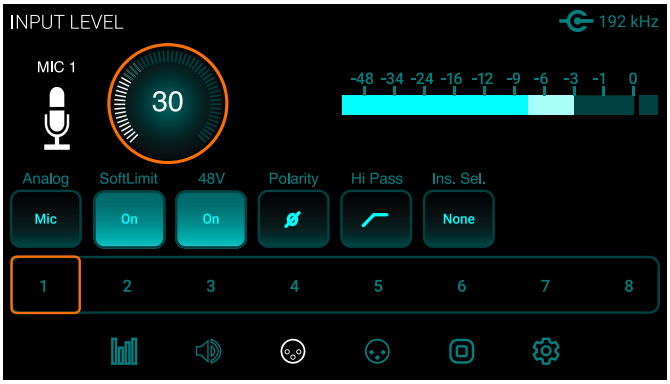
Pressing the control knob mutes and un-mutes the sound coming out of Symphony I/O Mk II, and is indicated on the Home page with the "M" lit up.

Touchscreen Section Overview

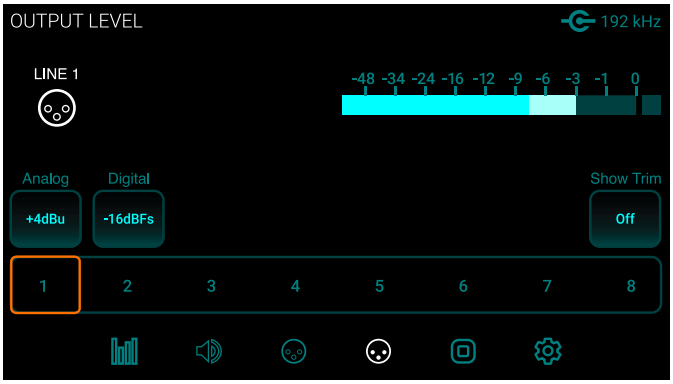


HOME
Sample Rate, Clock Source, Headphone & Speaker output levels, Meters for all I/O, and section navigation

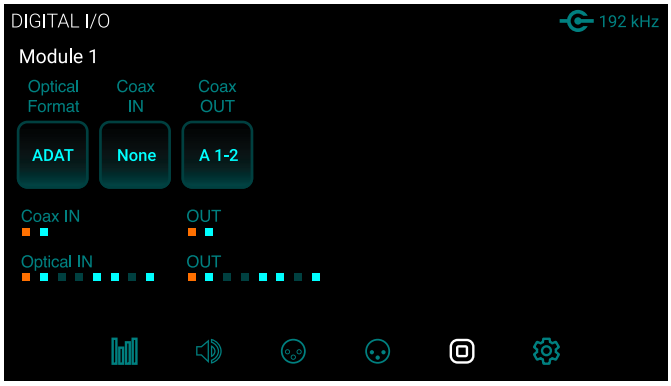
MONITOR
Headphone & speaker output levels, mute, dim, sum to mono, headphone output selection, speaker set selection and section navigation



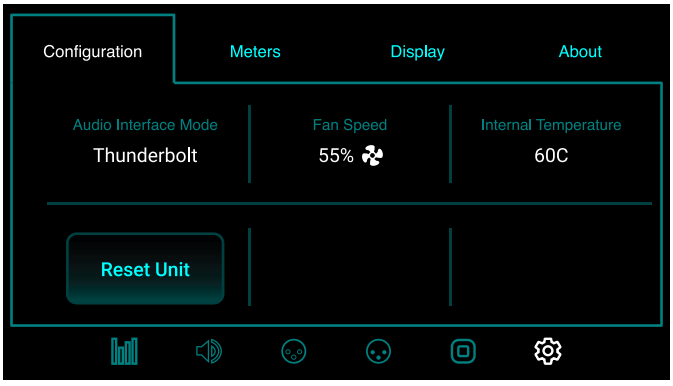
INPUT LEVEL
Analog input reference levels, calibration, Soft Limit, mic pre parameters (when 8 channel mic preamp module is installed)



OUTPUT LEVEL
Analog output reference levels, calibration and section navigation



DIGITAL I/O
Digital format settings, Digital input signal meters, SPDIF Coax In replaces and coax output mirrors settings and section navigation



SETTINGS
Reset, WC termination, Internal temperature, Meter characteristics, Display brightness

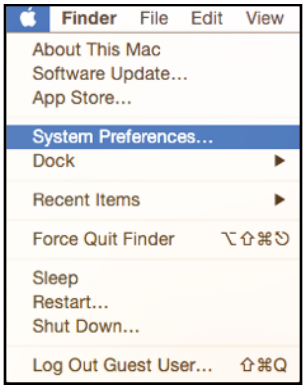
Getting Started with Audio Software

Select Symphony for Mac System Sound Output

To route audio from general audio applications such as iTunes and Safari through Symphony I/O, it must be selected as the output device in Mac System Preferences.

Make sure you have already installed the most recent Symphony I/O Mk II Software from the Apogee website before proceeding.

1. Click the icon in the upper-left corner of your Mac's display.

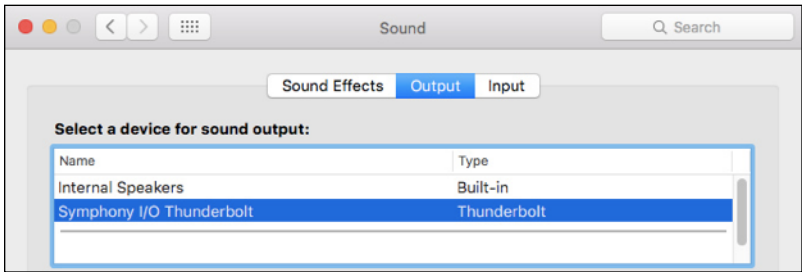


2. From the drop-down menu, select "System Preferences…"

3. In the System Preferences control panel, select "Sound"

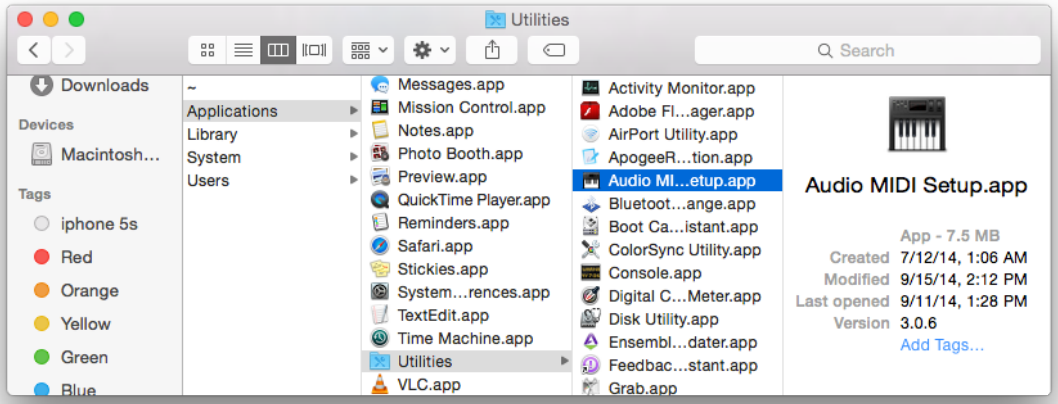
4. At the top of the Sound Preferences panel, select the "Output" tab

5. Under "Select a device for sound output:" click Symphony I/O Thunderbolt. By default, Symphony I/O's analog outs 1-2 will be selected



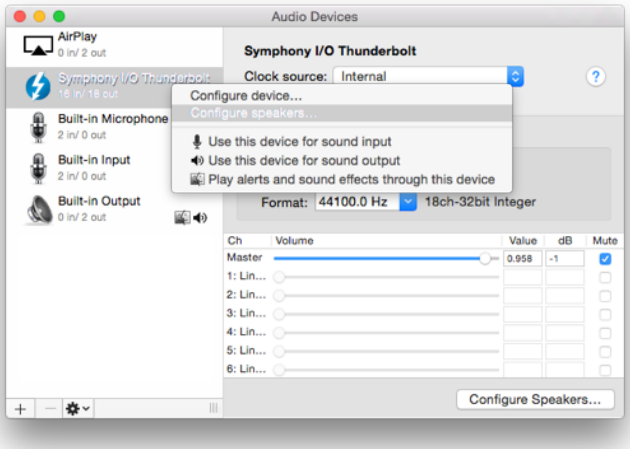
Route Mac System Sound to Different Outputs

1. Open the Audio/MIDI Setup Utility, found in the Applications > Utilities folder of your Mac



2. In the Audio Devices window, [Control+click] on Apogee Symphony Thunderbolt.

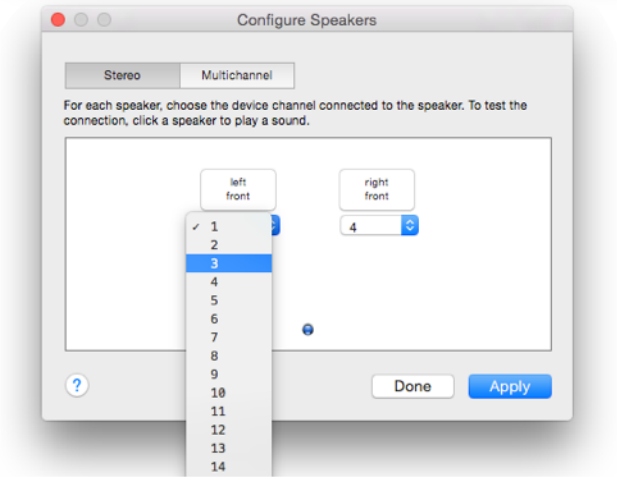
3. In the Menu that appears, select “Configure Speakers”.



4. If playing a stereo audio file, select the Stereo tab. If playing a multi-channel audio file, select the Multichannel tab.

5. Select the desired Symphony output channel for each speaker assignment. For example, if you want iTunes to play out of Symphony channels 3 & 4, set Left Front to “3” and Right Front to “4”.

6. Select the Apply button.

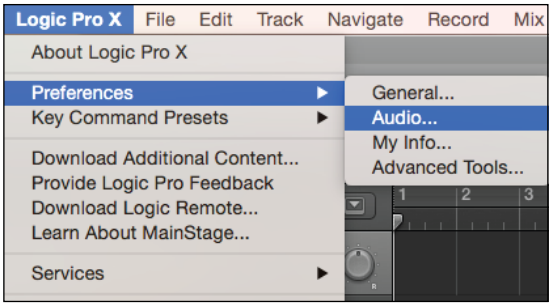


Select Symphony in your DAW

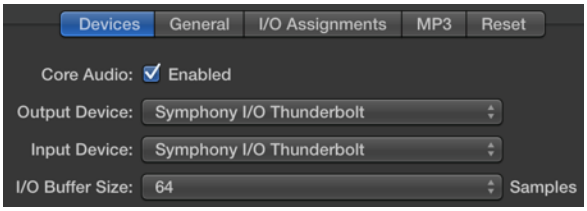
Most professional applications have their own audio preferences that are separate from the Mac System Preferences. Basic steps for setting up Symphony are provided. For more detail on this topic, refer to the documentation that comes with your recording program.

Select Symphony in Logic Pro X

1. Go to Logic Pro X > Preferences > Audio.

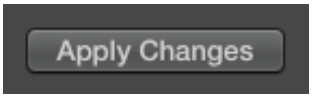


2. In the Devices Tab, select **Symphony I/O Thunderbolt** in the Output and Input Device drop-down boxes.



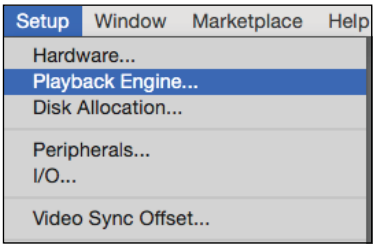
3. Start by setting the I/O Buffer Size to “64 Samples”. This setting may need to be adjusted based on your computer’s performance.

