WSG
SOUNDGRID FOR VENUE
USER GUIDE
INPUT
-94.1
ADD PLUGIN
ADD PLUGIN
DEVICE
1 - Avid WSG-HD-1
ON - I/O MODE
DIG (96k Hz)
FW
INFO
SOUNDGRID INVENTORY
9.92.50.28 Build E 134037

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Introduction

Thanks for choosing Waves! In order to get the most out of this product, please take a few minutes to read this user guide. We also suggest that you visit Waves Support where you'll find an extensive answer base, system and host requirements, troubleshooting guides, and much more.

About SoundGrid for VENUE

Waves SoundGrid Rack for VENUE is a software and hardware integration with Avid® VENUE | S6L systems. It provides SoundGrid real-time audio processing for front-of-house, monitor, and broadcast users. The SoundGrid network moves plugin processing from the VENUE engine to a SoundGrid server. The SoundGrid Rack plugin takes advantage of SoundGrid processing power and lets you assign up to eight plugins to each VENUE plugin insert. This greatly increases processing potential, with minimum system latency.

This integration of Waves SoundGrid networking technology with the Avid VENUE system consists of the several items:

- SoundGrid Inventory application
- SoundGrid Rack plug-in
- Avid WSG-HD Waves SoundGrid Option card
- One or two SoundGrid servers
- And, of course, plugins

This system provides Show file compatibility with legacy D-Show/Profile Show files, mapped encoders, multi-touch control, and per-plugin and per-insert automatic delay compensation. With two servers there's automatic switching to a redundant server for compete security.

SoundGrid Rack plugins are mapped directly to the VENUE control surface in a logical, common-sense manner. Rack presets can be shared with other Waves rack systems, including StudioRack, MultiRack, and eMotion LV1.

SoundGrid Rack and SoundGrid Inventory are compatible with all S6L and E6L models. For more information please visit Waves website.

What You Need to Get Started

Before you begin, make sure that you have the following items available.

1. Avid WSG-HD Waves SoundGrid Option card
2. Qualified SoundGrid server
3. Secondary SoundGrid server for redundancy (optional)

   Important: To ensure best performance, it is crucial that the redundant server is the same model and revision as the main server.

4. Cat 5e, Cat 6, or Cat 7 cables
5. Waves license for SoundGrid Rack for VENUE
6. Licenses for plugins
7. USB flash drive
8. Computer that has access to the internet (Mac or Windows) for activating licenses and downloading an offline installer

Waves servers and licenses can be purchased at www.waves.com or from your Waves dealer.

Contact your Avid dealer for the Avid WSG-HD Waves SoundGrid Option card.

Quick Start

If you're already comfortable installing Waves software products and you know your way around VENUE, you can probably download, install, and activate SoundGrid for VENUE by following the steps below. If, however, the quick start isn't enough, this user guide will teach you the necessary steps to set up and use SoundGrid Rack for VENUE.

1. Connect your server(s) to the Avid WSG-HD SoundGrid Option card.
2. On another computer, download the Waves Central application from the Waves website. Learn more about Waves Central at www.waves.com/support.
3. Download the dedicated offline installer for SoundGrid Rack for VENUE. Unzip and place the Waves folder on your USB flash drive.
4. Move your licenses from your Waves License Cloud to the Console or to a USB flash drive.
5. Run Waves Central on the Console using the offline installer that you downloaded in step 3.
6. Go to "Option / Plug-ins: Install WaveShell SoundGrid Rack."
7. Go to "Option / Devices / Engine / WSG HD."
8. Click Show SoundGrid Inventory to bring the application to the foreground.
9. In SoundGrid Inventory, choose the Intel Network Port that is connected to your VENUE Engine. The correct port name will end in "LM."
10. Assign Avid WSG-HD Waves SoundGrid Option Card.
11. Assign your connected server(s).
12. Click "Hide Inventory."

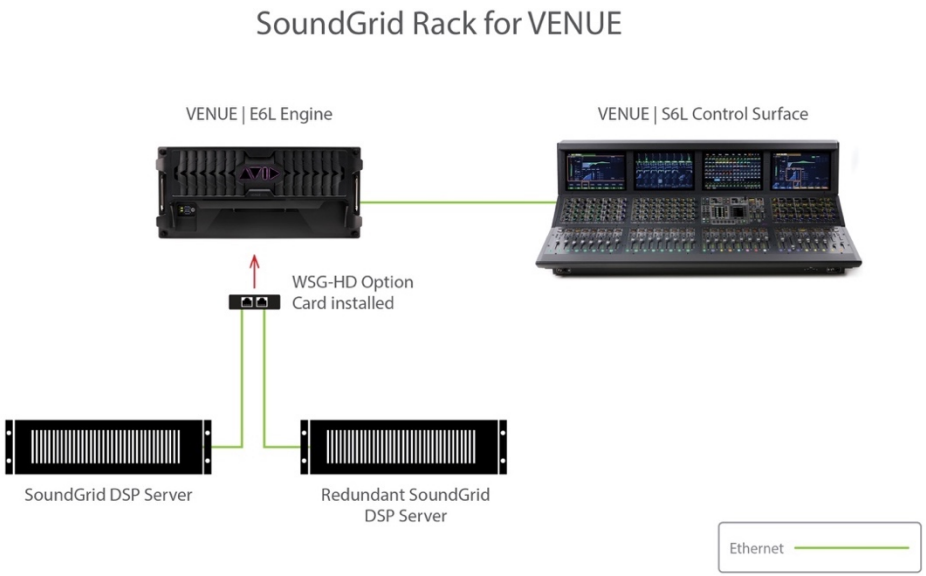
Installation

Hardware Installation

SoundGrid for VENUE requires a WSG-HD card, which is sold by Avid. The card occupies one PCI slot in the Avid VENUE engine. SoundGrid hardware installation consists of nothing more than connecting the WSG-HD card to the servers. For instructions about installing the WSG-HD card, please refer to the *WSG-HD Card Installation* document, available on the Avid website.

Connecting Servers

Use Cat 5e, Cat 6, or Cat 7 cables to connect Avid WSG HD external Ethernet port 1 (and port 2 if using two servers) directly to the SoundGrid servers. There is no need for an Ethernet switch or other additional hardware.



A server can be connected to either port: the physical connection does not determine if a server is the active server or redundant server.

Two or more VENUE S6L systems can be networked, each with its own SoundGrid Inventory. All SoundGrid assignments should be made before connecting the two systems.

Software Installation

This section describes the process of registration, installation, and activation of Waves licenses and software. Feel free to skip steps that have already been completed.

