



SOUNDGRID STUDIO

USER GUIDE

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Welcome to SoundGrid Studio

SoundGrid is a proven networking tool for connecting audio devices, streaming audio, and offloading plugin processing. *SoundGrid Studio* is the application that controls the network that makes all of this possible:

- SoundGrid Studio lets you offload processing from a host computer to a high-speed server. This results in a huge improvement in DSP, which lets you use many, many more plugins. All you need is a SoundGrid server and the StudioRack plugin.
- With SoundGrid Studio, you can flexibly assign I/O devices, servers, and drivers to a SoundGrid network. This enables efficient use of studio resources, since studios can pick and choose which I/Os to use for a specific job.
- Depending on the configuration and license, SoundGrid Studio incorporates a fully featured 64-channel studio mixer. This mixer, used in conjunction with the StudioRack plugin, lets you monitor while recording record—with plugins—with very low latency.
- SoundGrid Studio is a quick way to stream audio between computers.

Since SoundGrid Studio setup is essentially the same (in principal) for all configurations—the smallest to the largest—we suggest you read the next chapter, “Getting Started,” to help you get everything up and running. Use the later chapters to learn the details and as a reference. In addition to the table of contents, there’s a sidebar bookmark tool (on most PDF readers) that will help you navigate quickly through the information and find what you are looking for.

SoundGrid Studio supports several input devices: touchscreen monitor, touchscreen panel, external controller, and mouse. These devices may use different terms for input action, so for simplicity, we use common terms such as “click” to describe all such actions.

When a control or function is described more comprehensively elsewhere in this user guide, there is a [link](#) to that section.





Part 1: Getting Started

Setting up a SoundGrid system, regardless of its size or complexity, involves only connecting the host computer with all network devices and installing the software. During initial configuration, you'll be prompted to choose which devices to assign. SoundGrid Studio will take care of the rest. If later you add, remove, or replace devices, SoundGrid Studio will reconfigure the system once you select the devices to assign.

Getting Started: 1, 2, 3

SoundGrid Studio is a modular system, so how you set up your system depends on how you want to use it. The smallest system can grow into a much larger system simply by adding more components, so there's little new to learn as you grow. Still, initial setup is determined by your needs.

GETTING STARTED INVOLVES JUST THREE STEPS:

1. Connect the hardware.
2. Install the software.
3. Start SoundGrid Studio for guided configuration.

SoundGrid Studio will scan your network, configure your devices, and patch audio. You're ready to go.

1 Connect the Hardware

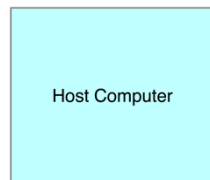
Hardware setup is really a matter of connecting the devices with Cat 5e (or better) Ethernet cable. SoundGrid Studio will update the device drivers, as necessary, once the you install the software. If there's only one device, whether a server or I/O, it can be connected directly to the host computer. When there is more than one device, you need to connect everything via an approved 1 Gb Ethernet switch (visit [Waves support](#) to learn about compatible Ethernet switches).

The diagrams on the next pages show common uses of SoundGrid Studio and the hardware required.



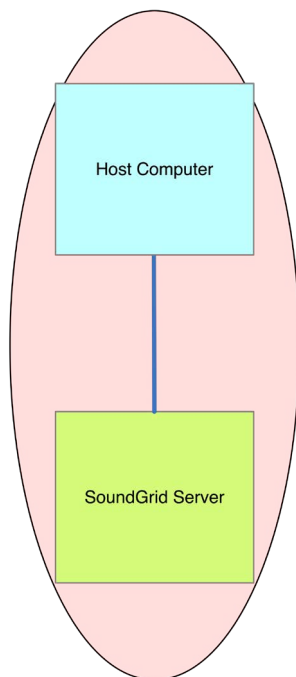
SOUNDGRID NETWORK ELEMENTS

HOST COMPUTER: CONTROL SOUNDGRID STUDIO AND THE DAW



The host computer controls the mixer and the SoundGrid network that connects all devices and streams audio. Applications, plugins, and preset files are located here. With Native systems, plugins processing is carried out on the host. When a SoundGrid server is assigned to the system, high-speed processing is done on the server.

SOUNDGRID SERVER: OFFLOAD PLUGIN PROCESSING



Add a SoundGrid server and all plugin processing is offloaded from the host to the DSP server. Offloading is made possible with the StudioRack plugin, a DAW insert.

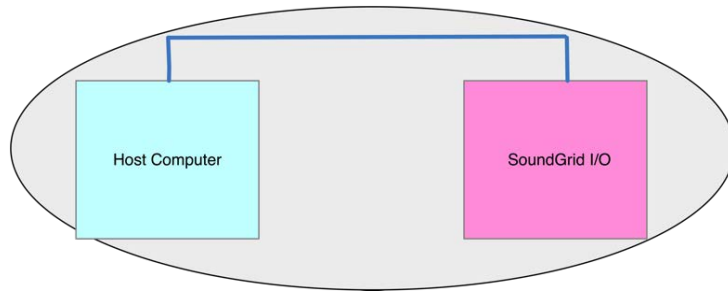
The speed of the server has a direct impact on the number of SoundGrid channels and plugin instances. There are a number of server configuration options. Visit www.waves.com/hardware for up-to-date specifications and requirements about servers and other hardware components.

This configuration gives you a much higher plugin count than can the host computer.

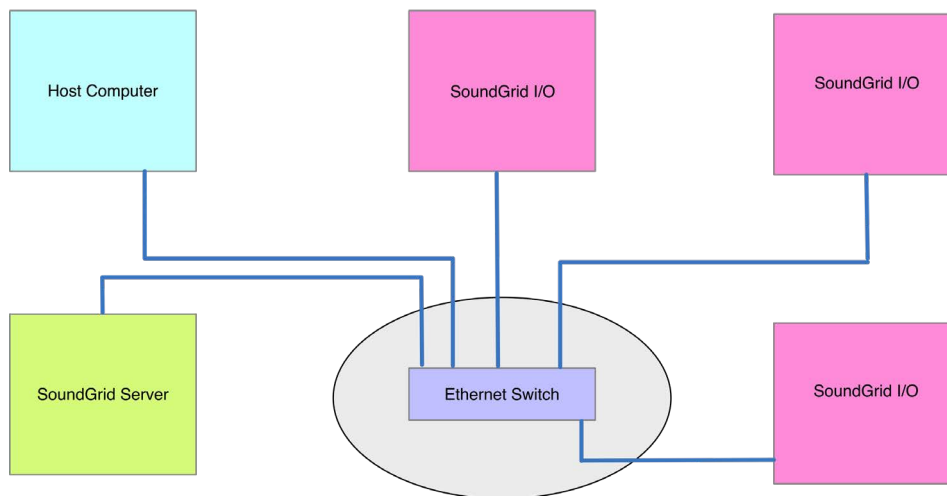


AUDIO I/Os: RECORD AND MONITOR SOUND

In the example below, the host that's running SoundGrid Studio is connected to one SoundGrid I/O device. This enables input and output and provides clock.



SOUNDGRID 1 Gb SWITCH: ADD SERVER AND CONNECT MULTIPLE DEVICES

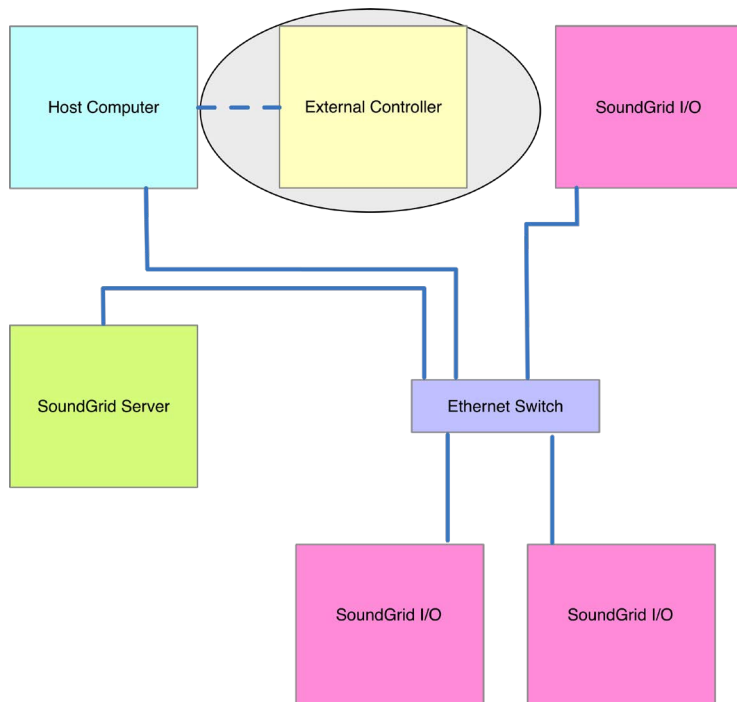


Whenever more than one device (e.g., hardware devices and server) you must use a 1 Gb Ethernet switch. With a server and at least one SoundGrid I/O, the SoundGrid Studio eMotion ST mixer can be used with real-time throughput.

With this configuration, you can assign multiple I/O devices and offload plugin processing. Low-latency monitoring is possible through the eMotion ST mixer and the StudioRack plugin.



5 ADDITIONAL I/O DEVICES: EXPAND AS YOU NEED



Add more I/O devices Connect additional I/O devices to the switch. Any combination of SoundGrid I/Os can be added to the network, up to a maximum of 16, including the local driver. If another Ethernet switch is needed, it can be connected to the primary switch.

Add a computer Assign a driver to stream audio between studios or to share I/Os between systems.

The sequence of the connectors to the switch is unimportant. Use Cat 5e or better cable. Do not use Cat 5 cable and don't "daisy chain" devices.

Add a MIDI controller to SoundGrid Studio to control the eMotion ST mixer with a remote device.

This configuration lets you swap and share I/O resources and offload processing to the server.

- Cable specifications are available at [Waves support](#).
- For descriptions and specifications of SoundGrid-compatible I/Os, servers, and Ethernet switches, visit the [Hardware Pages on the Waves website](#).
- The suggested display resolution is 1280x768. The mixer can accommodate one, two, or more computer displays, depending on the host computer video capabilities.
- Learn about up-to-date minimum system requirements [here](#).



2 Install the Software

Installing the SoundGrid Studio application involves these steps:

1. Download and install the SoundGrid Studio application with Waves Central.
2. Download and install any new plugins or plugins you'd like to demo.
3. Activate licenses to the host computer or a USB flash drive.

DOWNLOAD SOUNDGRID STUDIO SOFTWARE

Register SoundGrid Studio

To download software, register products, activate licenses, and participate in the Waves Update Plan, you'll need a Waves account. If you don't already have one, click *Sign In* on the Waves home page. Go to the SoundGrid Studio Product Page to register the 8-, 16-, 32-, or 64-channel "SoundGrid Studio + eMotion ST 8 Ch. Mixer" license.

Install SoundGrid Studio and Plugins

1. Waves Central is an application used to download and install Waves software and to manage product licenses. [Download](#) Waves Central, and then log in with your Waves username.
2. Open Waves Central. Go the *Install Products* page > *My Products* and select *SoundGrid Studio*, along with any plugins you want to install, including demo plugins.
3. Click **Install and Activate**. Waves Central also installs all SoundGrid-compatible I/O device drivers.

Licenses

When you install SoundGrid Studio or plugins, the relevant licenses are activated automatically when you install SoundGrid Studio or plugins. Waves plugins are always installed on the local computer. Licenses, however, can be activated on your computer or on a USB flash drive, so that you can move easily from one computer to another. Learn more in the [Waves Central user guide](#).

3 Launch SoundGrid Studio: Initial Automatic Configuration

When you first restart your computer after installing SoundGrid Studio, the Auto Configure Wizard will "suggest" how to automatically configure your system, based on the devices it finds on the network. Here's what it will do:



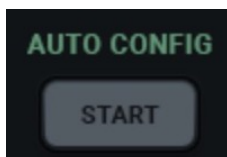
1. Identify the host computer LAN port. If more than one valid LAN port is present, you will be prompted to choose the correct one. If you can't identify the correct network port, please refer to this [support article](#).
2. Scan the network for devices. On-screen prompts guide you through device selection, and the Wizard then assigns devices to your inventory.
3. Patch input and output I/Os.
4. Update device firmware. If a device (I/O or server) firmware is out of date, Auto-Configure will automatically update it to match your current version of SoundGrid Studio software. When an I/O firmware update is finished, you will be prompted to turn the device off and on. Servers power cycle automatically.

Once Auto-configure is complete, you should have a fully working SoundGrid system.

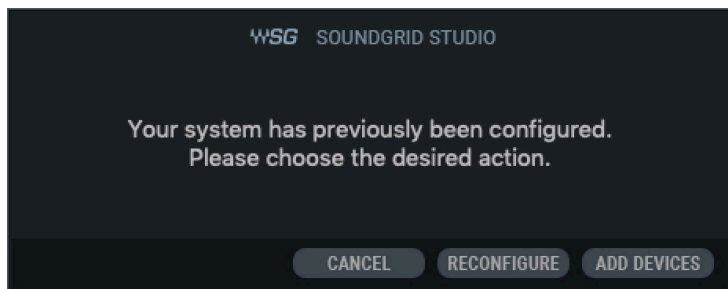
You can always manually change or customize this auto configuration to suit your needs. This is explained later in the [Device Racks](#) section of this user guide.

RECONFIGURING WITH THE SOUNDGRID STUDIO WIZARD

When you change, add, or delete devices, you can use the Auto-Configure wizard to update the inventory. If you have connected a device, a prompt will ask if you want to assign this device to your inventory. If so, the device will be added to the inventory and patched automatically without changing previous configurations.



If you don't see a prompt, can you manually start this process by pressing **Start Auto Config** and click *Add Device*. This is explained later in the user guide.

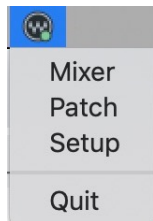


If you want to start fresh and discard previous configurations select "Reconfigure."



NOTES

- The SoundGrid Studio application is installed in the Waves folder in the host computer's Applications folder. We suggest that you do not move it from that location.
- Keep your SoundGrid Studio app and plugins up to date. Launch Waves Central and you will be notified if newer versions exist. Updating the SoundGrid Studio app also enables device driver updates.
- SoundGrid Studio launches when the host computer is started and remains open in the background. This is useful if you are using the host solely or primarily as a SoundGrid Studio controller. To prevent SoundGrid Studio from launching automatically, turn off "Launch Application on Startup" on the Setup window.



A small SoundGrid Studio icon on the Menu Bar (Mac OS) or Task Bar (PC) shows that SoundGrid Studio is running.

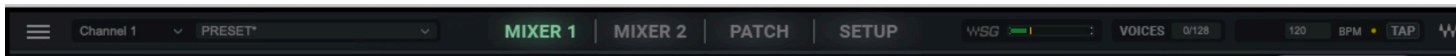
Use the drop-down menu to move directly to a window or to quit the application. SoundGrid Studio will launch automatically the next time you start the computer or if you choose to launch it manually.



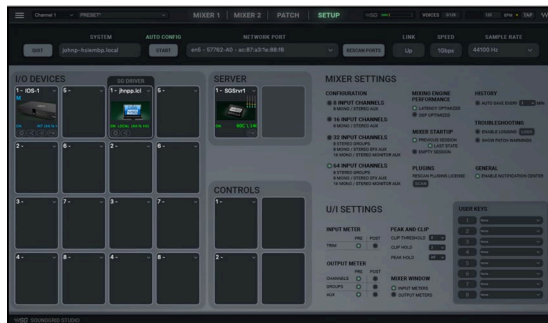
What Next?

Automatic setup is the same for all applications of SoundGrid Studio. For many SoundGrid Studio uses, no further configuration will be needed. To add or change I/O devices, modify patching, use the mixer, or change studio and network settings, select the relevant window from the tabs on the Top Bar. All SoundGrid Studio functions are controlled from these four windows.

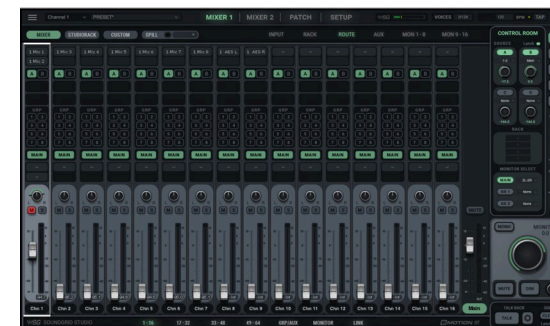
Click on a window name below to jump to the chapter that describes the window or use this user guide's table of contents or PDF bookmarks to guide you through the specific task at hand.



[TOP BAR](#)



[SETUP WINDOW](#)



[MIXER WINDOWS
1 AND 2](#)



[PATCH WINDOW](#)





Part 2: Top Bar

The Top Bar combines navigation tools, presets, feedback about network status, and more. It's visible from every view, so you can quickly access the main menus and monitor system status.

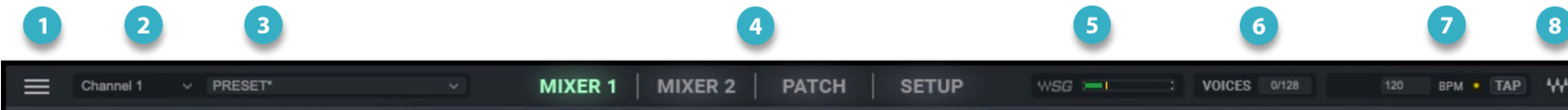
Top Bar

SoundGrid Studio is made up of windows, layers, modes, channels, and a monitor section. At the top of the interface is a control bar that's called, not surprisingly, the Top Bar. This is SoundGrid Studio's most basic tool for navigating the application and for monitoring critical functions. The Top Bar is always visible.

Top Bar 



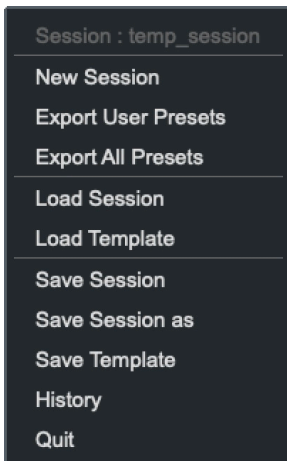
Top Bar Elements



- | | |
|------------------------------|--|
| 1 File menu | 5 DSP Meter/network status |
| 2 Channel Select menu | 6 StudioRack voices |
| 3 Preset menu | 7 Tempo section |
| 4 Window select tabs | 8 Logo: access user guides and view version information |



1 FILE MENU

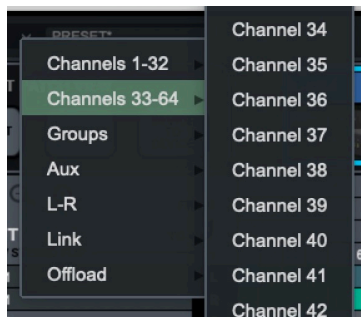


Use the File menu to save and load sessions and templates, along with session-wide presets.

New Session	Closes the current session and loads a new empty session.
Export User Presets	Creates a file with all user presets for the entire session, not just those of the selected channel. The exported presets are stored as one .xps file that can be saved to other media.
Export All Presets	Exports a file that contains the presets—not just the user presets—of all channels in the session.
Load Session	Presents a list of existing sessions. If the current session is not saved, you will be prompted to do so.
Load Template	Presents a navigation window for loading a session template. Loading a template does not alter the current I/O inventory and external patching.
Save Session	Overwrites the loaded session file with the current mixer condition.
Save Session As	Saves the current mixer condition as a new session.
Save Template	Saves the current session as a session template.
History	Opens the History folder, where auto-saved sessions are filed.
Quit	Quits the SoundGrid Studio app.



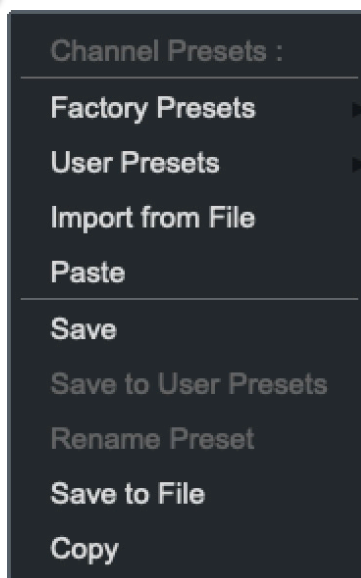
2 CHANNEL SELECT MENU



Use the drop-down menu to directly select any channel. The name of the selected channel is shown in the box to the right.

The channel name is displayed on the mixer channel strips and in the Patch window.

3 PRESETS MENU



The Presets is used to save, load, export, import, and manage presets. Presets are saved as part of a session. To use presets from another session, choose the *Import from File* menu item. The name of the current channel preset is shown in the Preset box above the menu.

Factory Presets (load)	A library of presets supplied by Waves. A factory preset cannot be modified or deleted. Instead, open it and save as a user preset.
User Presets (load)	A list of user-defined channel presets that is saved from within the current session or imported from another. To delete a user preset, hold Ctrl before opening the Preset



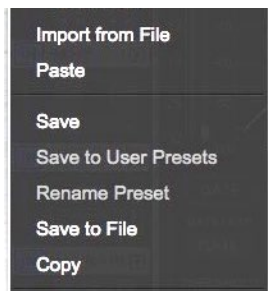
	menu. When then opening the User Preset menu, preset names will be preceded by “Delete.” Select the preset and it will be deleted. This cannot be undone.
Import from File	Opens a navigation window to locate presets files that have been saved. Imported presets are added to the User Presets menu.
Paste	Pastes the copied channel condition to another channel. The Copy command copies all rack information. Paste enables you to choose what channel information will be replaced in the target track.
Save	Saves the channel condition to the loaded channel preset, overwriting it.
Save to User Presets	Creates a new user preset. These are saved as part of the current session. Consider this a “Save As” function.
Rename Present	Changes the name of the current channel preset.
Copy	Copies the current channel condition to the clipboard. A copied preset can be pasted to any other channel in the current session. There are several Paste options.



