WAVESLIVE

# SUPER RACK

PERFORMER

## User Guide

# Contents

# Introduction

SuperRack Performer is a software host platform from Waves that lets live sound engineers run multiple, simultaneous instances of the same award-winning Waves plugins used in recording studios and mixing rooms the world over. It provides a software equivalent of outboard hardware processing racks. SuperRack Performer can be configured with up to 64 racks, and each rack can host up to eight plugins. You can view and control one plugin, or one rack, or up to 64 racks at a time.

SuperRack Performer uses the power of your host computer for plugins processing and overhead. This means that the number and kind of plugins you use are, as well as overall system latency, depend on the host computer's CPU sound driver capabilities

This user guide is organized just like the SuperRack, by different pages that control different parts of the application. The first chapter of this user guide is about getting started: installation, configuration, and the basics of using SuperRack. Read it; it may be all you need. The rest of this guide provides detailed descriptions and about every section of the product.

## USEFUL WAVES CONTACTS

**www.waves.com**

| | |
|---|---|
| https://www.waves.com/downloads/central | Download the Waves Central application, used to install Waves software products and activate licenses. |
| https://www.waves.com/support/tag/troubleshooting | FAQs and troubleshooting |
| https://www.waves.com/contact-us | How to reach us |
| https://www.waves.com/hardware | Learn about compatible SoundGrid hardware: servers, I/Os, and switches. |

# Part 1: Getting Started

Follow these steps to get up and running. This is more of a checklist than a detailed recipe—refer to the chapters that follow for more information.

- Download and install all software and licenses.
- Connect hardware.
- Assign devices.
- Configure racks.
- Insert plugins.

## Install the Software

1. Use the Waves Central application to download and install all Waves software and manage licenses. If you don't have Waves Central, you can download it here: https://www.waves.com/downloads. You'll need a free Waves User Account to log on to Waves Central. If you don't already have a Waves account, click the "Sign Up" button on the Waves home page.

2. Launch Waves Central. On the left side of the interface, select Install Products and then go to My Products. This shows a list of all of your Waves purchased products. If you don't see SuperRack or your your plugins in this list, go to your Waves account and register the products. You can also select the All Products tab, which shows you a list of the entire Waves catalogue. This is an easy way to choose plugins for purchase or demo.

3. Select the SuperRack Performer application and the plugins that you want to install. Products selected for installation and/or license activation are shown in a list on the right side. Click the "Install" button, or "Install & Activate" if you are activating licenses. The SuperRack Performer application and your plugins will be installed on your computer. By default, licenses are activated to your computer.

You can install SuperRack Performer and your plugins on more than one computer (e.g., your studio computer, along with a few live venue setups). Follow the instructions above to install SuperRack and your plugins on as many computers as you like, and then activate your licenses to a USB flash drive rather than to your computer. When you move from one computer to another, insert the flash drive, scan for plugins, and you're ready to go. You cannot use one license simultaneously on more than one system.

SuperRack Performer systems require Waves Native plugins.

> If your production computer is not connected to the internet, you can use Waves Central to create an offline installer. An offline installer must be created on a computer that's connected to the internet. It includes the SuperRack application and your plugins. Save this installer on a USB flash drive and use it to install SuperRack on your production computer (that is not connected to the internet). Activate your licenses separately on a USB flash drive.

Please refer to the Waves Central User Guide for details

SuperRack runs on Windows and Mac.

## *Connect the Hardware*

Connect an ASIO / Core Audio interface to your host computer. Use MADI, AES/EBU, or analog cables, depending on your console and audio interface. See the examples below.

ANALOG CONNECTIONS



Analog

Analog interface

Console with analog connectors

Firewire or USB

Host computer with SuperRack
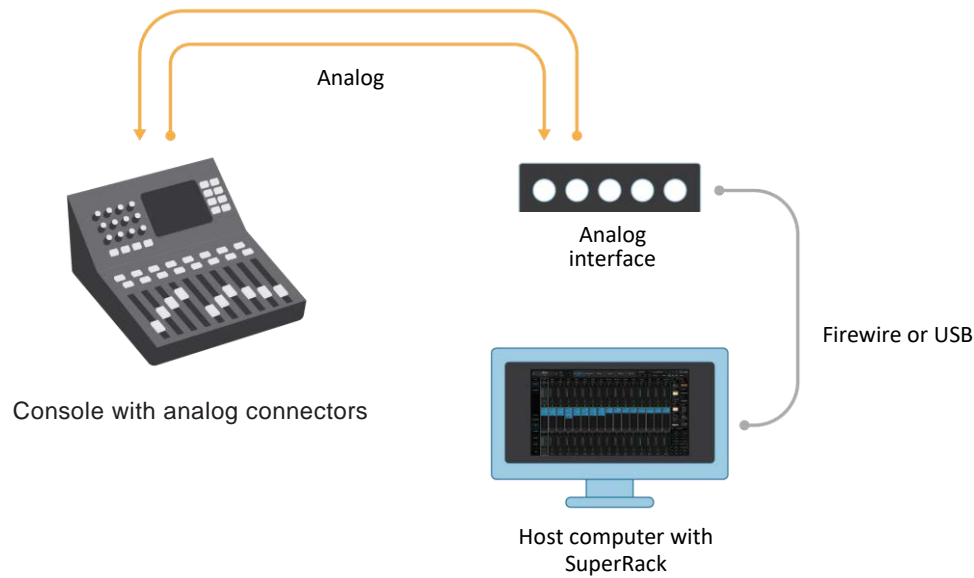
When a console does not have a digital I/O device, you can connect the console sends and returns or other analog inputs and outputs to an analog interface. Connect the interface to the host computer via USB or Firewire.