4. Select “Apply Changes” and close the Preferences window.

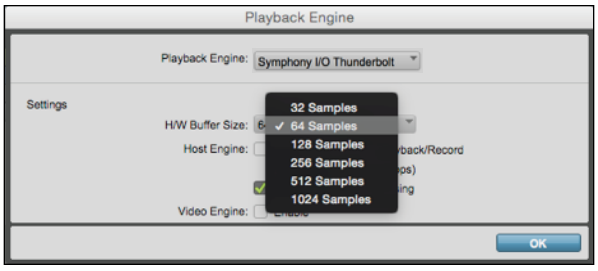


Select Symphony in Pro Tools

1. Go to Setup > Playback Engine.

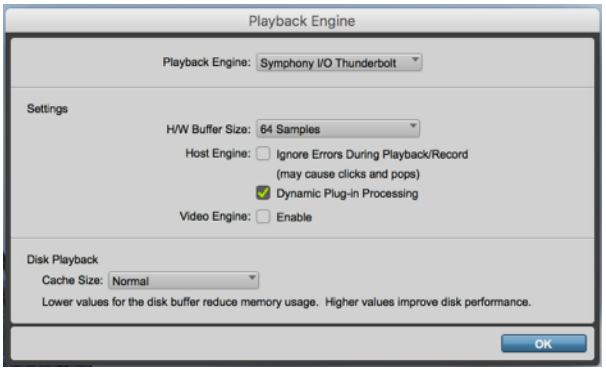


2. In the Playback Engine drop-down box, select “Symphony Thunderbolt”.



3. Start by setting the H/W Buffer Size to “64 Samples”. This setting may need to be adjusted based on your computer’s performance.

4. Select OK.



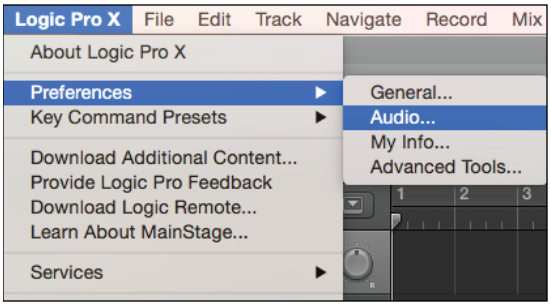
Monitoring the Input Signal

Using your DAW to Monitor

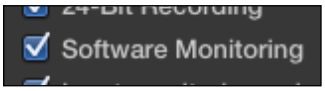
By default, Symphony is configured for your recording software or DAW to perform the monitoring duty of passing your input signal on to your output.

Enable Input Monitoring in Logic Pro X

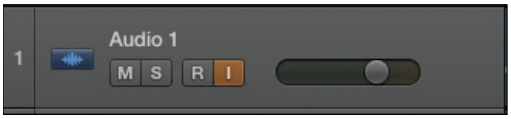
1. Open Logic Pro X > Preferences > Audio



2. Make sure the box next to “Software Monitoring” is checked.



3. Select the “ **I** ” button in each track you’d like to input monitor.



Enable Input Monitoring in Pro Tools

- In Pro Tools Native, record enable the track to activate input monitoring.

- In Pro Tools HD, the “ I ” button enables input monitoring.

- Also make sure the Software Monitoring is checked in the Preferences > Audio > Devices menu.

Using Symphony's Low Latency Mixers

If you do not have any recording software open, or do not want to use it's monitoring function due to issues such as high latency (see "Understanding Latency" on page 40), then you can use one of the Low-Latency Maestro Mixers built into Symphony to monitor your signal instead.

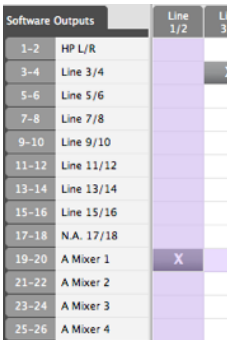
Low Latency Monitoring

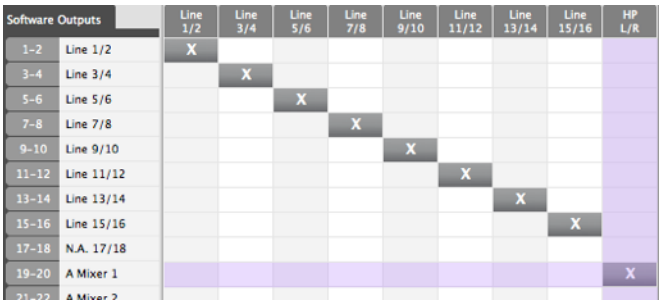
1. Open Maestro and select the Output Routing tab (or use the keyboard combination [⌘+5])

2. To monitor using Speakers Connected to outputs 1/2:

   Click the left-most box next to "Mixer 1".

   Now hardware Outputs Line 1/2 will draw signal from the Maestro Mixer 1





3. To monitor using headphones:

   Click the box to the far right of the Software Output Mixer 1 and under Hardware Outputs HP "L/R"

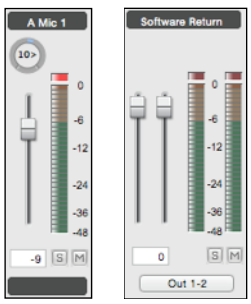
   This will cause your Headphones output to draw signal from the Maestro Mixer 1.

NOTE: The Mixer's location on the grid will vary based on the I/O s installed

You can control the amount of input signal verses audio playback you hear using the Maestro Mixer controls:

1. Select the Mixer tab (or use the keyboard combination [⌘+6]).

2. Select "Mixer 1"



3. Adjust the level of input heard by adjusting the Input Fader, and level of audio playback from a computer program by adjusting the Software Return Fader

Main Features

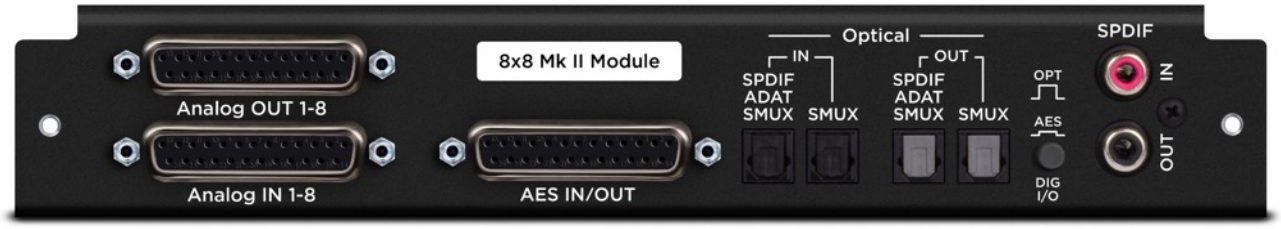
I/O Modules

The Symphony I/O Mk II has a configurable chassis allowing it the flexibility for use in any environment. Two module slots can be filled by any combination of several I/O modules providing a solution for everyone.

Mk II I/O Modules

Mk II I/O modules benefit from our most refined converter technology and engineering techniques which results in the lowest distortion and greatest dynamic range of any A/D converter we've ever designed, and a more powerful & robust D/A that maintains fidelity and punch.

8x8 Mk II Module



Provides a total of 16 channels of audio input and output:
- 8 channels of analog input and output
- 8 channels of digital input and 8 channels of digital output through either the AES DB25 connector (Yamaha Pin-out configuration), or Optical ports

To select either Optical or AES digital audio:
1. Toggle the **DIG I/O** button to the desired position
2. Power-cycle the Symphony I/O Mk II (turn the unit off, then on)

Optical ports can be configured to use the S/PDIF or ADAT/SMUX protocols.

S/PDIF	44.1 - 192k Sample Rates	- 2 channels of audio in and 2 channels of audio out
ADAT	44.1 - 48k Sample Rates	- 8 channels of audio in and 8 channels of audio out
SMUX	88.2 - 96k Sample Rates	- 4 channels of audio in and 4 channels of audio provided per port
		- 8 channels in and 8 channels out total when using both ports

Digital Coaxial RCA S/PDIF ports are also provided.
- **SPDIF IN** replaces a pair of analog or digital audio inputs. Routing of the S/PDIF input is set with the S/PDIF Replaces drop down menu, found in the Apogee Maestro's Input tab window.
- **SPDIF OUT** will duplicate any pair of analog or digital audio outputs. Routing of the S/PDIF Output is set with the S/PDIF Mirrors drop down menu, found in the Apogee Maestro's Output tab window.

16x16 Mk II Module

Provides 16 channels of analog input and output.

Digital Coaxial RCA S/PDIF ports are also provided.

- **SPDIF IN** replaces a pair of analog or digital audio inputs. Routing of the S/PDIF input is set with the S/PDIF Replaces drop down menu, found in the Apogee Maestro's Input tab window.
- **SPDIF OUT** will duplicate any pair of analog or digital audio outputs. Routing of the S/PDIF Output is set with the S/PDIF Mirrors drop down menu, found in the Apogee Maestro's Output tab window.

NOTE: Mk II I/O modules cannot be used in the original Symphony I/O chassis.

Other Compatible I/O Modules

These I/O modules from the original Symphony I/O can be used in the Symphony I/O Mk II chassis.

Mic Pre Module

The Mic Preamp Module upgrades the functionality of any 8x8 or 16x16 module by adding mic preamps to the existing line inputs. A direct connection between the Mic Preamp Module and the Analog I/O Module inserts a mic preamp stage before the line inputs.

1. **INSTRUMENTS 1-4** - These 1/4" TS connectors accept input from a wide range of instruments, including keyboards, guitars and other electronic instruments. The input impedance is high enough to avoid the loading of input sources such as passive electric guitars and basses.
2. **INSERTS Send 1-8** - This DB-25 connector provides 8 analog balanced line level sends routed after each channel's mic preamp stage.
3. **INSERTS Return 1-8** - This DB-25 connector accepts 8 analog balanced line level returns routed before each channel's A/D conversion stage.

   Use the INSERT sends and returns to insert analog line level gear (such as compressors and equalizers) between a channel's mic preamp and A/D conversion stage.

2x6 Analog + AES + 8 Optical Module

Provides up to 12 channels of audio input, and up to 16 channels of audio output.

INPUTS

2-channels of analog input via balanced XLR connectors
2-channels of AES digital audio input via XLR female connector
Up to 8-channels of digital audio input via Optical connector

SPDIF	44.1 - 192k Sample Rates	- 2 channels
ADAT	44.1 - 48k Sample Rates	- 8 channels
SMUX	88.2 - 96k Sample Rates	- 4 channels

OUTPUTS

6-channels of analog output via DB25 connector
2-channels of AES digital audio output via XLR make connector
Up to 8-channels of digital audio output via Optical connector

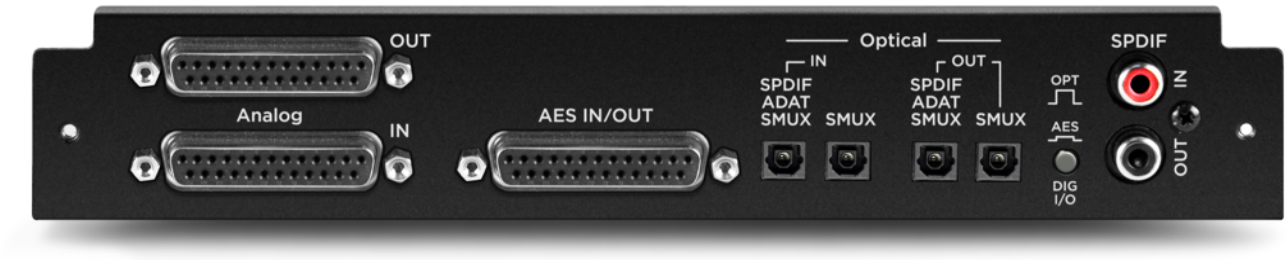
SPDIF	44.1 - 192k Sample Rates	- 2 channels
ADAT	44.1 - 48k Sample Rates	- 8 channels
SMUX	88.2 - 96k Sample Rates	- 4 channels

The Optical format is selected in the Apogee Maestro's Device Settings tab window.

Digital Coaxial RCA S/PDIF ports are also provided.