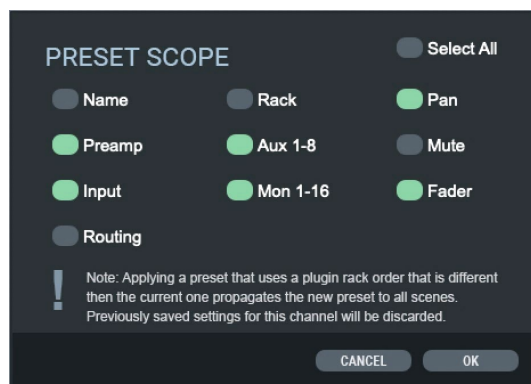
Copying Channel Information

Use the Preset menu to copy an entire channel, or specific channel settings, to another channel.

COPYING CHANNELS WITHIN A SESSION



1. Select a channel and choose *Copy* from the Preset menu.
2. Select the target channel. Click **Paste**.
3. Select what to replace and what to leave unchanged. Choose *Select All* to paste all channel settings.
4. Select the import parameters and click **OK**. Parameters that are not selected in the list will not be altered in the target channel.



The Preset Scope function can modify these settings:

- Plugin racks and their contents, including presets
- Pan and fader positions
- Digital trim levels
- Aux channel settings
- Group assignments

The Preset Scope function does not modify these settings:

- Input and output patching
- Preamp settings



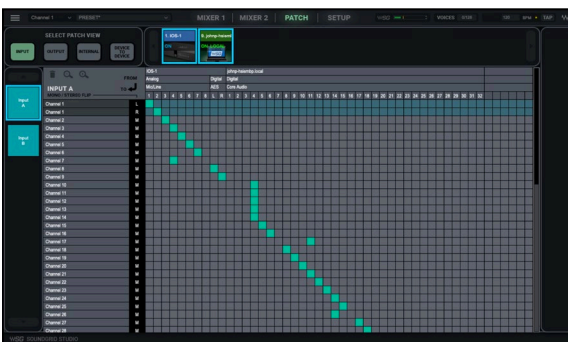
4 Window Select Tabs

Each window has its own control sections that vary according to the function of the window.



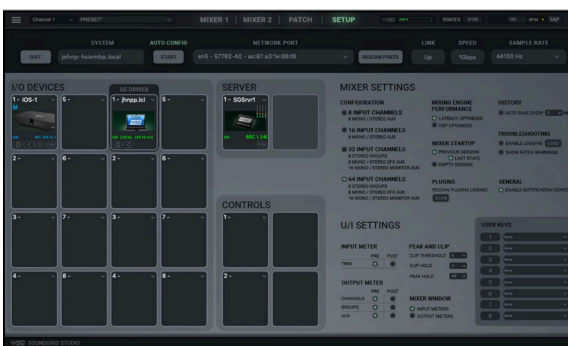
MIXER WINDOW

The [Mixer](#) window is inspired by traditional mixing consoles, so this is probably the most familiar view. It provides a broad, multichannel view of the entire mixer: input, routing, plugins, assignments, and channel parameters.



PATCH WINDOW

The [Patch](#) window establishes connections within the mixer, between the mixer and I/O devices, and between assigned devices on the SoundGrid network. It provides a comprehensive, detailed tool for patching the mixer and presents a wide overview of the mixer's condition so that you can quickly understand its configuration.



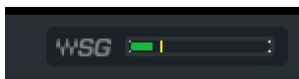
SETUP WINDOW

The [Setup](#) window provides the tools to configure SoundGrid devices.

- SoundGrid network setup
- I/O devices assignment
- Server assignment
- Mixer configuration
- User interface setup
- User-defined shortcut keys



5 DSP METER



The average peak processing load value is displayed as a green bar and peak value as a yellow line. Red indicates that an audio drop has occurred. The bar is gray when a server is not assigned.

This may happen for two reasons:

Processing overload (momentary or constant)

Solution: Disable some plugins.

Some plugins exhibit a high average/peak ratio. This may cause temporary CPU overloads that result in audio drops. When adding a large number of these plugins, the peak and average indicators will drift apart. In such cases, some of these plugins may need to be disabled.

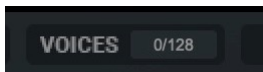
High network usage (channels over the network)



Solution: Increase server network buffer size.

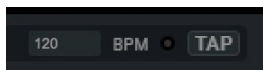
Learn more about [server setups](#) in the next chapter.

6 VOICES



Voices displays the number of StudioRack Channels in use compared with the number of allotted channels. This applies only to a server-based system and is independent of the voices used in a DAW. [Using StudioRack](#) with SoundGrid Studio is discussed later in this user guide. Refer, too, to the [StudioRack product page](#).

7 TEMPO



System tempo (BPM) is indicated in the value box and by the blinking light. To change tempo, enter a BPM rate in the field or tap the **Tap** button, in rhythm, for several seconds. These taps will be averaged to set the new tempo.

Click **Sync** next to the Tempo value box to slave SoundGrid Studio to the DAW tempo. This requires at least one StudioRack instance to be open in your DAW.



8 HELP AND GET INFO (WAVES LOGO)



Click here to open the Information Page, which provides software versions and other useful information. It also lets you quickly access this user guide.

Saving and Loading a Session

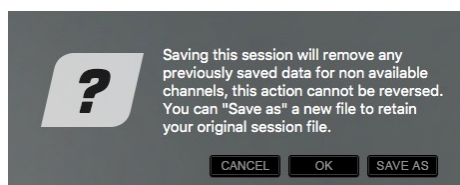
Select *Save* or *Save Session As* in the Presets to save the current session in its present condition. Sessions can be saved to any user-defined location, but we suggest you use the default location.

Mac: Users/Shared/Waves/SoundGridStudio/Sessions

Windows: Users\Public\Waves\ SoundGridStudio\Sessions

All SoundGrid Studio sessions use the *.sgst* extension. The Sessions folder also includes two files, “CurrentSGStudio.dat” and “CurrentSGStudio.dat-journal.” These are the system preferences and recovery files. Do not delete or move them unless instructed by Waves technical support.

SAVING A SESSION AFTER MIXER CONFIGURATION HAS CHANGED



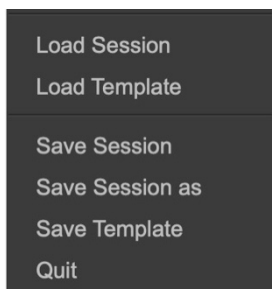
It is possible to change the number of mixer channels at any time, depending on the scope of your license. If the number of mixer channels in the session has been reduced *since the last time it was saved*, this prompt will appear when you save.

Removing channels clearly results in a loss of channel information. A normal *Save* at this point would eliminate all settings from the removed channels, since it overwrites the session file. To preserve that information, *Save As* under a different file name—unless you are absolutely certain that you do indeed want the mixer to be set to a smaller size.

Set Mixer Configuration in the Setup window.



LOADING A SESSION



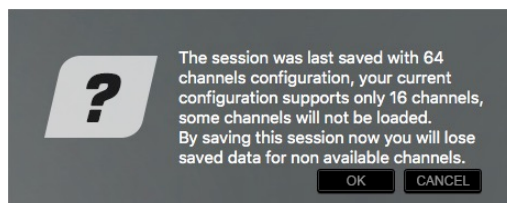
Select *Load Session* from the Presets menu.

Important: Loading a session can result in a dropout or click. Do not load a new session when this is not acceptable.

RESOLVING LOAD ERRORS

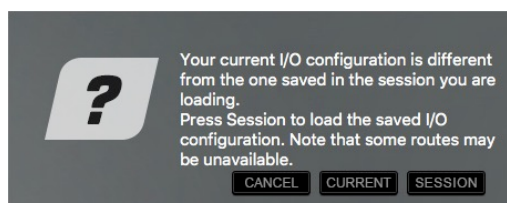
If there are differences between the needs of the session being loaded and the current mixer size or inventory, the mixer must reconcile this mismatch.

Example 1: The saved session has more channels than does the current mixer configuration.



In this case, the session calls for 64 channels, while the system inventory can provide only 32 channels. If the mixer can be enlarged to 64 channels, the session will load without incident. Otherwise, the highest 32 channels will be deleted, and the settings associated with those channels will be lost. In either case, it's important to save a copy of the session before proceeding.

Example 2: The I/O inventory of the saved session does not match the current mixer inventory.



Whenever the saved session's I/O inventory is not the same as that of the mixer, there is a chance that certain channels cannot be supported. If, for example, the session calls for a 128-channel MADi device, while the mixer hardware in the same slot is an 8-channel I/O, it will be difficult to provide the session with the channels it needs.



If the saved session does not match current inventory, you will be offered two options

Option 1: *Session*

CURRENT SESSION

Choose **Session** and the session loads completely, even though the device inventory does not match the session. Devices called for by the session and missing from the rack slot will appear as not available (N/A). The session's patching does not change, but the I/O channels of unavailable devices are not accessible and are colored red.



Option 2: *Current*

CURRENT SESSION

The saved session loads into the existing I/O inventory. It is replaced with a new session that reflects the current device inventory. The mixer searches each rack slot, one slot at a time, for an assigned device that will match the needs of the session. The device in the slot needn't be precisely what the session requests, but it must have sufficient I/O channels.

System Inventory is catalogued by slot, not by rack, so an appropriate device must be found in the same slot as the session calls for. The original session's patches for the I/O in a specific slot will be patched depending on the current channel count. For example:

- The session calls for a DiGiGrid IOX device in slot 1, and another in slot 2 (12 I/O channels each).
- The current inventory has DiGiGrid MGBs in slots 1 and 2 (up to 128 I/O channels each).
- When you load the session into this inventory, all the patches will be intact. The first 12 I/O channels from each MGB DiGiGrid interface will be patched, but the remaining channels are unused.

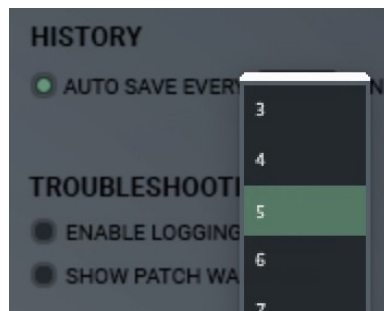


Templates

A template is a mixer session based on a previous session or a factory preset. It loads all mixer parameters (except the I/O inventory), which facilitates moving projects between mixer systems whose inventories are not identical.

When creating a new session, it's common to begin with a template, since most of the tedious setup work is already taken care of. Templates are saved to and loaded from the File menu.

Auto-Saving Sessions



The SoundGrid Studio can save sessions at user-defined intervals or each time scenes are saved or recalled. SoundGrid Studio does not delete auto-saved files. This can result in a very large number of files, but it provides access to all session information saved throughout a project.

These files are stored in the History folder:

Mac: Users/Shared/Waves Audio/SoundGrid Studio/History

Windows: Users\Public\Waves\ SoundGrid Studio\History

Delete History files manually in the host computer's file system.



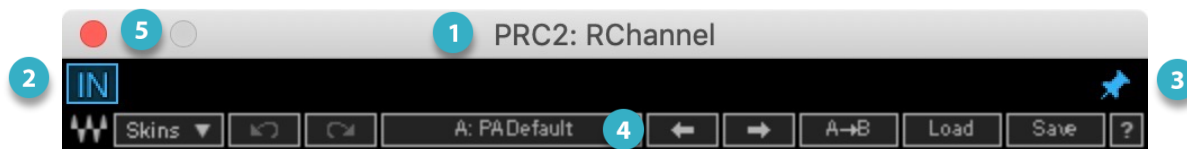
Floating Panels

Plugins and Mixer Windows can be detached from their docked locations and floated.

PLUGIN FLOATING WINDOWS

When a plugin is opened from the Rack layer mode, its complete interface appears as a floating window that can be moved anywhere on the host's displays. If a plugin interface is hidden by another object, it remains open and can be brought to the front by clicking on its rack icon.

Certain items are common to all floated plugin interface panels.

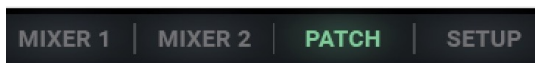


- 1 Plugin channel and plugin name
- 2 In/Out button bypasses the plugin
- 3 Pin window. When the pin is active, this window will remain in the front.
- 4 WaveSystem Toolbar. Used by all Waves plugins for presets management, undo/redo, and other functions. Appearance and tools vary slightly by plugin. To learn more, read the [WaveSystem Toolbar user guide](#).
- 5 Hide the plugin interface.



TEAR-OFF WINDOWS

There are four eMotion ST windows: Mixer 1, Mixer 2, Patch, and Setup. You can “tear off” one or more windows to spread SoundGrid Studio control over several displays. Click and drag downward, away from the Top Bar. A new window will appear. It can be positioned on any of your displays.



The original Window Selection Panel. All window tabs are available. In this example, we will separate the Patch window from the other windows to create its own screen.



Drag the Patch tab off of the Top Bar. This creates a new screen containing only the torn-off window. Move this separated window to another display.



The main display can access any window except the secondary view. Repeat the procedure for additional displays.

Close the torn-off window to return it to the main view.

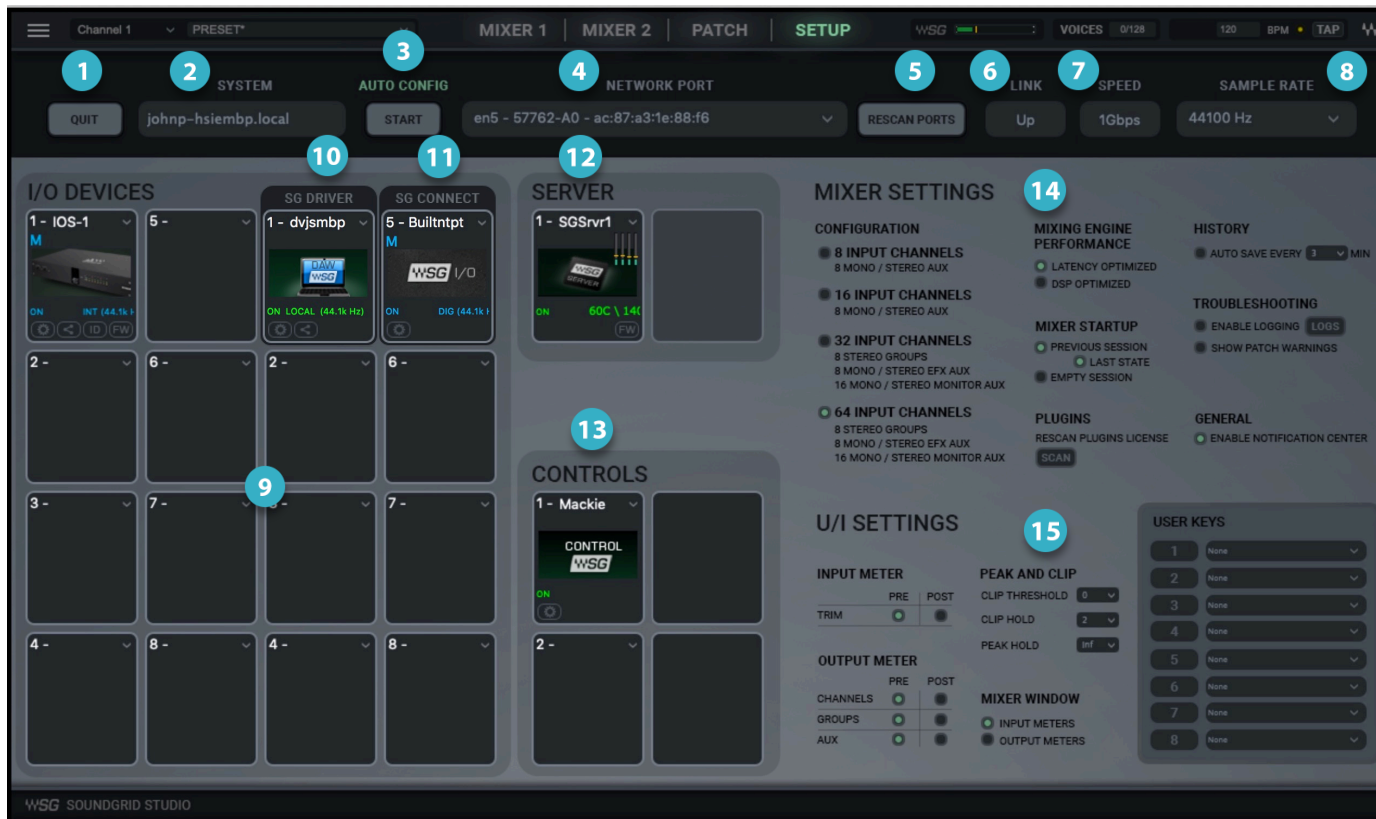




Part 3: Setup Window

Use the Setup window to control the SoundGrid network, configure the mixer and devices, and set up the interface just as you want it.

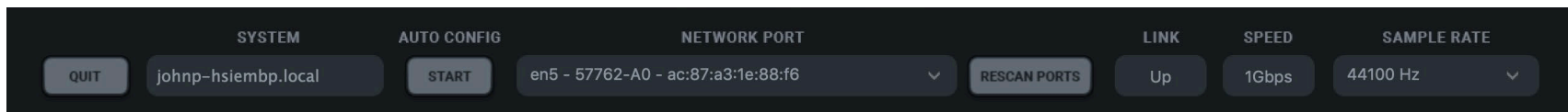
Setup Window Overview



- | | | |
|---------------------------------------|--|--------------------------|
| 1 Quit application | 6 Network link up/down | 11 SG Connect assignment |
| 2 System controlling SoundGrid Studio | 7 Network speed | 12 Server Racks |
| 3 Start auto-configuration | 8 Sample rate selector | 13 Control racks |
| 4 Host network port select | 9 I/O racks (hardware + software I/Os) | 14 Mixer config settings |
| 5 Re-scan network ports | 10 SoundGrid driver assignment | 15 Interface preferences |



Network Controls



1. Quit

Closes the session and quits the application.

2. System

Identifies the host system that is controlling SoundGrid Studio.

3. Auto-Configure / Start

Automatically configures a system based on current inventory. There are three options:

Reconfigure: Discards all previous assignments, patches, and settings and re-scans the network and takes a snapshot of all found devices. It then updates assignments and patches accordingly.

Add Device: Preserves the current assignments and patching; adds newly found devices (if present) consecutively to inventory and current patching.

Cancel: Aborts this operation.

4. Network Port

Shows all detected network adaptor ports on the host computer. Choose the port that connects to the SoundGrid devices or network switch. We recommend that this port is used exclusively for SoundGrid devices. Visit [Waves support](#) to learn how identify the correct network port.

5. Re-scan Network Ports

Scans all network ports for new network adaptors. If you connect a network adapter (e.g., Thunderbolt-to-Ethernet) while SoundGrid Studio is open, the adaptor may not appear in the Network Port drop-down menu. This will also locate local ASIO/Core Audio devices (using SG Connect) that have been added while the app is running.

Re-Scan temporarily disconnects SoundGrid and checks for new network adaptors—these will now appear in the list of network ports. This will result in a brief audio drop.

6. Network Link

Reports the status of the Ethernet connection to the computer running SoundGrid Studio software.

Options: UP, DOWN, INVALID

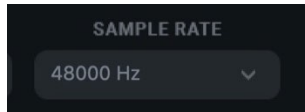


7. Speed

Reports the speed of the SoundGrid network. Options: 100 Mb/sec, 1 Gb/sec, N/A.

Sample Rate Section

8. Sample Rate Selector Menu



The value box displays the sample rate of the SOE clock master device.



Use the Sample Rate drop-down menu to set the sample rate of the SOE clock master. If the SOE clock master is locked to an outside source (e.g., word clock, digital, SPDIF), then SoundGrid Studio cannot change its sample rate. Use the device's control panel to set its sample rate, which will then report to SoundGrid Studio.

Assignment Racks

9. Device Racks

There are 16 device slots—two groups of eight. The sequence of device assignment is reflected in the Patch window. Otherwise it is not important. Slot 1 in Group 2 is reserved for the local driver. Slot 5 in Group 2 is reserved for SG Connect assignment.

10. SG Driver Assign Slot

The slot is for the local SG Driver. When you use the Auto-Config wizard, the SG Driver will be installed in this slot, after you've been asked. If you set up the inventory manually, make sure to assign the local driver to this designated slot. Otherwise, StudioRack offload capabilities will not be available. No other devices can be installed here.

11. SG Connect Assignment

SG Connect lets you connect non-SoundGrid I/O devices to a SoundGrid network. SG Connect can be assigned only in this slot, and no other device and be assigned here.

12. Servers Rack

Assign one server here.


Control Protocols Rack

Assign up to two control surface devices. A slot with no assignment is labeled "Add Device."



Device Racks: Assigning and Managing Network Devices

Device racks are used to assign and control the hardware and software I/Os, servers, and controllers available on the network. Use these to set up a new configuration or to modify an auto-configured setup.

 Click on the File icon at the top of a rack slot to open the Device menu.

I/O Devices Racks

There are 16 I/O device slots: two sets of eight. Every rack slot can assign one I/O device. Note the “SG Driver” slot at the top of the rack. This is the only slot to which you can assign the host computer’s driver.



There are three categories of assignable devices:

Network Assign all working I/O devices attached to this SoundGrid SOE network.

Local The host computer’s local driver.

Offline Templates of devices that can be used to prepare sessions without a server and I/O devices. Later, when the hardware is available, the session will load completely.

- Available devices are shown in white. Devices that are not available for assignment are gray.
- The rack slot number determines the device’s place in the Patch window and in certain drop-down menus. Device sequence is not important, but some engineers choose to use one rack for control room and input, and the other for monitoring.
- The ID button next to the device name activates a changing-color LED on the device to help identify the hardware unit.



I/O Device Racks Displays and Controls

- 1 Slot sequence number
- 2 Device name
- 3 Device menu access
- 4 Device status
- 5 Clock source
- 6 Sample rate
- 7 Clock master indicator
- 8 Device's control panel button
- 9 Identify hardware
- 10 Firmware status and re-flash
- 11 Enable sharing
- 12 Offline device
- 13 Shared device
- 14 Shared driver



There are several status indicators and buttons on the icon itself and just below it. The color of the text in the slot indicates the master/slave status of the device (Blue=Master; Green=Slave; Red=Device not available, Orange=Shared Device).