## BEHRINGER NATIVE CONNECTIONS



Host computer with
SuperRack

Firewire or USB

Behringer X-32 Series console
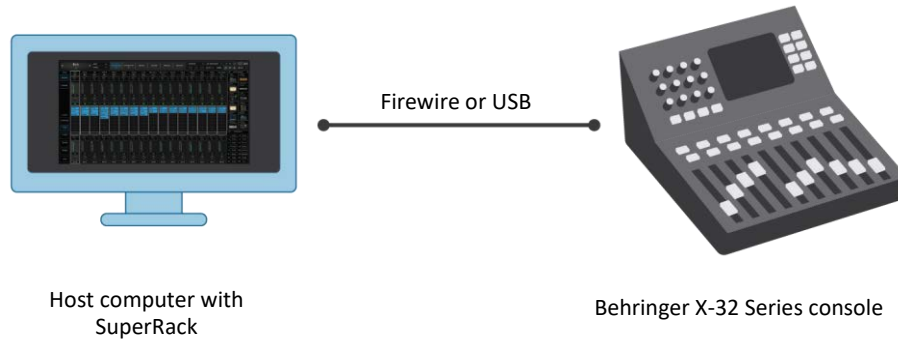
To use SuperRack Performer with a Behringer X-32 Series console simply connect the two with Firewire or USB cables.

To learn more about assigning devices, please refer to the Setup Window part of this user guide.

## Display Resolutions

**Full Screen** (default) fits the SuperRack window to 100% of the resolution set for the display. Aspect ratio is maintained.

**Scaled** (Full Screen off) scales the window of each display to 90% of the resolution set for the display. When more than one display is present, this behavior is independent per display.

Click Full Screen again or tap ESC to exit Full Screen mode.

## Configuring the Sound Card

Turn on your sound card and then launch the SuperRack Performer application. If it does not launch, go to Waves Central and confirm that the correct license has been activated. Follow these steps for basic setup.

1 At the top of the interface, click the **Setup** tab. The Setup window is where you select and configure the sound card. It's also where most of the system preferences are set.
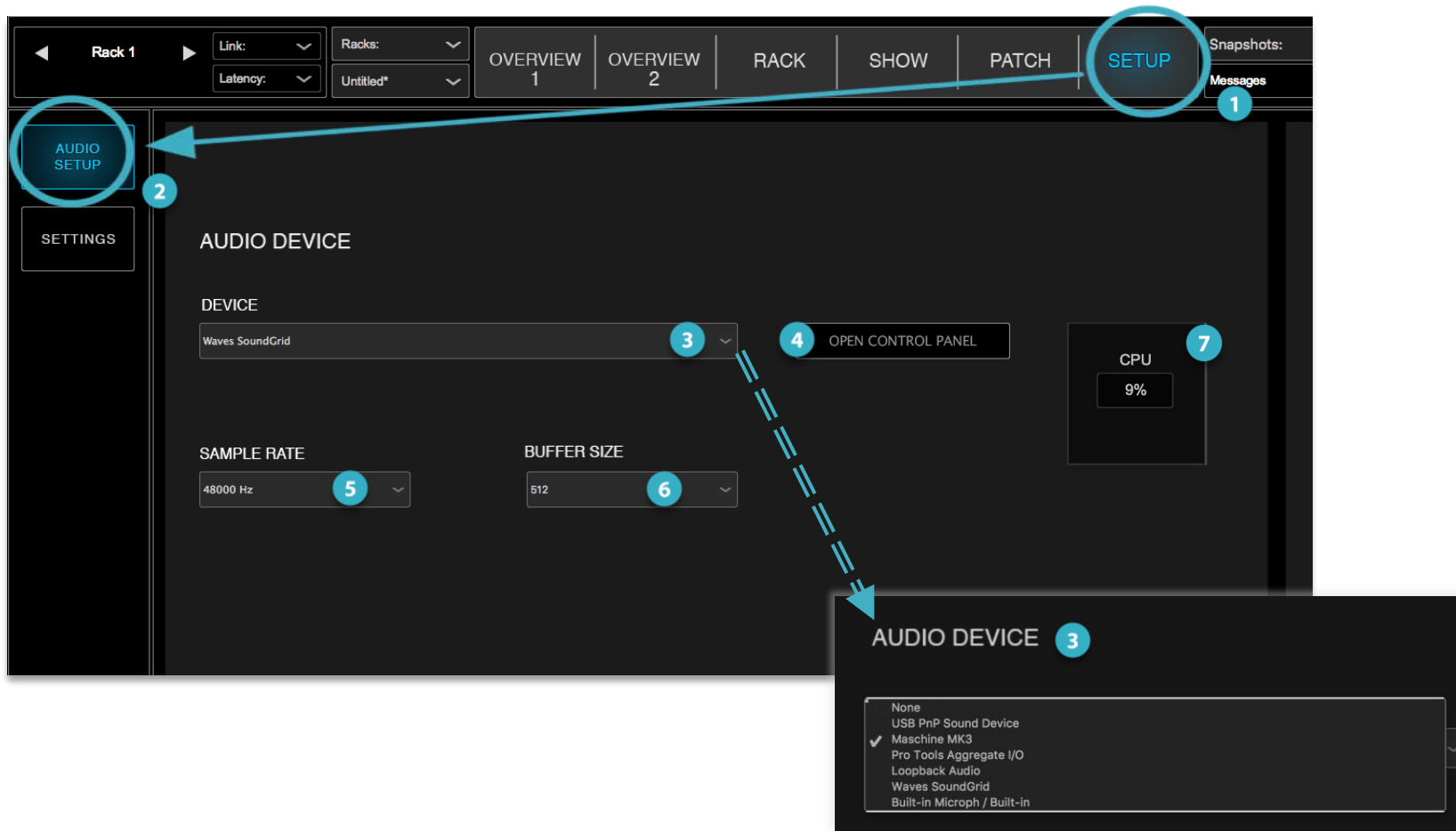
1. Select the Setup window.

2. Click on the **Audio Setup** tab. The SuperRack Performer Audio Setup page is used to assign and configure the sound card or console extension card.

3. Open the **Device** drop-down menu. This is a list of the ASIO/Core Audio device drivers for the available sound cards or interfaces. Select the driver for your device.

4. Open the **control panel** of the selected driver and configure the device, if needed.

5. View or set the system **Sample Rate**. If your ASIO/Core Audio device allows for its sample rate to be set externally (in this case by SuperRack), use this drop-down menu to set system sample rate. If the sample rate of the device cannot be set externally, then this value box will display the device's sample rate as set externally.

6. Set the device's **Buffer Size**. Larger buffers will result in more stability but greater latency. (Mac only.)

7. **CPU** indicates the CPU load of the host processor, expressed as a percentage of CPU available to the application.