- **SPDIF IN** replaces a pair of analog or digital audio inputs. Routing of the S/PDIF input is set with the S/PDIF Replaces drop down menu, found in the Apogee Maestro's Input tab window.
- **SPDIF OUT** will duplicate any pair of analog or digital audio outputs. Routing of the S/PDIF Output is set with the S/PDIF Mirrors drop down menu, found in the Apogee Maestro's Output tab window.

8x8 Analog + 8 AES/Optical IO Module



Provides a total of 16 channels of audio input and output:
- 8 channels of analog input and 8 channels of analog output
- 8 channels of digital input and 8 channels of digital output through either the AES DB25 connector (Yamaha Pin-out configuration), or Optical ports

To select either Optical or AES digital audio:
1. Toggle the DIG I/O button to the desired position
2. Power-cycle the Symphony I/O Mk II (Turn the unit off, then back on)

Optical ports can be configured to use the S/PDIF or ADAT/SMUX protocols.

S/PDIF	44.1 - 192k Sample Rates	- 2 channels of audio in and 2 channels of audio out
ADAT	44.1 - 48k Sample Rates	- 8 channels of audio in and 8 channels of audio out
SMUX	88.2 - 96k Sample Rates	- 4 channels of audio in and 4 channels of audio provided per port - 8 channels in and 8 channels out total when using both ports

Digital Coaxial RCA S/PDIF ports are also provided.
- **SPDIF IN** replaces a pair of analog or digital audio inputs. Routing of the S/PDIF input is set with the S/PDIF Replaces drop down menu, found in the Apogee Maestro's Input tab window.
- **SPDIF OUT** will duplicate any pair of analog or digital audio outputs. Routing of the S/PDIF Output is set with the S/PDIF Mirrors drop down menu, found in the Apogee Maestro's Output tab window.

Note: The two variants of the 8x8 I/O module are also compatible:

8x8 + AES only

8x8 + Optical only

16x16 Analog IO Module

Provides 16 channels of analog input and output.

Digital Coaxial RCA S/PDIF ports are also provided.

- **SPDIF IN** replaces a pair of analog or digital audio inputs. Routing of the S/PDIF input is set with the S/PDIF Replaces drop down menu, found in the Apogee Maestro's Input tab window.
- **SPDIF OUT** will duplicate any pair of analog or digital audio outputs. Routing of the S/PDIF Output is set with the S/PDIF Mirrors drop down menu, found in the Apogee Maestro's Output tab window.

Incompatible I/O Modules

The following I/O modules cannot be installed into a Symphony I/O Mk II chassis:

16 Analog In + 16 Digital Out (AI16)

16 Analog Out + 16 Digital In (AO16)

Option Card Slot

The Symphony I/O Mk II has an option card slot for further expansion capabilities.

Pro Tools HD Option Card

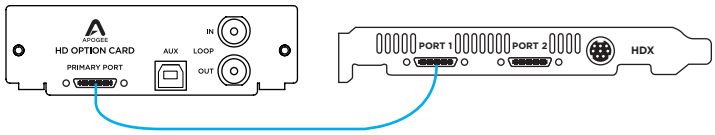
The Pro Tools HD option card enables the Symphony I/O Mk II to connect directly to a Pro Tools HD System.
Any Pro Tools HD System that is compatible with an AVID HD I/O will be compatible with a Symphony I/O Mk II.

To connect a single Symphony I/O Mk II to your Pro Tools HDX or HD Native hardware, simply connect Symphony I/O Mk II's Option card HD port directly to any available port.

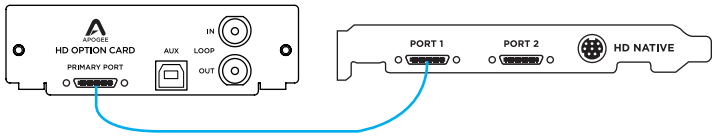
Note you can not connect Symphony I/O Mk II to an Avid interface. Avid interfaces and Symphony I/O Mk II interfaces must be connected to separate ports.

Once hardware connections have been made, launch Pro Tools software.
- If a single I/O module is installed, then Symphony I/O Mk II appears in Pro Tools Hardware Setup as a single HD I/O.
- If two I/O modules are installed, then Symphony I/O Mk II appears in Pro Tools Hardware Setup as two HD I/Os.

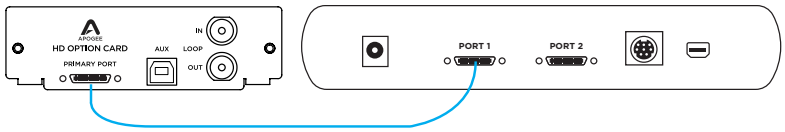
Symphony I/O Mk II to Pro Tools HDX



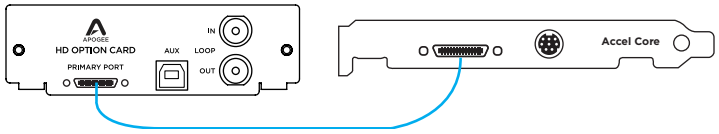
Symphony I/O Mk II to Pro Tools HD Native PCI



Symphony I/O Mk II to Pro Tools HD Native



Symphony I/O Mk II to Pro Tools Accel Core (requires adapter, not included)



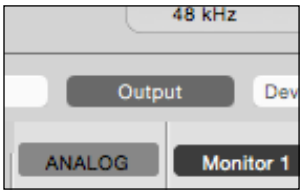
Monitor Control Center

Symphony I/O Mk II is equipped with several monitoring features to provide for your monitoring needs.

How to set the Monitor Outputs as a fixed Line-Out

This setting changes the Monitor Outputs from a variable volume controlled by the control knob to a fixed output at the full +4dBu or -10dBV reference level. This setting is convenient for connecting Symphony to an external monitor control device such as a mixer or control center.

1. Open Maestro and click the "Output" tab (or use the keyboard combination [⌘+2]).



2. In the Speaker Output section click the Speaker Output drop-down box and select "Line".

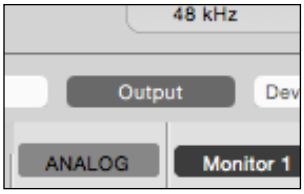
Note: This disable's Symphony's Monitor Output level control.

How to Setup and Use Multiple Speaker Sets

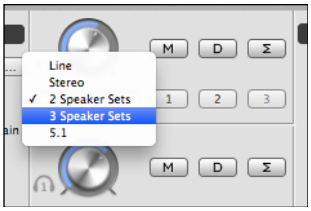
It is possible to connect up to three pairs of speaker monitors and toggle between them. This is very useful to check how a mix sounds through different speakers and systems.

1. Connect the first pair of speakers to analog outputs 1-2, the second pair to outputs 3-4, and if desired, a third pair to outputs 5-6.

2. Open Maestro and click the Output tab (or use the keyboard combination [⌘ +2]).



3. From the Speaker Output Select drop-down box, select "2 Speaker Sets" or "3 Speaker Sets".



4. Click the Speaker Set 1, 2, or 3 button to select which speaker set is active.

Note: To activate multiple speaker sets simultaneously, hold down [command ⌘] and select another speaker set button.

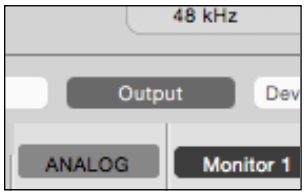
How to connect and configure a Surround Speaker Setup

When using Symphony with a surround speaker setup, the first set of outputs can be configured as speaker outputs suitable for connection to a 5.1, 6.1, or 7.1 speaker system depending on which I/O module is installed in slot 1. With this configuration, turning the control knob will adjust all applicable line-outputs simultaneously.

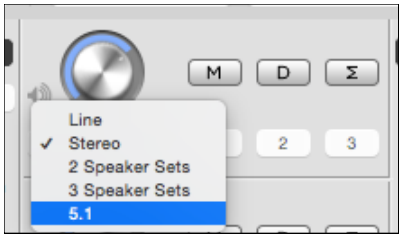
1. Connect your speakers to Symphony's outputs 1 - 6
   A standard 5.1 surround setup is routed as follows:

   - Output 1: Front Left
   - Output 2: Front Right
   - Output 3: Center
   - Output 4: Sub-woofer
   - Output 5: Left Surround
   - Output 6: Right Surround

2. Open Maestro and click the "Output" tab
   (or use the keyboard combination [⌘+2]).



3. In the Speaker Output section, click the Speaker Output drop-down box and select "5.1"



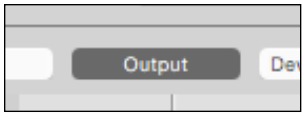
Note:

- When an 8x8 I/O module is in the bottom Module 1 slot, an additional option for 7.1 becomes available.
- When a 16x16 I/O module is in the bottom Module 1 slot, additional options for 7.1 and 9.1 become available.

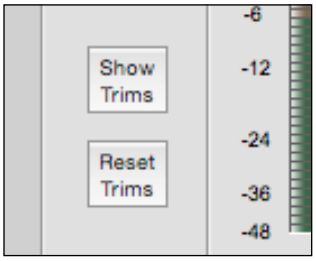
Adjust for Volume Differences Between Speakers

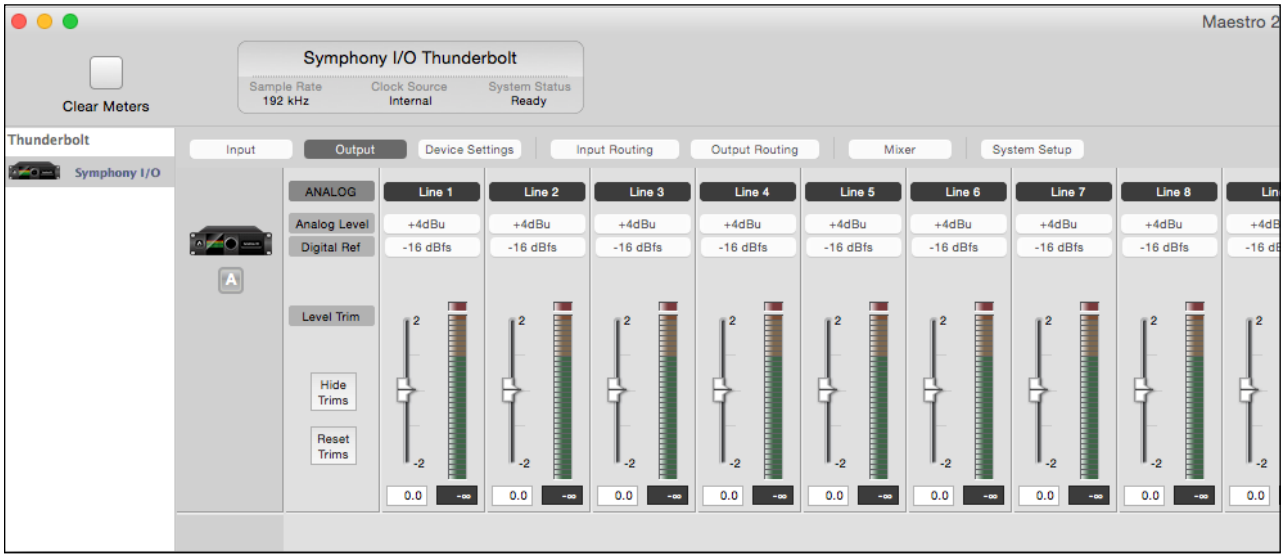
There may be cases where the perceived volume of one of two or three speaker sets, or a speaker in a surround setup, is slightly different from the others. The output Trim controls in Maestro can be used to compensate for this so all speakers produce the same perceived volume levels.

