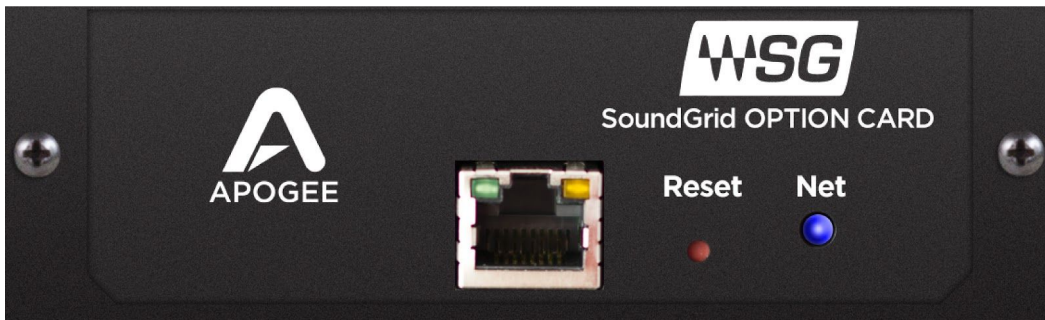


Symphony I/O Mk II SoundGrid

User's Guide for units equipped with the WSG Option Card



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Introduction to WSG Systems

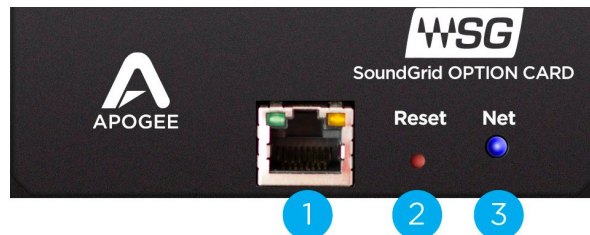
A Waves SoundGrid (WSG) system is a network of devices connected and integrated together through the Waves SoundGrid software and drivers. It can be as simple as a single computer and single hardware device (such as a Mac or PC computer, and the Symphony I/O MkII), or more complex setups that include multiple computers, DSP servers, mixers, and other hardware pieces integrated into a single system.

Since Symphony I/O MkII with WSG Option Card is a single piece of this network system, this document is limited to explaining features and details specific to the Apogee Symphony I/O Mk II Soundgrid unit. All functions, settings, and controls other than your recording program will be done via various SoundGrid software as there is no Apogee-specific software involved.

Additional information about your SoundGrid system can be found in the User's Guides provided by Waves. The [SoundGrid Studio Manual](#) will contain the most information directly related to your Symphony I/O Mk II Soundgrid setup. This manual as well as other guides and support resources and where to ask technical support questions can be found on the Waves Support website: www.waves.com/support

Panel Tour

SoundGrid Option Card



1. 1GB Ethernet Port
2. Recovery/Reset Button
3. Network Status Indicator
 - Blue: Device recognized by the SoundGrid network
 - Red: Device not recognized by the SoundGrid network
 - Yellow: Updating
 - White: Unit malfunction (e.g., firmware did not load properly, unit did not boot properly)
 - Cycling through colors: This LED is used to identify the unit from the control panel

Compatible Modules

The following Module Cards are compatible with Symphony I/O Mk II SoundGrid. Any combination of these cards can be used with the exception of the Mic Pre Module which must be installed into the top Slot 2 with an 8x8 Mk II or 16x16 Mk II module in the bottom Slot 1.

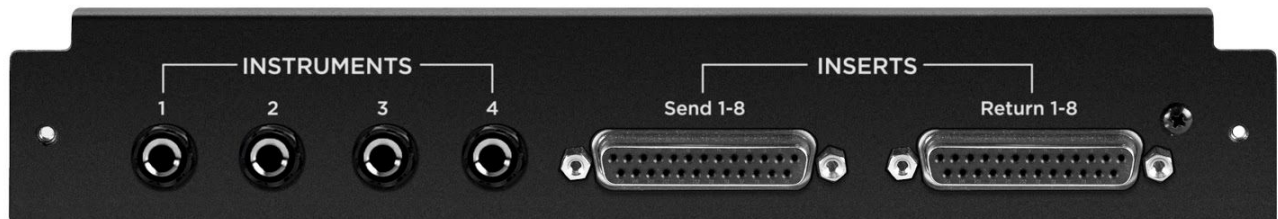
8x8 Mk II Module



16x16 Mk II Module



Mic Pre Module



Please refer to the Symphony I/O Mk II User's Guide for a full description of these modules
<http://www.apogeedigital.com/support/symphony-io-mk-ii#tab-id-2>

Incompatible Module Cards

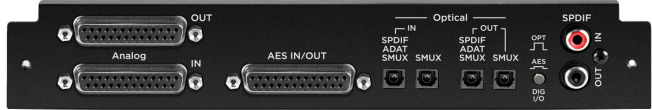
All original I/O modules are not compatible with Symphony I/O SoundGrid.

2x6 Analog + AES + 8 Optical Module



8x8 Analog + 8 AES/Optical IO module & variants:

- 8x8 + AES only
- 8x8 + Optical only



16x16 Analog IO Module



16 Analog In + 16 Digital Out (A16IP)



16 Analog Out + 16 Digital In (A16OP)



Other Connectivity Option Cards are not Compatible

No other connectivity cards available from Apogee are compatible with Symphony I/O Mk II SoundGrid.

- The Thunderbolt card, Pro Tools HD option card, and any other option cards will not work in a Symphony I/O Mk II SoundGrid unit.
- A Symphony I/O Mk II Soundgrid unit cannot be turned into a different unit by removing the SoundGrid card and installing another option card.
- A SoundGrid Option Card cannot be installed into any other unit such as a Symphony I/O Mk II Thunderbolt or Symphony I/O Mk II PT HD.