The device is now configured.

## Routing I/O Channels to Racks

A rack must be routed to an input and output I/O, whether channels from an ASIO/Core Audio driver, a console expansion card, or an additional hardware device. Rack input and output routing is done in the Rack or Overview windows. In the following example, we will route rack input and output to a single rack in the rack window.

**Routing Racks Manually**

Use the tab at the top to open the Rack window.
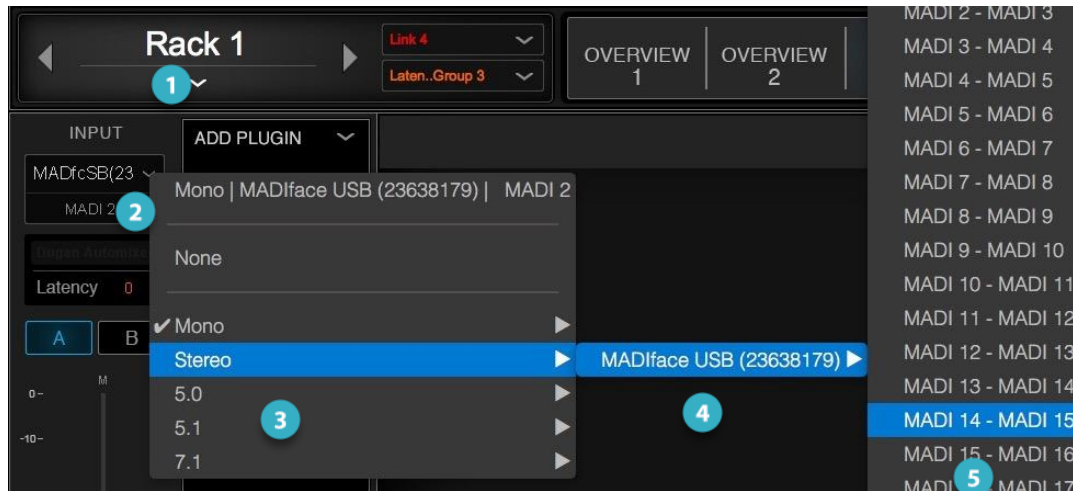


1. Select a rack.

2. Click on the Input arrow. This opens the Input Device Assignment menu.

3. Select an input format.

4. Select an input device.

5. Select input I/O channels.

Rack outputs are routed in the same manner.

A rack's input and output do not necessarily need to have the same number of tracks. A stereo rack input can, for example, coexist with a 5.1 output. The rack's L/R signal will output only from the L and R channels of the 5.1 I/O stream. The position of the L and R channels in the 5.1 output will vary depending on the 5.1 format. If rack output is unassigned when the input is routed, SuperRack will attempt to patch the same input and output I/O channels.

An I/O can be patched to several rack inputs. Only one rack can patch to an output I/O.

**Routing Racks Automatically**

SuperRack Performer can automatically route input and output I/O channels to each rack in a session. Routing is applied to a pre-configured session with no existing I/O patches. Patching continues until all racks are routed or all I/O channels have been assigned.

**Routing Asymmetrical Racks**



If the channel formats for the rack's input and output are the same (e.g., mono-to-mono, stereo-to-stereo, 5.1-to-5.1, etc.), the I/O channel numbers for a rack's in and out will increment together. Here, inputs and outputs are mono:

Rack 5: input MADI 25, output MADI 25
Rack 6: input MADI 26, output MADI 26
Rack 7: input MADI 27, output MADI 27, etc.

If, on the other hand, the rack input has fewer channels than output channels (or vice versa), certain channels will go unused so that each rack begins with the same input and output channel number. In this example, rack input is mono, and output is 5.1. The resulting patching looks like this:

Rack 1: input MADI 1, output MADI 1–6
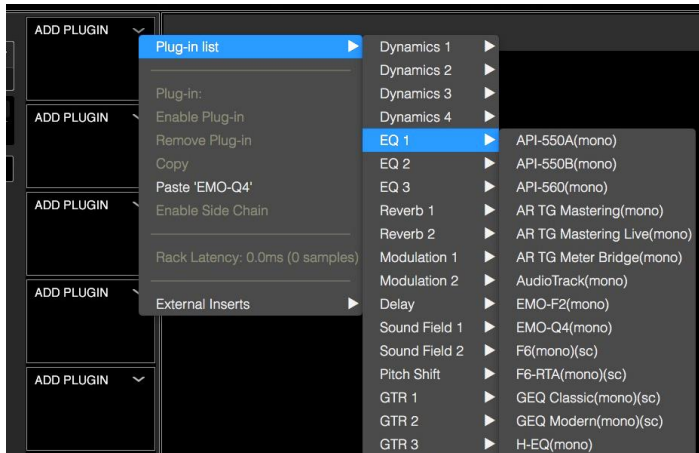Rack 2: input MADI 7, output MADI 7–12
Rack 3: input MADI 13, output MADI 11–18, etc.

To learn more about routing in SuperRack Performer, please refer to *Part 5: Rack Window.*

## Inserting Plugins

Each plugin rack has eight slots. Rack signal flow is from top to bottom.



1. To insert a plugin in a slot, click on the down arrow (Rack window) or plus symbol (Overview window). This opens the drop-down Plugin menu.

2. Choose a plugin from the list. The input/output structure of the rack determines if a plugin can be inserted in the rack. If a plugin cannot provide a component that is compatible with the rack input/output structure, it will not appear in the menu (e.g., a 5.1 rack will not let you insert a stereo component). Also, certain plugins (e.g., mono-to-stereo) change the channel structure of the rack.

3. You can insert a plugin into any slot. The plugin's icon will appear in the slot. Click a plugin icon to open the plugin's interface in the plugin pane.

   A plugin's rack position determines its place in the signal flow. You can change a plugin's position by dragging an icon up and down in the rack.

   In this example, Abbey Road Chambers slides upward (blue path) to displace Doubler (red path).

   Changing plugin order may result in a short audio drop. Wait for a convenient time to rearrange the rack.