1. Open Maestro and select the Output tab window.



2. Select the “Show Trims” button.



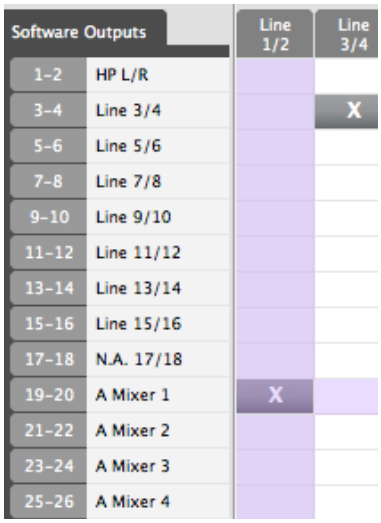


Setup Headphone/Speaker Mixes via Maestro Mixer

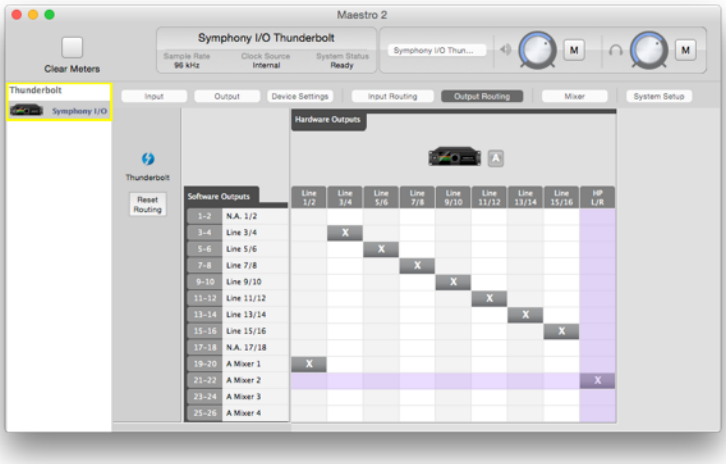
Since there are four low-latency mixers in Maestro, these can send different mixes to the various Symphony audio outputs. For example, send one mix to the Line 1/2 output to your speakers, and a different mix to the Headphone output.

1. Open Maestro and click the Output Routing tab (or use the keyboard combination [⌘+5])

2. Route a Hardware Output listed at the top of the grid to one of the four Mixer Software Outputs available on the left of the grid by clicking the box where they intersect. This places an “x” in that location



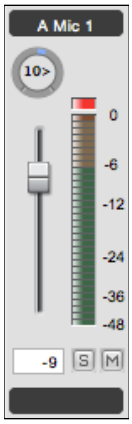
3. If desired, continue routing other Hardware Outputs to any of the other three Mixer Software Outputs



4. Select the Mixer tab (or use the keyboard combination [⌘+6])

5. On the Left, show or hide the four mixers by selecting the mixer 1, 2, 3, or 4 button

6. Adjust the mixer channel faders, pan controls, and other settings to achieve the sound desired.

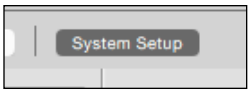


Clocking with External Equipment

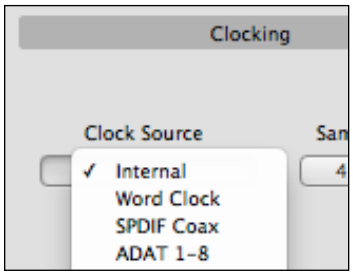
When connecting digital audio cables between Symphony and another digital audio device, a clocking relationship must also be set. Whether connecting two or more devices, one must be set as the clock master, and all other devices must be set as clock slaves.

Configure Symphony as Clock Master

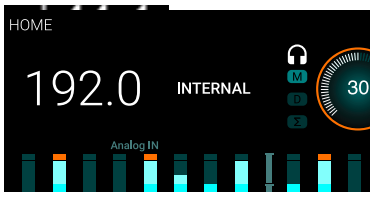
1. Open Maestro and select the “System Setup” tab (or use the keyboard combination ⌘+7]).



2. In the Clocking section, set Clock Source to “Internal”.



3. When Symphony is using it’s internal clock, the Home display will show “INTERNAL”.



Clock signal is sent to all of Symphony’s digital audio outputs and BNC Word Clock output.

4. Connect a digital audio cable (optical or coaxial) out of Symphony and into the external equipment.
   Or connect a BNC Word Clock cable from the OUT of Symphony to the IN of the external equipment.

5. Make the appropriate settings on the external equipment to set it as a slave.

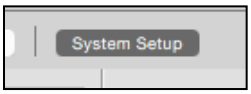
- The sample rate must match on both devices. Though the Slave device may automatically switch to the appropriate sample rate, this may not always occur and the sample rate will need to be set manually.

Configure Symphony as Clock Slave

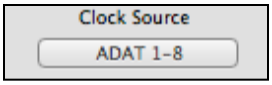
1. Set the external device as the clock master.

2. Connect a digital audio cable (optical or coaxial) out of the external device and into Symphony. Or connect a BNC Word Clock* cable out of the external gear to Symphony's BNC IN port.

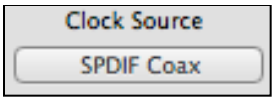
3. Open Maestro and select the "System Setup" tab (or use the keyboard combination ⌘+7]).



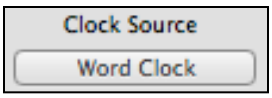
4. In the Clocking Section, set Clock Source to the appropriate external connection.



•Set the Clock Source to "ADAT", "SMUX", or "SPDIF Optical" when using an optical cable. Symphony's front panel will also reflect the source.



•Set the Clock Source to "SPDIF Coax" when using a coaxial audio cable. Symphony's front panel will also reflect the source.



•Set the Clock Source to "Word Clock" when using a BNC word clock cable. Symphony's front panel will also reflect the source.

* BNC is the preferred method of transferring digital clock. Use this connection whenever possible and make sure to follow appropriate termination practices.

If Symphony doesn't receive or is unable to lock to a external clock source, the display's clock source indication will turn red, and the sample rate will blink.
When this happens, check your connections for a bad or misconfigured cable, and make sure the sample rate of the master and slave devices are set to the same value.

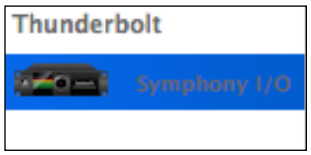
Maestro

Apogee Maestro is a controller software for your Symphony Thunderbolt. Though you do not need Maestro open to use your Symphony Thunderbolt, it provides access to all of Symphony's settings and parameters. It's level meters are also a useful diagnostic tool to see which inputs and outputs are receiving and sending signal.

Maestro Features

While only basic settings may be made from the front panel controls, all Symphony features are available and can be controlled from Apogee Maestro software.

Devices Sidebar

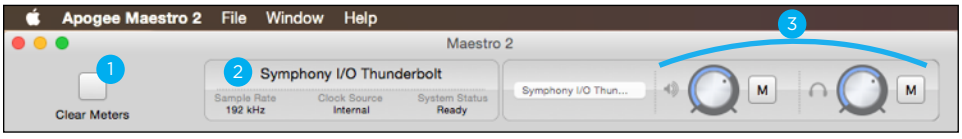


Any Maestro-compatible Apogee interface connected to the host computer are displayed in the Devices sidebar. Hardware settings are displayed by first selecting one or more interfaces in the Devices sidebar and then clicking on a tab.

Device Icon and ID Button

A device icon and ID button is placed adjacent to each row of parameters to identify the hardware unit to which the row belongs. By clicking on the ID button, the corresponding hardware unit's front panel will illuminate. Each hardware unit is assigned a Peripheral Prefix (A-Z, found in Maestro's Device Settings tab window) which is displayed on the ID button.

Toolbar



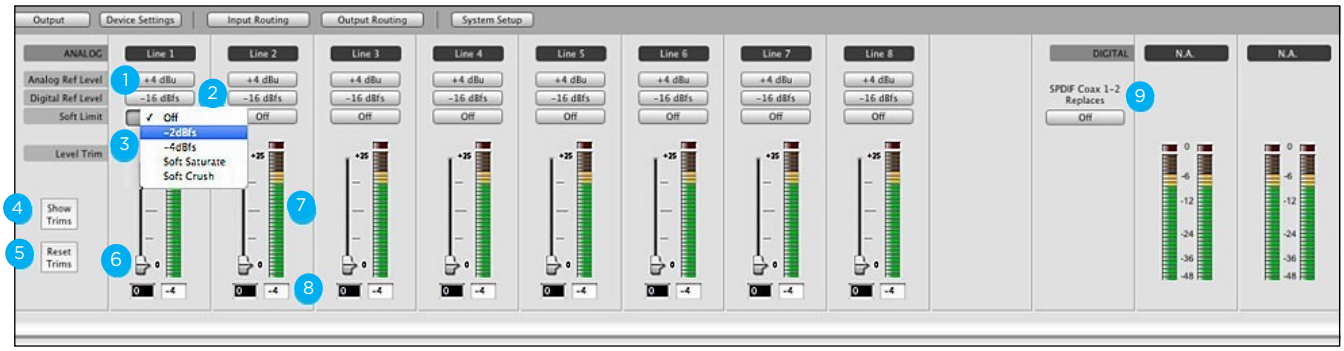
1. **Clear Meters**
   This button clears all held peak and over indications on all hardware and software meters.

2. **System Status**
   This window displays the sample rate, clock source, and system status of the currently selected system. A system status of "Ready" indicates that all detected units are properly connected and clocked

3. **Toolbar Monitor Controls**
   These controls offer immediate access to one peripheral's speaker and headphone volume controls, regardless of the Devices Sidebar selection.

Input Tab Window

Settings for Symphony's analog and digital inputs are found in the input tab.



1. **Analog Level** - Use this drop down menu to choose the analog level for each A/D conversion channel.

   Option+click any channel to set the reference for all channels

   Choose **+4dBu** when connecting to "pro" gear, such as en external mic pre, compressor, or EQ, with outputs at a +4dBu nominal level.

   Choose **-10dBV** when connecting to "semi-pro", hi-fi, or musical instrument gear with outputs at a -10 dBV nominal level.

   When an optional Mic Pre module is installed, the following entries become available:

   Choose **Mic** when connecting microphones or direct boxes, or any devices that needs to run through a microphone preamplifier.

   Choose **Inst** when connecting a guitar or keyboard, or any high impedance (Hi-Z) instrument to the 1/4" input (balanced TRS or unbalance TS). The signal is sent through a Hi-Z to Low-Z conversion circuit before sent through the microphone preamplifier circuit.

2. **Digital Ref Level** - When Analog Level is set to +4 dBu or -10 dBV, use this pop-up menu to choose the digital reference level for each A/D conversion channel.

   Option-select any channel to set the digital reference for all channels

3. **Soft Limit** - Select "On" to engage. This option begins to attenuate transient peaks at a threshold of -4dBfs.

4. **Show/Hide Trims** - Click this button to display or hide all Trim faders.

5. **Reset Trims** - Click this button to reset all Trim faders.

6. **Trim Fader** - Once the desired reference levels have been chosen, click Show Trims, then use the Trim Fader to precisely trim the A/D conversion level within +- 0.1 dB. Note that numerical values may be entered directly in the Trim level readout. Press Tab to advance to the adjacent Trim level readout for quickly

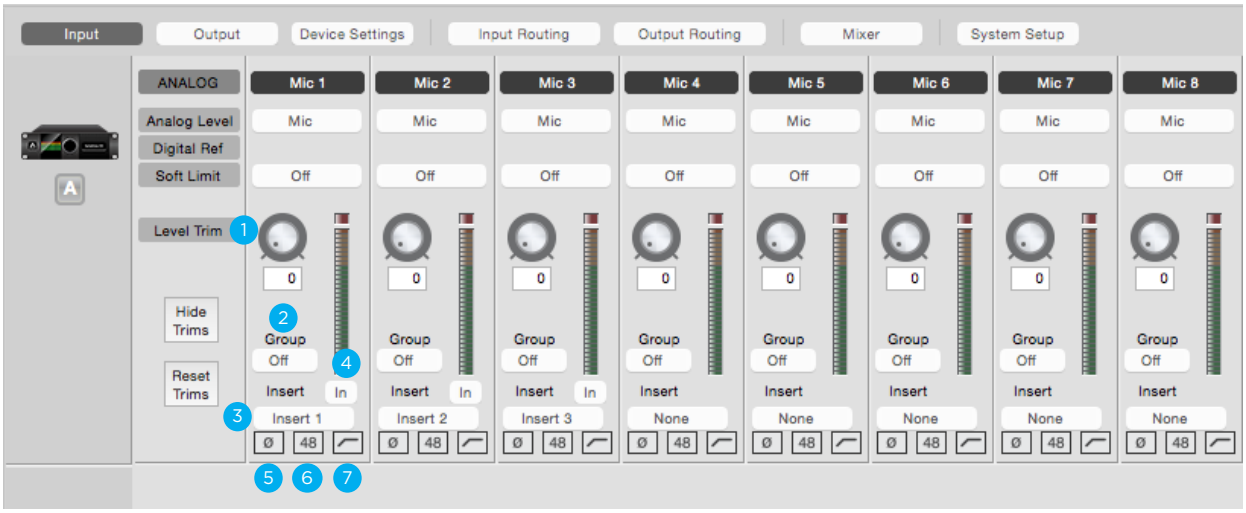
7. **A/D Converter Meter** - This meter displays the level of the input after A/D conversion in the range -48 to 0 dBfs.