Register SoundGrid Rack for VENUE

Your new Waves SoundGrid Rack for VENUE software and all new Waves plugins must be registered to your Waves account. If you purchased the software directly from Waves, this has been done for you. If you purchased the software elsewhere, you will need to register the product yourself.

If you don't have a free Waves account, go to http://www.waves.com/create-account and open one. Next, visit https://www.waves.com/support/register-new-products to register your products. A license will be deposited immediately in your Waves Central license cloud.

All Waves VENUE software installations are performed on the Console. There is no need to run an installation on the VENUE Engine.

Waves Central

Waves software installations in VENUE consoles are carried out with Waves Central, an application for downloading and installing all Waves software products and managing Waves licenses. To download Waves Central, visit www.waves.com/downloads/central.

Once Waves Central is installed in VENUE, it can be launched here:

Options / Devices / Waves SG / Settings: Launch Waves Central.

Note: Waves software is not installed in the same manner as other plugins. You must use Waves Central.

Installing the Software

Software installation requires a computer that's connected to the internet. As part of the download process, you'll download an offline installer with which you can install Waves Central, all software, and licenses to the VENUE console.

Fresh Install

A fresh install means that no Waves software is installed on VENUE. To install SoundGrid Inventory, SoundGrid Rack, and Waves plugins to VENUE, you must download an offline installer using a computer that's connected to the internet (not the VENUE computer).

Do this in the computer that's connected to the internet:

1. Download the Waves Central application to the online computer (https://www.waves.com/downloads/central).
2. Launch Waves Central.
3. Go to "Licenses/Manage Licenses." Select the "SoundGrid Rack for VENUE" license, along with the licenses for your Waves bundles/plugins and send them to your USB flash drive.
4. Go to the Waves VENUE downloads page (https://www.waves.com/downloads/venue) and download the dedicated offline installer for VENUE S6L.
5. Unzip and copy the Waves folder directly to the root of the USB flash drive.

Do this in the VENUE console:

1. Plug the USB flash drive into the S6L.
2. Go to “Option/System.”
3. Enter the CONFIG mode and press “Update.”
4. Choose “Install Waves Central.” This action copies and installs Waves Central from the offline installer. When installation is complete, you can proceed directly to Waves Central. If you cancelled Auto Launch, choose “Launch Waves Central” from the Settings panel.
5. Once installed, go to “Option/Devices/Network Cards/Waves WSG-HD/Settings.”
6. In Waves Central, select “Offline Installer.”
7. Navigate to the Waves folder on your USB flash drive and select “Folder.”
8. From the product list, choose “SoundGrid Rack for VENUE” and all of the bundles/plugins you wish to Install.

Note: If the console is connected to the internet, you can choose to move licenses to the console. If you perform a Restore, these licenses will be deleted. You will need to reactivate them.

Once installation is complete, restart the console.

9. In VENUE, go to Options/Plugins, select “WaveShell SoundGrid Rack,” and choose “Install.”

Note: VENUE does not display individual Waves plugins. Instead it indicates “WaveShellSoundGridRack-AAX.”

Installing Updates and New Software

Once you've installed the SoundGrid software and Waves Central, you can download and install updates, new plugins, and licenses directly to an online VENUE. This lets you quickly install a new plugin or demo, or to install a new license.

When you launch Waves Central on this online VENUE, all of your Waves products are scanned to determine if you're running the current versions. Waves Central will prompt you if updates are available. Keeping your software up to date makes for a more stable processing environment; we recommend a full update each time Waves Central indicates that newer versions are ready.

You can, however, select only the products you want to download, without updating your entire collection of Waves plugins. This is very useful when, for example, you want to download a single plugin or demo plugin now, and then do the full update later. It can save considerable time.

Installing and updating directly to an online VENUE

1. Make sure your VENUE system is connected to the internet (use the ECx port on the S6L control surface).
2. Go to Option/Devices/Network Cards/Waves WSG-HD/Settings.
3. In Waves Central choose "Install." Select the software and click "Install." Software will be installed to the VENUE.

> Note: We strongly recommend that if you install software directly from Waves Central to the VENUE console you also make a new offline installer. This serves as a backup that you can use for reinstalling software and licenses when you are working at a location without internet access.

Installing additional software and updating existing software using an offline installer

If the VENUE console is not connected to the internet, use another computer to make an offline installer from which you can install new plugins or update your Waves software. If time permits, create a complete offline installer. This gives you an up-to-date backup of all of your software.

Creating an offline installer is discussed in the Fresh Install section above.

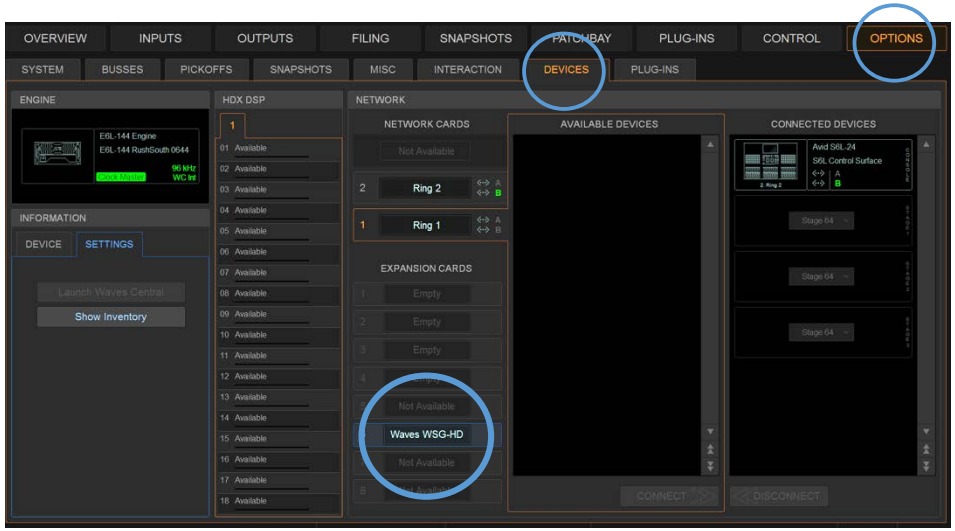
Waves Central Updates

Periodically, the Waves Central application software needs to be updated. These are largely housekeeping updates that keep Waves Central efficient and robust. When you launch Waves Central, you may receive a prompt that tells you to update before continuing. Follow the link, https://www.waves.com/downloads/central. Download, install, and relaunch Waves Central.