   Learn more about adding plugins to a rack in *Part 5: Rack Window.*
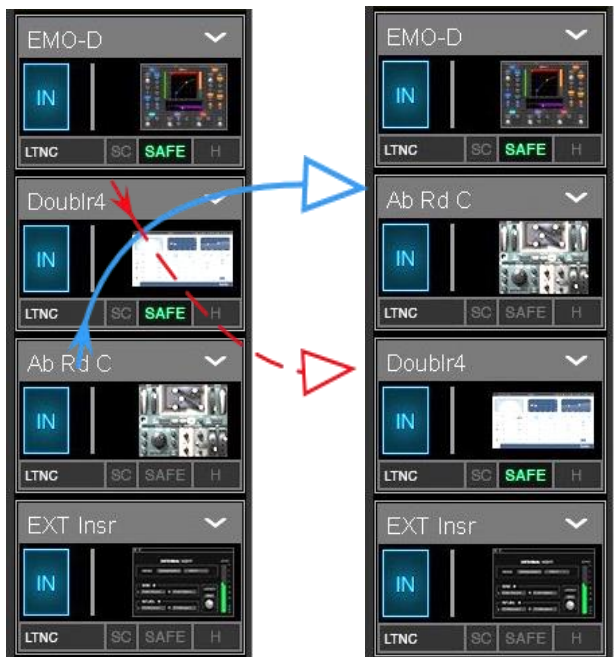
## *Floating Panels*

Certain panels can be detached from their docked locations and floated anywhere on the displays. This provides quick access to critical plugins and the controls you want to access regularly.

The following panels can be detached and floated:

- User Keys
- Hot Plugins
- Plugin control panes
- Snapshots notes
- Window tear-offs (Setup, Patch, Show, Rack, Overview 1 and 2)

### DETACHING A PANEL

Each detachable panel has a Float symbol at the top of its frame. Click this button to detach the panel from its dock. It can now be positioned anywhere on the SuperRack interface. When a panel has been detached from its original position, the Float symbol is blue.

Click anywhere else on the display and the floated panel will move backward and disappear. To keep a panel in the foreground, click the Pin button. Click the Float symbol again to return the panel to its dock.
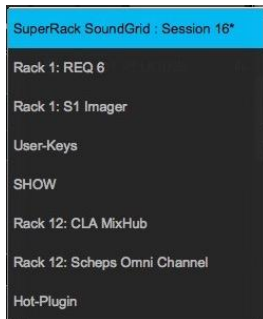
The Floating Panels drop-down menu on the right side of the Top Bar is a list of all detached panels. Select a panel or window and it will move to the front.

The name of the current session is shown at the top of the list.

## Detached Plugin Panes

To float a plugin's control interface, click on the Detach symbol at the upper-right corner of the of the plugin pane.

Rack 1: Pro-Q 3

IN  SC  not connected ⌄                                                    CLOSE ALL

Bypass or close a floating plugin and check side chain status from the panel above the plugin.
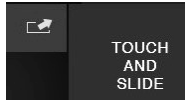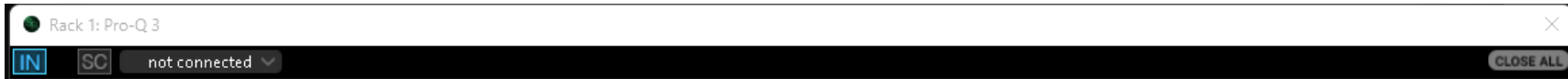
- Deselect the **IN** button to bypass the plugin.
- **X** closes the window; the plugin panel will return to the plugin pane.
- **Close All** closes all floating plugins.
- Side chain status (**SC**) is shown on the left side of the bar.

A floating plugin remains visible in all SuperRack views.


## Hot Plugins Panel

The Hot Plugins panel provides instant access to selected plugin control panels. Up to twelve plugins can be assigned to the Hot Plugins panel.

HOT PLUGINS 📌

- Any plugin in any rack can be assigned to the Hot Plugin panel.
- Hot plugin assignments are made in the plugin's drop-down menu.
- Hot Plugins can be within the scope of a snapshot, so you can have a different panel for each snapshot. Scope and Recall Safe are set in the Show window.
- Click on a Hot Plugin icon to display its complete plugin control panel.
- Right-click on a hot plugin to remove it from the current snapshot or from all snapshots.
- A detached Hot Plugin panel can be displayed in a horizontal or vertical orientation. Click the ladder icon on the left side of the panel to toggle between these views.
- The plugin's name and rack number are shown above the icon.

## TEAR-OFF WINDOWS

There are five SuperRack windows: Setup, Patch, Show, Rack, and two Overviews. You can "tear off" one or more windows to spread SuperRack control over several displays. Click/drag downward, away from the Top Bar. A new window will appear. It can be positioned on any of your displays.

| OVERVIEW 1 | OVERVIEW 2 | RACK | SHOW | PATCH | SETUP |
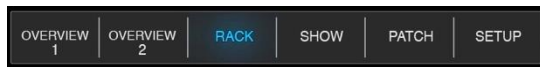
The original Window Selection Panel. All window tabs are available. In this example we will separate the Rack window from the other windows to create its own screen.

| RACK | | | | | |

This creates a new screen containing only the torn-off window. Move this separated window to another display.

| OVERVIEW 1 | OVERVIEW 2 | SHOW | PATCH | SETUP | |

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

The name of the panel will appear in the Floating Panels drop-down menu. Click on the window name and it will move to the front. Close the torn off window to return it to the default location in the Top Bar.

MultiRack SoundGrid : Untitled*

Rack 1: REQ 6

RACK

Rack 1: S1 Imager

Hot-Plugin
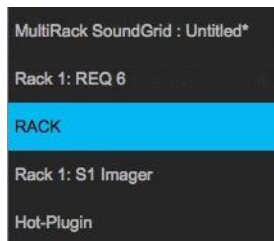
## *System Requirements*

Specifications for host computers, cables and connections, servers, display resolutions, and controllers can be found at Waves Support.