Getting Started

Registration

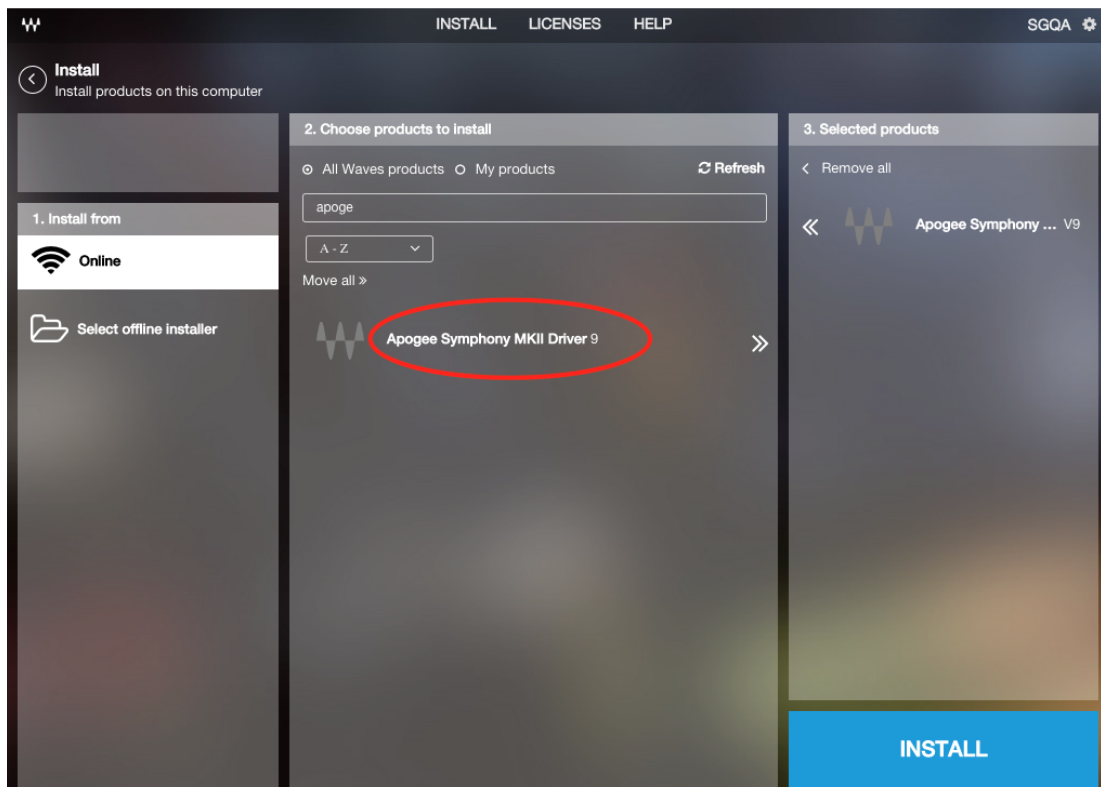
You must have a Waves account in order to get the software, drivers, and any licenses needed for the WSG system. To register your device, log into your Waves account at www.waves.com

If you own Waves plugins, please register, install and activate them prior to following the instructions below:

- Note: SoundGrid and Native applications support v9.3 and higher plugins only (installer V9r19 and above).

Software Download

1. Go to Waves.com > Downloads > Latest Version and Download **Waves Central** for Mac or PC, as needed. Run the installer and follow onscreen instructions when finished.
2. Launch **Waves Central**.
3. Click on **Install Products**, select **Online**, then the **All Waves Products** radio button.
4. Type **Apogee** into the search box and the driver will appear.
5. Make sure that **Apogee Symphony MKII Driver** is selected (this will automatically install SoundGrid Studio), then click on the **Install** button.
6. When complete, restart your computer.



Connections

Thanks to the flexibility of the SoundGrid system, it's possible to start with just a single Symphony I/O interface and build your system as the need arises. Even without a SoundGrid DSP Server, it's possible to expand your setup to 128 channels of I/O and up to 8 Mac and Windows computers. Add the DSP Server for low latency mixing and recording with Waves plugins plus greatly expanded DSP capability.

Basic setup:

1. Using a CAT5e or CAT6 ethernet cable, connect the WSG Option Card's ethernet port to your computer's ethernet port.

This is the simplest setup. Note that:

- This is just like connecting a USB or Thunderbolt interface to your computer, only you are using an Ethernet cable instead.
- The SoundGrid software integrates the Symphony I/O MkII with your audio software via ASIO drivers on a PC, or CoreAudio drivers on a Mac. No separate Apogee software needs to be installed.
- *Monitoring must be done via your recording software as there is no low-latency eMotion ST Mixer.
- *Plugins would be inserted into your recording software as usual.

Once you learn how the basic setup works, it is not hard to build a more powerful system.

*Adding a DSP server offloads plugin processing from your DAW. This enables you to use the eMotion ST Mixer and StudioRack plugins, add additional plugins, and record and monitor with very low latency.

Expanded Setup:

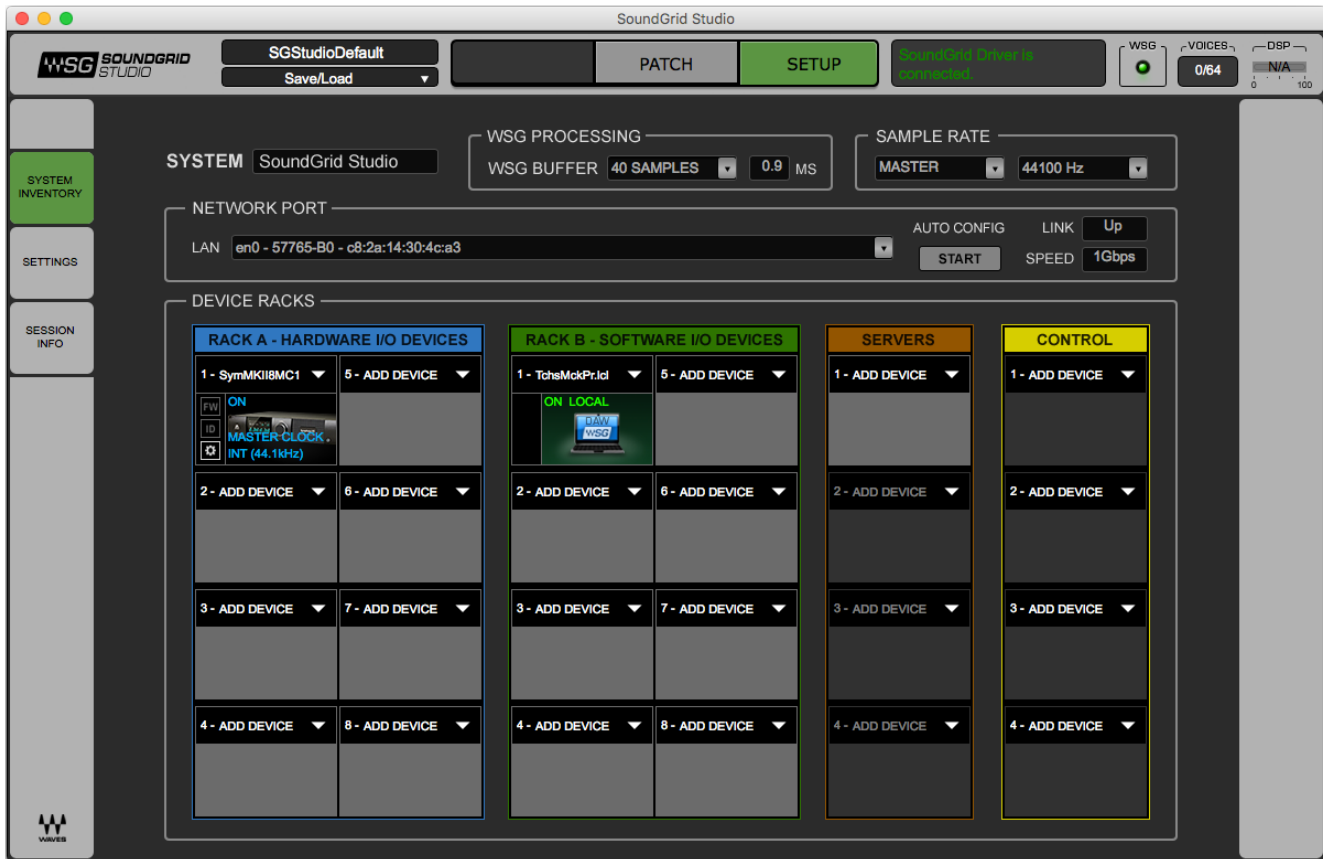
1. To connect multiple devices - for example: multiple Symphony I/O MkII's, a SoundGrid DSP Server, or multiple Mac and Windows computers - connect them all to a SoundGrid-compatible ethernet switch, and connect the switch to your computer's Ethernet port. Use a CAT5e or CAT6 cable for all connections.