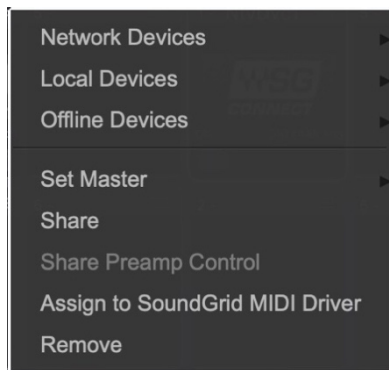
Indicator	Possibilities	Function
Slot Sequence Number	Left rack 1–8 Right rack 1–8	Indicates the rack slot number. I/Os appear in the Patch window in this sequence. Use slot 1 of the right rack for assigning the DAW driver.
Device Name	Text entry	The device product name followed by a number is the default name. Change the device name by double-clicking on its Name Box.
Devices Menu	Drop-down menu	Used to add and remove devices from the slot and to set the device as clock master.
Device Status	On	Device is active.
	NA	Device is unavailable. Likely causes: <ul style="list-style-type: none"> • Device is assigned to another system. • Device or firmware is incompatible with current SoundGrid Studio software. • Device was previously assigned to this user but is not currently connected.
	Offline	A virtual device is assigned to this rack slot for offline preparation of sessions without I/Os connected. All device patching will be maintained when the session is launched on a complete system.
Clock Source	INT, SOE, AES, WC, DigiLink	Clock source of this device.
Sample Rate	44.1, 48, 88.2, 96 kHz	Sample rate of device.
Clock Master	M (Master) / (blank = slave)	Identifies the device as the clock master of the SOE network.
Control Panel Access	Gear button	Click to access device's control panel to adjust preamps, configure channels, and control clock. Refer to the I/O device manufacturer's user guide for more information.



ID Hardware	Locate hardware device	Activates lights on the hardware device associated with the icon.
FW		Status of device's firmware:
	Green	Firmware is compatible with installed mixer software.
	Blue	Firmware is compatible with installed mixer software, but a newer version exists. Firmware should be updated as soon as possible.
	Red	Firmware is not compatible or is out of date. Click the FW button to re-flash device hardware.
Offline Device	Red	Device is offline.



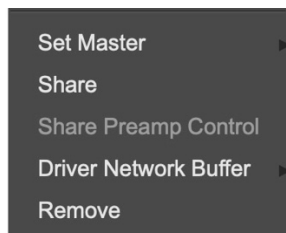
I/O Devices Menu Items



Once an I/O device has been assigned to a rack slot, additional menu items are available.

Menu Item	Possibilities	Function
Set Master	A list of all devices that can be used as a clock source for the local SOE network.	Designates the device as the SOE network clock master and other devices as clock slaves. The letter “M” and the blue text in the slot indicate that the device is the master.
Share	Check/Uncheck	Allows sharing of I/O channels on this device with other systems.
Share Preamp Control	Check/Uncheck	Allows remote users to control the preamps of the shared device.
Assign to SoundGrid MIDI Driver	Check/Uncheck	Assigns any MIDI-port-equipped I/O device to the SoundGrid MIDI driver. The device can then serve as a port for other MIDI devices. The assigned device appears to MIDI controllers as “SG Device I/O.” Refer to the device user guide for configuration details.
Remove		Releases the device from the local host. It will then be available to other drivers.





These menu items apply only to drivers.

Menu Item	Possibilities	Function
Set Master	Assigns main driver.	Assigns this as the main driver. The second driver serves as a backup.
Share	On or Off	Allows other SoundGrid Studio systems to share the device, rather than assigning the entire device to one SoundGrid Studio. Share Preamp Control enables other users to share control of preamp channels on shared devices.
Driver Network Buffer	(Values in samples) Range @ 44.1kHz/48 kHz: 104, 288, 512, 1024 Range @ 88.2 kHz/96 kHz: 208, 288, 512, 1088	The network buffer helps the OS send synchronized information between the ASIO/Core Audio drivers and the I/Os through the network port. When many channels are going in/out of the driver(s) to several destinations, the Driver Network Buffer may need to be increased to reduce the possibility of audio drops or artifacts as a result of overloading the network port driver.

All computers on the network should have the same up-to-date versions of SoundGrid Studio software installed.



SG Connect

SG Connect is a feature of the SG Driver that enables an ASIO/Core Audio device to appear in the SoundGrid Studio inventory as a SoundGrid I/O. This lets you incorporate a non-SoundGrid device in a SoundGrid network for high-speed offload processing. When you run Auto Config and if no SoundGrid I/Os are present in the network, you will be asked if you want to assign the SG Connect Driver. If so, it will be assigned its dedicated slot. The SG Connect driver can be assigned only to this slot.

An assigned ASIO/Core Audio device (e.g., RME, MOTU) appears in the Local Devices assignment submenu.



Once assigned, the device will appear in the assignment menus and the Patch just like any other device.

CONFIGURING THE DAW FOR OFFLOAD PROCESSING

1. Launch your DAW.
2. Select your audio interface's driver as the playback engine ("Windows built-in" must use ASIO4ALL).
3. Configure your host application's outputs as necessary.
4. Insert StudioRack on channels that will offload processing to the SoundGrid server.

STUDIORACK CONFIGURATION

1. Open the StudioRack user interface.
2. Confirm that the StudioRack Processing mode is set to select "Switch to SG."
3. Insert up to eight SoundGrid-compatible plugins to the available slots of each StudioRack.

Please refer to the StudioRack user guide for detailed instructions.



I/O Sharing

A single SoundGrid system consists of a host computer with the SoundGrid Studio app running, an Ethernet switch, at least one SoundGrid server, and at least one I/O. These elements communicate through a SoundGrid SOE network. All connected I/O devices within this system can be assigned and patched to the host.

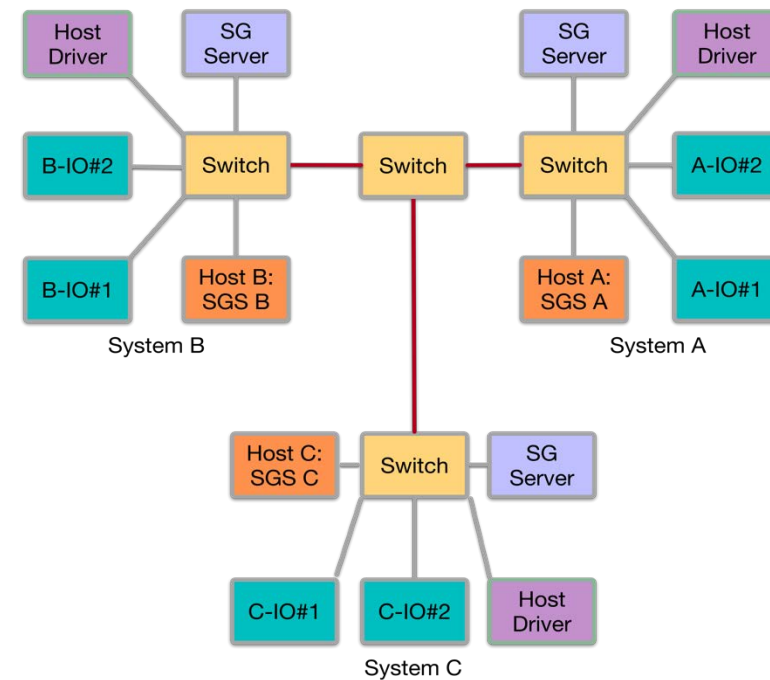


All I/O devices, servers, and local drivers in this SOE network are seen in the System Inventory.

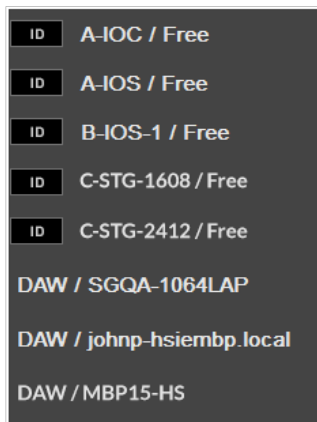
CONNECTED SYSTEMS

Multiple SoundGrid systems can be linked by connecting their Ethernet switches. This enables hosts within this “Super System” to build private networks from all connected I/Os, servers, and drivers. These assignments are exclusive; devices assigned to a host are available only to that host until they are un-assigned. Other users will see the assigned devices in their System Inventories, but they will be grayed out and unavailable.

Individual I/O channels cannot be shared in this configuration.



SYSTEM INVENTORY IN SUPER SYSTEMS



All devices in a super system—whether assigned to a host or not—are displayed in the Device menu of each independent system’s Inventory (left). In this example there are five I/O devices, none of which have been assigned to a system. Each connected host’s local driver is also shown. The letter preceding the device name identifies the SoundGrid Studio system to which the device is physically connected to.

A device assigned to a host’s inventory is the **manager of the device**. When a device is removed from a host, it becomes Free and it can be assigned by any other host, which in turn becomes its manager.

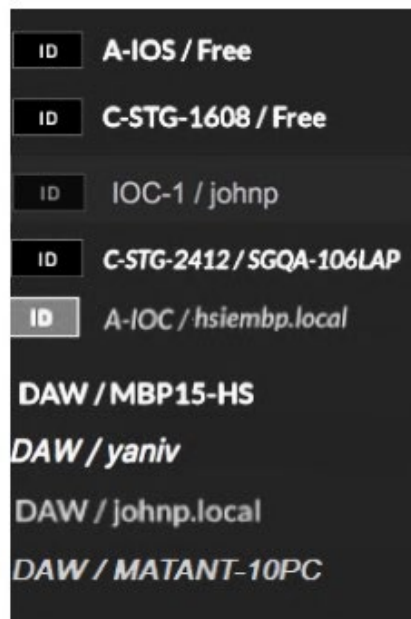
Sharing a Device

Device sharing enables hosts to assign devices that are already claimed by other hosts and patch available device I/O channels. A host that patches I/O channels from a device that’s been assigned to another host (the manager) is called the **client of that device**. A host can be a manager of some devices and a client of others. A device can have several clients, within the limits of the device’s maximum output to the network. Each destination establishes a direct connection from the shared IO device, so the total outputs to the network increase.

For example, a 128-input MGB patched to four hosts will use up the 1 Gb network capacity of the SoundGrid network. In this case, the device will output 128 x 4 channels=512 channels (at 48 kHz).



The font style and shading indicate the type of assignment. Italics indicates that the device is sharing-enabled.



- Unassigned devices
- Once a device is assigned, its name is followed by the name of the host to which it is assigned.
- ← Locally assigned device (grayed out)
- ← Sharing-enabled device on another system (not grayed out, italics)
- ← Device assigned to another system (grayed out, italics)
- ← Unassigned driver
- ← Sharing-enabled driver on another system
- ← Driver assigned to local host
- ← Driver assigned to another system

Setting up Device Sharing

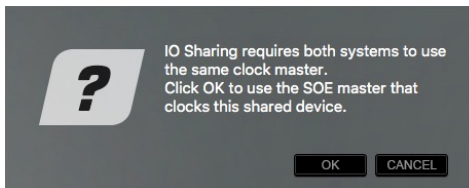


Select the assigned device you want to share with other systems. Click the device's Sharing icon. The device is now sharable. Sharing can also be enabled from the Device menu. Only the manager of a device can activate its sharing.

Other systems can now assign the I/O device to their Inventories and patch available I/O channels. Output I/O channels patched by the manager cannot be shared with other systems until the device's manager releases the patches or removes the device from its inventory.



Shared Devices: Clocking Considerations



When a device is shared by two systems, both systems must be locked to the same clock master. If a client system assigns a shared device that's part of a system with a different clock source, something must be done to rectify the difference.

When assigning a shared device whose clock source is not the same as that of the client system, this prompt will appear. Click **OK** to set the clock of the client system as your system's clock. The shared device, or its master clock, is now the local SOE clock master for all the devices in your local SoundGrid network.



Cancel to explore other ways to provide a clock common to both systems.

In this example, device **A-IO5** is shared with system **B**. This means that the device is now assigned to two independent systems (A and B) that must be synchronized to the same master clock device. In this example, A-IO5 becomes the clock master of system B—all other devices become SOE slaves.

It is possible to assign another device as the clock master while using a shared device, as long as all devices share the same clock.



Use each system's **Set Master** menu to re-assign clock masters. Select the same device in both systems, if possible, and the clock will be common to both systems.

The shared device can now be a slave in the client system.





If the shared device cannot synchronize to the new clock, it will be unavailable for sharing by that host. Other hosts in the super system may be able to sync to the shared device if they can adjust their clocks accordingly.



A shared device can be a slave or the clock master of in its *own* SOE network, indicated by the **M** on the shared device's icon (left). On the right, the device is still the SOE master of the system it's being shared with but is a slave within its own system.



When devices from more than two systems are assigned to a system's inventory, all systems must be locked to the same master clock device.

! Note: Changing the master clock assignment in a system that includes shared devices will result in a clock reset in all associated systems. This results in a short audio dropout.



Patching Shared Devices



Patching Shared Input Devices

When a device is shared, all of its inputs are available to all users. The shared device appears in the Patch window along with the non-shared devices.

Learn how to patch in and out of the mixer, within the mixer, and between devices in the SoundGrid network in the next chapter, [The Patch Window](#).

PATCHING SHARED OUTPUT DEVICES

Once assigned, a shared I/O device appears in the client's Output Patch window. "IO Sharing, Remote Device" is shown on its icon. Patching shared I/Os follows the same conventions as patching unshared SOE devices. There are, however, a few considerations when sharing devices. In the example on the next page, the device "B-IOS" is owned by System 1 and is being shared by System 2.

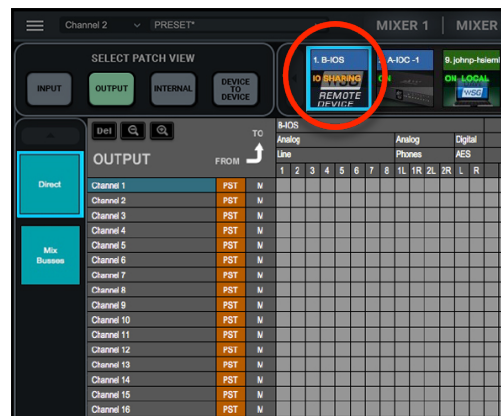


Shared and Un-Shared Devices in the Patch

B-IOS, owned by System #1

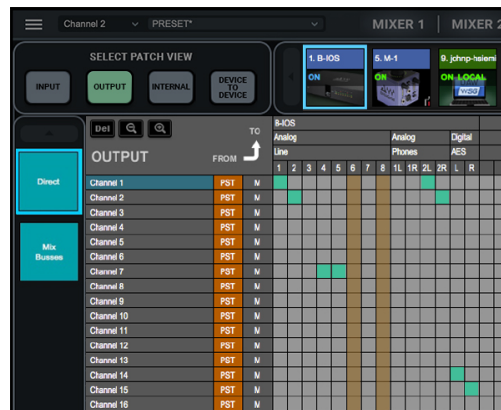


System #2, using shared device B-IOS



Device B-IOS appears as an assigned device in the output patch of System #1 (left) and as a shared remote device in System #2 (right).

When an output patch is made in either system, the corresponding I/O channel in the other system is colored orange to indicate that the patch is in use.



System #1 (left): Analog line outs 6 and 8 are orange, indicating that those channels have been claimed by another system, in this case, System #2. Local patches are shown in green.

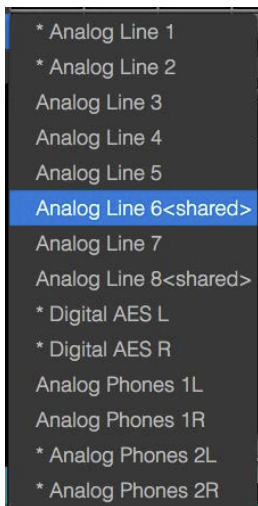
System #2 (right): Analog line outs 1, 2, 4, and 5; headphones 2L and 2R; AES 1 and 2 are patched by System #1, the device manager. Therefore, they are unavailable for patching by other systems.

A manager can always disconnect an I/O channel and establish its own connection.

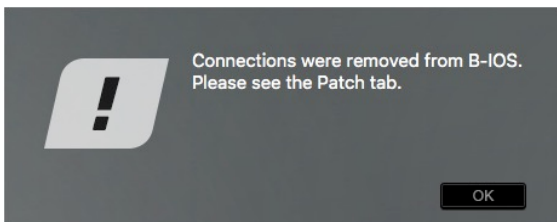




If the manager of a device patches to an I/O channel that's already taken by a client, the preexisting client patch will turn red. The client is no longer patched to that I/O output channel.



Patching shared outputs in the Mixer window follows the same rules as in the Patch window. Devices shared by other systems in the super system are indicated with <shared>.

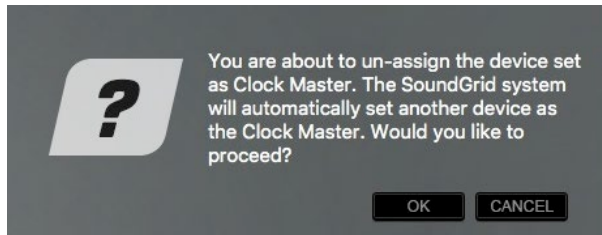


A warning alerts the client that the original patch has been disabled. When the manager releases the patch, it will return to the client.



Removing Shared Devices

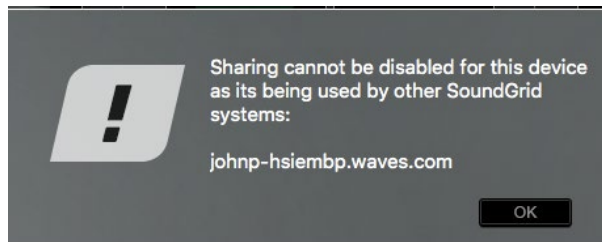
Client



Select **Remove** from the Devices drop-down menu. Since the remote device is, by necessity, the local clock master, removing it will result in another device becoming the clock master. This prompt will appear. Once the device is removed, SOE clock will return to the previous master.

This may result in a short audio drop.

Manager

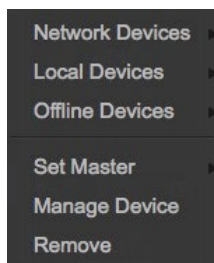


Deselect the Sharing icon or uncheck *Share* in the Device menu to end sharing for a device. If you attempt to remove a device that is being used by another system, this prompt will appear. You will not be able to un-share the device until it is no longer patched by other clients.



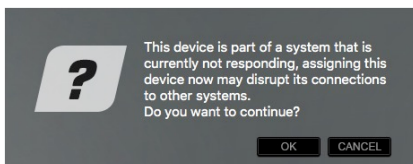
IF THE SHARING HOST BECOMES UNAVAILABLE

If the manager of a shared device fails (e.g., Ethernet connection is broken, computer stops working, computer is taken away), the shared device will continue to function. As long as the device is powered up and is connected to the manager's SoundGrid network, it will pass audio. The device, however, is still owned by the missing host, so a client cannot access the device's control panel.



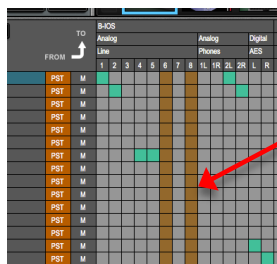
To gain full control of the shared device, select "Manage Device" from the device's menu. This, in essence, moves the device's administrative privileges from the missing manager host to the client's computer.

The device will now appear in the client's inventory as a local SOE device. It can then be designated as a clock master or slave of the SOE network.



If the absent manager system is sharing devices with yet other systems, this operation may interfere with some connections.

SHARE PREAMP CONTROL



A device manager can enable all clients in a super system to adjust the preamp gain for a shared device. When Share Preamp Control is selected, any client host can adjust the preamp gain of any I/O channel of the device. All users sharing this device have equal control of preamp gain in any patched I/O channel.



Servers



The Servers rack is used to assign, remove, and configure a SoundGrid server. The server's CPU temperature is shown on the icon.

Menu Item/Indicator	Possibilities	Function
Devices	Drop-down menu	Choose among the servers on the SoundGrid network. A server that is assigned to another host is unavailable and grayed out.
Server Network Buffer	Range @ 44.1kHz/48 kHz: 40–224 samples Default: 40 samples (0.8 ms) Range @ 88.2 kHz/96 kHz: 80–448 samples Default: 80 samples (0.8 ms)	This sets the amount of time it takes for audio to stream from the I/O or driver to the server and back. It determines the speed of real-time processing. Lower settings result in lower system latency and greater responsiveness. Higher settings yield more stability but greater latency. If you encounter pops or similar errors, increase the buffer setting. The buffer size is set in samples but is also displayed in milliseconds.
Information	(N/A)	Displays technical details about the server.
Remove		Releases the server from the local host. It will then be available to other hosts.

TEXT ON SERVER ICON

Server Status Indicator	On (N/A)	Indicates that the server is present and operational. The server's rack slot will remain red until the firmware is compatible with current SoundGrid software. Launch the updater manually by clicking the FW (firmware) button.
Temperature		Displays temperature of server CPU.



Add or Change the Server



Servers are assigned and removed in the same manner as I/O devices. Some SoundGrid devices contain I/Os as well as a server. Treat these devices as two separate units. One will appear in Device Rack A or B as an I/O under its own name. The other will appear as SGS-1, SGS-2, etc.

DSP Meters

The meter bars on a server icon indicate DSP load of the server's cores. The solid bar areas display **average** DSP use per core:

The yellow lines show **peak** use, as indicated in the percentage display above the line. Certain plugins can exhibit a high average/peak DSP ratio. This may cause overloads (momentary or constant) that result in audio drops. When adding a large number of these CPU-hungry plugins, the peak and average indicators will drift apart. In such cases, you may need to disable or remove certain plugins.

Average	Peak	Status
Green	DSP peak value: 1% to 84%	System is stable. You can add more plugins.
Yellow	DSP peak value: 1% to 84%	The network is approaching its limit. Monitor the meter status and be prepared to remove some plugins and/or increase the network buffer size.
Yellow	DSP peak value: 85% to 99%	Network load is excessive. Monitor the meter status. Remove some plugins and/or increase the network buffer size.
Red		DSP load is beyond the limit. Remove heavy-load plugins immediately.



External Control Devices

Use this rack to assign external controllers to the mixer.



Indicator/Menu Item	Possibilities	Function
Selected Control Category		Displays selected protocol.
Controller Device Status	Displays presence and status of device	Off>Device corresponding to the selected protocol is not present or not functioning properly. On > Device is present and operational.
Assess Control Panel (Gear Button)	Switch	Opens the control panel of the selected controller.
Devices Menu	Drop-down menu listing available control protocols	All available controller categories are listed, whether the associated device is connected or not.
Remove		Unassigns the control protocol.