# Part 2: Top Bar

At the top of the interface is a control ribbon called the Top Bar. It plays an important role in controlling SuperRack. We suggest that you read this chapter before moving on.



|          Rack Controls          |          Window Select          |          Snapshots and Utilities          |

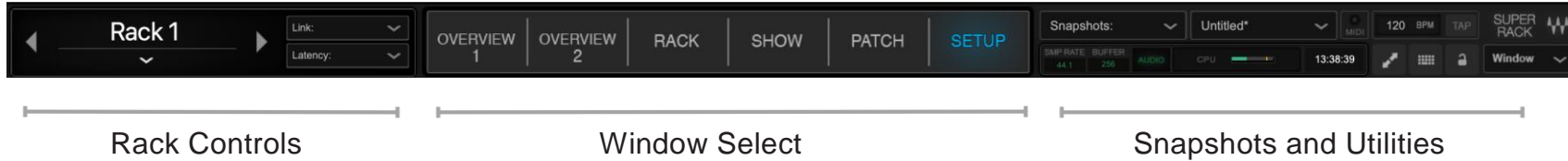The Top Bar is visible from every SuperRack window. It includes the menus, information boxes, system feedback, and navigation tools that you need all the time.

The Top Bar is used to:
- Navigate to and select a rack
- Assign a rack to link groups
- Assign a rack to a latency alignment group
- Save, load, and manage rack presets
- Save and load sessions
- Switch between windows
- Load and store snapshots
- Indicate Audio, sample rate, remote control (e.g., MIDI)
- Set and monitor BPM
- Verify MIDI input
- Lock the interface and access on-screen keyboard
- and other functions

## *Left Panel: Rack Controls*
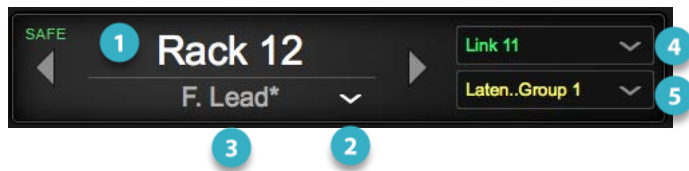
Use this section of the Top Bar to select a rack, assign it to a link group and a latency group, manage rack presets, and open and save sessions and templates.

### ① Rack Name

The Rack Name box displays the name of the selected rack. Left and right arrows move the selection to the previous or next rack. You can move directly to a rack using the Racks menu on the right. To rename a rack, double-click on the Name box and then type. If the rack is set to Recall Safe, the word "SAFE" appears.
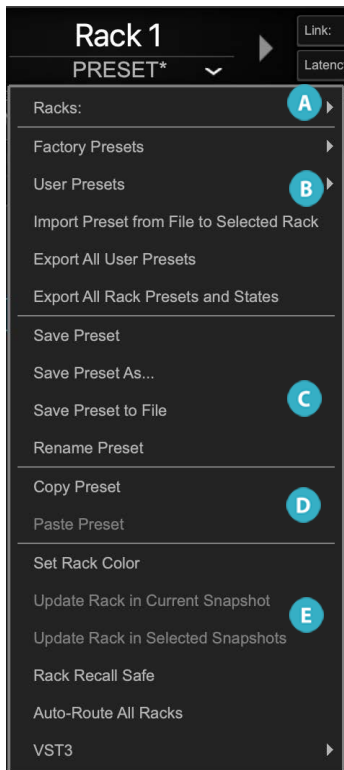
### ② Racks Menu

The Racks menu is used to load, save, import and export, and copy and paste the presets for the selected rack. A Rack Preset is a complete description of a rack (i.e., I/O patching, rack structure, and plugin settings).

A rack's settings can be copied from one rack to another. Factory presets can be loaded, modified, and then saved as new user presets. Presets can also be copied and exported as files, which can then be imported to another SuperRack host. This enables moving individual racks between sessions.

The Racks Menu is divided into five sections.

## 2a RACK SELECT

Navigate directly to a rack using this submenu.
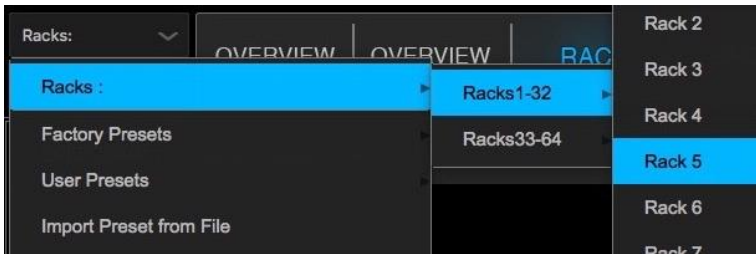


## 2b RACKS MENU: IMPORT AND EXPORT PRESETS

### FACTORY PRESETS (LOAD)

Displays a list of presets supplied by Waves. These provide starting points for many setups. Factory presets cannot be saved. Instead, modify the preset and save it as a user preset. **Empty** removes all plugins from the rack.

### USER PRESETS

Loads user-created rack presets that has been saved in the current session or imported from another. To delete a user preset, hold Ctrl/Alt before opening the Preset menu. Select the preset and it will be deleted. This cannot be undone.

#### IMPORT PRESETS FROM FILE

Loads presets into User Presets menu—presets that have been saved as a file, not as part of the session. When a preset is selected, you have the option to import all presets or just selected ones.

#### IMPORT PRESET FROM FILE TO SELECTED RACK

Imports a single preset to the selected rack.

### EXPORT ALL USER PRESETS

Creates a file with all user presets for the entire session, not just those of the selected rack. These are stored as one xps file that can be saved to other media.

### EXPORT ALL RACK PRESETS AND STATES

Exports a file that contains the presets and states—not just the user presets—of all channels in the session.

### RACKS MENU: SAVE AND COPY PRESETS

#### SAVE

Saves the current condition to the loaded preset, overwriting it.

#### SAVE TO USER PRESETS

Creates a new user preset. These presets are saved as part of the current session. Consider this a "Save As" function.

#### SAVE PRESET TO FILE

Copies the current rack condition and creates a file that is saved at a user-defined location. This preset file can be imported to any session (the extension is xps). Unlike user presets, these are not embedded in the session.

#### RENAME PRESET

Changes the name of the current rack preset.

### RACKS MENU: COPY/PASTE PRESETS

#### COPY PRESET

Copies the current rack condition to the clipboard. A copied rack preset can be pasted to any other rack in the current session.

#### PASTE PRESET

Pastes the copied rack preset from the clipboard to another rack. A dialog box lets you choose what rack information will be replaced in the target rack and what will be left unchanged.