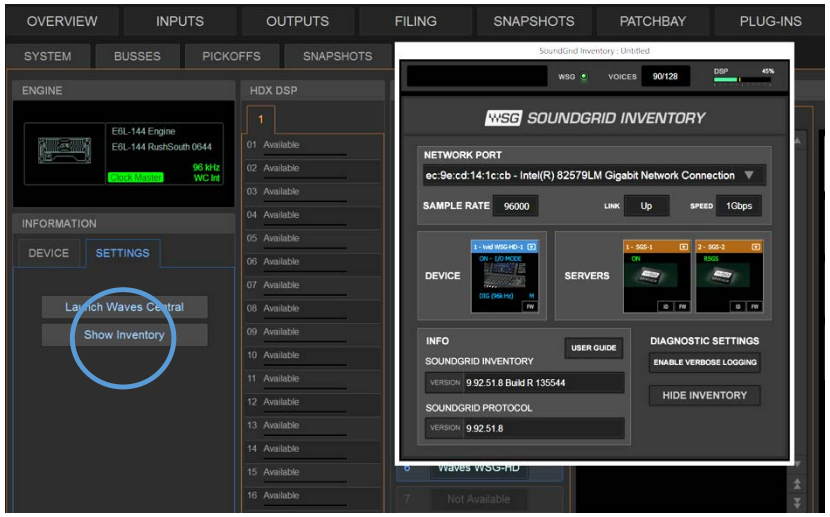
If your console is not connected to the internet, you won't be prompted to update Waves Central. You must update the application on your next online visit to Waves Central.

SoundGrid Inventory Application

The SoundGrid Inventory page is used to assign and manage I/Os and servers. It plays an integral role behind the scenes, connecting the SoundGrid Rack and the SoundGrid servers. Therefore, the SoundGrid Inventory application must be running and configured at all times.



From the VENUE Options/Devices tab, select “Waves WSG-HD” as the expansion card.



Click the “Show Inventory” button to open the SoundGrid Inventory page. This is where the Avid WSG-HD Waves SoundGrid card and one or two SoundGrid servers are assigned to the system.

The SoundGrid application loads automatically when you boot up the console. Once configured, you likely won’t need to access this app again except for troubleshooting or updating firmware in the servers or the WSG-HD card. In the event of a temporary system failure or SoundGrid network disruption, VENUE is notified and will automatically bypass all instances of SoundGrid Rack.

The SoundGrid Inventory page is also used to monitor the SoundGrid network.

SoundGrid Inventory Controls

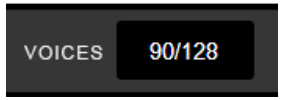
SoundGrid Status Section

This panel monitors the SoundGrid network. It is visible in the SoundGrid Inventory and in the Rack view.

WSG LED

Reports the status of the SoundGrid network. Green indicates a normal condition. Red indicates an error, such as a lost connection to the network or a server error: Check network connections and the condition of devices. Confirm that the Avid WSG-HD Waves SoundGrid Option card is properly seated and operating properly and that all devices are assigned.

Voices



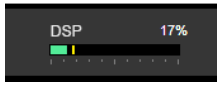
This box displays the maximum number of channels that are routed to the SoundGrid Server and back in a single instance of SoundGrid Rack.

Think of a voice as one plugin input: a mono plugin is one voice, a stereo plugin is two, and a sidechain is three. SoundGrid for VENUE provides a total of 128 voices. The number of voices is based on maximum throughput without compromising stability—it cannot be changed. The Voices meter displays how many of the 128 have been allocated. This display is mirrored in all instances of SoundGrid Rack.

Voices used per channel

Mono	1 Voice
Stereo	2 Voice
Mono to Stereo	2 Voice (max channel count is on output =2)
Mono Sidechain	2 Voice
Stereo Sidechain	3 Voice (max channel count is on input =2+1)
Mono to Stereo Sidechain	2 Voices (This is a special case where the plug-in acts like stereo with a sidechain.)

DSP Meter

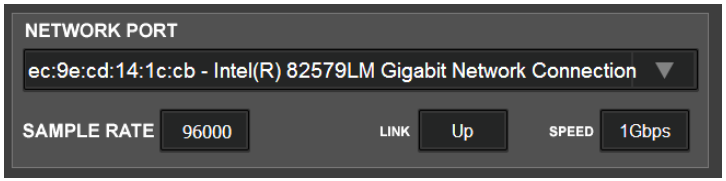


The DSP meter shows system usage of the primary SoundGrid Server.

- The solid bar area displays average DSP use. The number of cores can vary between servers, so the DSP average represents a calculation of all cores.
- The yellow line shows peak use, as indicated in the percentage display above the line. This represents the highest peak in any core. 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.

	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 limits. 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.

SoundGrid Network Section



Network Port

Shows all detected network ports on the S6L engine. Use the drop-down menu to select the LAN port that ends with the letters “LM.”

Link

Reports the status of the Ethernet connection to the console that’s running the SoundGrid Inventory software.
Options: UP / DOWN / INVALID

Speed

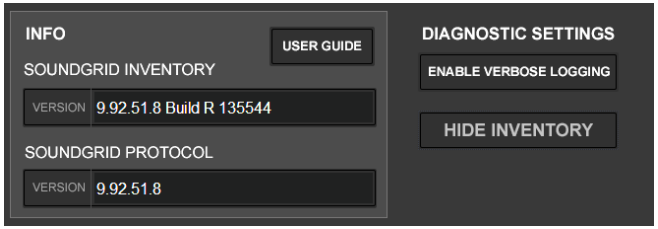
Reports the speed of the SoundGrid network.

Options: 100 Mb/sec, 1 GB/sec, N/A. It should read “1 GB/sec.”

Sample Rate

Displays the sample rate of the SoundGrid network. The sample rate is set by VENUE and it is always 96 kHz.

Information and Diagnostics Section



User Guide

Opens this user guide.

SoundGrid Inventory and SoundGrid Protocol

These report the software versions that are currently running.

Enable Verbose Logging

Creates a report that's used by Waves technical support for troubleshooting and customer service. The report file is sent to the desktop. De-select Verbose Logging for normal operation.

Hide Inventory

Moves the application to the background. The Inventory can be returned to the front by pressing the "SG Inventory" button/indicator on the SoundGrid Rack. Alternatively, you can bring the app to the foreground by clicking on the "Show Inventory" button, "VENUE: Options/Devices/WSG HD/Settings."