Control Panel

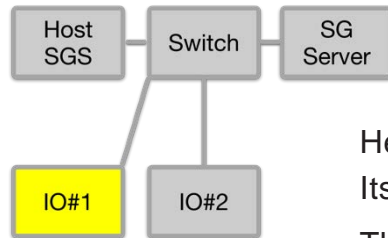
Each controller category has its own control panel: they all behave in a very similar manner. Please refer to the Appendix at the end of this user guide for details about controlling the mixer with an external device.

Any mixer or plugin parameter currently being controlled by an external device is highlighted by a red bracket.



Setting Sample Rate

The SoundGrid network is synchronized with a clocking protocol called Sync-Over-Ethernet (SOE). This is a versatile protocol that allows the host to easily assign a clock master and to control sample rate throughout the system.

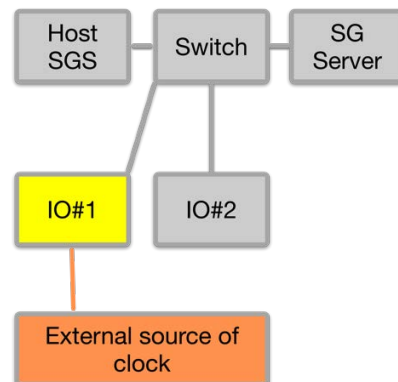


As in any digital network, one I/O is assigned as the clock master of the system. The other I/Os are slaves and must lock to the sample rate by the master.

Here is a basic SoundGrid Studio setup. I/O #1 has been assigned as the clock master (M). Its source is set to INT, so its own internal clock is the master.



The sample rate of I/O #1 can be set on its control panel (click on the gear icon on the I/O slot) or, much more commonly, on the SoundGrid Studio sample rate drop-down menu (right). This menu requests the SOE master I/O device to change its sample rate. If the I/O is able to comply, it will change to the requested rate and the slaves will follow suit.



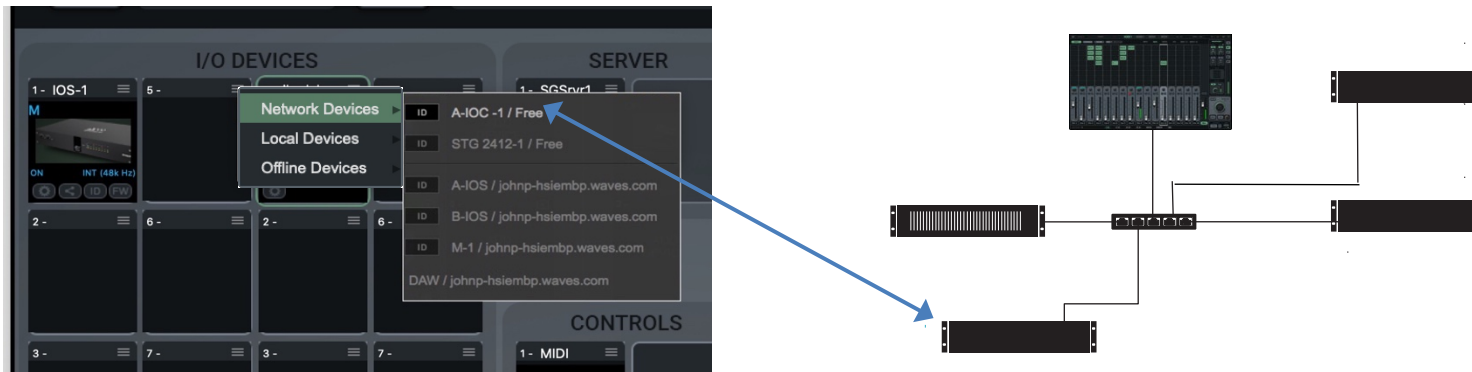
A common reason why a device cannot comply with the SoundGrid Studio request to change its sample rate is that it is being clocked by a device that is outside of the SOE network. It is the master of the SOE network but a slave to another device, whether with word clock or AES/EBU or SPDIF. This device could be an I/O, a console, or a clock generator.


SoundGrid Studio can control the workings of its own devices, but it cannot set external devices. Therefore, the sample rate needs to be set in the control panel of the external device, which will change the sample rate of the SEO master.



Assigning I/O Devices Manually

1. Click the Device Menu icon in the upper right corner of an I/O device rack slot to open the Devices menu. All devices available to this SoundGrid system are displayed here. Devices that are currently unavailable are grayed out.



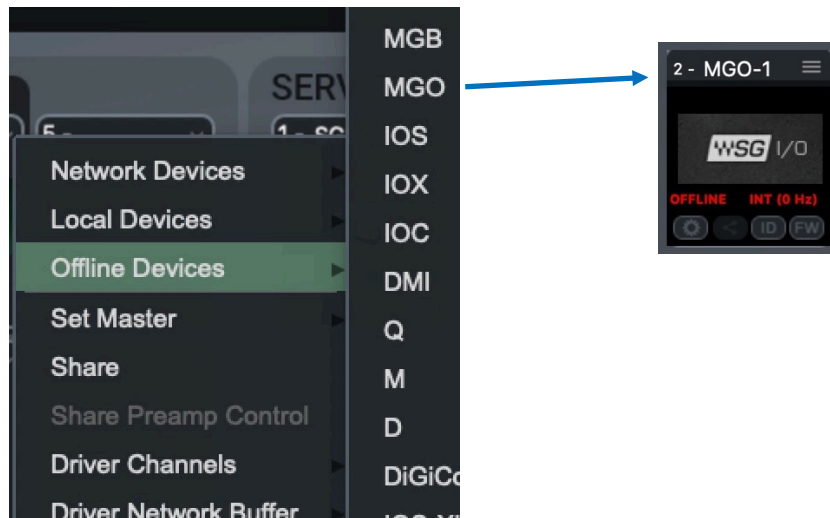
2. Assign hardware and software devices to device slot. The sequence is unimportant.
3. Select an available device. It will appear in the rack. If this is the only device in the rack, it is by default the clock master for the SOE network and its icon text is blue. Now that there is a master clock for the SOE network, the Network Link and Speed indicators in the Top Bar are no longer red.
4. Once an I/O has been assigned to a computer, no other computer can access it until it is released by that user or shared. To release an I/O from your computer, select **Remove** from the menu.
5. Add more devices in the same manner. They will be defined as clock slaves and their icon text will be green. To designate one of these added devices as the clock master, choose **Set Master** from that device's drop-down menu. The original clock master becomes a slave.
6. If you need to adjust preamps or otherwise configure the I/O, click the **gear button**  beneath the icon to open the I/O device's control panel. The SOE master can be locked to a system outside of the SOE network (such as a mixing console). Use the device's control panel to configure its sync with the outside device or system. Even though this device is a slave to an outside source, it remains the SOE master.
7. I/O channels of all assigned devices—hardware and software—will appear in the Patch, Channel, and Mixer windows.



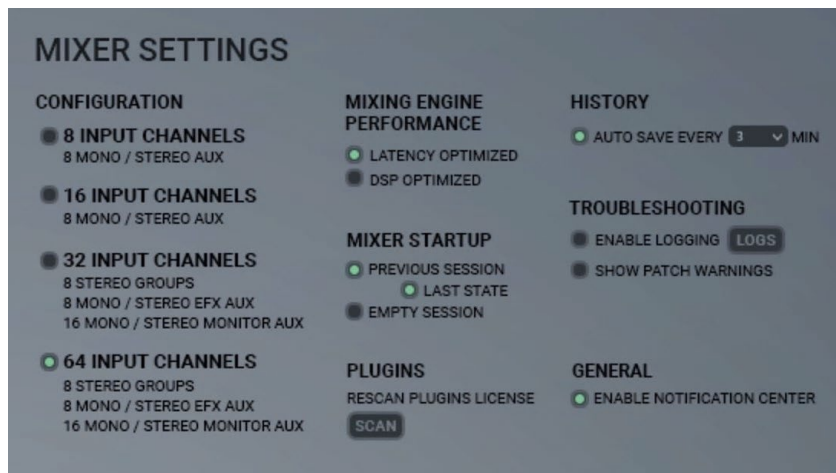
Working Offline

The eMotion ST mixer can be pre-configured or modified offline. Virtual devices can be assigned to the racks, allowing for detailed preparation of patching, channel settings, plugins presets, mixer configuration—the entire system—without a server or I/O devices. A session that has been prepared offline—whether on the host computer, a laptop, or a tablet—is a complete session and is fully operational when a server and I/Os are added.

1. Load the session you wish to work with or start with a blank session.
2. From the Offline Devices drop-down menu, select the device you wish to use “virtually.” It will appear in the I/O Devices racks like any hardware device. Its text will appear red and the icon will read “Offline.”
3. Set up your session. Offline device inputs and outputs are available in the Patch menu and in any mixer window where devices can be routed.
4. Configure all channels, auxes, internal routing, and plugins in the same manner as devices that are physically present. When the session is opened on a mixer system with I/Os and a server, the devices that were configured offline will maintain all settings, even those dependent on external connections that were not present during offline configuration.



Mixer Settings



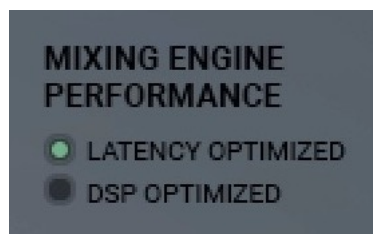
CONFIGURATION

The Configuration section sets the size of the mixer. The mixer can have 8, 16, 32, or 64 channels, with 8 stereo groups, 8 AUX channels, 16 stereo monitor channels, and an L/R main buss (depending on the selected configuration and license).

Mixer size is normally established when a session is created, but you can change the mixer configuration of an existing session. Please note that if you reduce the number of channels in a session, the parameters in channels that are no longer part of the session will be discarded. Save a session under a revised name before you reduce its size. Mixer Layers without any channels are unavailable and their buttons are grayed out.

MIXING ENGINE PERFORMANCE

This sets the mixer's internal processing priority, which affects DSP performance.



In the **Latency Optimized** mode, a processing cycle must include all signal processing paths, so there is no internal routing latency. However, processing in this mode can be less DSP efficient with certain plugin processors. In the **DSP Optimized** mode, processing can spread across several buffer cycles, regardless of signal path position. This parallel processing provides greater DSP efficiency, with increased latency on certain signal paths.



Setting Maximum Latency



The Server Network Buffer is the amount of time it takes for audio to stream from the I/O to the server and back. This determines the maximum latency for a processing route.

Internal Routing latency is determined by the number of paths that are necessary to complete a route. The more paths, the greater the latency, and usually the larger the Server Network Buffer must be. Set the Server Network Buffer size in the Server rack.

Mixer Startup

Determines the startup condition of the mixer.



- | | |
|-------------------------|---|
| Previous Session | Loads the last session to its most recent user save. |
| Last State | Loads the most recent session to its last state before quitting. This is the file created by the auto-save routine, as described below. |
| Empty Session | The mixer opens with a blank session. |

History

Enables automatic saving of the current SoundGrid Studio session as a History file. Set the frequency of auto saves with the drop-down menu. Save interval: 3–30 minutes.

History files are recalled in the Show window. All SoundGrid Studio session files use the *.sgst* extension. These files are the same format as user-saved sessions, but are stored in a separate folder:

- | | |
|----------------|---|
| Windows | Users\Public\WavesAudio\SGS\history |
| Mac | /User/Shared/Waves/SoundGrid Studio/history |

The mixer stores an unlimited number of auto-saved files. Auto-save files are not deleted; new saves do not replace old saves. Delete session files using the host computer.

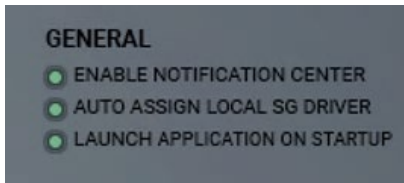


Update Plugins

If you install and activate new plugins—purchased or demo—while SoundGrid Studio is running, they may not be recognized immediately. Click the Scan button. This initiates a scan of all installed and licensed plugins and enables SoundGrid Studio to recognize them. If plugins are still not found, read this [technical support article](#).

GENERAL SETTINGS

Enable Notification Center



SoundGrid Studio provides pop-up windows to guide you through the Auto-Config process. Turn notifications on or off here.

Auto-Assign Local SoundGrid Driver

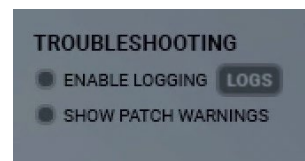
Sets whether or not Auto-Configuration assigns the host computer's SG driver to the inventory. Deselect this option if you prefer to assign the ASIO/Core Audio driver manually.

Launch Application on Startup

By default, SoundGrid Studio is launched on host computer startup and remains on until quit manually. Deselect this to prevent automatic launching.

TROUBLESHOOTING SECTION

Enable Logging



SoundGrid Studio constantly logs its activity for purposes of troubleshooting. Click on the Logs button to access the log files. Under certain circumstances, Waves technical support may ask for more comprehensive records for enhanced troubleshooting.

Select Enable Logging to create verbose records. Deselect for normal operation.

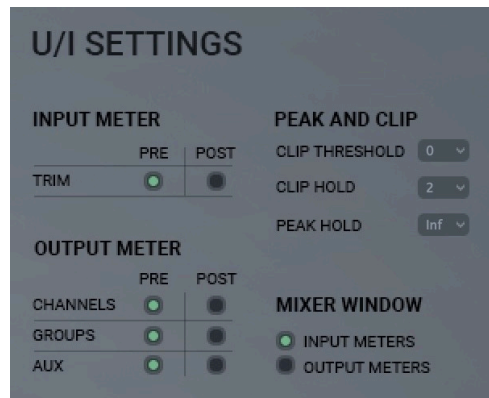
Show Patch Warnings

When selected, a warning is issued when any routing change is made in the Patch window. You can also set this preference in the Patch window.



User Interface Settings Section

The U/I Settings section is used to control meter behavior.



Input Meter

Sets whether the input meters on the eMotion ST mixer display pre-trim or post-trim input values.

Mixer Window

Sets whether the Mixer window meters display channel/buss input or output signal.

Output Meter

When Mixer Window is set to Output Meters, this sets the meter view of channels, groups, and auxes: pre-fader or post-fader.

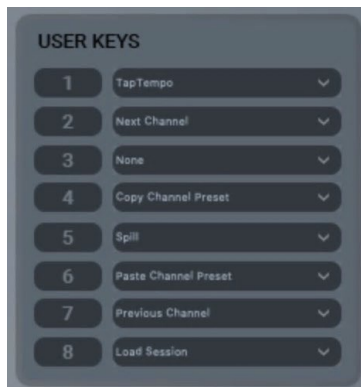
Peak and Clip

Clip Threshold determines the level at which a peak light turns red, indicating clipping. Setting the Clip Threshold below 0 dBFS provides a warning before clipping occurs. This setting does not affect the behavior of the peak level indicator.

Clip Threshold: 0 to -28 dBFS, Clip Hold: 0–5 seconds, Peak Hold: 0–5 seconds

User-Assignable Keys

Frequent actions can be assigned to eight user-assignable keys.



Assignments are made from the drop-down menu associated with each key.

To recall a user key, select a number from among the buttons on the left side of the Assignment panel.





Part 4: Patch Window

The Patch window establishes connections within the mixer, between the mixer and I/O devices, and between assigned devices on the SoundGrid network. It provides a comprehensive, detailed tool for patching the mixer and presents a wide overview of the mixer's condition so that an engineer can quickly understand its configuration.

Patch Window Sections

The Patch window is divided into two functional sections that help you patch between channels, busses, and I/Os.

- A** **Frame for Filtering Tools:** This frame contains the tools used to determine which channels and devices are needed in the patch grid to execute a particular patch.
- B** **Patch Grid:** This is where the channels are patched. The grid changes in functionality and appearance based on patch view and filtering.

The screenshot shows the WSG SoundGrid Studio Patch Window interface. At the top, there are tabs for 'MIXER 1', 'MIXER 2', 'PATCH', and 'SETUP'. The 'PATCH' tab is active. Below the tabs, there are buttons for 'SELECT PATCH VIEW' (INPUT, OUTPUT, INTERNAL, DEVICE TO DEVICE) and a row of device icons (1. IOC-1, 9. Oscar.local, 10. WSG-Y16-). A yellow arrow labeled 'A' points from the 'SELECT PATCH VIEW' buttons to the 'Patch Grid'.

The 'Patch Grid' (labeled B) is a large grid with columns for 'FROM' and 'TO' destinations. The 'FROM' column lists various channels and busses, including KICK, SNR TOP, RIDE, RACK 1, RACK 2, FL 1, FL 2, CRASH, OH S/L, OH S/R, BASS D1, BASS MIC, GTR1 S/L, GTR1 S/R, GTR 2, VOC 1, VOC 2, BVOC 1, BVOC 2, BVOC 3, PNO M1, and PNO M2. The 'TO' column lists destinations like IOC-1, Oscar.local, and Core Audio. The grid cells are color-coded (green, orange, purple) to indicate patching status. A yellow arrow labeled 'B' points to a specific cell in the grid.

At the bottom left, the text 'WSG SOUNDGRID STUDIO' is visible. At the bottom right, there is a logo consisting of three vertical bars of increasing height.

Filtering Tools

Since the Patch window can connect “anything to anything” within the eMotion ST mixer and between any assigned devices on the SoundGrid network, the number of potential patches is very large. To make patching manageable, sources and destinations are filtered according to the purpose of the patch.

- A Use the **Patch View Selector** to select the *type* of patch you want create. Are you patching into the mixer or out? Are you patching inside mixer? Do you want to assign channels to links? Or do you want to bypass the mixer altogether and patch between devices? The View Patch selection determines the category of patches that at possible for the desired use.
- B Once a Patch View is established, the specific rows and columns are defined. This, the Grid filters, is where the possibilities of *what patches to what* are shown.



Patch Views



The Patch View Selector filters the types of channels to display, based on what kind of patch is to be performed.

There are four patch views:

MIXER AND DEVICES

Input Patch between an assigned I/O device and one or more mixer channels.

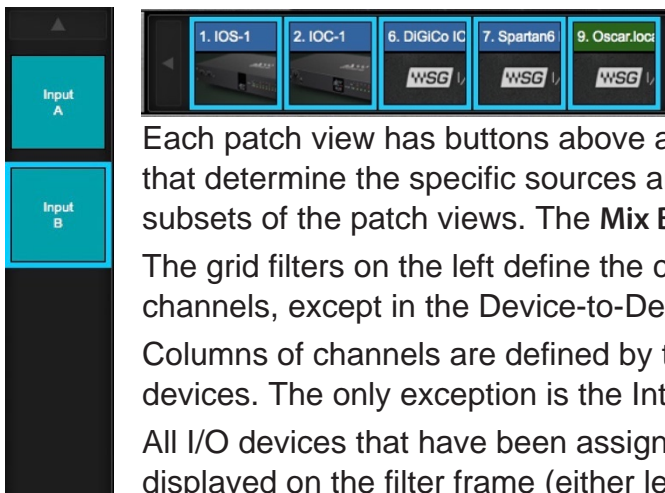
Output Patch between channel outputs and any assigned I/O device.

Internal Assign channels to groups, main out, and links.

NETWORK PATCHING

Device to Device Patch between assigned network devices.

Grid Filters



Each patch view has buttons above and to the left of the patch grid. These buttons select the filters that determine the specific sources and destinations that can be patched in that grid. Grid filters are subsets of the patch views. The **Mix Busses** filter is, for example, part of the **Output** Patch View.

The grid filters on the left define the channels that make up the rows of the grid. These are usually mixer channels, except in the Device-to-Device view.

Columns of channels are defined by the top filters. These are almost always used to select I/O devices. The only exception is the Internal view, where instead mixer busses are shown.

All I/O devices that have been assigned in the Setup window—both hardware and software I/Os—are displayed on the filter frame (either left or top or both, depending on the purpose of the patch).



NAVIGATING THE GRID FILTERS

The scrolling arrows on each grid filter bar make for easier navigation within a long list of channels or devices.

PATCH DIRECTION



An arrow indicates whether patch signal flows from top to left or from left to top.

The Patch Grid

Once a patch view and a grid filter are selected, the relevant channels will be displayed in rows and columns. This (the Patch Grid) is where filtered channels, busses, and devices are patched.

PATCH GRID ZOOM TOOLS



Zoom in and zoom out buttons enable detailed views or broad overviews of the Patch Grid.

GRID ROW AND COLUMN INFORMATION



IOS-1								IOC-1																	
Analog				Analog				Digital		Analog				Analog											
Line				Phones				AES		Line				Phones											
1	2	3	4	5	6	7	8	1L	1R	2L	2R	L	R	1	2	3	4	5	6	7	8	1L	1R	2L	2R

Row and column names and other information are displayed in the row and column headings. There are two types of information displayed here, depending on the view:

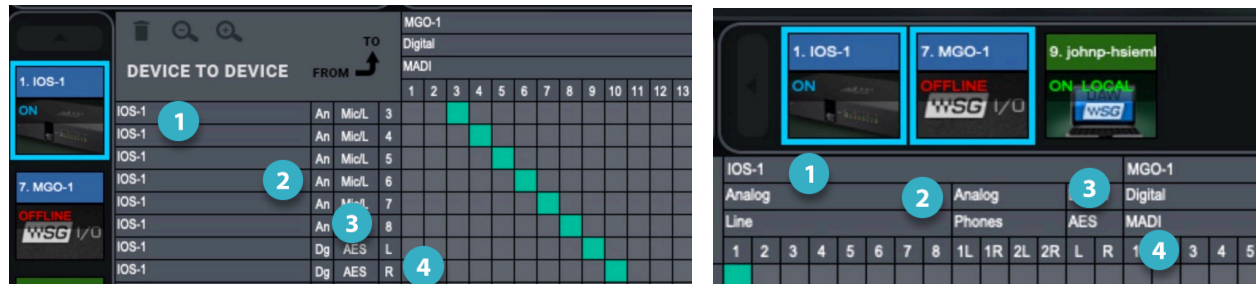
- I/O devices (hardware and software)
- Mixer channels, busses, and control groups (link, group, delay)

Row and column names are shown in all views.