> **!** Note: Before you paste a rack preset to another rack, make certain that the plugins and their sequence is the same on the source and target racks. Loading a preset to a rack that uses a plugin chainer order that's different from that of the current rack will apply the new preset to all scenes. This action cannot be undone.

## <span>2e</span> Racks Menu: Rack Status and Attributes

### Set Rack Color
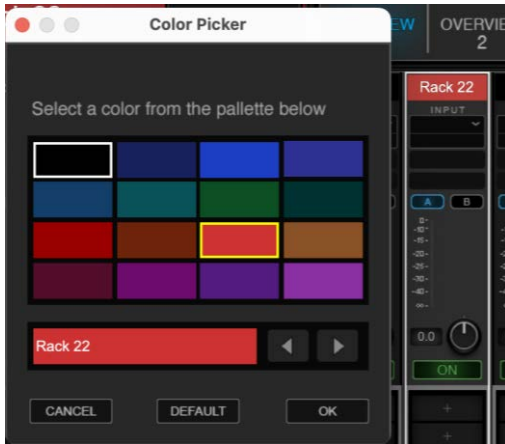


Opens a color palette that lets you assign an identifying color to the selected rack. Use the left/right arrows to move between racks for color assignment.

"Default" resets the color to black. Color setting is stored in Rack Presets and Snapshots.

### Update Rack Status

You can update the current rack settings to a snapshot:



- **Update Rack in Current Snapshot** updates the rack settings in the currently loaded (recalled) snapshot.
- **Update Rack In Selected Snapshots** updates the current rack settings to in selected snapshots.

Use the checkbox to select the snapshot(s) you want to update. In this example, snapshots 2 and 3 will be updated with the settings of rack 1.

### Rack Recall Safe Off

Sets the recall safe condition of the rack. When the rack is in a Recall Safe condition, a small SAFE icon is shown below the Rack name in the Top Bar.

#### AUTO-ROUTE ALL RACKS

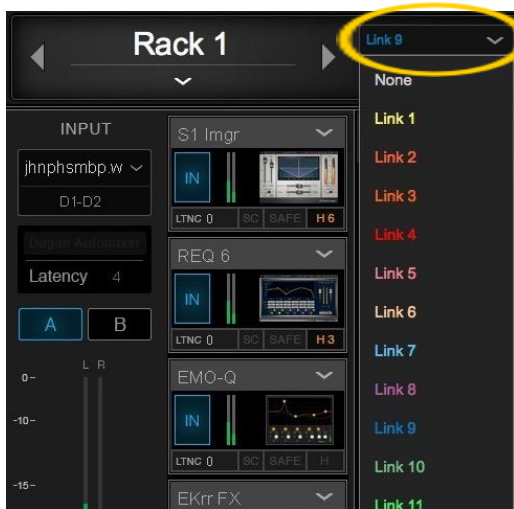Automatically creates routing for all racks in a session.

#### VST3 Plugins

Used to scan and manage VST3 Plugins.

### ③ Current Preset

Displays the rack preset if one is loaded. An asterisk (*) indicates that the preset has been modified since it was loaded.

### ④ Link Group Assignment



Use the Link Group Assignment menu to assign the selected rack to one of sixteen link groups. To open the menu, click the arrow in the Link Group Assignment box (circled yellow). When racks are linked together, the identical parameter controls of all members of the group move together. Variable controls are linked relatively: if controls are set to different values before they are linked, they will move together, and their offsets will be preserved.

Controls that are linked together:
- A/B input and output selection
- Input and output gain
- Plugin In/Out
- Mute

Plugin parameter controls are not linked.

The Link Group Assignment box displays the name of the link group that the rack is assigned to. A link group can include up to 64 racks, but a single rack can be a member of only one link group. The Patch window provides an overview of all link patches in the session and allows you to make many assignments simultaneously.

## ⑤ Latency Group Assignment



Use the Latency Group Assignment drop-down menu to assign the selected rack to a latency group. Latency groups are used to align the delays of several racks and to set the delay of a group of racks.
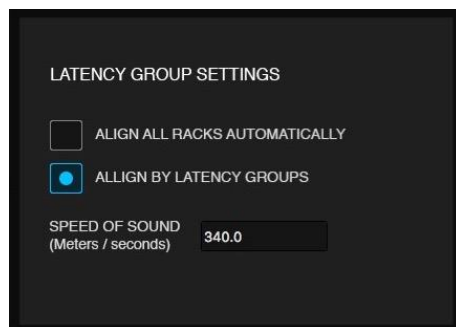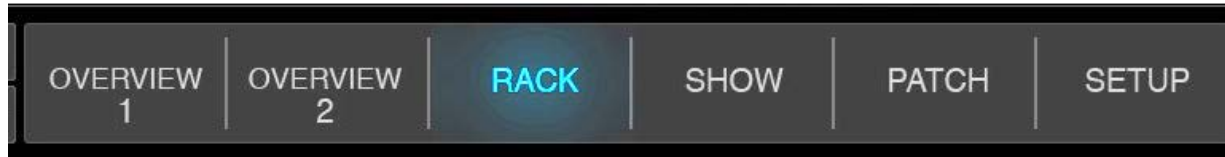


To establish latency groups, the Latency Group setting in the Settings page (Setup>Settings) must be set to "Align by Latency Groups." Setting "Align All Racks Automatically" aligns *all racks* to match the rack with the greatest latency. Latency is explained in detail in the Patch Window section of this user guide.
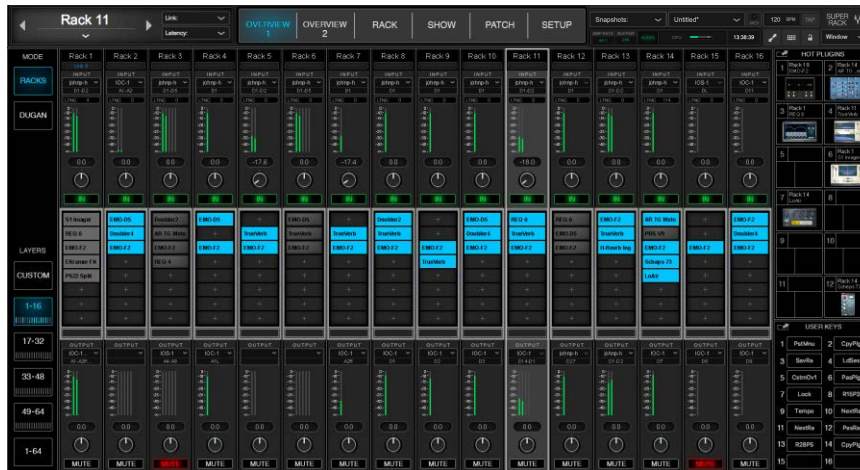
## Center Section: Window Selection Tabs



Use these tabs to select one of the six SuperRack windows.