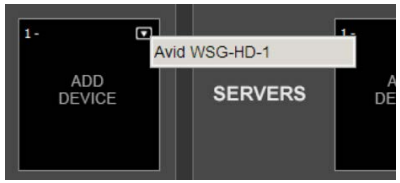
IO Rack

The I/O section is used to assign the Avid WSG-HD card and one or two SoundGrid servers to the VENUE console and engine. If you are setting up a multi-console system, Avid recommends that you first assign SoundGrid devices to each console and then network the consoles to each other.

Adding and Removing Devices

Devices and servers are assigned in the same way. Click the arrow at the top of the slot to open the Device menu.

Select a device

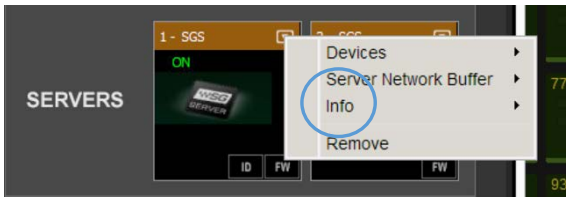


Choose an Avid WSG-HD card from the Device list. Only an Avid WSG-HD card can be assigned by the SoundGrid Inventory application. Other SoundGrid-compatible devices will not be available and will not appear on the Devices list. Assign one or more servers in the same manner.

If a device in the menu is red, its firmware is out of date with the SoundGrid Inventory. Assign the device and firmware updating will commence automatically. A server that is assigned to another host (i.e., another VENUE console in a multi-console system) is unavailable and grayed out.

Redundant Server

Assign a second SoundGrid server to provide redundancy in the event that the primary server fails. The redundant server is identified with RSGS (redundant SoundGrid server). Switchover to the second server is automatic and takes a few seconds. During this period, sound is muted.

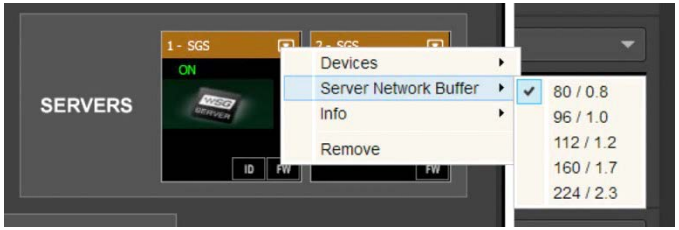


To ensure seamless functionality in case of failure, both servers should be of the same type and generation. This information is displayed in the Server Info menu item.

Remove
Releases the device from the local host.

Menu Items Unique to the Servers Menu

Server Network Buffer



This sets the amount of time it takes for audio to stream from the I/O to the server and back. It determines the maximum 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.

Range: 80 to 192 samples. Default: 80 samples (0.8 ms)

Device Status

The device name is shown at the top of the slot.

There are several status indicators and buttons on the icon itself and just below it. The color of the text in the slot indicates status of the device: (blue=active / red=device not available).

Indicators on the icon:

On	Device is active and operational.
N/A	Device is unavailable. Likely causes: Device is assigned to another system. Device or firmware is incompatible with current SoundGrid software. Device was previously assigned to this system, but it is not currently connected. Device is off.
Clock Source / Sample Rate	Source of clock that the Avid WSG-HD card is locked to. The system sample rate is indicated on the icon. Sample rate is set only from the VENUE system
M	The Avid WSG-HD card is the master device of the SoundGrid network. This is the normal state.

RSGS
(server only)

Indicates that the server is present and is standing by as a redundant server. Main/redundant server assignment is determined by SoundGrid Inventory and is not user adjustable.

ID
(server only)

Click to activate lights on the front panel of the server that's associated with the icon. This is used to identify the server. *(Not compatible with all servers.)*

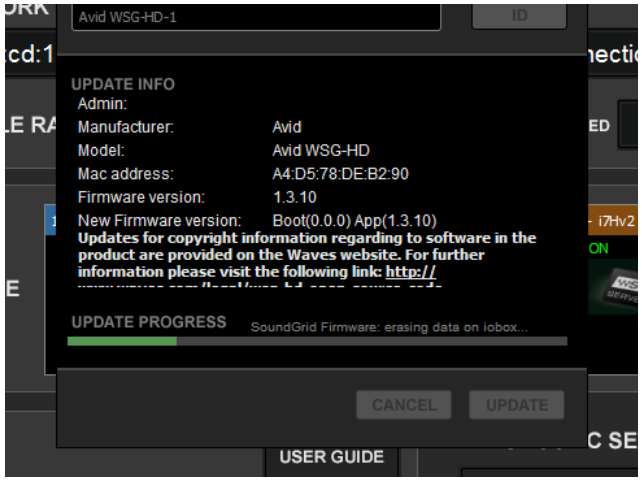
FW

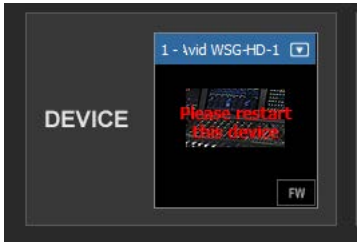
Indicates the status of installed firmware. Also used to initiate a manual firmware update.

Gray Firmware is compatible with the installed software

Blue Firmware is compatible with the installed 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

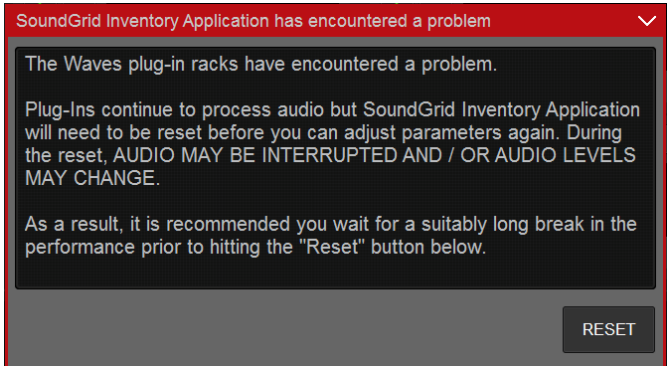




When the process is finished, re-boot the engine. The servers will restart automatically.

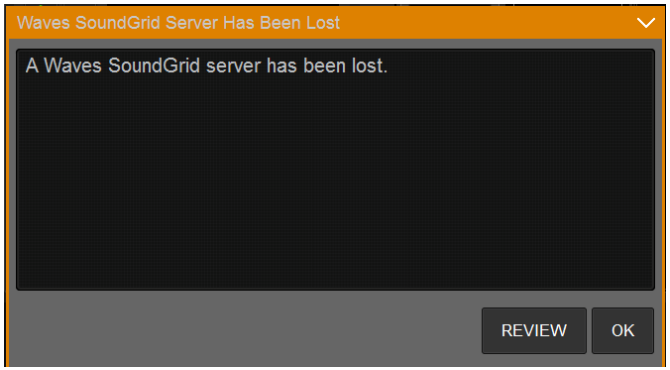
SoundGrid Inventory Information and Alerts

System status is shown as display boxes in the VENUE Settings section. The following examples represent situations that are rare, but which require your immediate attention.