I/O DEVICE CHANNELS

Hardware and software I/O devices are represented by icons, which can appear in the horizontal and/or vertical grid filter bars, depending on the patch view. Click on a device icon to expand its I/O channels, along with other applicable information. Any number of available I/Os can be expanded simultaneously.



DEVICE-TO-DEVICE MODE ROWS: I/O CHANNELS DEVICE-TO-DEVICE MODE COLUMNS: I/O CHANNELS

- 1 Name of I/O device: same as shown on the Icon
- 2 Format: analog vs. digital
- 3 Connector: mic, line, phones, AES, S/PDIF, ADAT, etc.
- 4 Channel number

Next to the device name is a series number. This indicates the device's slot number in the Device Rack in the Setup window.



Mixer Channels, Mix Busses and Control Groups

MONO AND STEREO CHANNELS

MONO / STEREO FLIP	
KICK	M
SNR TOP	M
SNR BOT	M
RIDE	M
RACK 1	L
RACK 1	R
RACK 2	L
RACK 2	R
FL 1	M
FL 2	M
CRASH	M

- Input channels can be changed from mono to stereo by double-clicking on the M or L/R buttons. When a mono channel is flipped to stereo, its name is shown in both the left and the right sides.
- When a channel is flipped from stereo to mono, the left channel patch becomes the mono patch.
- Mono/Stereo status reflects the current state of the channel and can be changed only on Input channels.



SELECTED CHANNEL



A blue highlight identifies the selected channel, whose name is shown in the Name box in the left corner of the Top Bar.

PATCH POINT

A patch is created at the intersection of horizontal and vertical grid lines. Select patch points one by one, or draw a straight line vertically, horizontally, or diagonally. Click again on a patch to remove it.

- A valid patch is blue/green.
- A red patch indicates that the device is not available.
- A stereo channel can accept signals from two independent mono sources.



Remove all patches using the Delete button. This deletes the patches for all channels in the displayed Patch View. Delete does not affect other views. This cannot be undone.

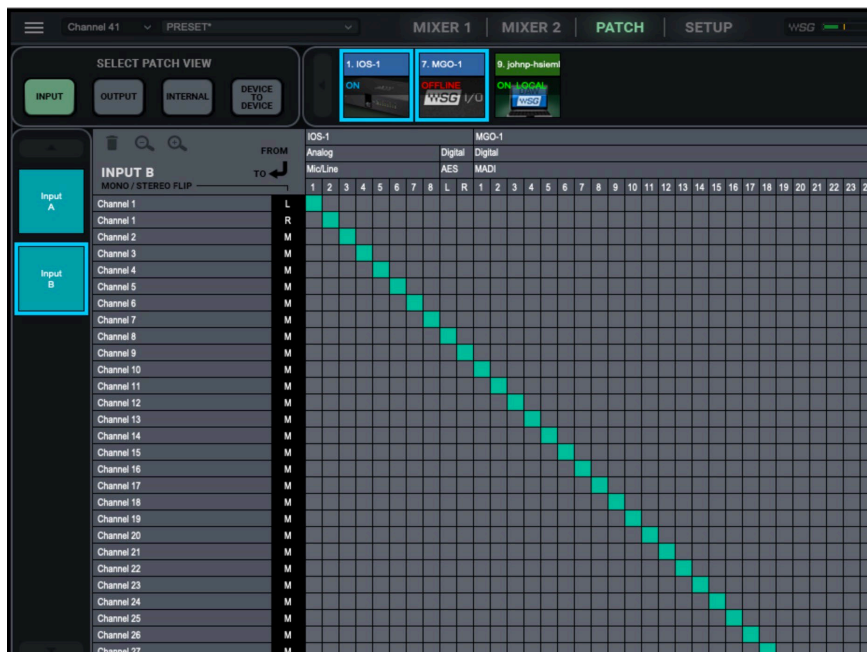


Mixer Inputs

Input signal flow is from top to left (I/Os on top, mixer input channels on the left). To avoid confusion, it is convenient to name the mixer channels before patching. You can create and save templates to streamline setup. Templates can store all channel, I/O, patching and processing information, which can later be modified if needed.

INPUT PATCH BEHAVIOR

- Inputs A and B can patch to the same I/O channels or to different I/Os.
- An I/O device channel can be patched to more than one mixer input channel.
- A stereo channel appears as two independent channels (L and R) with the same name.
- The two sides of a stereo channel are patched separately, whether from a single stereo I/O channel or from two different mono channels.

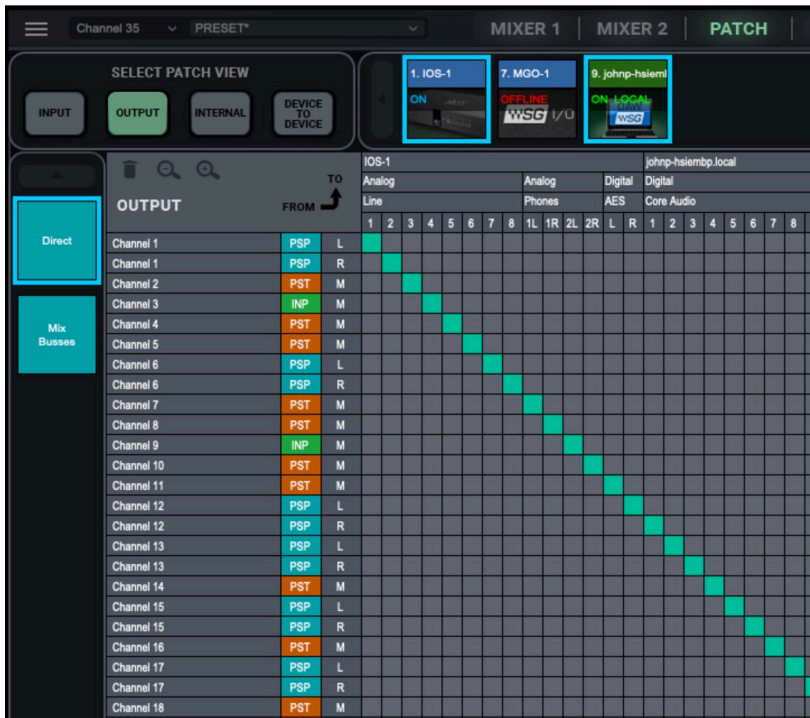


Mixer Outputs

A mixer channel or buss can be patched to any available I/O that has been assigned to SoundGrid Studio.

The Output view has two grid filters: Channel Direct outs and Mix Busses out. Mixer outputs are displayed on the left, assigned I/O device channels are displayed along the top.

Each channel or buss can output from one of four sources, indicated by the multi-colored buttons. To select the source, click on its button:



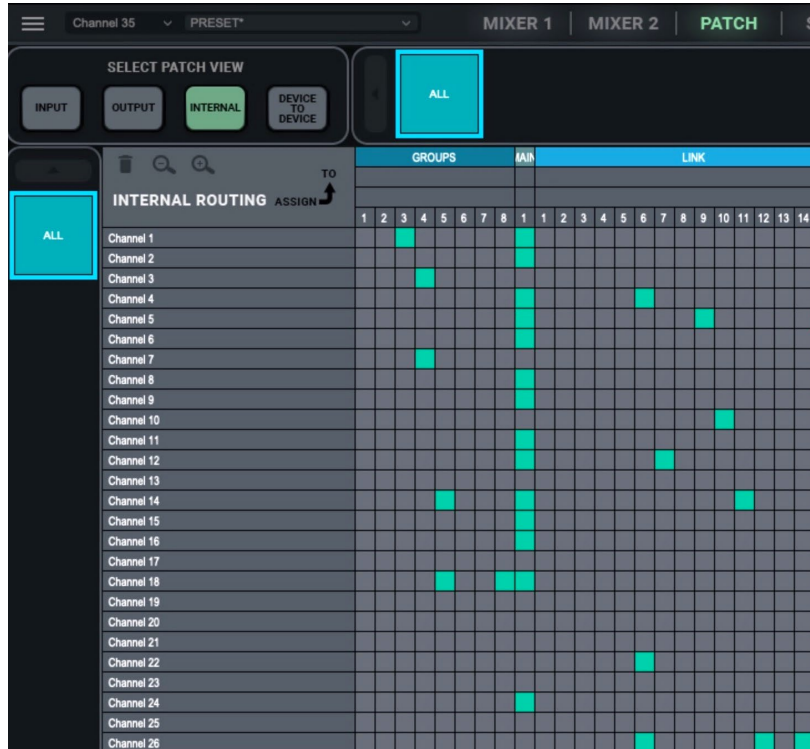
- INP Green Before all processing, after input gain
- PRE Purple Pre-fader, after processing
- PST Orange Post-fader, after processing
- PSP Turquoise Post-fader, after processing, after panner

On a stereo buss, source settings apply to both left and right channels. An I/O device can receive only one source signal.



Internal Routing

This window assigns channels to groups, main out, and links. In this mode, there is no patching to outside devices.

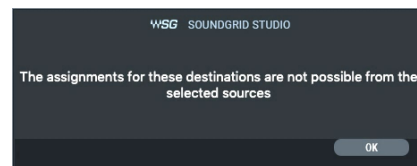


Device-to-Device

The Device-to-Device patch connects hardware or software I/O devices to each other. These patches do not pass through the mixer. This is used to stream all channels from an SoundGrid I/O directly in to a DAW's inputs (and back), using the SG Driver.



DEVICE-TO-DEVICE PATCH BEHAVIOR



All I/O devices that are assigned to the inventory appear in this patch view. A device can patch to any other assigned device, but not to itself. For example, a device named IOX-2 can patch to IOX-1, but not back to IOX-2.





Part 5: Mixer Window

The Mixer window is inspired by traditional mixing consoles, so this is probably the most familiar view. The window provides a broad, multichannel view of the entire mixer: input, routing, plugins, assignments, and channel parameters.

Mixer Window Overview

SoundGrid Studio includes a full-featured, 64-channel studio mixer. It can supplement a studio console or replace it altogether. All channel controls can be adjusted or accessed here: preamps, channel strips, plugins, keystroke shortcuts, monitors, and auxes. The StudioRack plugin uses the mixer for ultra-low-latency monitoring and recording.



Mixer Layers

- 1 Mixer Layer Type
- 2 Mixer Layer Select

Mixer Channels

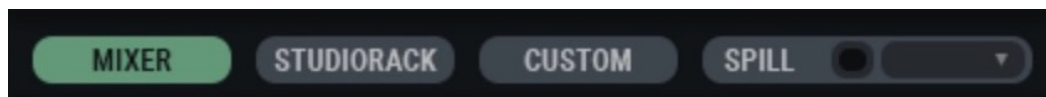
- 3 Channel Strips
- 4 Layer Modes

5 Main Fader 6 Monitor Section



Mixer Layers

The eMotion ST Mixer is, like most digital mixers, organized in layers. Layers represent categories, or types, of channels. Layer Channels are the specific channels you are viewing and controlling. Select a Mixer Layer with the four buttons at the top of the interface.



1 CHOOSE A LAYER TYPE

Layers are filtered by type and function:

Mixer View the full mixer layout. All mixer channels, groups, effects and monitor aux busses, and link controls are accessible here.

Mixer 1 and Mixer 2 are identical. By having two views of the same mixer, you can efficiently control the mixer from more than one display. There several ways to benefit from duplicate mixers. Here are two examples:

- View the input mode of channels 1–16 on one display and 17–32 on another. This provides a 32-fader console.
- Place the faders of a layer on one display and the aux sends on the other, so that you can have quicker control of one set of channels.

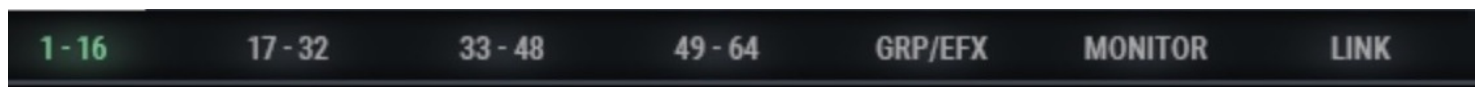
Of course, you can instantly switch the views on the displays.

StudioRack View and control the StudioRacks that have been set up in the StudioRack plugin.

Custom Combine user-selected combinations of channels into a single layer view. You can create a Custom layer from Mixer layers or StudioRack layers, or a mix of both.

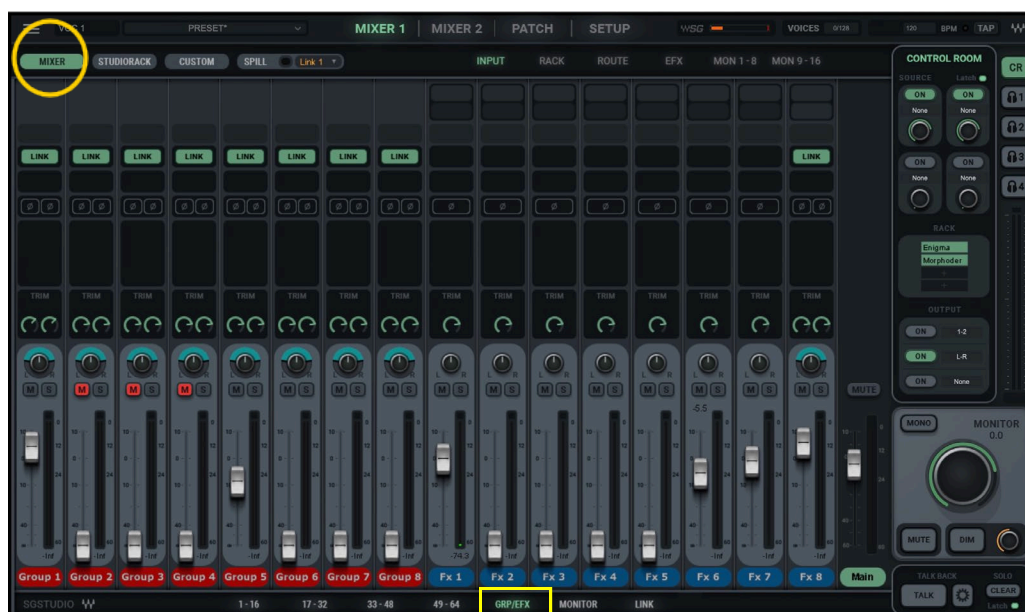
Spill Displays all member channels of a Link group. To the right of the Spill button is the Link select drop-down menu.

2 LAYER SELECTOR



The Mixer Layer Selector panel at the bottom is used to choose which channels, groups, Auxes and Monitors, and link groups are at the front of the display.

In this example, the Mixer layer *type* and the GRP/AUX layer are selected.



There are seven layers:

Channels Channels 1–16; 17–32; 33–48; 49–64

GRP/AUX Groups 1–8; Effects (aux) 1–8

Monitor Monitor (aux) 1–16

Link Link group controls 1–16

The number of active mixer layers is determined by the size of the mixer, which is set in the Setup window. Certain layers are not available in smaller configurations, and a layer may not contain all 16 channels.

Channel Layers

The four **Channel** layers address all mixer input channels. Any channel can be mono or stereo, and this does not affect the total number of channels available. Input channels can control I/O preamps (depending on input device), and each channel can have up to eight plugins. They can be routed to groups, main and direct outs, and sent to AUX and Monitor channels.

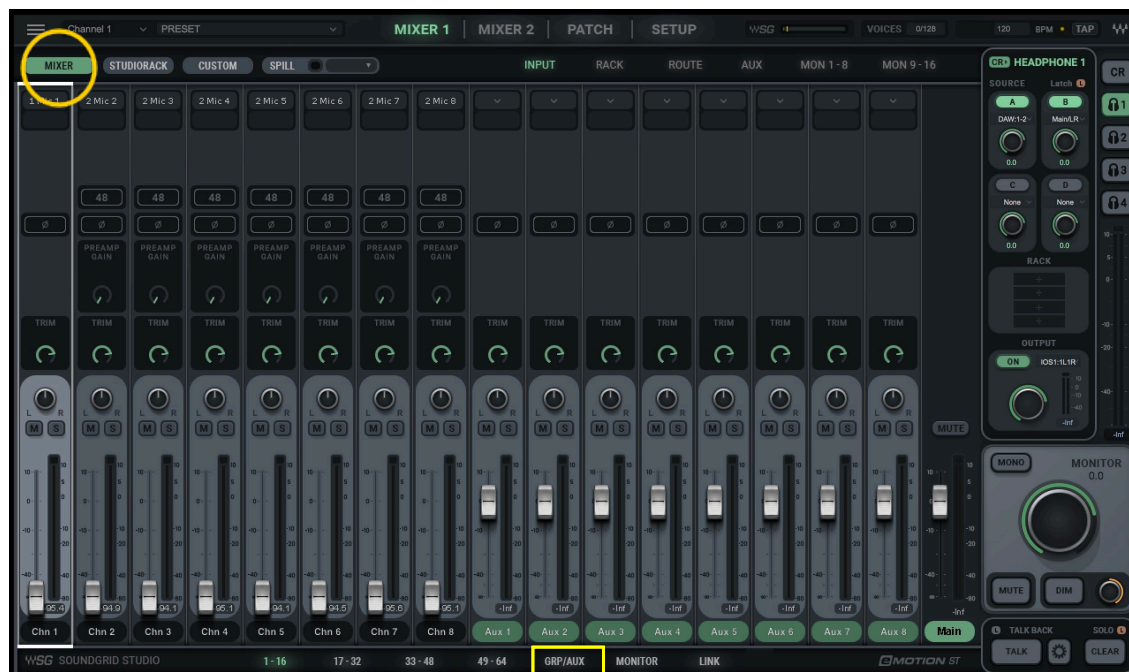
These four layers share the same view and functionality. Only the channels change.



Groups/AUX Layer

Groups are commonly used to down-mix several channels to a single buss, the “Group.” This allows for global control of the mix of these channels. Think of the group as being “downstream” from the channels. For example, a drum group may be fed from 16 drum channels and mixed to a group. This mixed group can then be further processed, faded, panned, etc.

- Send to the AUX or Monitors and/or to the Main out.
- Up to 8 plugins per group.
- All group busses are stereo.



AUX busses are used primarily for processing signals that will be sent to monitor outs or other paths. AUX channels can be sent directly to the main buss, with no need for additional return channels and IO devices. You may choose to process an AUX buss and then send it to one or more MON busses. This way, you can efficiently perform effects processing that can be used over several monitor outs. You can also send an AUX to another AUX buss, depending on its position in the signal flow.

Monitor Layer

Channels can be sent to any of 16 Monitor channels. Auxes can be patched directly to the main buss, with no need for additional return channels, or to the matrix and I/O devices.

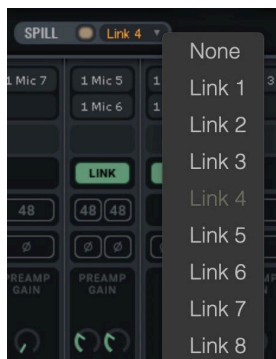


Effects and Monitor channels are very similar in most Layer Modes, but their signal flows differ slightly. Monitor channels are typically used for monitor feeds. Signals are sent from channels and busses. These aux monitor channels will be mixed and then assigned directly to outputs. Each monitor aux can have up to eight plugins, so effects such as reverb, delay, or other processes can be added to an aux buss before they are routed to the Main out.

Smaller SoundGrid Studio configurations do not provide Monitor channels. If needed, some AUX busses can be used as monitor outputs (within limitations of available sources). In addition, monitor busses can be used for more effects processing and routed to the main mix rather than a monitor (IO device).

Sending to AUX and Monitor busses is discussed in the Mixer Mode section of this chapter.

Link Layer



A Link group is a collection of channels that move together in all modes. *Links are not the same as channel groups.* Groups mix together the audio of several mixer channels. Links control the faders and mutes of several channels—no audio passes through a Link fader. Link groups serve two purposes:

- Move a group of faders together: adjust one fader in the link group and the others will follow along. Offsets between channels are kept.
- Control the link group from a link remote fader. This lets you control several channels from one fader, while keeping track of each fader’s original position.

Links are assigned in the Internal View of the Patch Window. Any number of channels can be assigned to a link, but an individual channel can be assigned to only one link.



The **Spill** button creates a view that includes only the channels in a selected link group. Use the Link drop-down menu to specify which link.

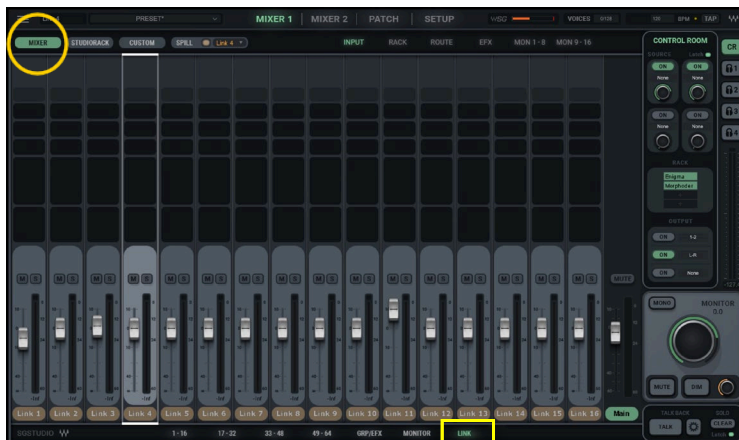
In this example, six channel strips have been assigned to Link 10. Note that the small LED between “Spill” and “Link 10” is lit. In this mode, move any of the six faders and the others will move with it. Turn off this LED to temporarily disable the link group so that you can adjust individual faders. Turn on the LED to reactivate the link.

The Link fader on the left controls all of the faders in the link group. This type of control fader is called a DCA. Note that the number of the link is displayed at the bottom of the DCA fader.

Here, the six faders in the link group adjusted as desired by the mixer.

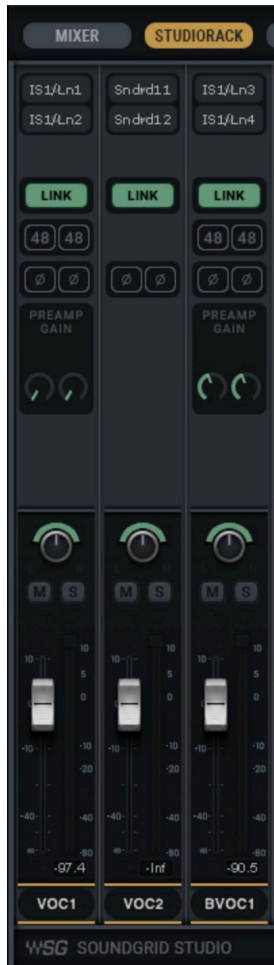


Move the DCA fader to change the gain offset of all the faders under its control. When you move a DCA fader, the controlled faders don't move. They stay at their original positions, while "ghost faders" show the current channel level, as determined by the offset introduced by the DCA fader. This makes it easier to return the faders in the link group to their previous positions.