### OVERVIEW 1 AND OVERVIEW 2 WINDOWS



The two Overview windows provide a broad look at your session. Most rack functions can be controlled here. Plugins are added, removed, disabled, and bypassed in the small plugin rack. Click a plugin's icon to access its full interface. Drag any plugin icon to move it from rack to rack or within its own rack.

There are five Overview layers: four layers with 16 racks and one layer that displays the inputs and outputs of all 64 racks.

### RACK WINDOW
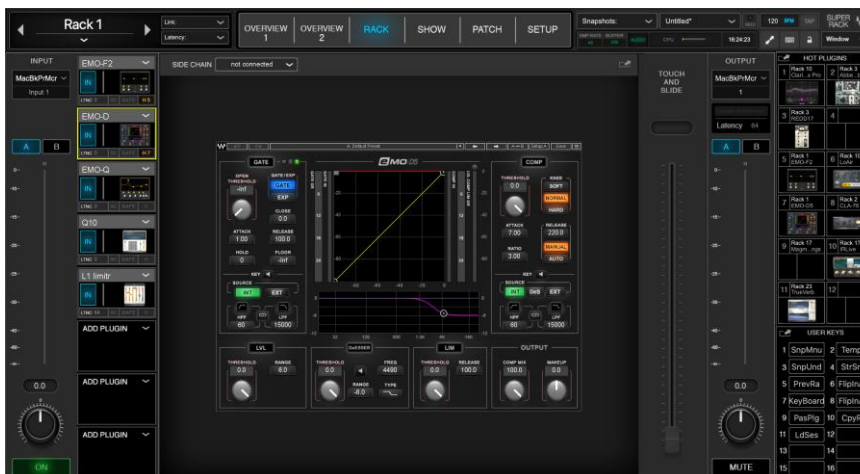


The Rack window is a detailed view of the selected rack. It's used to control plugins, assign I/Os, set input and output levels, and recall hot plugins and user-assigned keys. When a plugin in the plugin rack is selected, its complete interface is displayed in the middle of the screen.

## SHOW WINDOW



The Show window is SuperRack's filing center, where snapshots and sessions are managed.

The window consists of three pages:

- Sessions
- Snapshots
- Recall Safe

## PATCH WINDOW
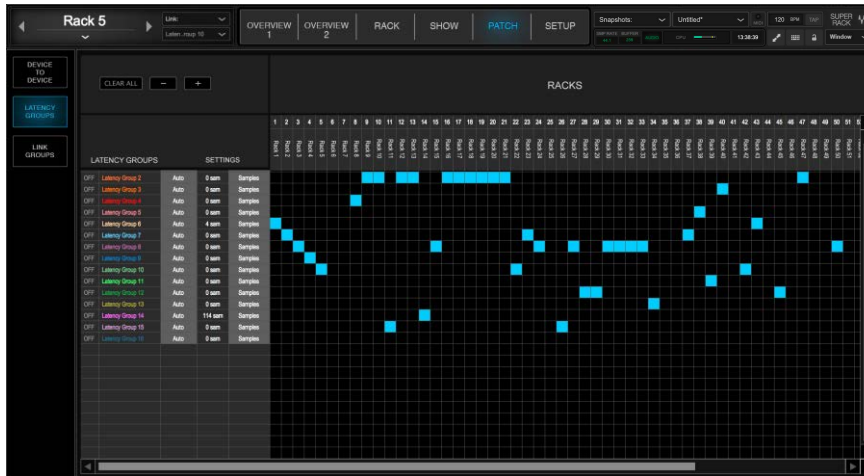


This is a patch bay for managing latency groups and overseeing link groups. Latency group and Link Group assignments are made on a rack -by-rack basis from the Top Bar. In the Patch window, however, you can view and control the groups on all the racks.

SuperRack Performer / User Guide
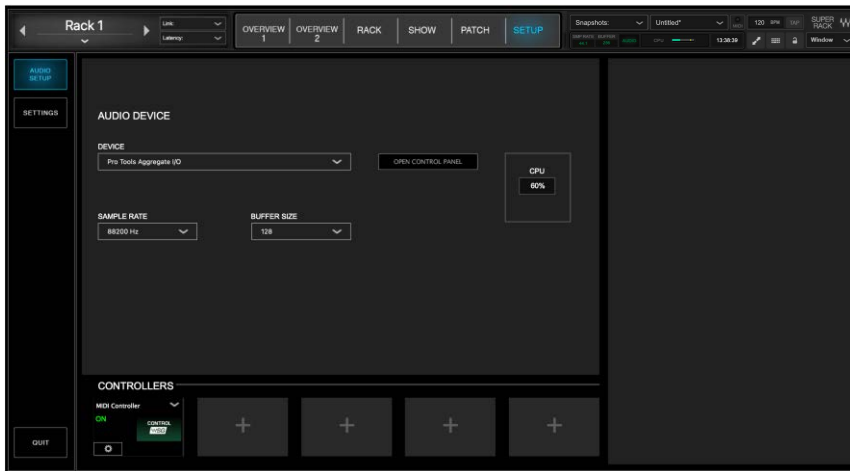
## SETUP WINDOW



The Setup widow is where you select a sound card, assign drivers and control protocols, and set preferences.

## Tearing Off Windows for Multiple Displays

SuperRack can be controlled with up to four displays. This enables you to manage several parts of a session simultaneously. Create additional display views by "tearing off" tabs from the original screen display. Click and drag downward, away from the Top Bar. A new window will appear.

This is demonstrated in the Floating Panels section.