See <http://www.waves.com/hardware/soundgrid-switches> for a list of approved switches.

SoundGrid Studio Software

For this guide we will use the **SoundGrid Studio** Application for configuration and setup.

Open the **SoundGrid Studio** Application that was installed by Waves Central. Setup of your SoundGrid system will be done through this application.



The SoundGrid Studio Application can be found at these locations:

- Windows: C:\Program Files (x86)\Waves\SoundGrid Studio
- Mac: /Applications/Waves/SoundGrid Studio

The SoundGrid Studio Manual can be found on the Waves website:

<https://www.waves.com/downloads/manuals>

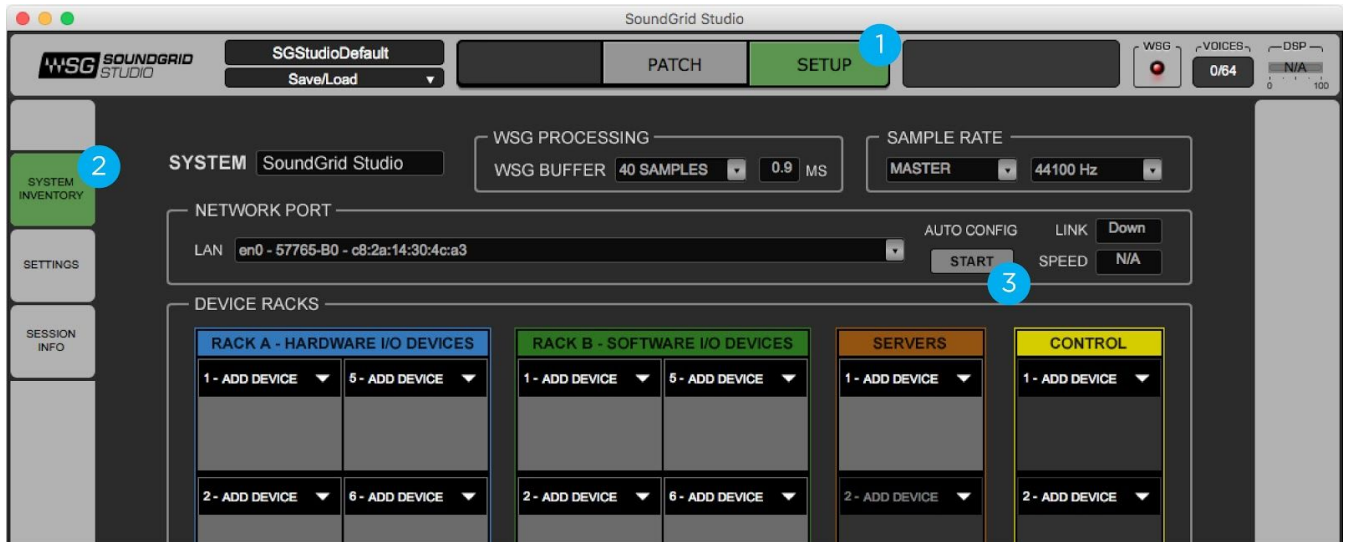
Make sure your Symphony I/O Mk II is connected to your system, and the “Net” light on the SoundGrid card is Blue.

Note: The first time you run and configure your Apogee Symphony I/O MkII WSG, you may be prompted to update the firmware of your device. If this happens follow the onscreen instructions.

Automatic Configuration

If this is your first time setting up your system, use the Automatic Configuration Wizard to make the settings for you. To do this:

1. Select the Setup tab at the top of the screen.
2. Make sure System Inventory is selected on the left column.
3. Click the START button under Auto Config and the Wizard will open.

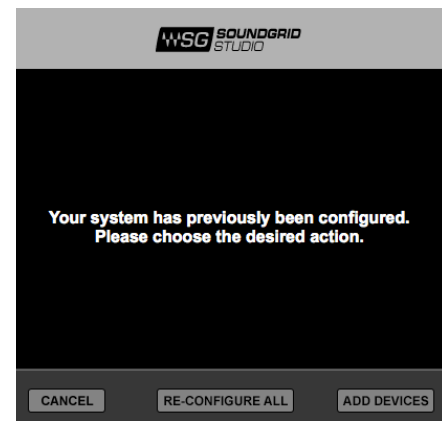


4. Follow the steps provided in the Wizard.

This Wizard will scan the SoundGrid network, identify and connect any hardware, and even patch IO routings to the system Automatically.

For more information on the Automatic Configuration Wizard, see page 14 of the SoundGrid Studio Manual.

<https://www.waves.com/downloads/manuals>



Note: Routing of signal for inputs/outputs is done in the Patch tab:

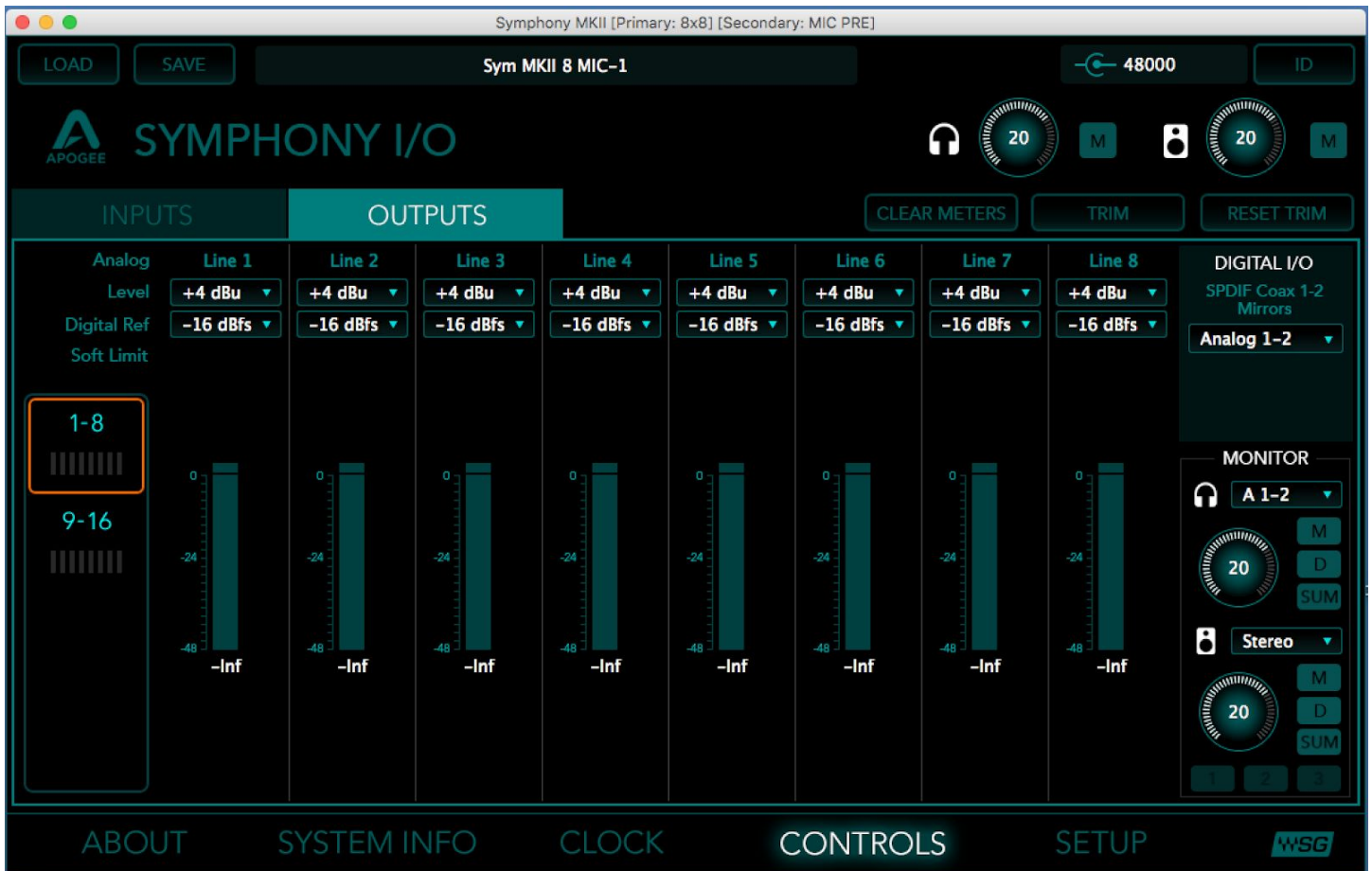
- To modify routing when no Waves DSP Server is connected, click Patch, then click Device to Device to open the Device to Device routing grid.
- To modify routing when a Waves DSP Server is connected, click Patch, then click the eMotion Input A, Input B and Output buttons to route Mixer inputs and outputs.

See the SoundGrid Studio Manual for a full description of the features of the Patch tab screen.

<https://www.waves.com/downloads/manuals>

Symphony I/O Mk II Control Panel

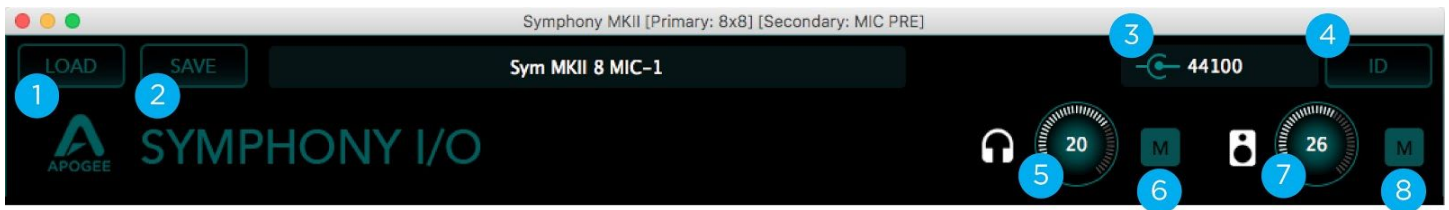
Use the Symphony Control Panel to view information and settings specific to the Apogee Symphony I/O Mk II.



To access the Symphony I/O Mk II Control Panel, find the unit in the SoundGrid Studio software's SETUP page for Rack A - Hardware I/O Devices. Click the **Gear** symbol to launch the Control Panel.

Top Bar

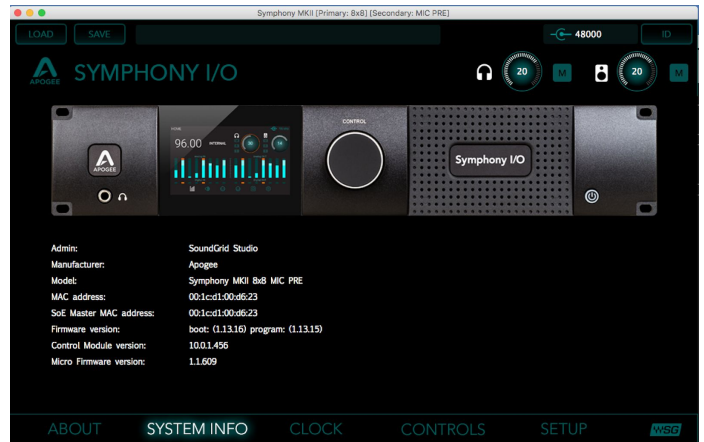
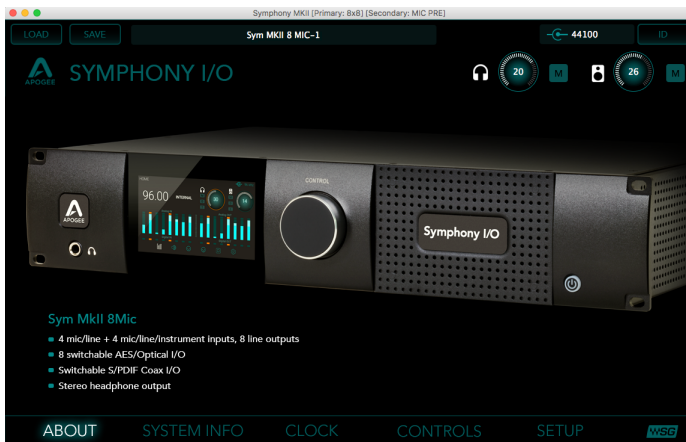
At the top of each Control Panel page is a banner used to load and save device presets, and to identify device hardware. These Top Bar controls do not change no matter what page of the Control Panel you view.