The Link layer is made up of the 16 Link faders. From here, you can control each of the link groups.

StudioRack Layer



The StudioRack layer is made up of the StudioRack instances in the Host DAW session. Each StudioRack channel represents one StudioRack instance.

StudioRack is a plugin chainer that provides efficient parallel processing, frequency-defined chainer racks, stereo and M/S/R input, and macro control. When used in conjunction with a SoundGrid server, plugin processing is offloaded from the host computer to the server. This results in a significant increase in the total number of plugins that can be used simultaneously.

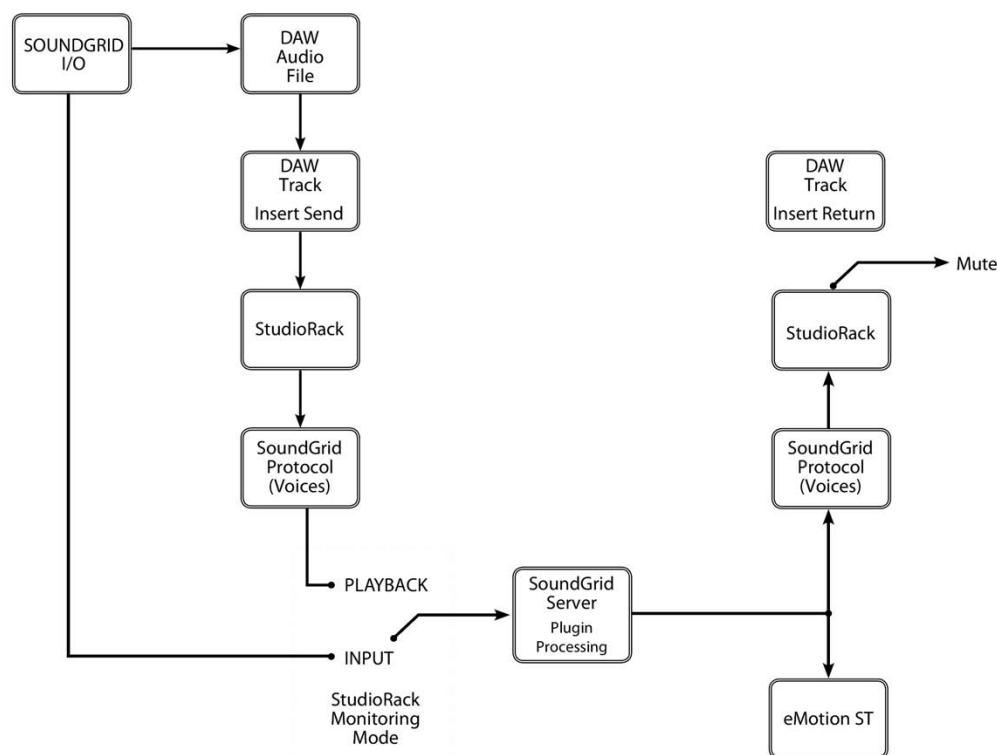
When part of a SoundGrid network that includes a SoundGrid server and at least one SoundGrid I/O, a StudioRack plugin is integrated with eMotion ST mixer. This enables low-latency monitoring and recording, and it lets you control up to 16 StudioRacks at once.

A StudioRack that has been assigned to a SoundGrid Studio input channel will appear in the eMotion ST StudioRack layer with the same functionality as other mixer channels.

Please refer to the StudioRack user guide to learn how to use StudioRack with a DAW and how to offload processing to a SoundGrid server.

Low-Latency Monitoring During Recording

Low-latency monitoring while recording is accomplished by sending the input signal from the I/O directly to a SoundGrid DSP server (see diagram). When StudioRack is in playback, the monitor signal passes through the DAW, as is expected. When the StudioRack monitor status switches to input, the I/O input signal is split to two paths. One path goes to the DAW and the second—for low-latency monitoring—goes directly to the inserted StudioRack, bypassing the DAW buffering latency.



During recording, the DAW output is muted and only the direct sound from the SoundGrid DSP server is heard in the control room or headphone monitor mixes. This prevents “double monitoring,” the phase error of audible doubling that would result from combining both signals due to the greater latency of the DAW output.

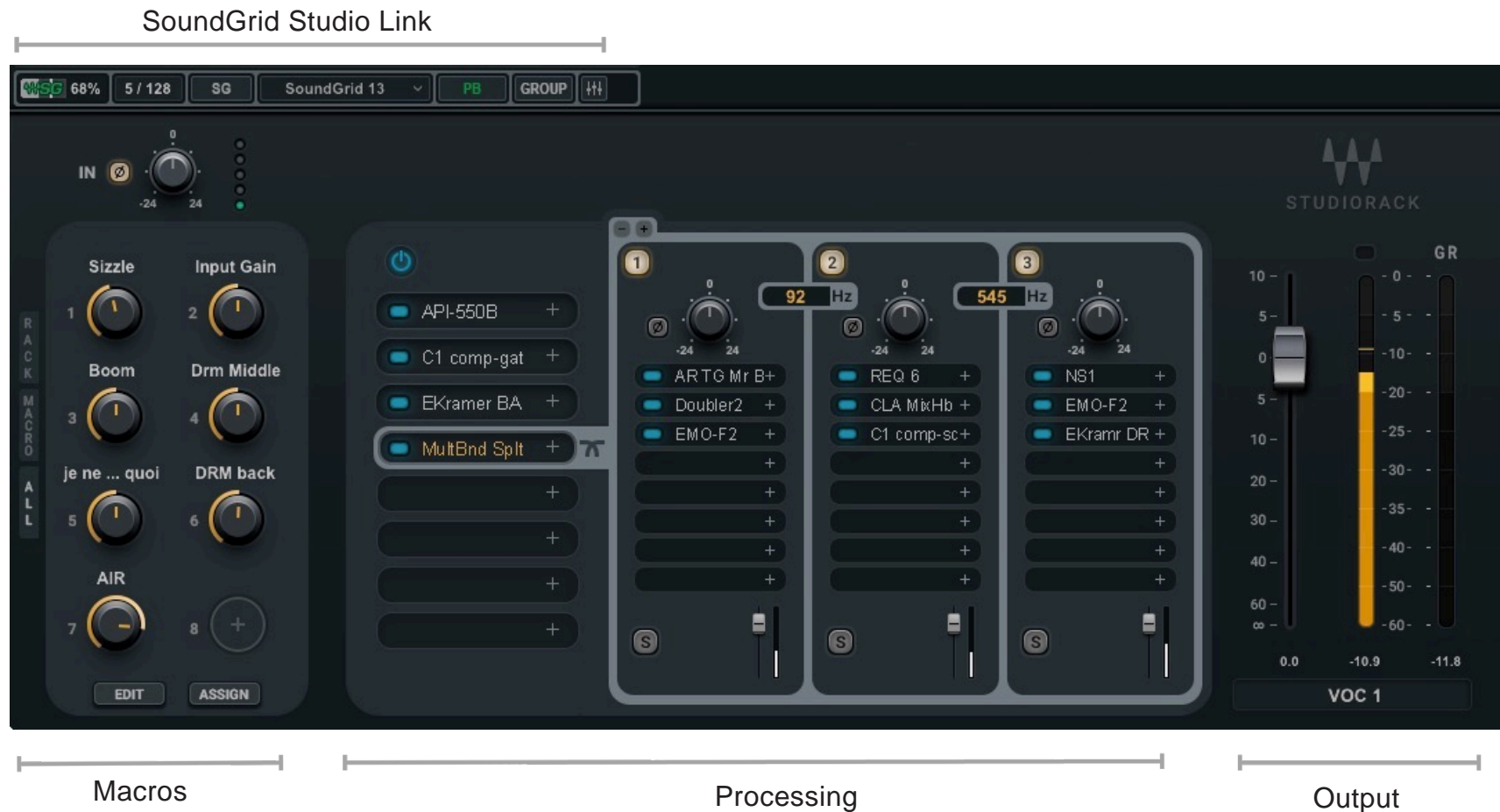
When recording is finished, the monitor path switches back to the output of the DAW—with StudioRacks in playback mode—for normal playback. You hear the same processing during recording and playback without having to commit to specific mixes or processing.

Low-latency monitoring requires at least one SoundGrid DSP server and one I/O. It requires no special setup. StudioRack must be in SoundGrid DSP Processing mode.

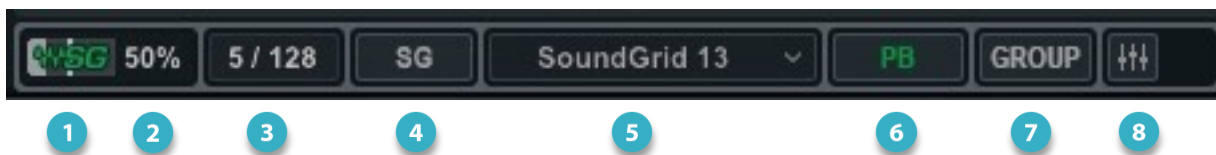
StudioRack Monitor Setup

This is an overview of configuring the eMotion ST mixer SuperRack layer with StudioRacks in a DAW session. For detailed instructions, please refer to the StudioRack user guide.

StudioRack consist of four sections. In this example, we are concerned with the top section, which is where the link between this StudioRack and the eMotion ST mixer is established.



- The SoundGrid panel is used to establish a link between each StudioRack and the mixer.



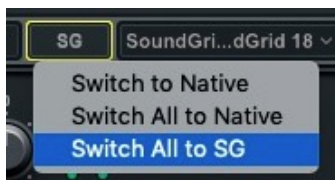
1	Setup Window	Indicates SoundGrid server status. When green, the server is working properly. Red indicates a missing server, whether removed from the rack, turned off, disconnected, or faulty. All StudioRacks will mute when server is missing. Click on the WSG button to access the SoundGrid Studio Setup window.
2	DSP percent	Shows the average DSP use of all cores in the server.
3	Voices	Displays the number of SoundGrid Studio channels being used between the StudioRack and the eMotion mixer. This is independent of the voices used in the DAW. A mono StudioRack takes one voice, a stereo StudioRack requires two, and a side chain requires one more.
4	SoundGrid/Native	Switch between SoundGrid and Native modes. This must be set to SG to link the StudioRack with the mixer.
5	Monitor Source Selector	Sets the I/O that will serve as input to the server when the StudioRack is in Input. The StudioRack will not appear in the mixer if this is not set.
6	PB/Input/Auto	Controls the monitor status of the StudioRack. When set to <i>PB</i> , audio is played from the DAW. When set to <i>Input</i> , such as during recording, the signal is “hijacked” and sent to the server for faster processing. Auto
7	Group	Assigns several StudioRacks to a group for switching between Input, Playback, and Auto modes. When <i>Group</i> is selected pm a StudioRack, it is a member of the switching group. Change the mode of any StudioRack and the others will follow.
8	Mixer Access	Click to open the StudioRack layer of the mixer.

FOLLOW THESE STEPS TO CONNECT

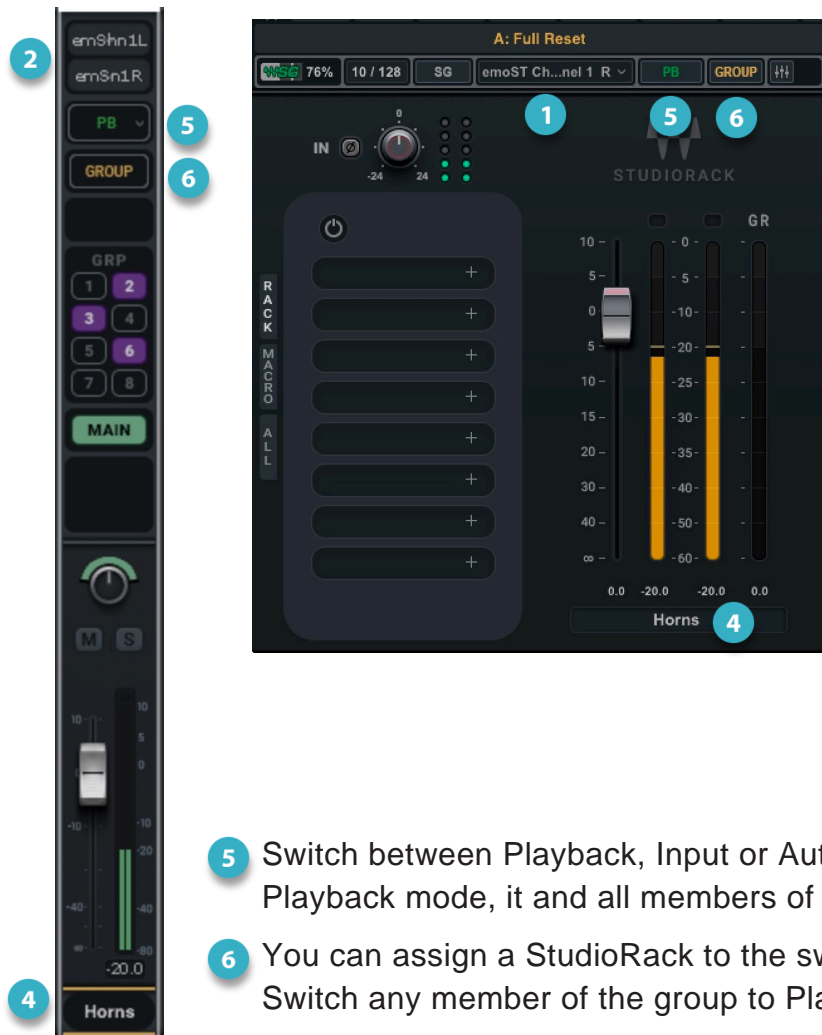
- a) Open the DAW session and set the Playback Engine to “Waves SoundGrid.”
- b) Insert a StudioRack on each track where you want to perform low-latency monitoring while recording.
- c) Confirm that the WSG logo is green, if not, click to access the SoundGrid Studio Setup window to address the problem.
- d) Assign the StudioRack input I/O channel used for low-latency monitoring during recording.
- e) Switch monitor signal between input and play. Monitoring can also switch automatically based on the host’s record/play status. This is explained later in this section.
- f) Group together several StudioRack instances so that they change status simultaneously.

Establishing a Link Between StudioRack and eMotion ST

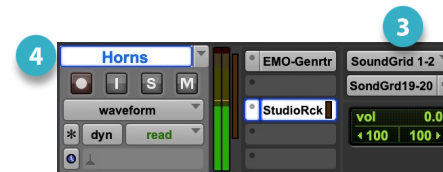
Each channel in the StudioRack layer of eMotion ST is one StudioRack instance in the DAW, so there must be a way of establishing a link between the two. There are two links that must be established: one between StudioRack and eMotion ST, another between StudioRack and the input channel of the DAW.



Set StudioRack to the SG processing mode. This moves StudioRack processing to the SoundGrid DSP server and establishes an initial connection between the mixer and the StudioRack. You can simultaneously switch all instances in the host session to SoundGrid or Native. eMotion ST will not recognize StudioRack channels that are set to Native CPU.



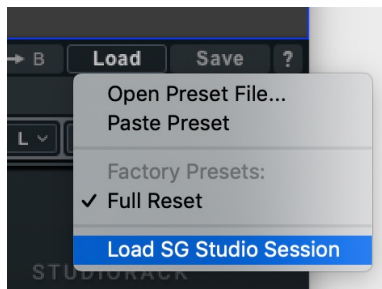
- 1 To populate channels in the eMotion ST StudioRack layer, set the StudioRack input channel to match the driver input channel in the DAW track where the StudioRack is inserted.
- 2 This StudioRack instance will appear as a channel strip in the StudioRack layer of the mixer. The channel input will match the Input assignment in the StudioRack plugin.
- 3 By setting the StudioRack input to the same source, switching from Input to Playback will match.
- 4 The name of the DAW track is displayed at the bottom of the StudioRack instance and on the mixer StudioRack layer channel strip.



- 5 Switch between Playback, Input or Auto in the mixer or on the StudioRack plugin. When a StudioRack is in Playback mode, it and all members of the group are muted, since StudioRack is not used during playback.
- 6 You can assign a StudioRack to the switching group either on the StudioRack plugin instance or on the mixer. Switch any member of the group to Playback, Input or Auto, and all other members of the group will switch.

If the StudioRacks layer button is active but some StudioRacks do not appear in the mixer, it probably means that those StudioRacks are not assigned to I/Os.

StudioRack placement in the mixer is directly related to the channel population in the inventory. If, for example, you select IOS channel 5 in StudioRack A and IOX channel 2 in StudioRack B, the placement of these channels in the mixer will be determined by which device slot the IOS and IOX are assigned to in the Setup inventory. Within a device, track order in the mixer is determined by input channel number, with lower channels placed to the left of higher ones



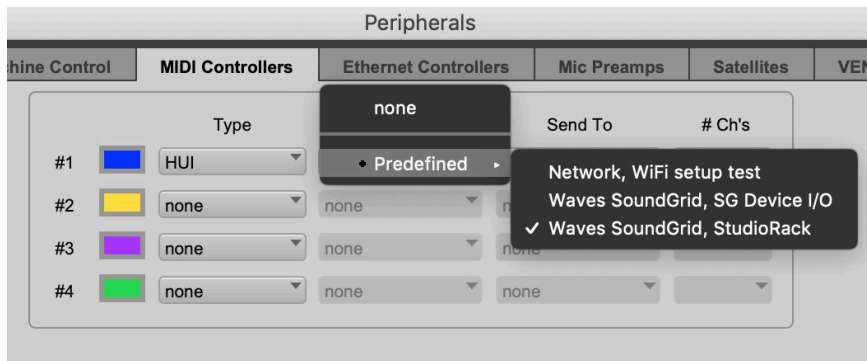
You can load the SoundGrid Studio session that is associated with the current StudioRack. Go to the Load menu at the top of the plugin and select “Load SG Studio Session.”

Monitor Switching Under DAW Command

StudioRack can follow commands from the host DAW to switch automatically from Playback to Input state and back. To accept these commands, StudioRack uses a virtual HUI device. This device is installed automatically to the computer, but it must be connected manually to the DAW. This allows low-latency recording and monitoring of overdub tracks using preprogrammed DAW in-points and out- points.

To enable this functionality, configure the DAW to send MIDI commands to StudioRack. Once selected as a MIDI controller, StudioRack will await record status commands from the DAW. No setup is necessary in StudioRack.

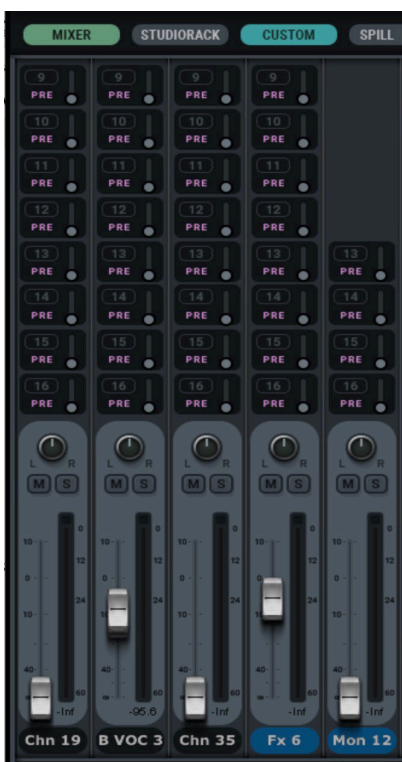
SETTING UP A MACKIE HUI IN A DAW



Setting up MIDI controller using HUI protocol varies from one DAW manufacturer to another. It consists of selecting a HUI protocol virtual controller and then assigning Waves SoundGrid, StudioRack to “Receive From” and Send To.” SuperRack does not need additional configuration.

This example shows assigning a HUI-type controller in the Peripherals page of Pro Tools. Controller configuration varies by DAW manufacturer. Please refer to the [Appendix](#) for details.

Custom Layers



Channels of any layer type can be combined in user-created Custom layers. This enables control of specified channels in one view, without having to jump between mixer layers. Channels can be organized in any order within a Custom layer.

To assign a channel to a custom layer, click on an empty channel strip to open the multi-level assignment menu. Assign a channel to the strip.

Once the custom channel is populated, Ctrl+click will access the assignment menu to change assignments.

Click and drag on the channel name at the top of a strip to re-arrange the channel strips.

OTHER ITEMS IN THE CUSTOM LAYER DROP-DOWN MENU:

None

Removes the selected channel from the custom layer.

Clear Page

Removes all channels from the custom layer.

Lock Strips

Prevents channel strips from being repositioned.

Copy from Factory Layer

Copies all of the channels of a mixer layer and pastes them to the custom layer.

Optimize Layer Layout

Removes blank channels and moves all populated channels to the left.

Insert Empty Strip

Inserts a blank strip to the left of the selected populated strip.

Mixer Channels

A Mixer's processing, routing, and control take place on channels. To control these channels, two things are needed:

1. A mechanism for controlling channel input, panning, cue/solo/mute and other traditional mixer functions (Channel Strip)
2. A means of selecting and controlling the processing, routing, and controls applied to a layer of channels or busses (Layer Modes).

Channel Strips

eMotion ST channel strips are laid out in a manner customary for digital mixing consoles. Signal flows from top to bottom.

- Only the Input and Route modes have input sections.
- All channel strips have a central processing or routing section that varies by mode selection.
- Every mode has panning and imaging controls at the bottom of the channel strips.

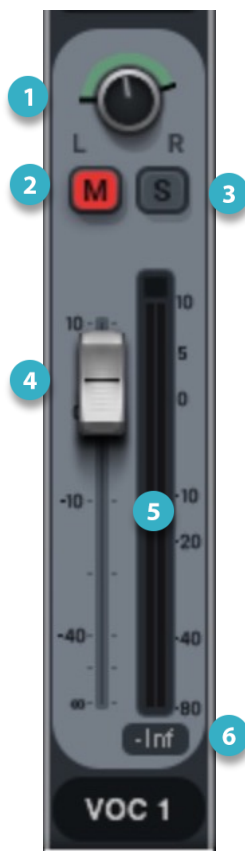


Channel strip layout and function change with Layer Mode selection.