8. **Meter Level Readout** - This indicator provides an accurate reading of the analog input meter to an accuracy of 0.1 dB. The reading is used primarily to calibrate the A/D converter stage with a steady input tone.

9. **S/PDIF Replaces** - To use the S/PDIF Coax input, it's necessary to select another analog or digital channel pair which the S/PDIF Coax input will replace on the Input Routing grid. Use this drop down menu to select the channel pair to be replaced.

Mic Pre Module Input Tab

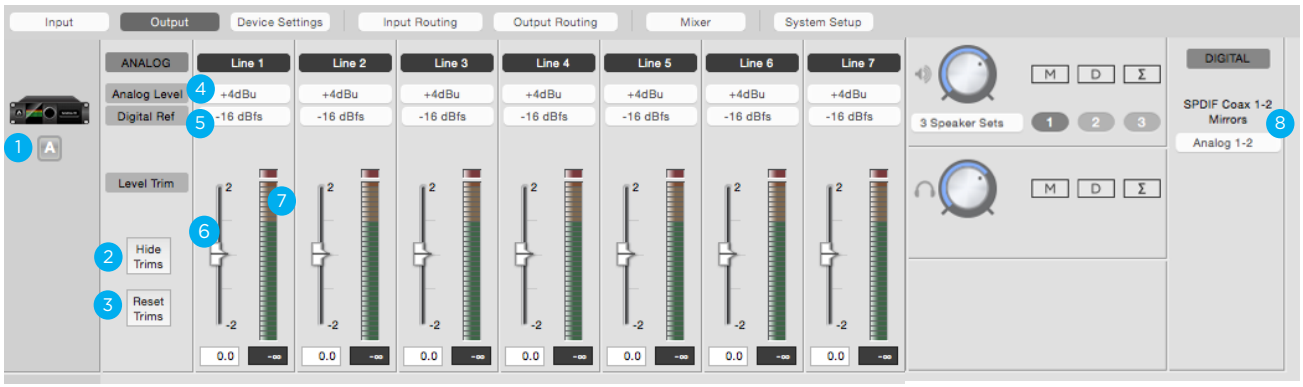
When a Mic Pre I/O module is installed and Analog Level is set to Mic or Instrument, the following additional controls become available:



1. **Level Trim** - Use this knob to adjust the gain of the mic pre.
2. **Group** - Use this drop down to choose a Level Trim group, for controlling the Level Trim of multiple inputs simultaneously. Any level offset that exists before inputs are grouped will be preserved after a group is chosen.
3. **Insert Select** - Use this drop down to insert one of the eight rear panel send/return pairs into the input signal path. Insert labels may be customized in the Device Settings tab window. The insert point occurs after the mic pre and high pass filter and before the A/D conversion stage.
4. **Insert In** - Use this button to enable the Insert Return. The Insert Sent is always active once an insert is selected. Thus, the Insert Send may be used as an analog direct out when an insert is selected but the In button isn't depressed.
5. **Polarity** - Use this button to invert the polarity of the input signal.
6. **48** - Use this button to enable 48 volt phantom power on the corresponding Analog IN channel. Condenser mics require 48 volt phantom power to operate.
7. **High Pass** - Use this button to engage an 80Hz high-pass filter on the input.

Output Tab Window

Settings and controls for Symphony's analog and digital outputs are found in the Output tab.



1. **Device Icon & ID Button** - Use this drop down menu to choose the analog level for each D/A conversion channel.

   Option+Select any channel to set the reference for all channels.

   - Choose **+4dBu** when connecting to "pro" gear with inputs at a +4dBu nominal level.
   - Choose **-10dBV** when connecting to "semi-pro", hi-fi, or musical instrument gear with inputs at a -10 dBV nominal level.

2. **Show/Hide Trims** - Displays or hides the Trim faders

3. **Reset Trims** - Resets all Trim faders.

4. **Analog Ref Level** - When calibrating Symphony I/O, use this drop down menu to choose the analog reference level for each D/A conversion channel. Option-select any channel to set the analog reference for all channels.

5. **Digital Ref Level** - Use this pop-up menu to choose the digital reference level for each D/A conversion channel. Option-select any channel to set the digital reference for all channels.

6. **Trim Fader** - Once the desired reference levels have been chosen, click Show Trims, then use the Trim fader to precisely trim the D/A conversion level within +- 0.1 dB. Please note that, because the D/A Meter displays the digital signal before conversion, it's necessary to measure the analog output with an external voltmeter when calibrating.

7. **D/A Meter** - Displays the level of the output *before* D/A conversion.

8. **S/PDIF Mirrors** - The S/PDIF coaxial output may be set to mirror (i.e. transmit in parallel) any of the analog or digital outputs pairs on the routing grid. Use this pop-up menu to select the output pair that is mirrored by the S/PDIF coaxial output.

Speaker & Headphone Controls

The following settings control the configuration and level of the rear panel analog outputs and front panel headphone output.

1. **Speaker Level** - Controls the speaker output level.

2. **Analog Out Format** - Sets the format of the analog outputs.

- **Line**: Output 1/2 are configured as line outputs. Functions such as level control, Mute, Dim, and Sum to Mono are disabled.
- **Stereo**: Output 1/2 are configured as speaker outputs (with all monitor functions available). Outputs 3-10 are configured as line outputs.
- **2 Speaker Sets**: Output 1/2 and outputs 3/4 are configured as two pairs of stereo outputs. Switch between the stereo pairs with the Speaker Select buttons. These outputs are adjusted simultaneously with the Output Controller knob.
- **3 Speaker Sets**: Output 1-6 are configured as three pairs of stereo outputs. Switch between the stereo pairs with the Speaker Select buttons. These outputs are adjusted simultaneously with the Output Controller knob.
- **5.1, 7.1, 9.1**: Outputs are configured as speaker outputs, suitable for connection to a 5.1, 7.1 (8x8 or 16x16 I/O modules only), or 9.1 (16x16 I/O module only) speaker system. These outputs are adjusted simultaneously with the Output Controller knob.

3. **Headphone Level** Controls the output level of the corresponding headphone output.

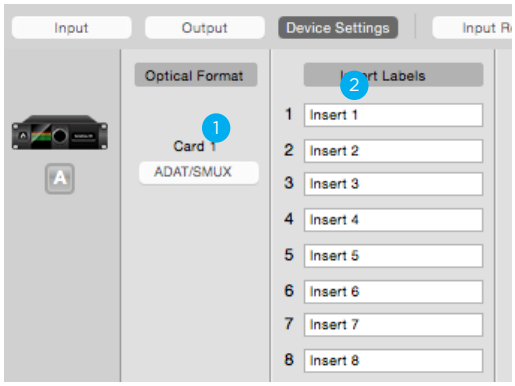
4. **Mute** Select “M” to mute the speaker or headphone output.

5. **Dim** Select “D” to lower the speaker or headphone output level by 15dB. This function is a convenient for briefly lowering the playback volume in the speakers or headphones in order to hold a conversation without completely muting the output.

6. **Sum to Mono** Select “∑” to combine the left and right channels of the speaker or headphone outputs to mono. This function is useful to check mono compatibility of a stereo signal.

Device Settings Tab Window

This tab only appears when the Mic Pre module, 2x6 I/O module, or an 8x8 I/O module with optical ports is installed.

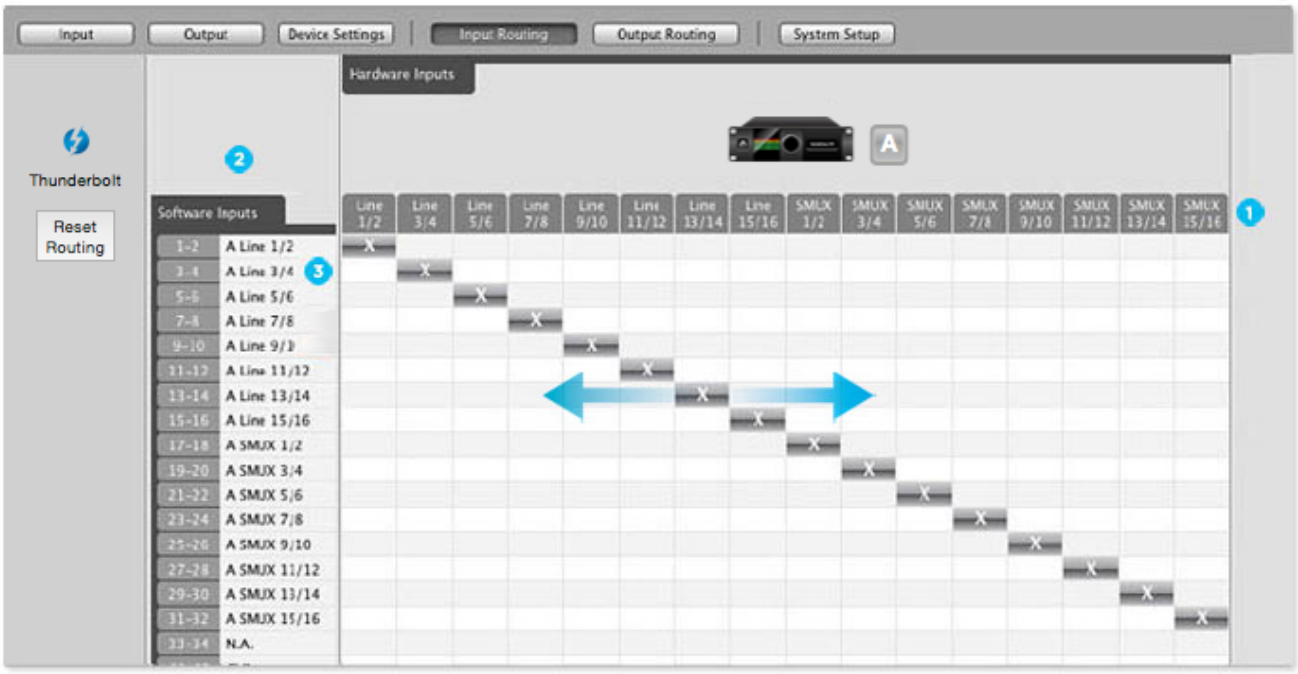


1. **Optical Format** - On modules with optical ports, select between ADAT/SMUX, and SPDIF protocols.

2. **Insert Labels** - Type a description of the device(s) connected to the Insert point of the Mic Pre module.

Input Routing Tab Window

The Input Routing tab window determines how Symphony I/O hardware inputs are routed to audio software inputs.