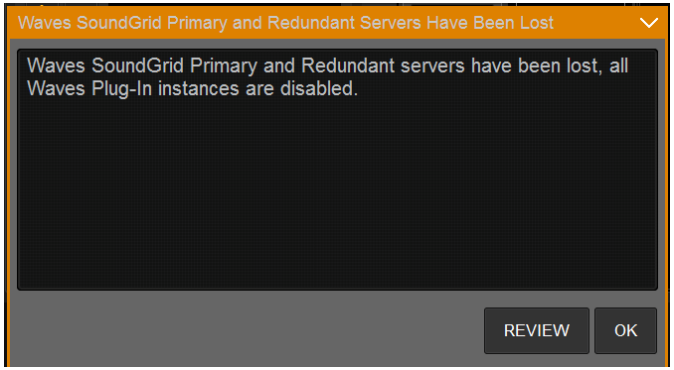
SoundGrid Inventory application is not responsive or quits

If the SoundGrid Inventory application freezes or quits unexpectedly, audio will continue to pass through the rack and processing will be unchanged. VENUE will ask if you want to relaunch the Inventory. Take into account that relaunching the application re-syncs the I/O and the servers, which results in a brief drop in audio. Wait for a pause in the program that will accommodate an interruption.



Primary server fails

In this case, the main server or I/O has gone offline. SoundGrid Inventory will switch automatically to the redundant server, if available. The changeover will take a few seconds, during which time audio will be muted. You will be notified of this.

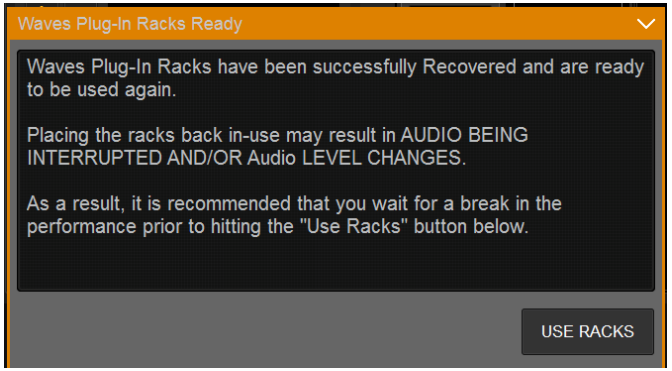


All servers fail:

This indicates that all servers have been lost. It can occur in two in two conditions:

- A SoundGrid system with one server: that server fails
- A system with a main and a redundant server: both servers fail.

The Rack is bypassed until the server problem is solved.



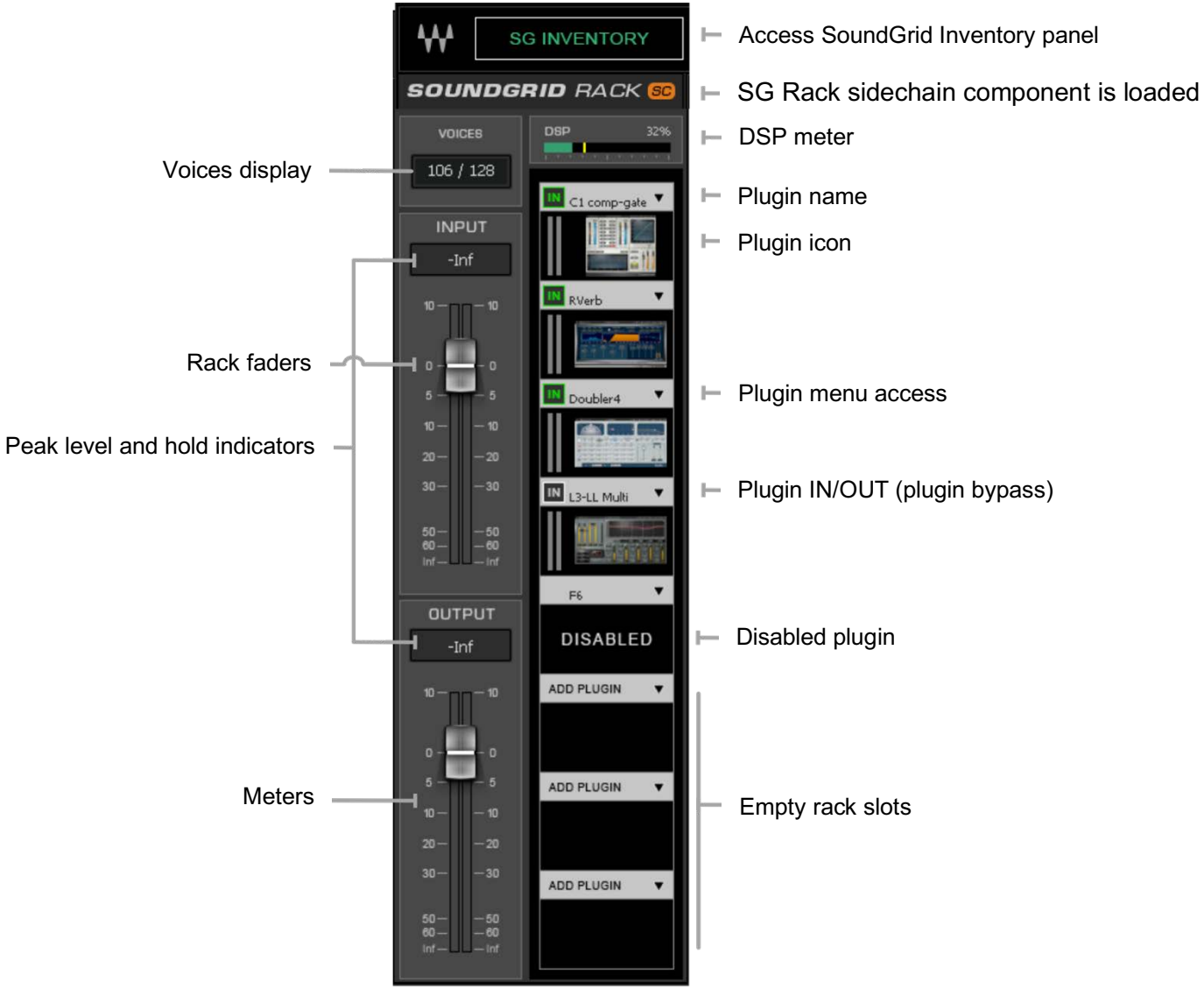
Restart the Racks

Once a rack or server issue has been resolved, you will see this prompt. When the rack and the Inventory resync, there will be a short mute. Wait until there is a gap in the performance and then click “Use Racks.”