1. Load Preset
2. Save Preset
3. Connection Status and Sample Rate
4. Identify Button
5. Headphones Volume control
6. Headphones Mute button
7. Main Output/Speakers Volume control
8. Main Output Mute button

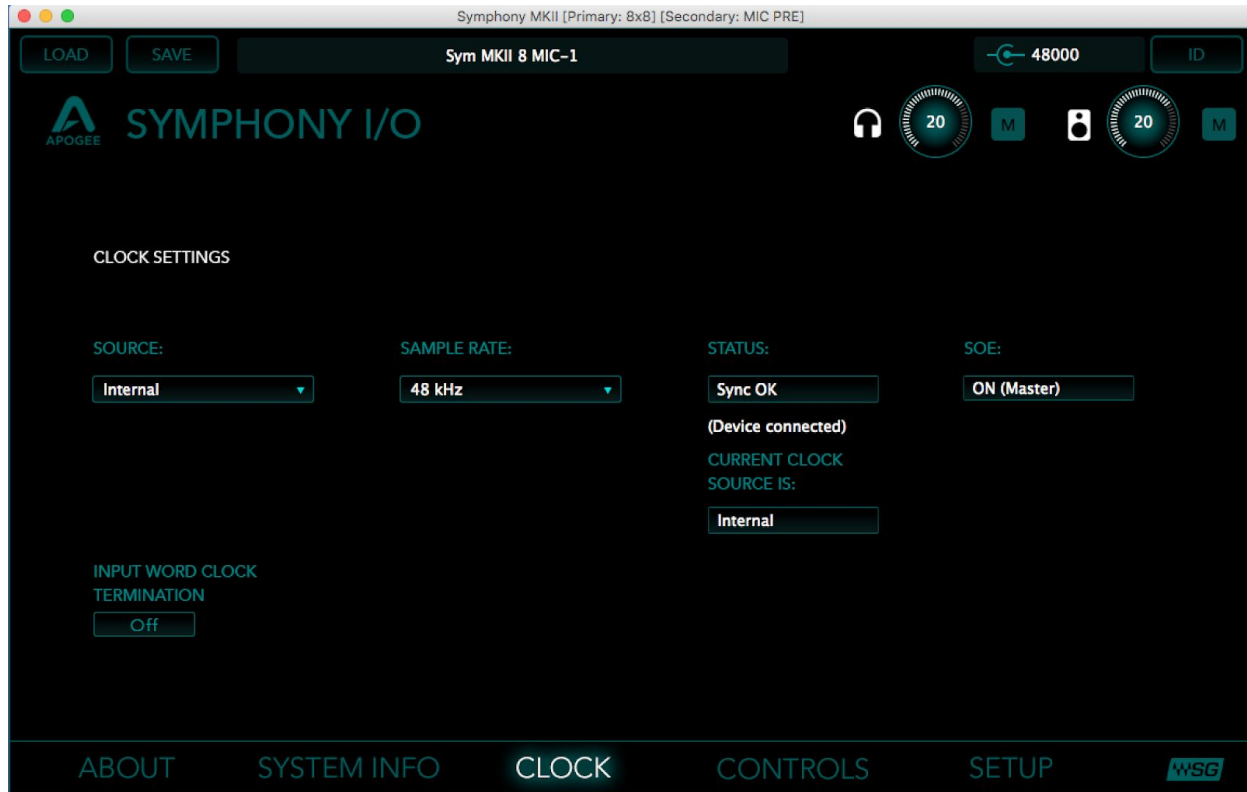
About & System Info Screen

The About and System Info pages provide information about the unit, such as MAC address, SoE master MAC Address, firmware version, and more.



Clock Screen

Use the Clock page to set the clock source and sample rate for the device and to assess clock status. Clock controls are on the left side of the page, status indicators are on the right.



- **Source** - Sets the clock source.
 - **Internal** - The Symphony I/O Mk II's internal clock is used
 - **External WC** - Clock is provided by an external device via the Symphony I/O Mk II's Word Clock Input connector
 - **Digital** - Clock is provided by an external device via the Symphony I/O Mk II's digital audio input connector. When this option is selected, additional settings appear:
 - **SPDIF Coax** - Clock is provided to the selected SPDIF Coax input
 - **ADAT** - Clock is provided to the selected ADAT optical input
 - **AES** - Clock is provided to the selected AES input

- **Sample Rate** - Sets the sample rate when Clock Source is set to Internal.
 - Sample Rate can be set to 44.1 / 48 / 88.2 / 96 kHz.
 - If Source is set to anything other than Internal, the Sample Rate menu is grayed out and inoperative.
 - A SoundGrid system's maximum sample rate is 96kHz

- **Input Word Clock Termination** - Terminates the BNC Word Clock Input connector on the rear panel of Symphony I/O Mk II. In general, leave this Input Termination on at all times. This applies even when Symphony I/O Mk II is being used as the master clock for other devices. The only time this should be turned off is when Symphony I/O Mk II is slaving to external clock AND passing the signal through the BNC Out to another device.

- **Status** - Reports the presence or absence of sync between the Symphony I/O Mk II and the SoundGrid network.
- **Current Clock Source Is** - Displays the current sync method. This may differ from the choice made in the Source menu.
- **SOE** - Sync over Ethernet - Indicates whether this device is the master or a slave in the SoundGrid network. This mirrors the status information in the SoundGrid Studio Device Rack.

Controls Screen

Use this screen to adjust the settings for inputs, outputs, preamps, digital I/O, calibration controls, and all aspects of the Symphony I/O Mk II module cards.

The following are present in all views of the Controls Screen:

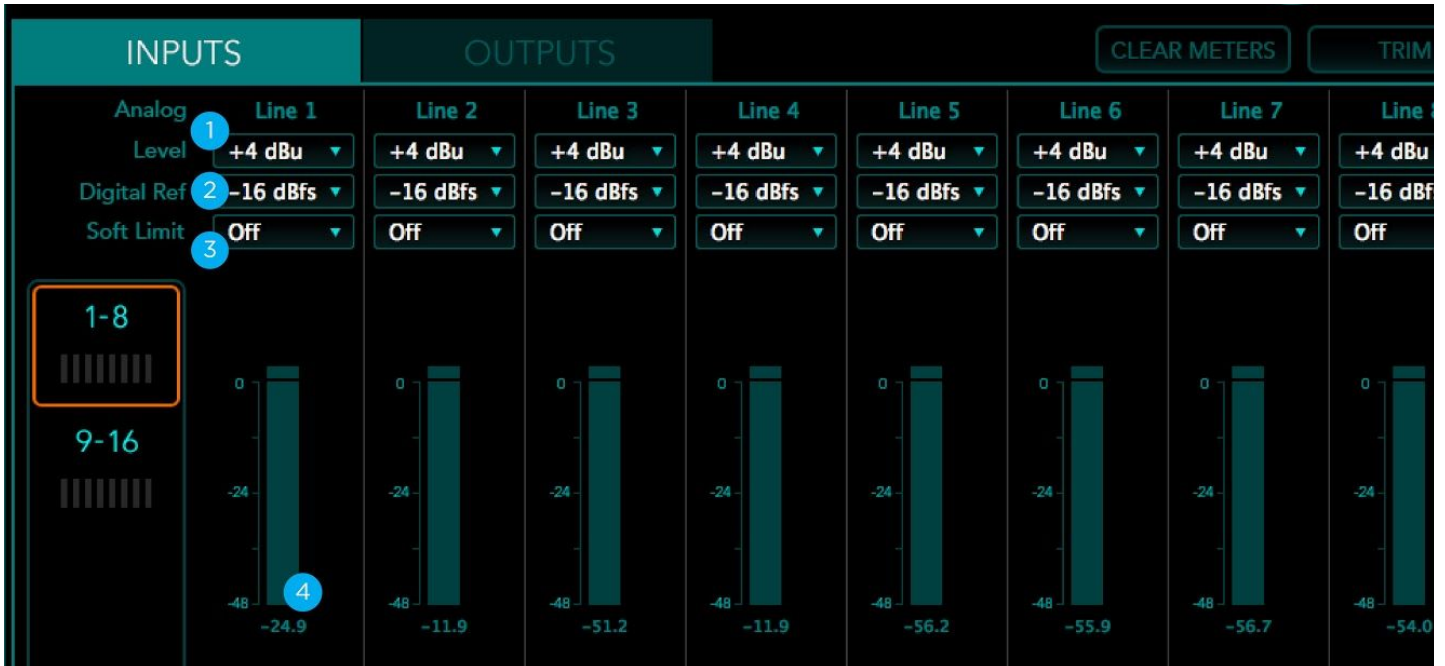


1. **Inputs page** - View the Analog & Digital Input channels and settings
2. **Outputs page** - View the Analog & Digital Output channels and Monitoring settings
3. **Channel View switcher** - Selects which set of channels are in view
4. **Clear Meters** - Clears the peak and hold indicators in the level meters
5. **Trim** - Show/Hide the Trim controls on channels set to +4dBu or -10dBV

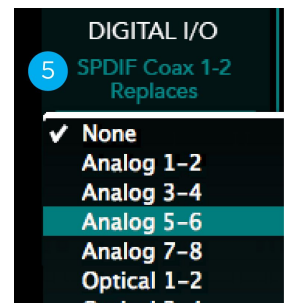
6. **Reset Trim** - Restores the Trim controls to 0.0.

Inputs Tab

Settings for Symphony I/O Mk II's analog and digital inputs are found on the Inputs page



1. **Analog Level** type selector - Set the analog level for each A/D conversion channel.
 - Choose **+4 dBu** when connecting to "pro" gear with outputs at a +4 dBu nominal level.
 - Choose **-10 dBV** when connecting to "semi-pro", hi-fi or musical instrument gear with outputs at a -10 dBV nominal level.
2. **Digital Ref** level - Decides the reference point at which this channel's analog input signal will be converted to a digital signal.
3. **Soft Limit** - Apogee's proprietary analog circuit which attenuates transient peaks of the input signal at a threshold of -4dBfs before conversion to digital.
4. **Meter Level Readout** - Provides a reading of the analog input meter to an accuracy of 0.1 dB.
5. **SPDIF 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. Use this drop down menu to select the channel pair to be replaced.



When a Mic Pre Module is installed

The following additional controls become available:



1. **Analog Level Type Selector** additional entries:

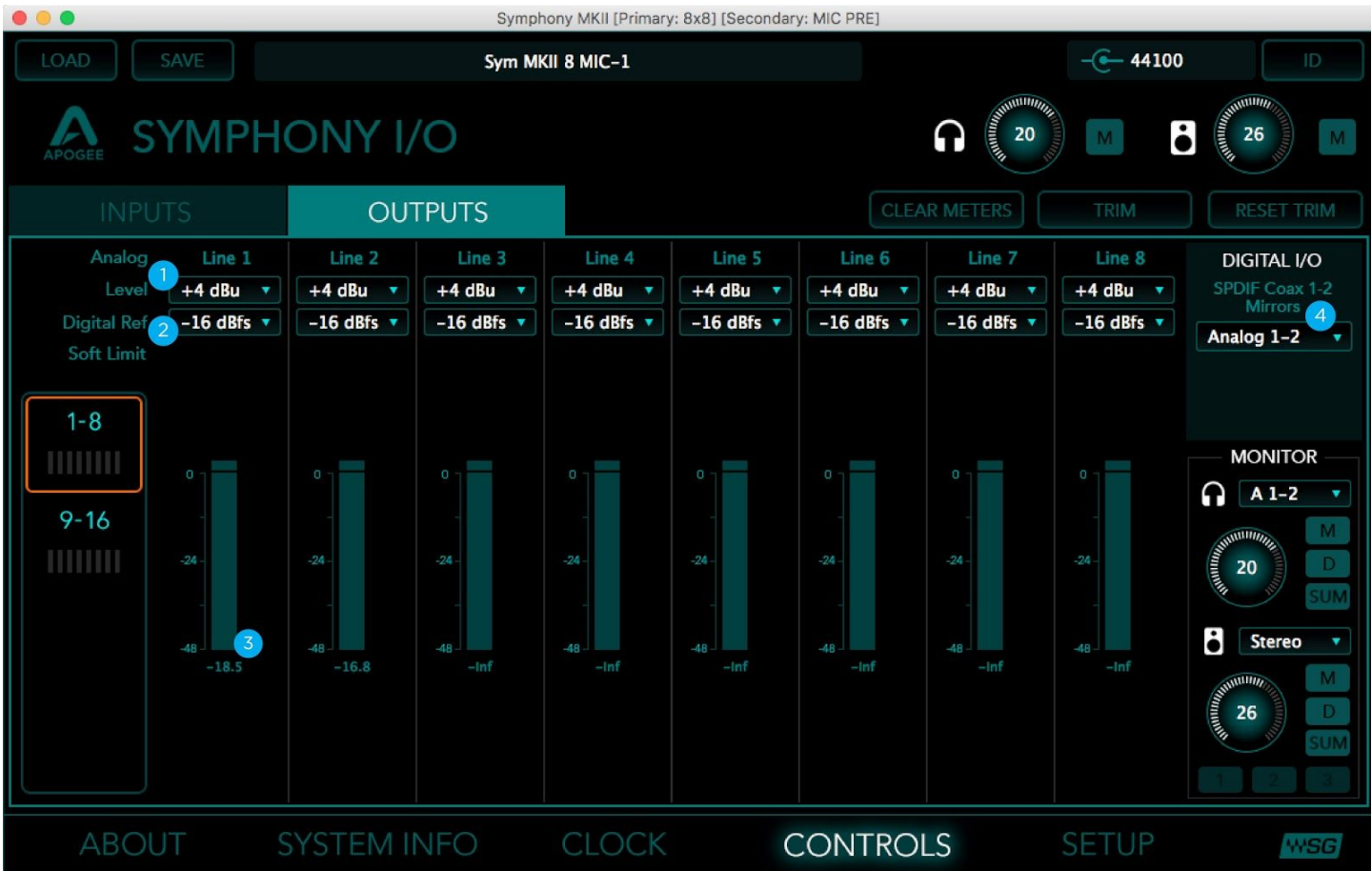
- Choose **Mic** when connecting microphones or direct boxes, or any devices that needs to run through a microphone preamplifier. -XLR Input only.
- Choose **Instrument** when connecting a guitar or keyboard, or any high impedance (Hi-Z) instrument to the 1/4" input (balanced TRS or unbalanced TS). The signal is sent through a Hi-Z to Low-Z conversion circuit before sent through the microphone preamplifier circuit.