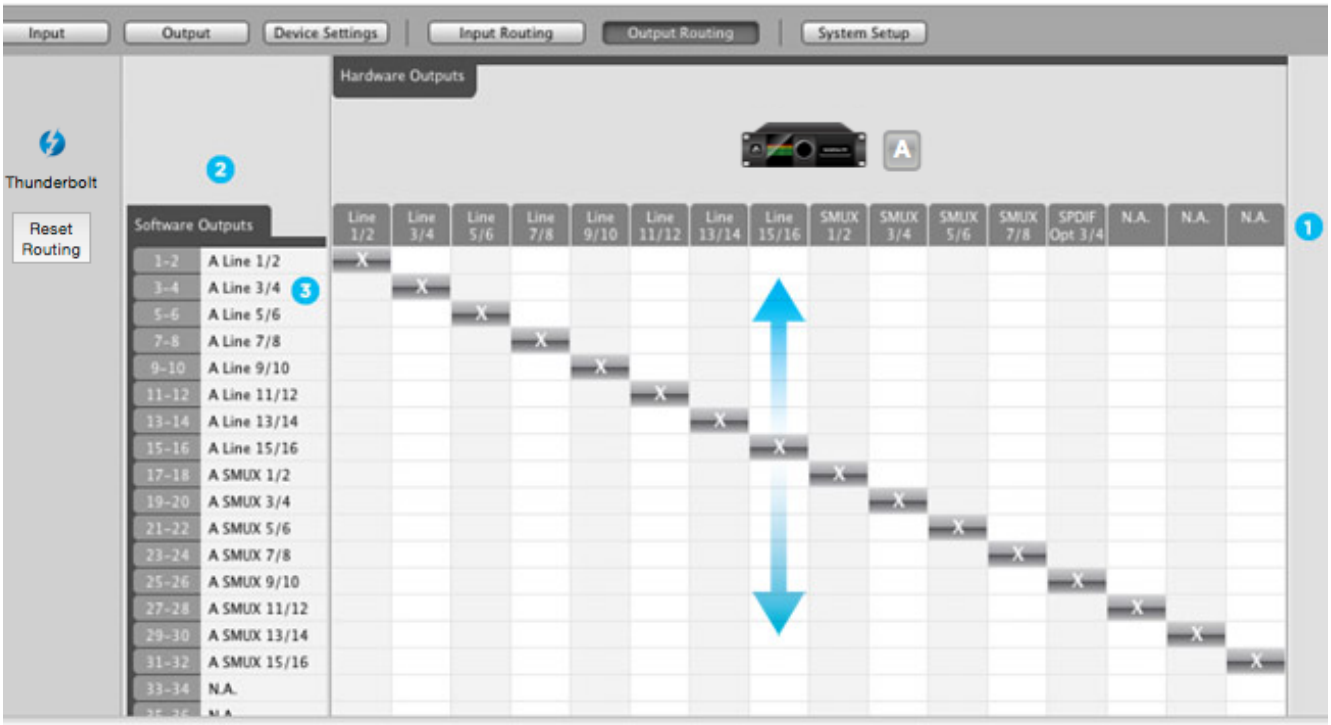
The Input Routing window determines how Symphony's physical hardware inputs are routed to these software inputs

1. **Hardware Inputs Columns** - The hardware analog and digital inputs of all peripherals connected to Symphony are displayed in these columns.
2. **Software Inputs Rows** - Available audio software inputs are displayed in these rows in pairs (1-2, 3-4, etc.)
3. **Software Inputs Labels** - Once a connection has been made between hardware and software inputs, the software input label (consisting of the peripheral prefix plus the hardware input label) appears in these fields.
   - *For these labels to appear in your Audio software input/output assignments, ensure that the software is set to accept labels transmitted through Symphony's Core Audio driver.*
4. **Reset Routing** - Restores the factory default routing.

Audio connections between hardware and software inputs are made by positioning markers on the routing grid at the intersection of the desired hardware and software channels. By default, hardware inputs are routed sequentially to software inputs. Note that the movement of markers is restricted based on the routing capability of the system. On the Input Routing page, one hardware input may be assigned to multiple software inputs (in effect splitting the signal) but multiple hardware inputs may not be assigned to one software input (an operation which would require the summing of input signals). Each markers range of motion is indicated by the horizontal shading on the routing grid, as depicted above by arrows on the input routing grid.

Output Routing Tab Window

The number of output channels that appear to audio programs in the computer is determined by Symphony's Core Audio driver. The Output Routing tab window determines how these software outputs are routed to Symphony's physical hardware outputs.



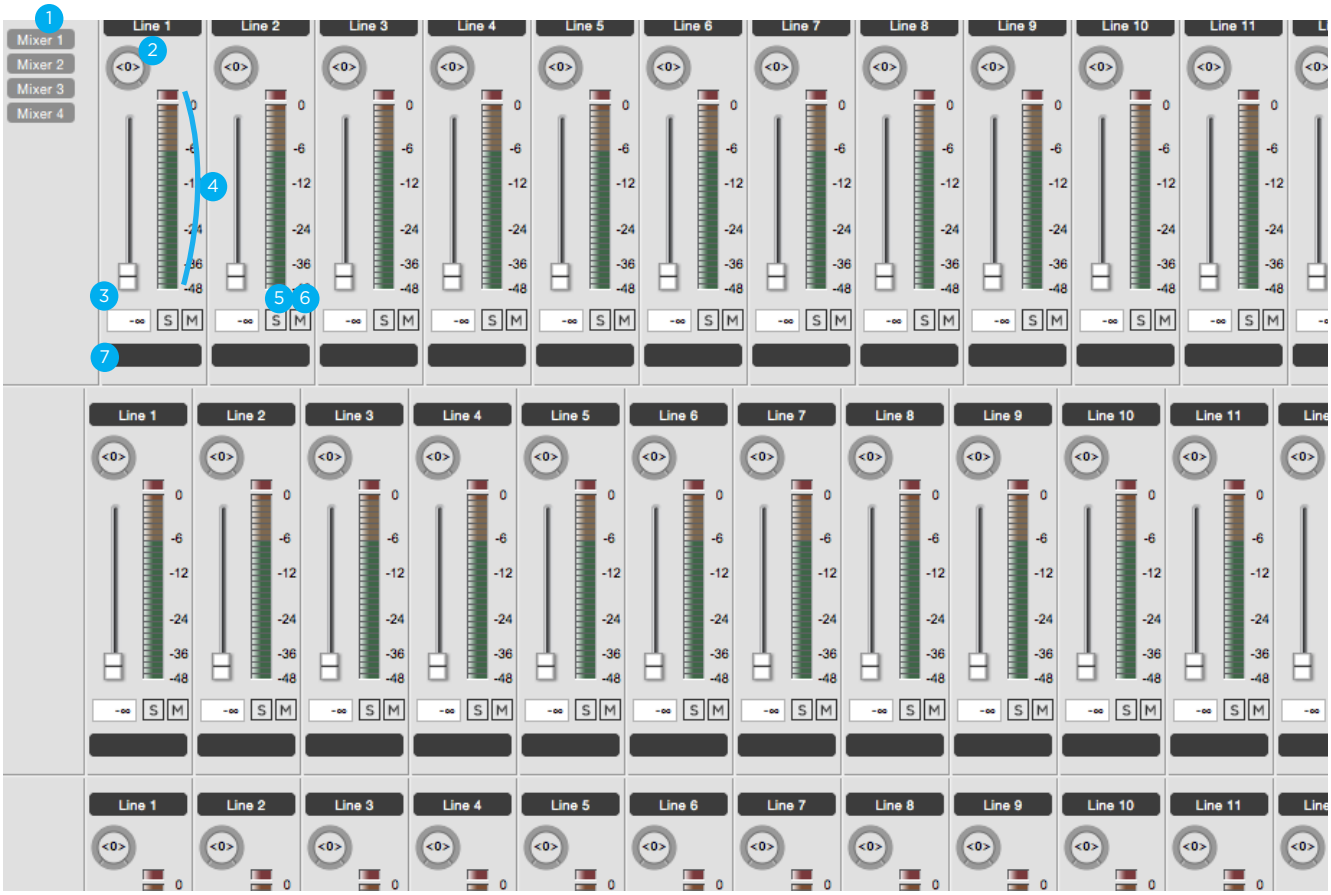
1. **Hardware Outputs Columns** - The hardware analog and digital outputs of all peripherals connected to Symphony are displayed in these columns.
2. **Software Outputs Rows** - Available audio software outputs are listed in these rows in pairs (1-2, 3-4, etc.)
3. **Mixer 1-4 Outputs Rows** - The four low latency mixer outputs appear at the bottom of the Software Outputs list, and may be assigned to one or more hardware output pairs.
4. **Software Outputs Labels** - Once a connection has been made between software and hardware outputs, the software output label (consisting of the peripheral prefix plus the hardware output label) appears in these fields.
5. **Reset Routing** - Restores the factory default routing.

Manipulation of the Output Routing Tab Window is essentially the same as the Input Routing Tab Window, with the important distinction that one software output may be assigned to multiple hardware outputs but multiple software outputs may not be assigned to one hardware output. Each marker's range of motion is indicated by the vertical shading on the routing grid, as depicted above by arrows on the Output routing grid.

Note that each marker represents an odd-even pair of audio signals - it's not possible to route the odd and even signal of a pair to different destinations.

Mixer Tab Window

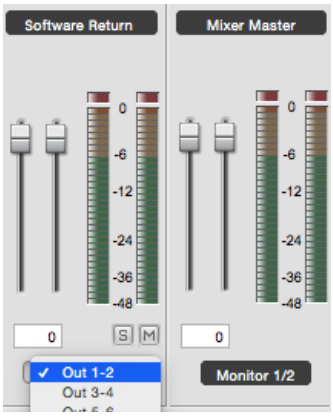
The Maestro Mixer provides a low latency patch from Symphony's inputs to its outputs. This is useful for when latency through software audio applications are too long, but also when wanting to monitor your input signal without needing to have an audio software application open at all.



Four independent mixers are provided for various uses, such as where multiple performers each require a different low latency mix.

1. **Mixer 1-4** - Use these buttons to show or hide any of the four mixers from view.
2. **Pan** - This rotary knob pans the input signal between the left and right sides of the mixer's stereo output.
3. **Input Fader and Readout** - This slider sets the level of the input signal tin the mixer's stereo output. The level of the fader is indicated in the adjacent window.
4. **Input Meter** - This bar-graph meter displays the pre-fader input level.
5. **Input Solo** - This button mutes all input channels whose Solo buttons are not engaged.
6. **Input Mute.** - This button mutes the input channel
7. **Input Custom Label** - Alphanumeric labels may be entered in these text boxes.

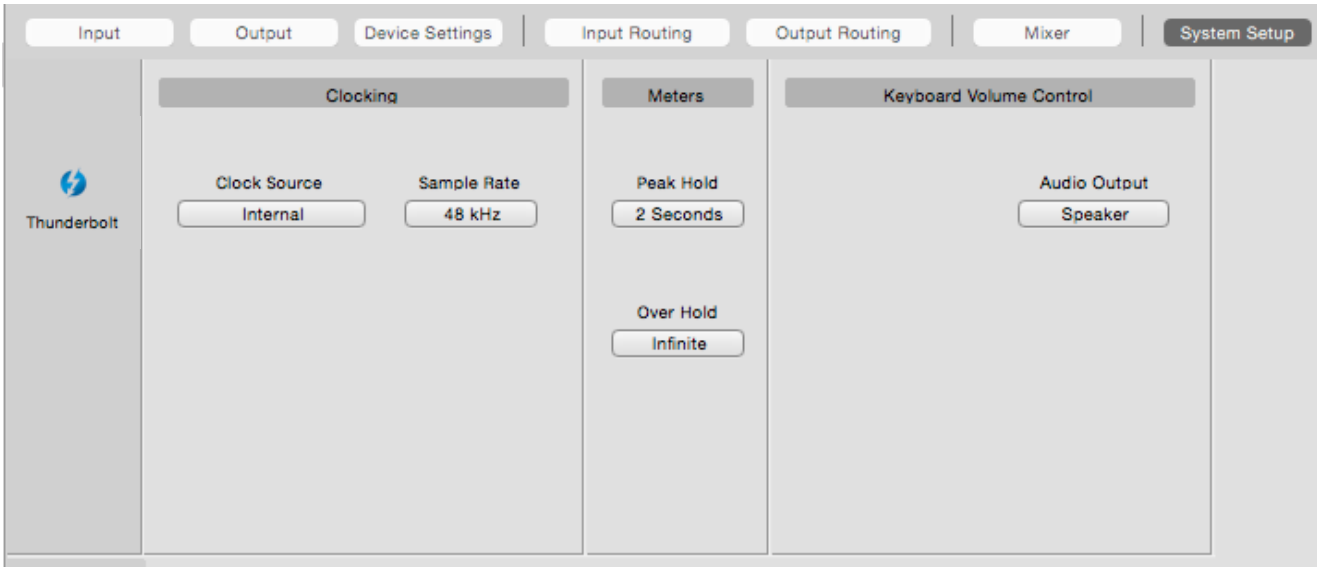
Mixer Tab Window (Continued)



8. **Software Return** - This stereo input channel draws signal from your software audio application. Use the drop down menu to select which stereo pair from software is heard through the mixer.