Click the down arrow to minimize the status box.

SoundGrid Rack

The SoundGrid Rack plugin is the heart of the SoundGrid implementation for VENUE. It provides a bridge between the VENUE console and SoundGrid-compatible plugins. Each SoundGrid Rack plugin instance can chain up to eight plugins.



A SoundGrid Rack can be mono or stereo, depending on the status of the channel. Signal flow in a rack is from top to bottom, and if a mono-to-stereo plugin is added to a mono rack, the rack will be stereo from that point on in the signal flow. However, plugins “above” the mono-to-stereo plugin will remain mono.

SoundGrid Rack Controls and Indicators

Rack Input and Output

Peak level and hold indicators (input and output)

Displays channel peak level and clipping. Click on the meter to reset the value box

Input / Output Faders

Sets SoundGrid Rack I/O levels—one fader for either the mono or stereo component.

Range: -144 dB to +10 dB

Input / Output Meter - Stereo or mono peak meter.

Range: -INF to +10 dBFS infinite-hold peak indicator. Click anywhere on the meter to clear.

Plugin Rack Section

The Rack section is a chainer that hosts up to eight plugins per VENUE insert.

Plugin name

Displays the name of the plugin inserted in the rack slot

Plugin icon

A thumbnail image of the plugin’s interface

Plugin menu access

This arrow accesses the plugin menu, which is used to insert and manage plugins.

IN button

Plugin processing is bypassed when the IN button is not lit. The plugin is still active, is included in delay compensation calculations, and uses server DSP.

Disabled plugin indicator

A disabled plugin remains in the rack but is removed from processing in the server and is not considered in delay compensation calculations. The plugin will no longer display an icon, but rather the text “Disabled.” There are a number of reasons why a plugin is disabled:

- The plugin is not installed.
- There is no license.
- The plugin has been disabled by the user.

When a disabled plugin is re-enabled, its settings are restored. When a plugin is removed, its settings are lost unless they have been saved as a preset.

Empty rack slot

“Add Plugin” appears in the plugin name cell.

SoundGrid Rack Status Indicators

The panel at the top reports the status of the SoundGrid Rack. There are three indicators:

- SoundGrid Inventory status.
- Percentage of available DSP being used.
- Number of voices being used.
- If the loaded SoundGrid Rack component is sidechain enabled.

SoundGrid Inventory Status

The SG Inventory panel indicates the status of the SoundGrid network. It has two conditions:

- **Green: SoundGrid inventory is operating properly**
- **Flashing red: SoundGrid Inventory is not configured properly**

Click this button to bring the SoundGrid Inventory to the front.

DSP meter

This single meter displays the current DSP load on the SoundGrid network. The solid area displays average DSP use across all cores. The yellow line shows peak DSP level of the core with the greatest peak processing.

The **Average** meter can show Green, Yellow, or Red.

	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 limits. 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.

Voices

The voices meter displays how many voices have been allocated. This indicator is mirrored in all SoundGrid Racks, as well as in the SG Inventory and all instances of SoundGrid Rack. (See next section.)

SC

A orange **SC** indicates that a mono or stereo SoundGrid Rack sidechain component is loaded. It does not indicate presence of a sidechain signal. One sidechain signal is sent to all of the plugins in the rack.

SoundGrid Rack Components, Voices, and Latency

Components

SoundGrid Rack is a plugin, so it instantiates in the same manner as all other Waves plugins. There are six different components to suit the format of the channel and how whether or not you intend to use a sidechain.

- Mono
- Mono Sidechain
- Stereo
- Stereo Sidechain
- Mono to Stereo
- Mono to Stereo Sidechain

Voices

Voices are the number of channels that are routed to the SoundGrid Server and back in a single instance of SoundGrid Rack. SoundGrid for VENUE provides a total of 128 voices.

You can open as many instances of SoundGrid Rack as you like, with any combination of components within the voice limitations of your setup.

Voices used per channel

Mono	1 Voice
Stereo	2 Voices
Mono-to-Stereo	2 Voices (max channel count on output is 2)
Mono Sidechain	2 Voices
Stereo Sidechain	3 Voices (max channel count on input is 2+1)
Mono-to-stereo Sidechain	2 Voices (This is a special case where the plugin acts like stereo with sidechain.)

The Voices meter displays how many voices have been allocated. This display is mirrored in all instances of SoundGrid Rack. The maximum number of voices is set at 128 and cannot be changed.

Latency

Latency is calculated based on two factors: Server Network Buffer setting and plugin latency.

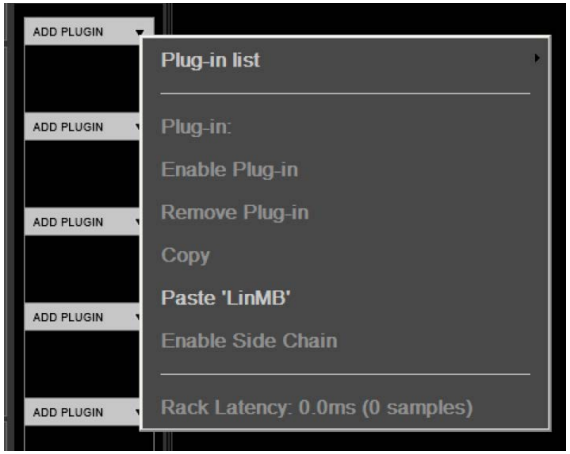
Server Network Buffer

The Server Network Buffer is configured in the SoundGrid Inventory application. It sets the amount of time it takes for audio to stream from the I/O to the server and back. An additional set value of 80 samples is added by the audio path between Avid and SoundGrid. This determines the speed of real-time processing. Lower settings result in less 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 and is also displayed in milliseconds.

Plugin Latency

Some plugins introduce latency. Calculations that require a determined amount of time to calculate or have features such as look-ahead processing declare a fixed latency to the host's delay compensation engine. SoundGrid does real-time processing so its latency is very small, but it cannot reduce plugin latency. Plugins that introduce "x" latency in a Native platform will introduce the same latency on a SoundGrid system. To view a full list of latencies of all Waves plugins, visit "www.waves.com/support/tech-specs/plugin-latency."