All channels in a layer type display the same layer type.

Channel Strip Sections Common to All Layer Modes

The bottom section of all channel strips is the same in all modes.



1 PAN/BALANCE/ROTATION KNOB

Pans a mono signal between left and right when sent to a stereo buss. The stereo panner/rotator controls the balance of a stereo signal or moves the image without changing its internal balance.

2 CHANNEL MUTE

A user-selected Mute for a specific channel will be solid red. A Mute activated by a DCA fader or asolo will flash red.

- When a mute button on a channel is flashing, click it again un-mute it.

3 CHANNEL SOLO

Activates a send to the Solo buss for channel monitoring. Clear all instances with the Clear Solo button on the Top Bar.

4 FADER

When the fader is touched, its position value is displayed above the fader. Set pre-fader or post-fader metering in the Setup window.

When under the control of a link fader, the channel fader stays in its original position, while the DCA offset value is shown as a “ghost fader.”

ALT+Click to return a fader to its default position. Range: -144 dB to +10 dB

5 METER

Stereo or mono peak meter. Clip is indicated with red LED at the top of the meter. Set input or output meter display in the Settings window.

Range: -INFINITY to +10 dB

6 PEAK LEVEL INDICATOR

Peak hold time, clip hold time, and clip indicator threshold are set in the Setup window.

Pan/Balance/Rotate Functions

Multi-function pan/balance/rotate knobs provide mono panning and stereo balance and rotation.



1 MONO PANNER/STEREO BALANCE KNOB

When a mono channel is routed to a stereo buss, rotating the center panner will move the source right to left within the stereo image. When the input channel is stereo, the panner moves the overall sound left and right, but the feeling of the image can change.

2 LEFT AND RIGHT PANNERS (STEREO ROTATION)

The stereo panners set the values of the left and right channels routed to the destination. The colored area between the panners indicates the width and orientation of the stereo image. Drag this area to rotate the image.

3 STEREO WIDTH

To change the width of the stereo image, hold Ctrl and move the cursor up or down over the shaded arc. The image can be summed to mono (width=0) or panned beyond mono to reverse the stereo image (rotation indicator turns brown).

Stereo panning and stereo rotation are quite similar, but there are differences. Depending on the content, turning the panner will likely move the “weight” of the signal left or right, while the rotator is more likely to move the “air” of the image. You have to experiment.

Mixer Layer Modes

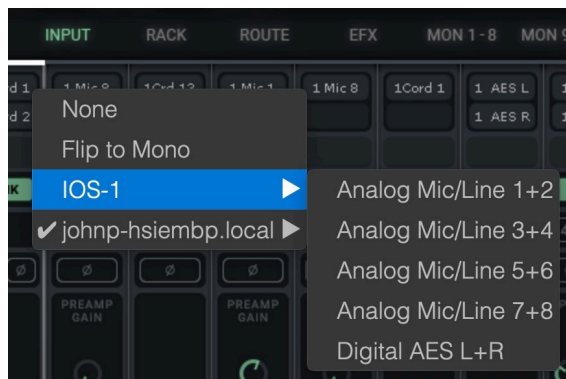
Input Mode



The Input mode section accepts signals from outside sources, whether driver channels or I/O device channels.

- 1 Input select menu
- 2 Link left and right channels (stereo only)
- 3 48v phantom on/off
- 4 Phase reverse
- 5 Preamp gain
- 6 Channel trim

INPUT SELECT MENU



Toggle the track between Mono and Stereo with the menu items Flip to Stereo and Flip to Mono. This converts the format of the entire channel: input and output, imaging, plugins, sends, and meters.

LINK LEFT AND RIGHT CONTROLS

When Link is selected, the left and right controls are linked for 48k phantom preamp gain (with compatible I/Os), phase reverse, and channel trim. An existing offset between left and right will be maintained. Switches are absolute—all on or all off.

THESE CONTROLS ARE AVAILABLE WHEN USING I/Os WITH DIGITAL PREAMPS THAT CAN BE CONTROLLED REMOTELY

48V PHANTOM POWER

Activates the microphone preamp 48v phantom power. Stereo channels have independent L/R 48v phantom controls.

INPUT PHASE POLARITY REVERSE

Reverses the polarity of an input channel. Each channel of a stereo input can be controlled separately.

PREAMP ANALOG GAIN

Controls the analog level of an I/O device preamp. Knob position is displayed in the value box and with a blue ring around the knob. Stereo channels have independent L/R input. Range is determined by the preamp.

CHANNEL TRIM

Trims channel input level digitally. Stereo channels/busses have independent left and right trim controls. Range: -144 dB to +10 dB

Rack Mode



Each eMotion ST mixer channel can host up to eight plugins. The Rack mode is used to add, remove, rearrange, and control these plugins.

To insert a plugin, click on an empty rack slot and choose from the Plugin list. If a slot is already populated, right-click on the plugin icon to open the expanded Plugin menu. Choose a plugin from the multi-level drop-down menu.

Here are some of the most commonly used functions when working with plugins in the Rack window. [Using plugins in the eMotion ST mixer](#) is described in detail in the next section.

BYPASS

Bypasses the plugin while keeping it in the processing chain. A disabled plugin appears light gray in the rack.

DISABLE PLUGIN

Removes the plugin from the processing chain without deleting it from the rack. Disabling plugins that are currently unused may reduce rack latency. Higher rack latency can result in an accumulated delay from the buss inputs. You can re-enable the plugin without losing its settings, controls, or automation assignments. When a plugin is disabled, its name will remain visible, but the slot will be solid gray.

REMOVE PLUGIN

Deletes the plugin from the slot. All parameter settings and control assignments are lost.

ADDING AND DELETING A ROW OF PLUGINS

Hold the ALT key while selecting Insert or Remove from the plugins menu to extend the action across an entire row of slots.

Route Mode

The Route mode patches Input, Group, AUX, and Monitor layers channels. Patching is different for each layer.

ROUTE MODE: CHANNELS LAYER



Input I/O Channel: Open the drop-down menu to select an input device channel. Use this menu, too, to flip the channel between mono and stereo.

Input: Choose between two sets of I/O device inputs—A or B. This provides alternate inputs to each channel without changing mixer and plugin settings.

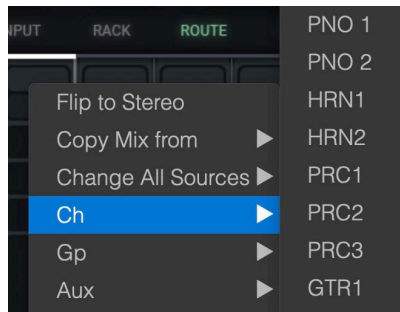
Group Assignments: Assigns channel to up to eight mix groups. Groups are controlled in the GRP/AUX layer.

Main Outputs Assignments: Assigns channel to the main mix.

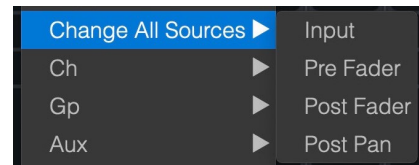
Channel Direct Outputs: Assigns channel to direct or mix outputs. Devices assigned to the mixer are available for patching from this menu. Grayed-out I/O channels are unavailable.

ROUTE MODE: GRP/AUX LAYER

Groups can be assigned to L/R Main output and direct channel outs.



Copy Mix From: An aux channel input can accept a mix as an input, whether from the Main mix channel or from another aux channel. Select **Copy Mix From** to add that mix to the input of the AUX or MON aux channel.



Change All Sources: Changes source of all sends to the AUX channel.

FX Input Assignments: Patch from Channels, Groups, and other AUX channels. You cannot patch from outside the mixer.

The eight AUX busses are used primarily for effects processing, with up to eight plugins per aux channel. Because of their position in the signal flow, these busses can be sent to the main out or to other destinations. They can be sent to the monitor aux busses to provide common effects processing. AUX busses can also be sent to other AUX busses that have higher index numbers (a later AUX buss).

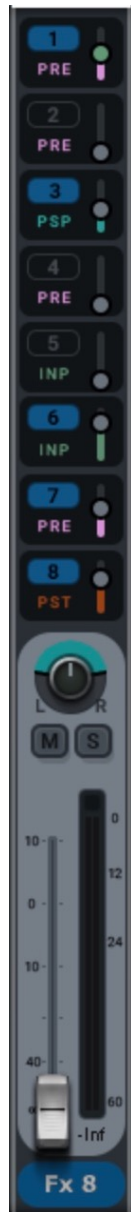
ROUTE MODE: MONITOR LAYERS

The Monitor layer has the same routing options as the AUX channels.

Aux Sends Signal Flow

Whether or not a channel or a buss can be sent to an aux channel depends on its position in the signal flow. All Input channels, which are at the beginning of the signal flow, and groups can be sent to AUX and Monitor channels. The AUX aux channels can be sent to the MON aux channels, which they precede in the signal flow. MON aux channels cannot be sent to the AUX busses. You can also send an AUX buss to another AUX buss that has a higher index number. Bussing to Aux or Monitor channels is available on 32- and 64-channel mixer configurations.

Adjusting an Aux Send



All channels are sent to the AUX and Monitor auxes in the same manner. Certain sends are not possible due to their places in the signal flow, as described above.

Select an AUX Layer mode.

Select an aux that you want to send from the selected channel. Auxiliary channel numbers are shown in the panel on the left side of the layer mode section.

Turn an aux send on or off by clicking its send number.

Select the source for each send on the source cell. The color of the fader bar indicates the aux source:

INP	Green	Before all processing, after input gain
PRE	Purple	Pre-fader, after processing
PST	Orange	Post-fader, after processing
PSP	Blue	Post-fader, post-panner, after processing

Adjust the aux level using the small vertical fader. Fader value appears in the cell when the fader is touched.

Sends on Faders

In the “Sends on Faders” mode, the channel faders control the level of the aux send, not the channel level. The master fader controls the level of the aux channel rather than that of the main out.

CONTROLLING AUX SENDS WITH LARGE FADERS

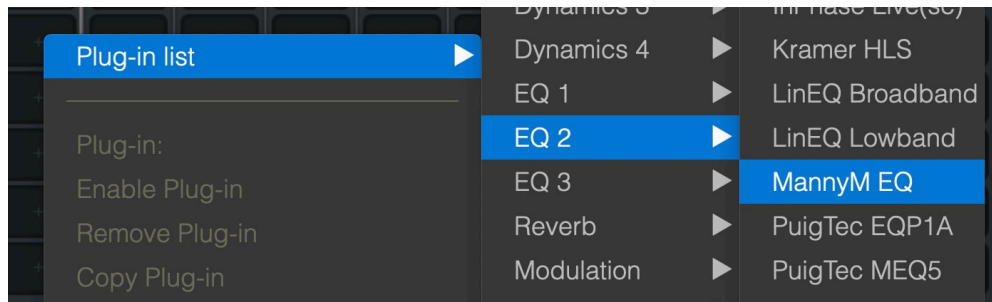


- 1 Select a channel from which you want to send to an aux.
- 2 In the panel on the right, click the number of the aux channel whose sends you wish to adjust. The interface changes color to indicate that channel faders have flipped function.
- 3 Use the faders to adjust send levels.
- 4 The Master fader now maps the aux output, and the buss name appears above the fader. Use the Master fader to adjust the aux buss output.
- 5 To return to normal faders, click on the aux send number.
- 6 Select another AUX channel while the faders are flipped. This will remap the faders to the new aux sends.

Using Plugins

Plugins are managed in the Rack mode. You can assign up to eight plugins to any mixer channel, including AUX and Monitor busses. Up to four plugins can be inserted in each headphone and control room monitor.

Inserting a Plugin



Click on an empty rack slot. This opens the Plugin menu. If a slot is already populated with a plugin, use Ctrl+click to open the menu. Go to the Plugin List sub-menu and choose from among the available plugins. The plugin name then appears in the rack slot.

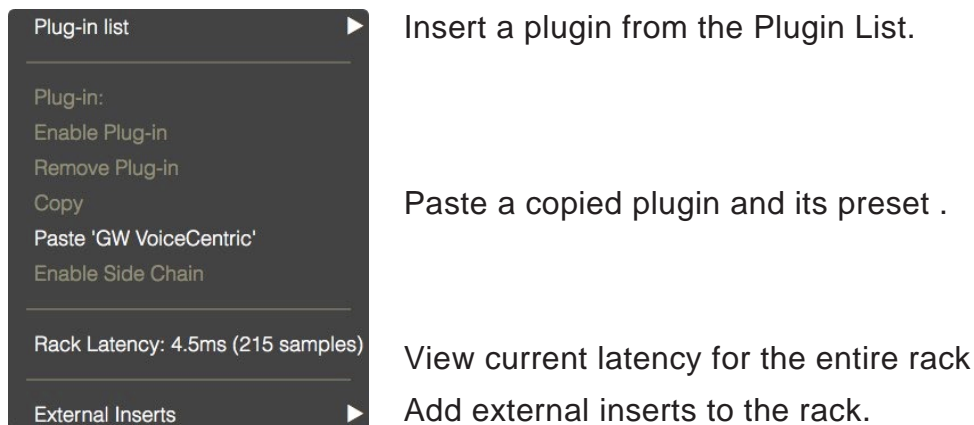
Click on the plugin icon to open the plugin in a floating panel.

The Plugin Menu

The Plugin menu is used to insert, remove, assign, and manage a selected plugin. It is also used to copy plugins and plugin settings between racks and between rack slots. Plugin menu settings affect only the selected plugin slot.

BASIC PLUGIN MENU

If a plugin slot is empty, the Plugin menu looks like this. It's used for four things:



All other menu items are grayed out.

PLUGIN LIST

The Plugin List is a drop-down menu that lists all available plugins. Only plugins that have components compatible with the current rack format are displayed. If, for example, the rack is mono, it will not be able to insert a plugin that does not have a mono component.

Paste [plugin name]

Pastes a copied plugin and its settings to an empty slot or replaces the plugin that occupies the slot. In certain circumstances, it is possible to paste a preset into an existing plugin (see *Paste [plugin name] Preset* below).

Rack Latency

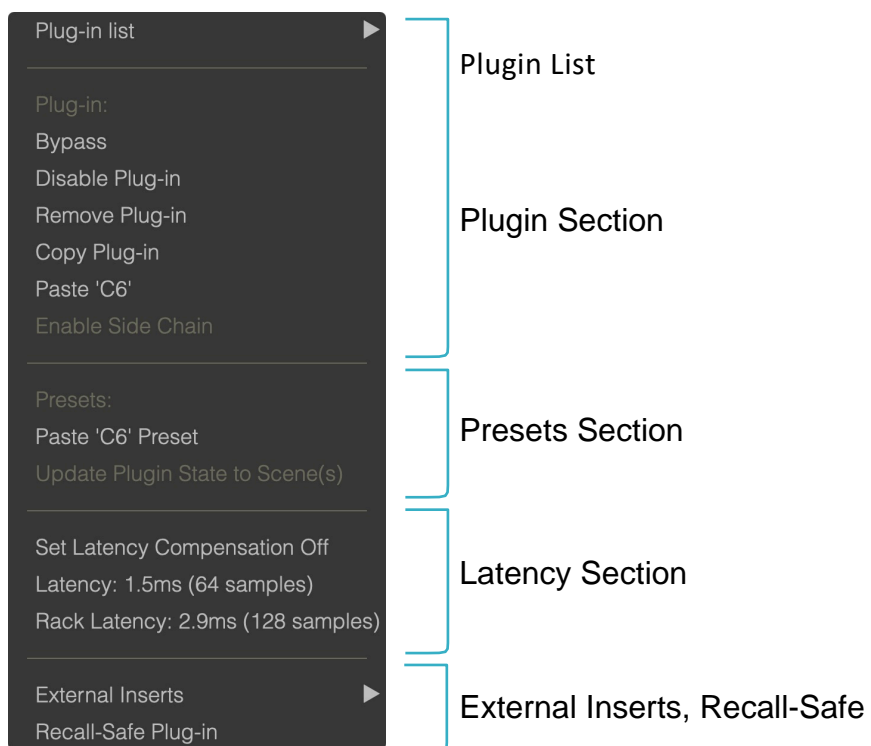
Indicates the total latency of all plugins and external inserts in the rack. If no latency is declared, the text is grayed out.

External Insert

Allows you to inset a device—hardware or software—to the plugin rack. This allows you to use outboard gear as an insert in the plugin rack. Using external inserts is described later in this section.

EXPANDED PLUGIN MENU

Once a plugin has been inserted in a rack slot, an expanded menu replaces the basic menu.



Plugin Section

Bypass

Bypasses the plugin while keeping it in the processing chain. This serves the same function as the IN button on the plugin floating menu.

Enable/Disable Plugin

Removes the plugin from the processing chain without deleting it from the rack. Disabling a plugin removes its latency from the rack and it will likely free up processing power. You can re-enable the plugin without losing its settings, controls, or automation

assignments. When a plugin is disabled, its name will remain visible above the slot and its icon will be grayed out. You can also disable and enable a plugin by clicking its rack slot while holding down the Ctrl key.

Remove Plugin

Deletes the plugin from the rack slot. All settings and control assignments are lost. You can also remove a plugin by dragging it off the mixer.

Copy

Copies the plugin and its settings. This enables pasting the plugin and its current settings to another rack slot. There are two paste options: Paste [plugin name] and Paste [plugin name] Preset.

Paste [plugin name]

Pastes the copied plugin and its settings to an empty slot or replaces the plugin that occupies the slot. In certain circumstances, it is possible to paste a preset into an existing plugin (see *Paste [plugin name] Preset* below).

Enable Sidechain

Enables or disables the plugin's sidechain key input when an active sidechain is patched to an appropriate plugin. Sidechain sources are established at the top of the Plugin Pane. Plugins with an active sidechain have a drop-down menu (S/C) that patches the sidechain source.

Plugin Presets

Paste [plugin name] Preset

Pastes presets from a copied plugin to another plugin in the same family (e.g., Q10 to Q6, or L1 Ultramaximizer to L1 Limiter, etc.). This does not replace the plugin, only the presets.

You cannot copy and paste presets between plugins that are not in the same family of plugins. You can, for example, paste a preset from L3 Multimaximizer to L3LL Multimaximizer, but you can't paste that L3 Multimaximizer preset to L1 Limiter or SSL G Channel. If it's not possible to paste a preset to a plugin, the *Paste [plugin name] Preset* menu item will not be available.

Latency Section

Latency

Indicates the delay introduced by the plugin or external insert, displayed in samples and milliseconds.

Rack Latency

Indicates the total latency of all plugins and inserts in the rack. If no latency is declared by any of the plugins in the rack, both latency menu items will be grayed out.

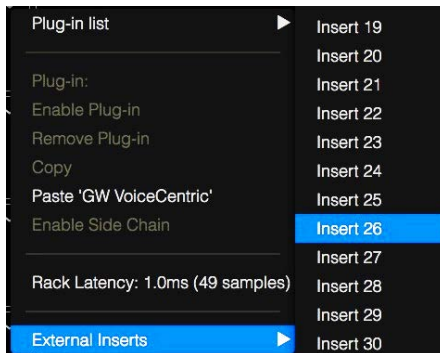
Latency Compensation On/Off

Removes the highlighted plugin from the rack's latency compensation calculations. This is useful if you have one or more plugins with unusually large latencies and you don't want to delay the entire rack to match these "slow" plugins. Turning off latency compensation does not eliminate the plugin's delay, so it may become out of sync with the rest of the rack.

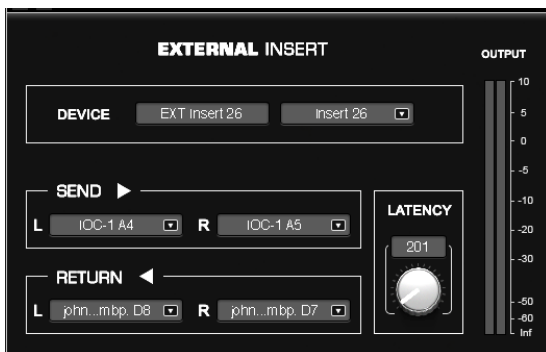
External Inserts

You can add external inserts to a plugin rack. An external insert follows the same routing path as plugins and can be moved up and down the rack to change its position in the processing chain.

Using an External Insert



1. Choose a plugin slot in the rack.
2. Select External Inserts from the Plugin Menu.
3. Choose an available insert from the menu.




1. Click on the External Insert icon to open the control page.
2. Select the physical send and return I/Os using the drop-down menus.
3. Use the Device cell to rename the insert, if needed. Use the Insert drop-down menu to move between inserts. If no send is assigned, the insert will be bypassed. It remains in the rack and its place in the processing chain is unchanged.

A full-scale meter indicates the level of the return signal.

The Latency knob is used to adjust the amount of delay added to the signal returning from the external device. Unlike a plugin, an external insert cannot declare its delay to the latency compensation engine, so this must be done manually.

Change the Position of a Plugin

Drag to move a plugin or external insert to another channel, or Alt+drag to copy. Move a mono plugin module to a stereo channel and the plugin becomes a stereo module. The mono plugin's parameters will be applied to both sides of the stereo module. If a stereo plugin is moved to a mono channel, then settings of the left stereo channel become the mono parameters.

Do not add, remove, disable, or move a plugin when an audio dropout is not acceptable.  These actions change the structure of the plugin rack, which can result in a brief interruption. Bypassing a plugin or changing its parameters can be done at any time.

Plugins Can Change the Rack Structure

Mixer channels can be mono or stereo. The format selected in the input section defines the rest of the channel (i.e., rack, imager, and output). You can, however, use a mono-to-stereo plugin to convert a channel from mono to stereo at any position in the rack.



This example shows a mono rack. API-560 and Doubler 2 in the first two slots are mono components. RChannel in slot 3 is a mono-to-stereo plugin, so its processing and output are stereo. The rest of the rack can be stereo only, so the Scheps 73 beneath it is stereo. The first two plugins remain mono.

Moving a mono-to-stereo plugin up or down the rack will change the point at which the rack converts from mono to stereo. This is useful when you want to have very well-focused mono processing at the top of the rack's signal flow, and then add more spacious effects further down the chain.