9. **Mixer Master** - This section of the mixer provides level control and metering for the mixer's output.

System Setup Tab Window



In most cases, Symphony hardware interface is part of a larger Mac-based audio system. Settings that encompass the integrated hardware-software system are found on this tab window.

1. **Clock Source** - This drop down selects the clock source. The following sources may be selected:
   - **Internal**: Symphony is clocked from its internal crystal.
   - **Word Clock**: Symphony is clocked from an external signal connected to the rear panel BNC input.
   - **SPDIF Coax, SPDIF Optical, ADAT, or SMUX**: Symphony is clocked from a digital audio input. The clock sources listed will vary depending on sample rate and optical input settings.

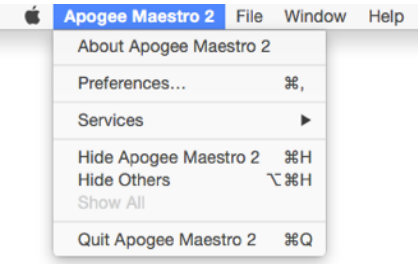
2. **Sample Rate** - Selects Symphony's sample rate. In some cases this setting may be overridden by software running on the computer (i.e. When a DAW session project is open).

3. **Peak Hold** - Sets the time that peak indications are held on software and front panel meters.

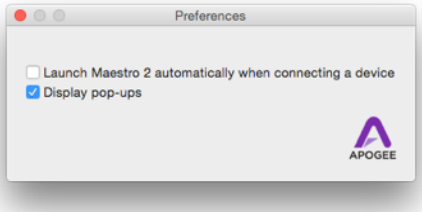
4. **Over Hold** - Sets the time that over indications are held on software and front panel meters.

5. **Keyboard Volume Control** - The audio system may be configured so that the Mac keyboard volume controls set the output level of Symphony's speaker or headphone outputs.

Menu Bar Menus



About Apogee Maestro - Choose this menu item to display version information for all the hardware connected and software elements installed on your Mac.
Preferences - Choose this menu item to display Maestro's Preference panel.



- **Launch Maestro automatically when connecting a device** - This launches Maestro when an Apogee device is connected to the computer.
- **Display pop-ups** - check this box to cause a transparent overlay to appear on your mac screen whenever the speaker or headphone levels are adjusted.

Hide Apogee Maestro - Choose this menu item to hide the Maestro application.
Hide Others - Choose this menu item to hide all other open applications.
Show all - If any open applications have been hidden, choose this menu item to reveal all open applications.
Quit Apogee Maestro - Choose this menu item to quit Maestro.

Rescan - Choose this menu item to re-initialize the link between Maestro and Apogee hardware connected to the Mac, in the case where the hardware is correctly connected and powered on but not detected by Maestro.

Selecting an item in the **Window Menu** switches to a view of that selection.

Reference

Understanding Latency

What is latency?

When recording with most computer-based digital audio applications, a delay between the input and output of the recording system often disturbs the timing of the musicians who are performing. This delay, known at latency, means that the musician hears the notes he produces a few milliseconds after having produced them. As anyone who has spoken on a phone call with echo knows, relatively short delays can confuse the timing of any conversation, spoken or musical.

To illustrate the effect of latency, **Figure A** depicts the typical signal path of a vocal overdub session. A vocalist sings into a microphone, which is routed through a hardware interface to the audio software application for recording. In the software application, the vocalist's live signal is mixed with the playback of previously recorded tracks, and routed back through the hardware interface to the vocalist's headphones. Because of the audio application's latency, the vocalist hears his performance delayed by several milliseconds in his headphones.

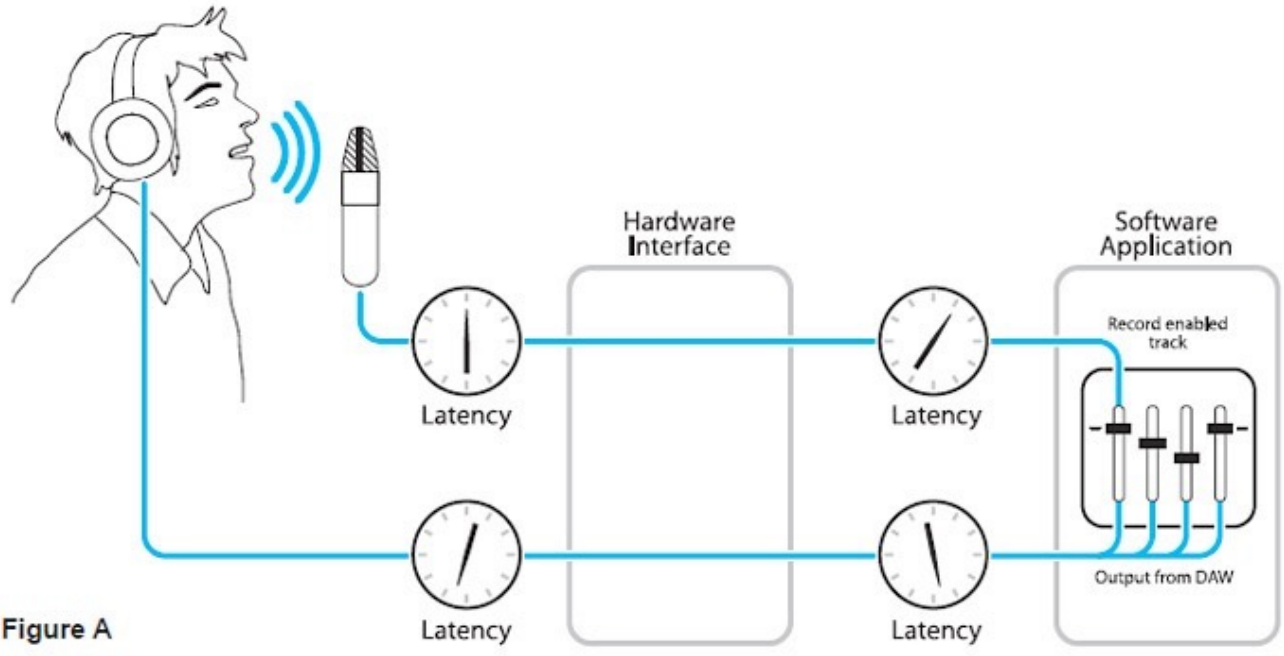


Figure A

How does Maestro resolve latency?

By routing the hardware input directly to the hardware output and mixing in playback as shown in **Figure B**, it's possible to create a headphone listening signal with a much shorter delay.

First, the signal being recorded (in this case, a vocal mic) is split in the hardware interface and routed to both the software application for recording and directly back to the hardware outputs without going through the latency-inducing software; this creates a low latency path from mic to headphones. Next, a stereo mix of playback tracks is routed to the low latency mixer and combined with the hardware input(s). This allows the performer to hear both himself without a confusing delay plus the playback needed for overdubbing.

Note that the software application's mixer is used to set a stereo mix of playback tracks while the low latency mixer is used to set the balance between the stereo playback mix and the hardware inputs.

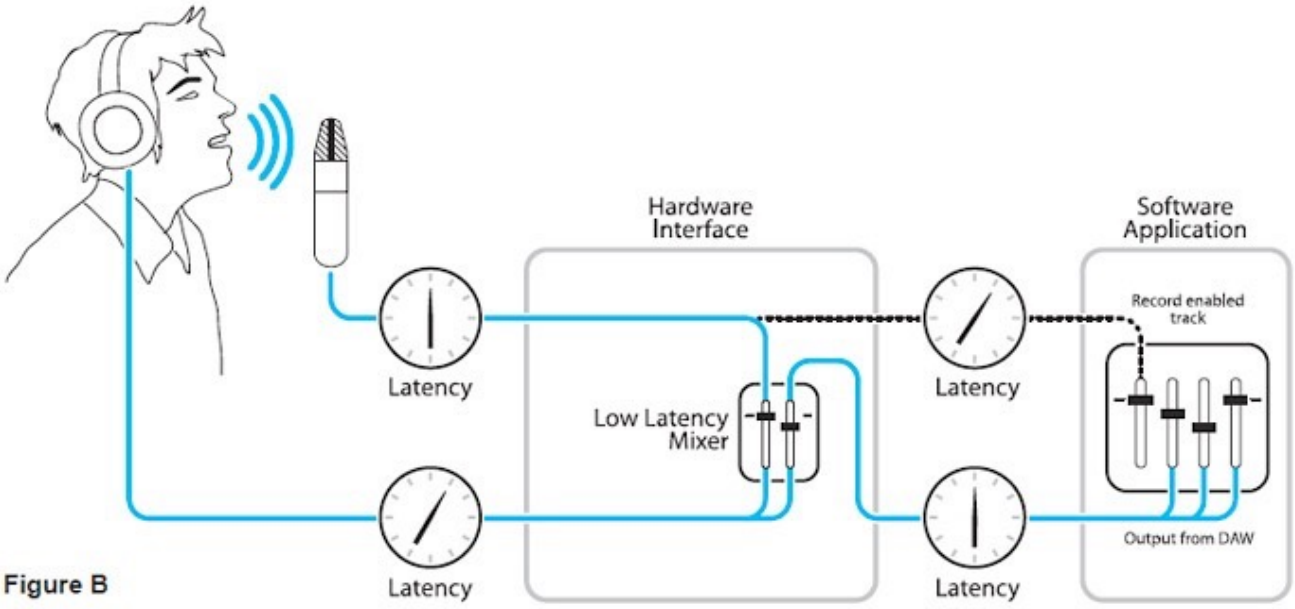


Figure B

Do I need the Maestro Mixer?

The Maestro mixer serves to provide a low latency listening mix while recording. Therefore if you're using Symphony to listen to iTunes or audio from another program, there's no need to use the mixer.
It's also possible that the latency of your particular recording system is low enough to be unnoticeable by you or other performers, especially since Symphony uses the very efficient Thunderbolt™ 2 Technology. If you've set your audio software's input/output buffers according to the guidelines below and latency doesn't bother you or other performers, there's no need to use the Maestro mixer.

How do I set my software's I/O Buffer?

The I/O Buffer setting found in most audio software is one of the most crucial, but often ignored, settings in a Mac-based recording system.
When choosing a buffer setting, a compromise between the latency through the application and the amount of computer processor power accessible to the application must be made.

A lower Buffer setting results in lower latency but less available processing power. If the application can't access enough processor power, processor overruns may occur, resulting in audible clicks and pops or error messages that interrupt playback and recording.

A higher Buffer setting, on the other hand, results in greater amount of accessible processor power (i.e. less chance of overruns) but increases the latency. Determining the best setting requires some trial-and-error in order to find the best compromise.

Keep in mind that as tracks and plug-ins are added to a software session, processor requirements increase. Thus, the buffer setting that works during the early stages of a session might result in processor overruns during later stages.

The best strategy is to set the buffer to a lower setting during recording and accept certain limitations on plug-in usage, and then raise the buffer during mixing to utilize the computer's full processor power when latency isn't an issue.

With the processing power of today's Macs, you may find that adjustment of the Buffer isn't necessary, and you can leave it at a setting for low latency and still access a sufficient amount of processing power when adding tracks and plug-ins. If you do encounter clicks, pops or software errors, don't hesitate to experiment with the Buffer setting.

Soft Limit

Soft Limit is Apogee's proprietary analog process for taming transients before A/D conversion. By gently rounding transients in a transparent manner, it's possible to maximize level BEFORE the A/D conversion stage and prevent unwanted distortion from clipping.