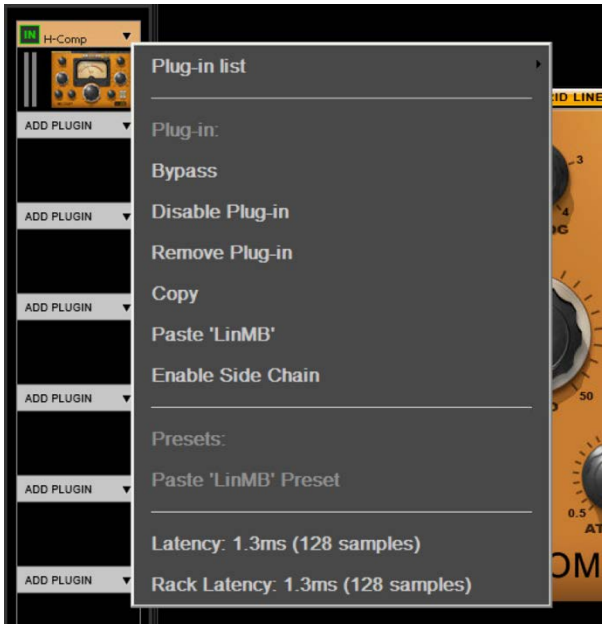
Adding and Managing Plugins



To add a plugin to a SoundGrid Rack, click the arrow on an empty rack slot. This opens the **Plugins Menu,** a multi-level drop-down menu that lists all available plugins. Plugins are organized by category.

If you are inserting a plugin to an empty slot (i.e., no plugin is present in the slot), then the only available menu items are “Plugin list” and “Paste [plugin name].”

Once the plugin slot is populated, the **Expanded Plugin Menu** is enabled.



Bypass

This bypasses the plugin’s processing but does not remove it from the chain. The plugin remains active and continues to use CPU and is included in delay compensation calculations. Bypassing or un-bypassing a plugin does not cause a click or interruption, so it can be done at any time. When a plugin is bypassed, the IN button on the rack frame is not lit.

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. A disabled plugin’s name is still shown above the slot and “DISABLED” replaces the icon. A disabled plugin can be re-enabled with all of its settings intact.

Remove Plugin

Deletes the plugin from the slot. All parameter settings are lost.

Copy

Copies the plugin and its parameters. This enables pasting the plugin and its current settings to another rack slot. There are two paste options:

Paste

Pastes the copied plugin and its parameters to an empty slot or replaces the plugin that occupies the slot.

Paste 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. If the source plugin and the target plugin are not of the same family, then Paste Preset is not available. Choose between Paste [plugin name], which will replace the target plugin with the source, or cancel.

Enable/Disable Sidechain

Toggle on or off to enable the plugin's sidechain. When the sidechain is active, the IN button will turn orange.

Latency

Indicates the delay introduced by the plugin.

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 and Rack Latency will be grayed out.

Moving and Copying Plugins

> **Important:** Adding, removing, disabling, or moving a plugin changes the structure of the rack, which may result in a brief mute. Do not make these changes when an audio interruption is unacceptable. Wait until there is a pause in the performance. This action is blocked in VENUE Show mode. Bypassing a plugin or changing its parameters can be done at any time.

Signal flow in this rack is from top to bottom. Alter the processing sequence by re-arranging plugin order.

Use these actions to move and copy plugins in the rack:

Ctrl + click

Disables the plugin and removes it from the DSP processor. The plugin can be re-enabled with all settings intact.

Drag an icon off of the left side of the screen

Removes the plugin (this cannot be undone).

Click + drag icon

Moves a plugin and its presets to another rack slot.

Alt + click + drag icon

Copies a plugin from one rack slot to another.

Copy/Paste between Stereo and Mono

Copy a mono plugin module to a stereo channel: the plugin becomes a stereo module. The mono plugin's parameters will be applied to both sides of the stereo plugin, unless the stereo plugin has provision for split/linked processing. In such a case, the mono plugin parameters will be the settings for the left channel.

Mono-to-Stereo Plugins

A stereo plugin cannot be inserted into a mono rack. However, you can add a mono-to-stereo plugin to a mono rack. From that point in the rack's signal flow (below the stereo plugin), the rack will be stereo, and only stereo plugins can be inserted. Mono plugins can still be inserted prior to (above) the mono-to-stereo plugin.

Plugin Pane

The Plugin Pane shows a plugin's entire user interface. Open the pane by clicking on a plugin icon.

Plugin functionality and controls are the same in VENUE as in other hosts. Certain visual details may have been modified slightly to fit the window.

SoundGrid Rack Sidechain Components

When a sidechain component is loaded, a small SC is shown at the top of the rack. This allows any SC-enabled plugin to accept a sidechain signal. All of the plugins in a rack share the same sidechain.

Assign a sidechain source with VENUE's sidechain menu.

The Sidechain button at the top of the Waves plugin pane is used to turn the sidechain input on or off for that plugin. There is also a sidechain listen button. This button appears only on sidechain-compatible plugins. Choose "Enable SC" from the plugin menu.

Presets

SoundGrid Rack manages plugins presets and rack presets with the WaveSystem Toolbar. The Toolbar also lets you A/B between plugins and to cycle through all available plugin presets. The selected plugin and the rack each has its own toolbar. SoundGrid Rack has two WaveSystem Toolbars:

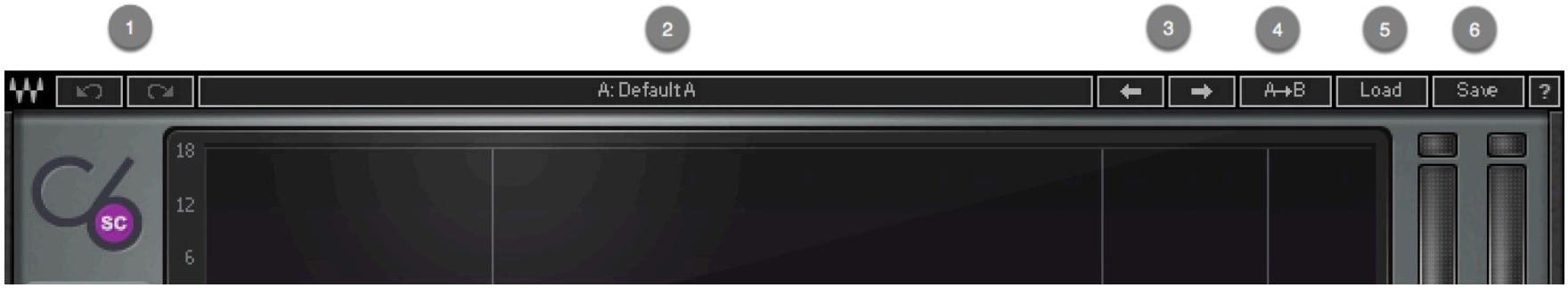
The **Rack Toolbar** is used for copying individual presets between racks or between sessions. It manages presets for the entire rack: structure, parameter settings for all plugins in the rack, and input and output levels. You can move plugin presets between hosts, independent of the loaded session.