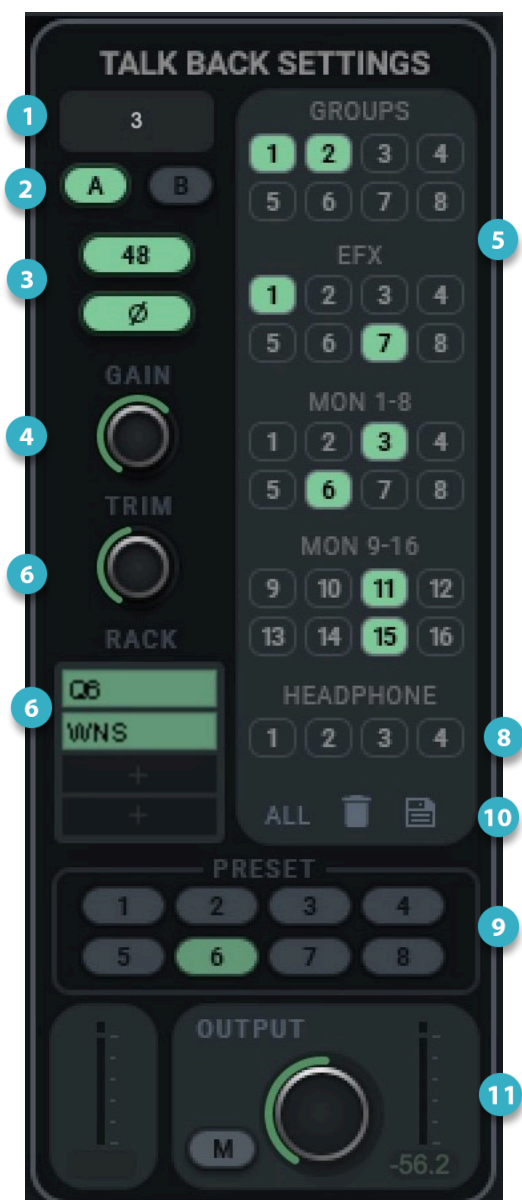
Monitor Panel

The Monitor panel provides individual monitor mixes to four sets of headphones, as well as three custom control room mixes for three different studio loudspeakers. Setting up a monitor consists of these steps:



1	Select a monitor mix (Headphones 1–4 or Control Room). The CR button to the left of the Headphones title copies the sources and trims from the Control Room setup.
2	The selected mix is identified in the box at the top of the panel.
3	Use the central section to control the four mix sources for the selected mix: A) Click on the text above the knob to choose source (devices, drivers, and mixer channels). B) Adjust the input level of each source. C) Turn a source on or off with the ON button.
4	Insert up to four plugins for each mix. Adjust the relative levels of plugins with their individual input/output controls.
5	Input level to Control Room.
6	Use the Output section to select output device channels for up to three different control speakers (Control Room selection, left) or set the output device channel and set gain for the selected headphone mix (right).
7	Control room monitors are managed here and include: gain, mute, mono, dim (with adjustable dim level).
8	Talkback: click on the Gear button next to the Talk button to configure Talkback.
9	Use the Clear Solo icon to clear all solos in all layers. Choose between single solo or latch solo mode. Clear also returns Aux on Faders to normal fader view.

Talkback



The Talkback function sends the signal of an assigned I/O to selected busses, which are then routed to I/Os. It is used primarily to communicate between the mixer and the artists. Hold the Talk button to mute the control room speakers and open the Talkback channel.

SETTING UP THE TALKBACK

1	Select an input I/O channel. This is normally the input from the Talkback mic.
2	Select the physical input group (A or B).
3	If the talkback input is directly from an I/O device with preamp control, set the 48v phantom power and the phase reverse.
4	Adjust the gain of the talkback input signal (usually the mixer's microphone).
5	Use this grid to set which busses the Talkback channel is patched to. The Talkback buss can be routed to any available I/O. It can also be routed to mixer busses, including Main outs. If All is selected, Talkback is patched to every buss.
6	Insert up to four plugins. Adjust the balance within the rack using the input and output gain adjust in the plugins.
6	Trim the level of the plugins mix with respect to the overall talkback signal.
8	Sends to the headphone matrix.
9	Create presets of the routing configurations. Once a preset is saved, click on its number to recall.
10	Preset utilities: All selects all routing possibilities, Trash un-patches all routing possibilities. File saves the current patches as a preset to the current recall button.
11	Monitor section controls overall level, including gain, mono, mute, and dim. Adjust the dim level reduction with the small knob on the right side.



Appendix

Controlling SoundGrid Studio Remotely
Setting up Mackie HUI in a DAW

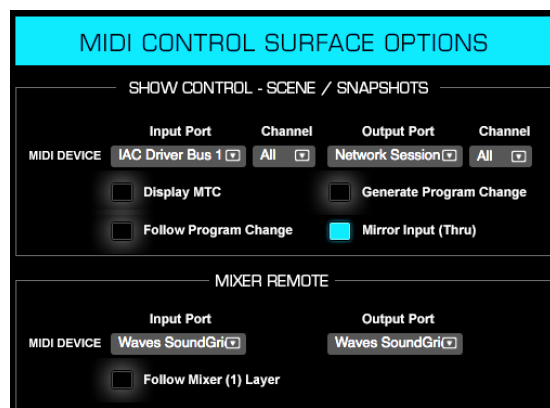
INCORPORATING MIDI

MIDI devices can be assigned to the mixer for remote control of certain functions. Program change messages can be sent from a MIDI controller to the mixer or from the mixer to a MIDI controller. Also, mixer faders, panners, and mutes can be remote-controlled.

Control protocols are assigned and removed in the Control rack of the System Inventory page. Select the MIDI protocol from the drop-down menu.

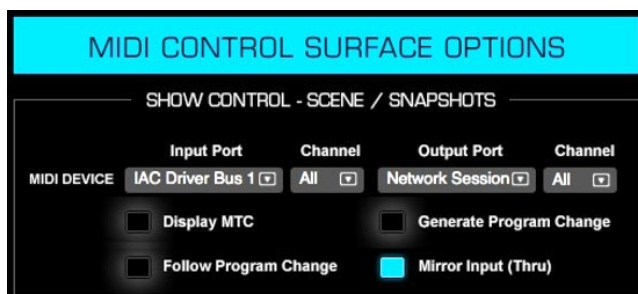


Click on the Gear button to open the MIDI Control Surface Options panel.



Show Control Section

This section sets the MIDI port and channel used for triggering Scenes using MIDI program change messages.



Select a MIDI Device: Select an Input and Output port from the drop-down menu. All available MIDI ports are listed. The selected device appears in the Port Name box.

Choose a MIDI Channel: Select a MIDI channel for Input and Output.

Assigning a Specific (single) channel (when applicable) means that all data from other channels are filtered out from the incoming stream. Messages that are part of the stream and are common to all channels will remain in the stream.

Select the All channels option and all the channels will remain in the stream; none will be filtered. The incoming stream is unchanged.

Display MTC: When selected, the time window in the Top Bar displays MIDI timecode. When deselected, the window displays time from the host computer.

Mirror Input (Thru): When Mirror Input is selected, the input stream is sent directly, unchanged, to the selected output port.

Mixer Remote

This section sets the port that the MIDI controller will use to map the mixer. The 16 faders in each layer are mapped to standard MIDI mapping: volume, pan, and mute controls per fader.



Input Port/Output Port: Select MIDI Ports. Selection can be set in specific port only.

Follow Mixer Window: When Follow Mixer Window is selected, the MIDI faders will map the faders of the selected Layer, as displayed in the Mixer window. For example, when Mixer Layer 17–32 is selected, MIDI channel 1 will control mixer channel 17. When AUX is selected, MIDI Channel 1 will control Monitor 1.

When Follow Mixer Window is off, the mixer and the controller work independent of each other.

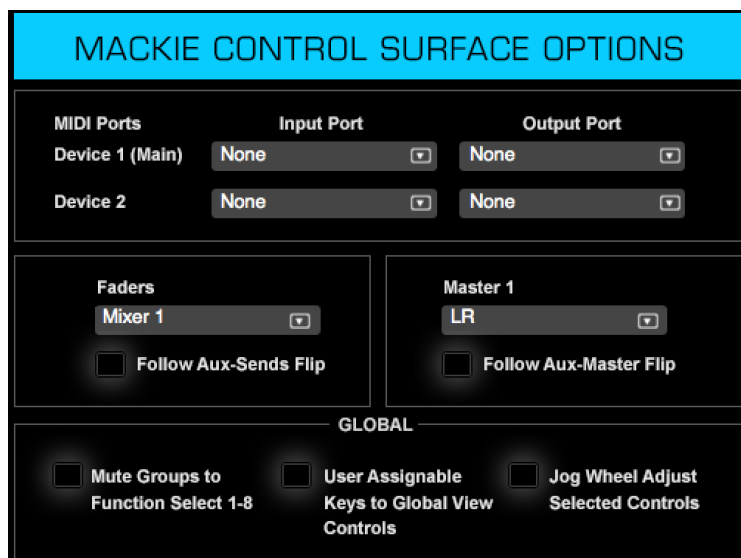
Using a SoundGrid I/O Device as a MIDI Port: A SoundGrid I/O device that has a MIDI port can be assigned to the SoundGrid MIDI driver. This device can then be used as a MIDI port for the mixer, as well as an I/O.

MACKIE CONTROL PROTOCOL

The mixer can be controlled with any control surface device using a Mackie Control protocol option. Some controllers support several protocols, so it's important to confirm that the device is set to the Mackie Protocol Mode. There are also tablet applications that emulate controllers using Mackie Control protocol. Consult the user guide of your control surface.



Control protocols are assigned and removed in the Control rack of the System Inventory page. Select the Mackie protocol from the drop-down menu. Click on the Gear button to open the Mackie Control Surface Options panel.



The SoundGrid Studio / Mackie protocol provides for two control devices. For each, select an input and output port. The selected device appears in the MIDI devices/port window.

A single MIDI port will map 8 faders at a time; using two ports will allow for 16 faders at a time.

Linking Layers and Faders

Both the Mixer window and the controller can be used to select between layers. The “Faders” drop-down menu establishes the relationship between the controller and the Mixer window when selecting layers. In some circumstances, you will want layer selections made in one interface to be reflected in the other. Doing this moves the active layer to the front in both interfaces, and fader moves in one device are reflected in the other. This is akin to a “Mirror Displays” mode of a computer monitor. At other times it’s useful for an external controller and the mixer interface to function independently.

There are three control surface modes that set the rules of layer selection.

STANDALONE

Here there is no correlation between the layer selected by the controller and the layer selected in the Mixer window. Both can access all layers and control faders, but one’s actions are independent of the other. Only if both interfaces are addressing the same layer will they display and affect each other’s fader moves. Otherwise it’s like sitting at two positions of a large mixing desk. Selecting a channel from any surface, whether screen or hardware, will cause the main “selected channel” to be displayed on the channel window.

FOLLOW SOFTWARE MIXER 1 WINDOW

In this mode layers can be toggled for both hardware and Mixer window from either the Mixer window layer control or the hardware bank controls. This layer is visible in the Mixer window and its channel names are displayed on the hardware channel strips. As long as Mixer 1 is the selected mixer, the window and the control surface govern the same layers and faders.

In this mode the relationship between Mixer 2 and the control surface is akin to the Standalone mode. Mixer 2 layer choices are not reflected in the controller, so layer choices must be made locally. This allows you to access various layers from the control surface without changing the Mixer’s layer view.

FOLLOW SOFTWARE MIXER 2 WINDOW

This mode is identical to “Follow Software Mixer 1 Window,” except that the roles of Mixer 1 and Mixer 2 are reversed. The “Follow Software Mixer 1 or 2 Window” modes are well suited for multi-display configurations. Display One may display the primary mixer, where faders/channels decisions are linked between mixer and controller. Display Two can be switched between an unlinked Mixer window and other mixer views.

Note that when using one device (8 faders), the Bank control will first toggle from the lower 8 channels to the higher 8 channels in the 16-channel layer. The next toggle opens a new layer.

Faders: Follow Aux-Sends Flip

In the “Sends on Faders” mixer mode, the channel faders control the level of the aux send, not the channel itself. Select “Follow Aux-Sends Flip” to enable controller faders to follow this behavior.

Master 1

Use this drop-down window to assign which channel the master fader is controlling. This can be the Main L/R mix or any other channel or buss in the mixer.

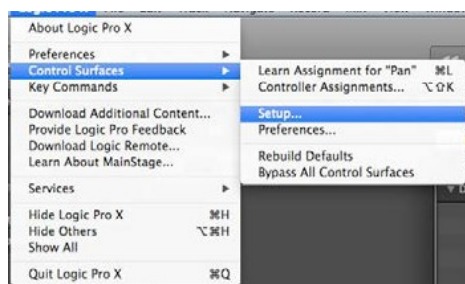
Master 1: Follow Aux-Master Flip

When in the “Sends on Faders” mode, the master fader controls the aux channel. This setting determines if the control surface master fader exhibits this behavior.

Setting Up Mackie HUI in a DAW

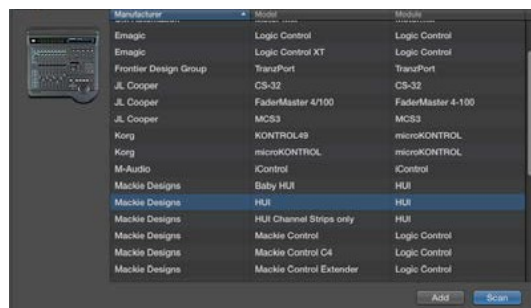
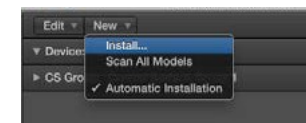
The following are examples of how to set up a Mackie HUI in the most popular DAWs. If you cannot find the information you're looking for, refer to the user manual or website for your DAW.

Logic Pro X



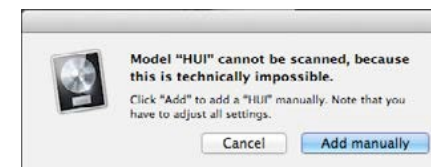
1. Go to Logic Pro X menu > Control Surfaces > Set Up.

2. On the upper left side of the window, click on "New" and choose "Install."



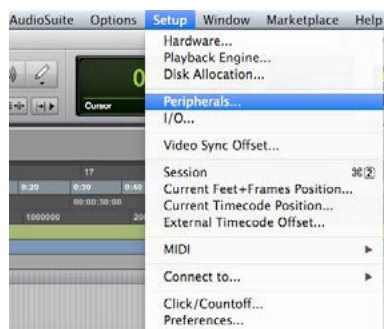
3. Choose "Mackie Designs" – "HUI" and then click on "Scan."

4. A pop-up window will appear. Click on "Add Manually."



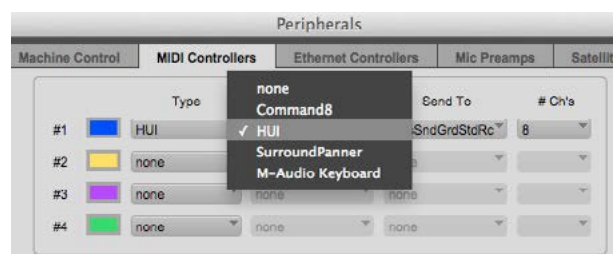
5. In the HUI Device window, set "Output Port" and "Input Port" to "StudioRack."

Pro Tools 11

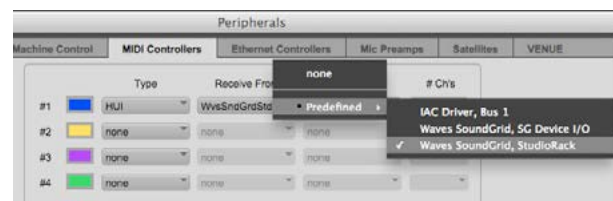


1. Go to Setup.

2. Choose Peripherals.

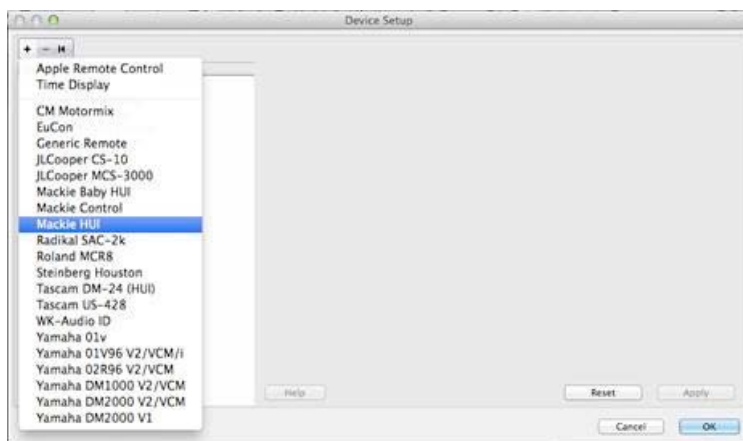


3. Click on the MIDI Controllers tab, and set one of the slots to “HUI.”



4. Set “Receive From” and “Set To” as “Waves SoundGrid StudioRack.”

Cubase



1. Go to Device > Device Set Up

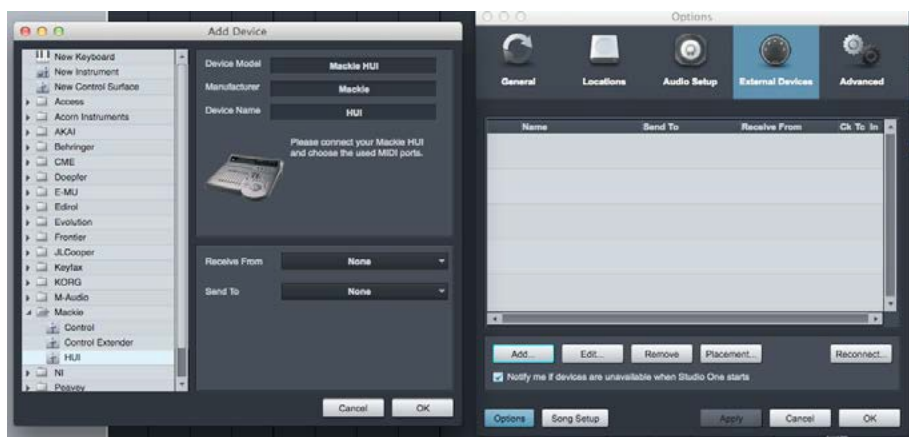
2. On the top left corner of the window, click on “+” to add a device, and choose “Mackie HUI.”



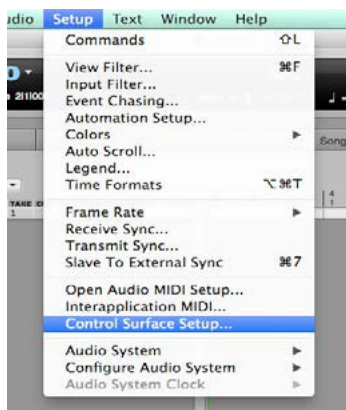
3. In the Mackie HUI window, assign “MDI Input” and “MIDI Output” to “Waves SoundGrid StudioRack.”

Studio One

1. In the Studio One upper menu, go to Studio One > Preferences.
2. Click on the “External Devices” tab.
3. Click on “Add” to add a device.
4. Open the Mackie folder and Choose “HUI.”
5. Set “Send and Receive From” to “Waves SoundGrid StudioRack.”



Digital Performer



1. In the Digital Performer top menu, go to Setup > Control Surfaces Setup.

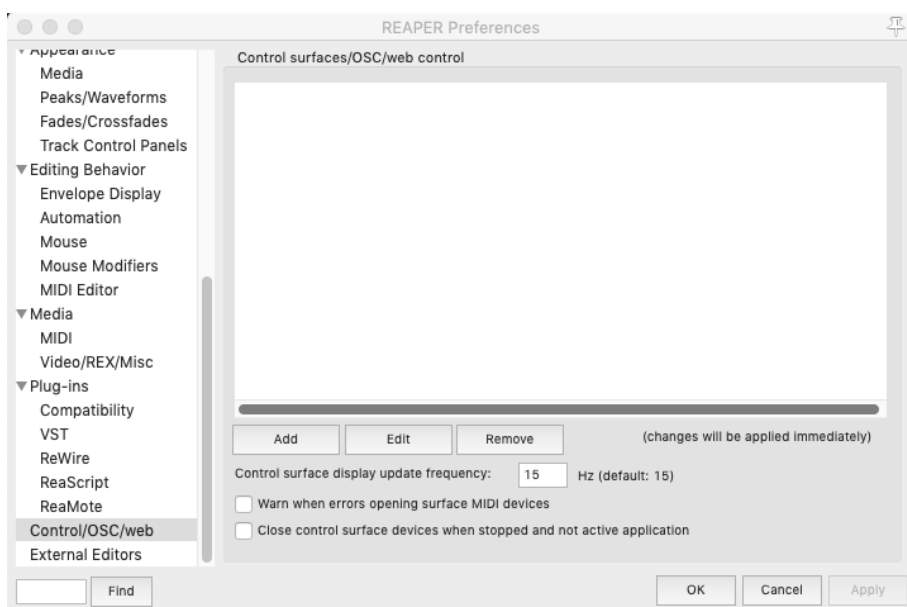


2. In the small window that opens, click on “+” to add a device and choose “HUI” from the list.



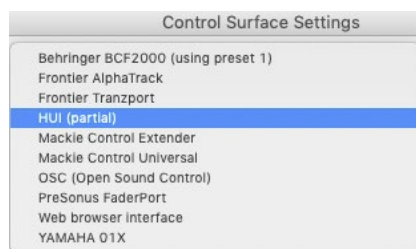
3. Set “Input and Output” ports to “Waves SoundGrid StudioRack.”

Reaper

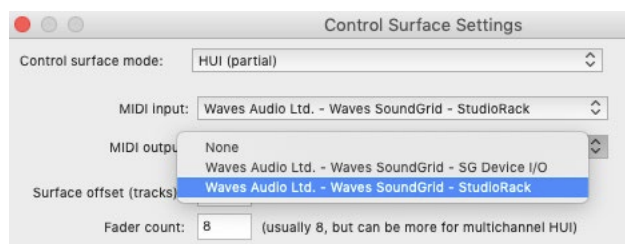


Go to Options menu > Preferences.

Select “Control/OSC/web”
at the bottom of the list.



Click on “Add,” then select “HUI (partial)”



In “Midi Input” and “Midi Output” select “Waves Audio Ltd. – Waves SoundGrid – StudioRack”

Click “OK.”