2. **Gain Control** - Use this knob to adjust the gain of the mic pre.

3. **Group** - Channels set to the same group number will have their Level Trim controls adjusted simultaneously. Any level offset that exists before inputs are grouped will be preserved after a group is chosen.

4. **Insert** - 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 Setup screen. The insert point occurs after the mic pre and high pass filter and before the A/D conversion stage.
5. **48v** - Use this button to enable 48 volt phantom power on the corresponding Analog IN channel.
6. **Polarity** - Use this button to invert the polarity of the input signal.
7. **High Pass** - Use this button to engage an 80Hz high-pass filter on the input.

Outputs Tab

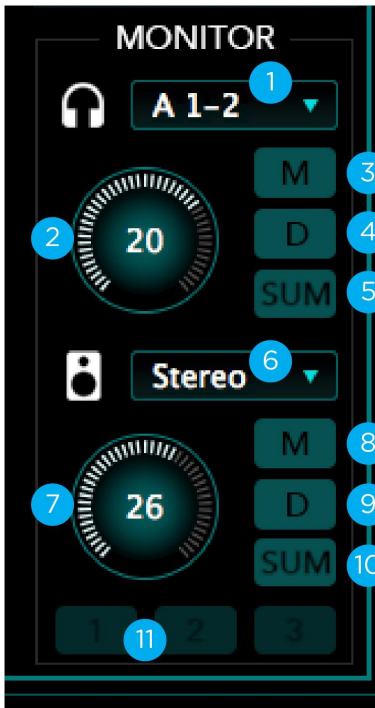


1. **Analog Level** type selector - Set the analog level for each A/D conversion channel.
 - Choose **+4 dBu** when connecting to "pro" gear with outputs at a +4 dBu nominal level.
 - Choose **-10 dBV** when connecting to "semi-pro", hi-fi or musical instrument gear with outputs at a -10 dBV nominal level.
2. **Digital Ref** level - Decides the reference point at which this channel's digital output signal will be converted to an analog signal.
3. **Meter Level Readout** - Provides a reading of the digital output meter to an accuracy of 0.1 dB.
4. **SPDIF Mirrors** - The S/PDIF coaxial output may be set to mirror (i.e transmit in parallel) any of the analog or digital output pairs.

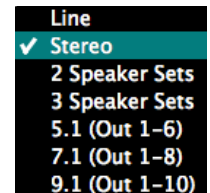


Monitor

Use this section of the Outputs tab to select and control the Headphones and Main speaker outputs.



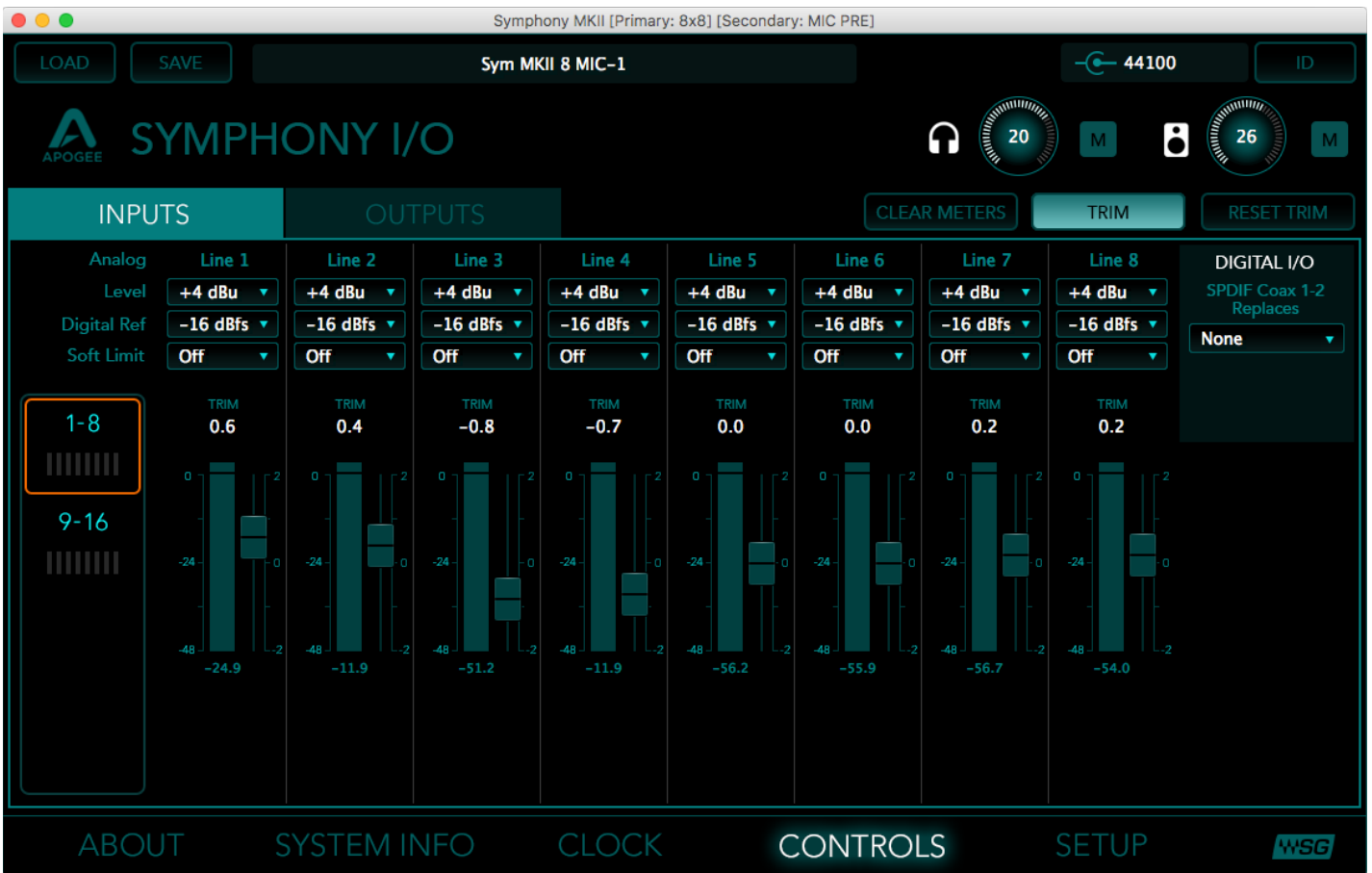
1. **Headphones Source** - Selects the output pair that is sent to the Headphones output.
2. **Headphones Level** - Controls the level of the front panel Headphones jack.
3. **Headphones Mute** - Mute the Headphones output
4. **Headphones Dimm** - Reduces the listening level by -15dB
5. **Headphones Sum-to-Mono** - Collapse left and right signals to mono at the output. This combined signal is sent to the Headphones output and is useful for verifying the mono-compatibility of a stereo mix
6. **Speaker Out Selection** - The analog outputs may be configured for use with active speakers or a power amp/passive speaker combination.
 - a. **Line**: Analog Out 1/2 are configured as line outputs. Functions such as level control, Mute, Dim, and Sum-to-Mono are disabled.
 - b. **Stereo**: Analog Out 1/2 are configured as speaker outputs (with all monitor functions available).