SoundGrid Rack has the same number of slots as other SoundGrid applications, including MultiRack, eMotion LV1, and StudioRack. Therefore, individual presets can be transferred between these Waves applications. Presets can be saved as external files and then transferred to other systems and loaded—and vice versa.

> Note: Loading a Rack Preset can change previously loaded plugins. For this reason, you are blocked from loading a rack preset when in SHOW mode.

When loading sessions or presets that include plugins that are not licensed or nor installed, those plugins will appear in the rack as disabled until the issue is resolved. Other plugins will load normally.

The **Plugin Toolbar** manages presets for the plugin that's currently being addressed. It sits at the top of the plugin pane.



1. Undo/redo last 32 plugin actions
2. Toggles between two presets
3. Move to previous or next preset
4. Copies current preset to next preset register
5. Recalls presets from file
6. Saves presets to Waves file format

To learn more about the WavesSystem Toolbar and other Waves plugins conventions, refer to the WaveSystem user guide at: www.waves.com/1lib/pdf/plugins/waves-system-guide.pdf

SoundGrid Rack/VENUE Integration

CONFIG/SHOW Modes

SoundGrid Inventory and SoundGrid Rack are synced with VENUE's CONFIG and SHOW modes.

When in SHOW mode, a lock function prevents unintended "structural" changes in a SoundGrid Rack, such as adding, removing, or copying plugins, changing hardware assignments, oupdating firmware, or quitting the application. Locking these controls does not affect parameter settings and internal routing, nor does not it affect Bypass.

Functions Locked in SHOW Mode

SG Inventory	SoundGrid Rack
Select LAN Port	Insert Plugin
Assign I/O	Remove Plugin
Remove I/O	Enable Plugin
Firmware Update I/O (FW)	Disable Plugin
Assign Server	Move Plugin
Remove Server	Paste Plugin
Firmware Update Server (FW)	Load Preset Menu (Rack ONLY)
Enable Verbose Logging	

Control Surface Mapping

All Waves SoundGrid plugins—in all of their components—have been mapped to the VENUE encoders. When SoundGrid Rack is focused, the encoders control the current selected (“displayed”) plugin. If no plugin is selected, the mapping will represent the rack itself (i.e., the input/output faders).

The mappings attempt to reflect the graphic layout of the plugins. Each plugin can have a different number of controls, with very different layouts—and a big difference in the number of controls. In cases where all of a plugin’s controls don’t fit on a single page, they are divided into multiple pages, according to graphic layout and logic.

A plugin control that’s mapped to VENUE encoders is outlined in red.

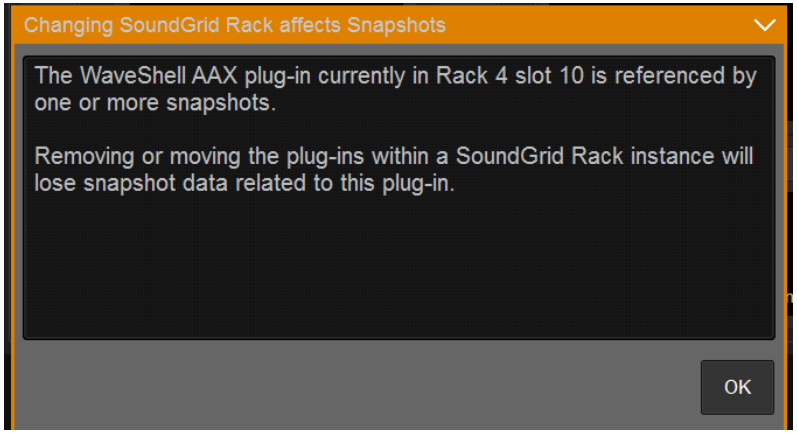
The VENUE encoder display specifies only the plugin controls mapped to the rotary knob, not directly to discrete controls. In some cases, discrete controls are mapped to both the rotary controls and the SEL or IN buttons.

Snapshots

SoundGrid Rack is a plugin, so it can be set to be in or out of the VENUE Scope of Snapshots, just like any other plugin. A snapshot takes into account the entire rack, including its inserted plugins. It does not address individual plugins. Changing a snapshot WILL NOT change the contents of the SoundGrid Rack.

> **Important:** The content of all racks is locked stationary when VENUE is in SHOW mode. VENUE considers the SoundGrid Rack as a single instance, and only when the console is in CONFIG mode can the contents (i.e., the inserted plug-ins) be added, removed, or moved.

Adding or enabling a plugin to a Rack that is in scope of a snapshot will propagate that change to all Snapshots. Removing or disabling a plugin to a rack that's within scope of a snapshot is **destructive.** The plugin will be removed from all snapshots.



A prompt will appear when you attempt to add, remove, disable, or enable a plugin if SoundGrid Rack is already within in the scope of one or more snapshots, since these actions can affect your snapshots.

We recommend that you add all intended plugins before creating snapshots.

Please refer to the VENUE S6L System Guide to learn about managing plugins and snapshots, specifically about snapshot "Edit Mode" and "Update Mode," which can be used to make changes across all snapshots.

D-Show/Profile Session compatibility

SoundGrid for VENUE is compatible with older D-Show/Profile sessions.

When opening a D-Show/Profile session on a VENUE system, all required Waves plugins will load, along with their settings and snapshots information. No matter how the channel racks were populated in the legacy session, each plugin loads into VENUE as an individual rack. The total number of SoundGrid Rack instances is restricted to 128 voices, so if the older session requires more than 128 voices, all plugins beyond voice 128 will load disabled.

Each rack introduces latency as the audio is routed to the SoundGrid server and back. The minimum roundtrip latency is 0.8 ms. This latency accumulates in a session that has multiple Waves plug-ins in the same signal path: each plugin is adding at least 0.8 ms delay. To minimize an accumulation of latencies, you should manually consolidate the racks. In this process there is chance of losing some snapshot information.

To consolidate plugins into racks, use the “Copy/Paste” feature in the Plugins menu.