Soft Limit Settings

Soft Limit may be engaged on each analog input in Maestro's Input tab window. The following settings are available:

- **-2 dBfs** - Soft Limit begins to attenuate transient peaks at a level of -2 dBfs. This is the most transparent Soft Limit setting.
- **-4 dBfs** - Soft Limit begins to attenuate transient peaks at a level of -4 dBfs. This is the threshold of previous implementations of Soft Limit.
- **Soft Saturate** - a lower threshold, plus asymmetrical clipping in a manner similar to tube circuits.
- **Soft Crush** - The most extreme setting, where audible distortion and dirty mojo are required. Take that, drums!

Soft Limit on the 16x16 Analog IO module - On the 16x16 Analog I/O module's inputs, soft limit functionality is restricted to On and Off. The On setting corresponds to the -4 dBfs setting on other I/O modules.

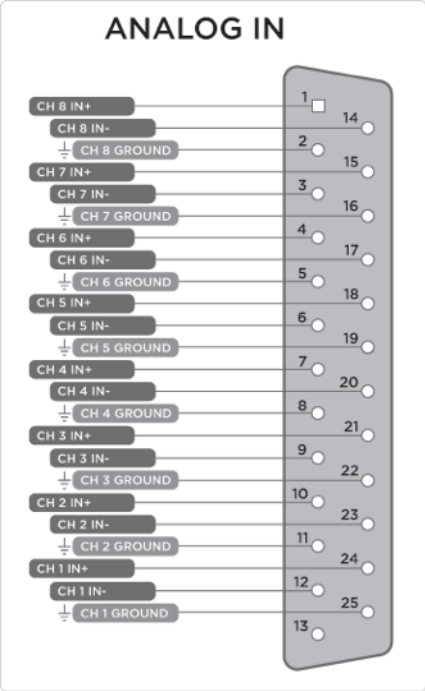
When to use Soft Limit

Soft Limit is an analog process that instantaneously rounds transient peaks beginning at -4dbfs. For all intents and purposes attack and release times may be considered instantaneous. As with any peak reduction device working at such fast time constants, Soft Limit is most effective with signals whose peak information is much greater than its average (or RMS) information, such as drums, percussion and plucked instruments. Soft Limit may not be the appropriate choice for limiting signals whose crest factor (peak to RMS ratio) is low, such as bass or organ.

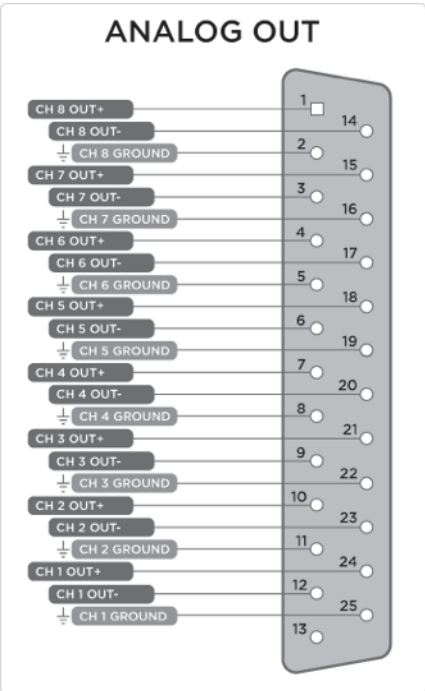
Pin Out Diagrams

Analog and Inserts

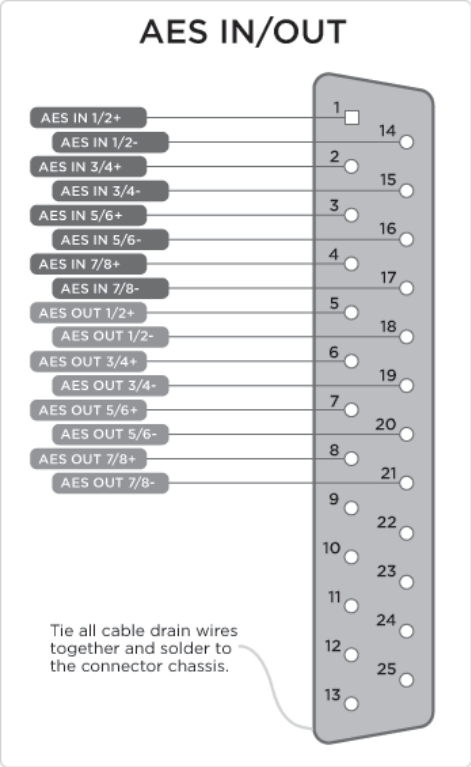
Pinout for Analog IN and INSERTS RETURN 1-8 (ic Pre I/O Module)



Pinout for Analog OUT and INSERTS SEND 1-8 (Mic Pre I/O Module)



AES IN/OUT


AES IN/OUT
AES IN 1/2+
AES IN 1/2-
AES IN 3/4+
AES IN 3/4-
AES IN 5/6+
AES IN 5/6-
AES IN 7/8+
AES IN 7/8-
AES OUT 1/2+
AES OUT 1/2-
AES OUT 3/4+
AES OUT 3/4-
AES OUT 5/6+
AES OUT 5/6-
AES OUT 7/8+
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Tie all cable drain wires together and solder to the connector chassis.

Specifications

System Requirements

- Computer: Intel Thunderbolt™ Equipped Mac
- Memory: 4GB RAM minimum, 8GB recommended
- OS X 10.9.5 or later
- Thunderbolt cable

**Thunderbolt and the Thunderbolt logo are trademarks of Intel Corporation in the U.S. and/or other countries.*

The Mini DisplayPort, featured on many pre-Thunderbolt Macs, is the exact same size as the Thunderbolt port but does NOT support Thunderbolt devices.

X Mini DisplayPort

✓ Thunderbolt Port

Factory Hardware Reset / Initialize

To return Symphony to the factory default settings:

1. **Start with Symphony turned off.**
2. **Hold down the Controller knob.**
3. **Turn Symphony on.**
4. **When the Symphony I/O "Resetting" screen clears and the Display shows the HOME screen, let go of the Controller knob.**

This completes the hardware reset of Symphony.

Technical Details

Technical Specifications	
Analog to Digital	THD + N: -114dB @22dBu (0.00020%) Dynamic Range: 122dB (A-weighted) Max Input Level: (+4dBu ref): +24dBu Max Input Level: (-10dBV ref): +6dBv Frequency Response @ 44.1kHz sample rate: 10 - 20kHz (+/- 0.05dB) Input Impedance: 10K
Digital to Analog	THD + N: -117dB Dyn Range: 129dB (A-weighted) Max Output Levels: ∞ to +24dBu Frequency Response @ 44.1kHz sample rate: DC to 20kHz (+/- 0.05dB) Output Impedance: 25 Ohm Outputs are balanced through Apogee's proprietary Perfect Symmetry Circuitry (PSC)
Headphone Output	1 stereo 1/4" headphone output on front panel THD + N: -110dB @19dBu into 600 Ohm (=80mW) -101dB @14dBu into 32 Ohm (=470mW) Dyn Range: 121dB (A-weighted) Output: Apogee's proprietary Constant Current Drive™ provides smooth frequency response with any headphones
Connections	2 Thunderbolt 2 ports
Max Audio Resolution	24-bit/192 kHz

General Details

General	
Symphony I/O Mk II Dimensions	Inches: 17.75 (19 with Rack Ears) x 11.5 x 3.5 Centimeters: 45 (48.26 with Rack Ears) x 29.2 x 8.9
Symphony I/O Chassis Packaging Box	Inches: 22.875 x 17.75 x 9.25 Centimeters: 58.1 x 45.1 x 23.5
I/O Module Packaging Box	Inches: `3.75 x 12.25 x 3.25 Centimeters: 34.9 x 31.1 x 8.3
Power	AC IN 90-240VSV, 50-60 Hz, 150W MAX

Additional Support

General Support

For more information:

- Apogee KnowledgeBase and FAQs
- Apogee Product Registration
- How to contact Apogee Technical Support

Visit: http://www.apogeedigital.com/support/

Apogee Pro Care

Want priority access and expedited repair? Consider an Apogee ProCare membership.

It's never been easier to get back to work.

As a ProCare member you'll have premium access to Apogee's world-class technical support group for the life of your agreement. The contract is fully transferable by the original registered owner of the agreement. All Apogee support technicians reside and are continuously trained at Apogee Electronics, Santa Monica, CA.

Learn more at: www.apogeedigital.com/apogee-procare

Warranty Information and Legal Notices

Symphony Warranty Information and Legal Notices

Registration and Warranty Information

Be sure to register your Symphony I/O Mk II by completing the on-line registration form at our Web site: www.apogeedigital.com/support/contact-support

If you do so, Apogee can contact you with any update information. As enhancements and upgrades are developed, you will be contacted at the registration address. Firmware updates are free for the first year of ownership unless otherwise stated.

Please address any inquiries to your dealer or directly to Apogee at:

APOGEE ELECTRONICS CORPORATION
1715 Berkeley St Santa Monica,CA 90404, USA
web: www.apogeedigital.com/support

APOGEE ELECTRONICS CORPORATION warrants this product to be free of defects in material and manufacture under normal use for a period of 12 months. The term of this warranty begins on the date of sale to the purchaser. Units returned for warranty repair to Apogee or an authorized Apogee warranty repair facility will be repaired or replaced at the manufacturer's option, free of charge.

ALL UNITS RETURNED TO APOGEE OR AN AUTHORIZED APOGEE REPAIR FACILITY MUST BE PREPAID, INSURED AND PROPERLY PACKAGED, PREFERABLY IN THEIR ORIGINAL BOX.

Apogee reserves the right to change or improve design at any time without prior notification. Design changes are not implemented retroactively, and the incorporation of design changes into future units does not imply the availability of an upgrade to existing units. This warranty is void if Apogee determines, in its sole business judgment, the defect to be the result of abuse, neglect, alteration or attempted repair by unauthorized personnel. The warranties set forth above are in lieu of all other warranties, expressed or implied, and Apogee specifically disclaims any and all implied warranty of merchantability or of fitness for a particular purpose. The buyer acknowledges and agrees that in no event shall the company be held liable for any special, indirect, incidental or consequential damages, or for injury, loss or damage sustained by any person or property, that may result from this product failing to operate correctly at any time.

USA: Some states do not allow for the exclusion or limitation of implied warranties or liability for incidental or consequential damage, so the above exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Service Information

Symphony contains no user-serviceable components; refer to qualified service personnel for repair or upgrade. Your warranty will be voided if you tamper with the internal components. If you have any questions with regard to the above, please contact Apogee.

In the event your Symphony needs to be upgraded or repaired, it is necessary to contact Apogee prior to shipping, and a Return Materials Authorization (RMA) number will be assigned. This number will serve as a reference for you and helps facilitate and expedite the return process. Apogee requires that shipments be pre-paid and insured — unless otherwise authorized in advance.
IMPORTANT: ANY SHIPMENT THAT IS NOT PRE-PAID OR IS SENT WITHOUT AN RMA NUMBER WILL NOT BE ACCEPTED.

Warnings

FCC Warning
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to take whatever measures necessary to correct the interference at his own expense.

Copyright Notice

Software Notice

Declarations of Conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Re-orient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a different circuit from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

NOTE: The use of non-shielded cable with this equipment is prohibited.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Apogee Electronics Corp.
1715 Berkeley Street
Santa Monica,CA 90404, USA

Betty Bennett, CEO.

Industry Canada Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matérial brouilleur du Canada.

Declaration of Conformity – CE

Apogee Electronics Corporation hereby declares that the product, the Symphony, to which this declaration relates, is in material conformity with the following standards or other normative documents:

• EN50081-1/EN55022; 1995
• EN50082-1/IEC 801-2, 3, 4; 1992
following the provisions of:
• 73/23/EEC – Low Voltage Directive
89/336/EEC – EMC Directive

Declaration of Conformity – Japan

Apogee Electronics Corporation hereby declares that Symphony, to which this declaration relates, is in material conformity with the VCCI Class A standard.

Declaration of Conformity – Australia

Apogee Electronics Corporation hereby declares that Symphony is in material conformity with AN/NZS standard requirements.