- c. **2 & 3 Speaker Sets**: Analog Out 1/2, 3/4 and/or 5/6 are configured as two or three pairs of stereo outputs. Switch between the stereo pairs with the Speaker Sets buttons. These outputs are adjusted simultaneously with the Speaker Out level knob.
- d. **5.1 (Out 1-6) & 7.1 (Out 1-8) & 9.1 (Out 1-10)**: Analog Outputs 1-6, 1-8, or 1-10 are configured as speaker outputs, suitable for connection to a 5.1, 7.1, or 9.1 speaker system. These outputs are adjusted simultaneously with the Speaker Out level knob.
7. **Speaker Out level** - When analog outputs are configured as speaker outputs, this knob controls the output level.
8. **Speaker Out Mute** - Mute the analog outputs to speakers
9. **Speaker Out Dimm** - Reduces the listening level by -15dB
10. **Speaker Out Sum-to-Mono** - Collapse the left and right signals to mono at the output. This combined signal is sent to the analog outputs to speakers and is useful for verifying the mono-compatibility of a stereo mix.
11. **Speaker Sets buttons** - When 2 or 3 speakers sets are selected, use these buttons to choose which stereo set is active.

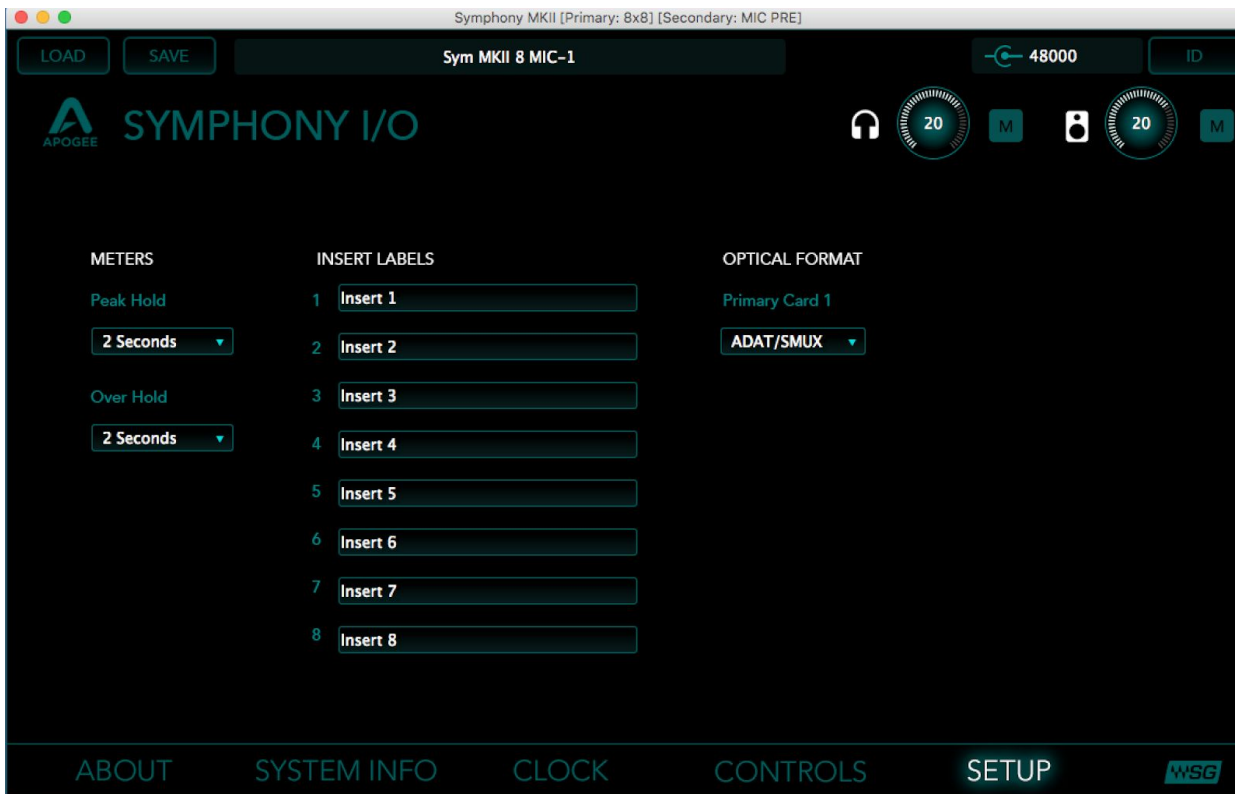
Trims

Use the TRIM button to reveal trim controls for Inputs/Outputs set to the Line-Level +4dBu or -10dBV setting.



- Trims adjust by 0.1dB increments and are useful for calibration of input and output analog signals. For example: Outputs Trim can be used to balance volumes of speakers between stereo sets, or between speakers in a surround 5.1 system.
- The Reset Trim button returns all input and output trims to 0.0.

Setup screen



- **Meters** - Use these controls to set the amount of time that peak and over indications are held on software and front panel meters.
- **Insert Labels** - When a Mic Pre I/O Module is installed, use these text boxes to enter labels for each of the eight insert send/return pairs.
- **Optical Format** - Sets the format of the rear panel optical Toslink connectors (when an 8x8 Mk II module with optical inputs and/or outputs is installed).

Reference

Resetting the SoundGrid Network Card

If an unsuccessful firmware update results in the Symphony I/O Mk II SoundGrid no longer being recognized by MultiRack or SoundGrid Studio (the device is not showing in the inventory panel), you can use the Reset button to try to recover the unit.

The Reset button is on the SoundGrid Option Card on the Symphony I/O Mk II's rear panel.

- Turn off the unit.
- Press and hold the Reset button.
- Restart the unit while holding the button.
- Release the Reset button once the device has fully booted.

The unit is now in “boot mode”, and a new firmware update can be performed.

Additional Support Resources

For additional information and help regarding your Symphony I/O Mk II when connected to a Waves SoundGrid system, please contact Waves Support at www.waves.com/support

For repair of your Symphony I/O Mk II SoundGrid unit, contact Apogee at www.apogeedigital.com/support

Manuals for SoundGrid Studio and other SoundGrid devices can be found at <https://www.waves.com/downloads/manuals>

The general User's Guide for the Symphony I/O Mk II can be found at <http://www.apogeedigital.com/support/symphony-io-mk-ii#tab-id-2>