## *Right Panel: Snapshots and Utilities*



### ① Snapshot Menu
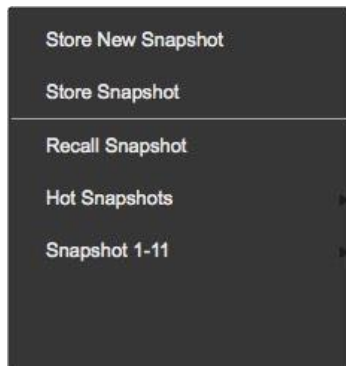
The Snapshot menu is used to store and recall snapshots for all current parameters. The name of the current snapshot and its index number are displayed in the box. If a scene has been modified since it was recalled, its name is followed by an asterisk (*). A session can hold up to 1024 snapshots.
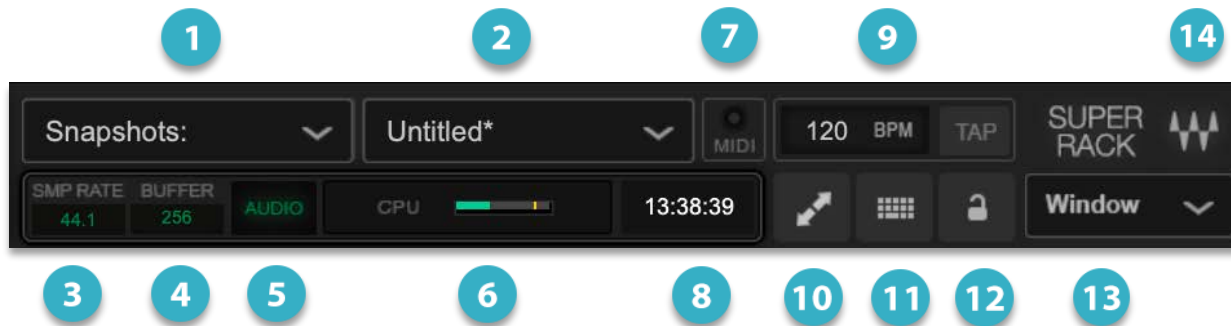
Snapshots are discussed at length in the Snapshots section of the Show chapter.

**STORE NEW SNAPSHOT**
Creates a new user-named snapshot based on the current SuperRack condition.

**STORE SNAPSHOT**
Overwrites the current snapshot with the current SuperRack condition.

**RECALL SNAPSHOT**
Directly recalls a snapshot based on its place in the snapshot list. Type an index number and the corresponding snapshot will be recalled.

**HOT SNAPSHOTS**
Provides immediate access to up to eight "Hot" (i.e., high priority) snapshots.

**SNAPSHOTS LIST (1–32; 33–64;...968–1024)**
Shows all snapshots associated with the session, in banks of 32 snapshots. Maximum number of snapshots per session is 1024.

Learn more about how SuperRack handles snapshots in Part 7: Show Window.

**2  Session Menu**

Used to open and save sessions and templates:

**Session:** Displays the name of the current session.

**Open Session:** Opens a session from a file.

**Open Template:** Opens a session template, which you will save as a regular session.

**Save Session:** Saves the current session, overwriting the previous save to that file (in other words, a regular save).

**Save Session As**: Saves the current session to a new file.

**Save Template:** Creates a new SuperRack template from the current session.

**3  Sample Rate**

Displays system sample rate (see Audio Setup page).

**4  Buffer**

Displays interface buffer size.

**5  Audio**

Green: System is properly configured, no audio issues.
Gray: System is not configured properly. No audio.

## ⑥ CPU Meter

 The **CPU** indicator bar displays *average* CPU. The small yellow line shows *peak* load. The color of the bar indicates CPU status. The CPU value is shown numerically in the Audio Setup page.

| METER | INDICATION |
|---|---|
| **GREEN BAR** | CPU load within normal range. |
| **RED BAR** | CPU load is too high. |
| **Red Peak Line** | Peak CPU too high. |

A high CPU warning indicates that SuperRack is requesting data at a rate that the host currently provide. Here are two common CPU overload conditions and suggested solutions.

| | |
|---|---|
| **PROCESSING OVERLOAD** (momentary or constant) | **POSSIBLE SOLUTION: DISABLE SOME PLUGINS** This is the most common cause of CPU overload. First remove some CPU-heavy plugins. If this helps, try to restructure you racks so that you can manage with fewer of these plugins. |
| **HIGH AUDIO THROUGHPUT** (channels over the audio Interface) | **POSSIBLE SOLUTION: INCREASE BUFFER SIZE** A larger buffer will result in more stability but greater latency. |

## ⑦ MIDI Activity LED

Flashes when incoming MIDI is present.

### Utilities

**8** CLOCK

The clock displays the current time on the host computer. When MIDI Control is used, this box can display MIDI timecode.

**9** GLOBAL TEMPO SECTION (BPM)

This section sets the tempo for all relevant plugins. By default, tempo-based Waves plugins are in a "tempo listen" state. Their tempo rates will fix to this value. Alternatively, click a rhythm on the Tap button. These taps are averaged to create a tempo value. You can also enter a numeric value in the box below. The tempo light flashes at the designated tempo.

**10** FULL SCREEN MODE

**Full Screen On**: Fits the SuperRack window to 100% of the resolution set for the display (screen space), while maintaining the aspect ratio. Click again or tap ESC to exit Full Screen mode.
**Full Screen Off**: Window behavior follows the Scaling selection in the Settings window.

**11** ON-SCREEN KEYBOARD

Accesses the operating system's touchscreen keyboard. Use this to enter text information on a touchscreen display when a hardware keyboard is not available.

**12** LOCK BUTTON

Click the Lock button to prevent unintended changes to the session during a show. The scope of Lock is established in the Settings page.

**13** FLOATING PANELS LIST

This is a list of currently detached panels (e.g., hot plugins, user keys, plugins, windows). Select a panel from the drop-down menu to navigate directly to it. The name of the session is shown at the top of the list. Click on this name to return to the main view. Refer to the [Floating Panels](#) section to learn more

**14** GET INFO PANEL (CLICK ON SUPERRACK LOGO)

Click this button to open the SuperRack information panel. This view includes the version of SuperRack Performer that you're running, as well as a link to the user guide.

# Part 3: Setup Window

The Setup window is used to monitor the network, set preferences, and assign devices. There are two pages.
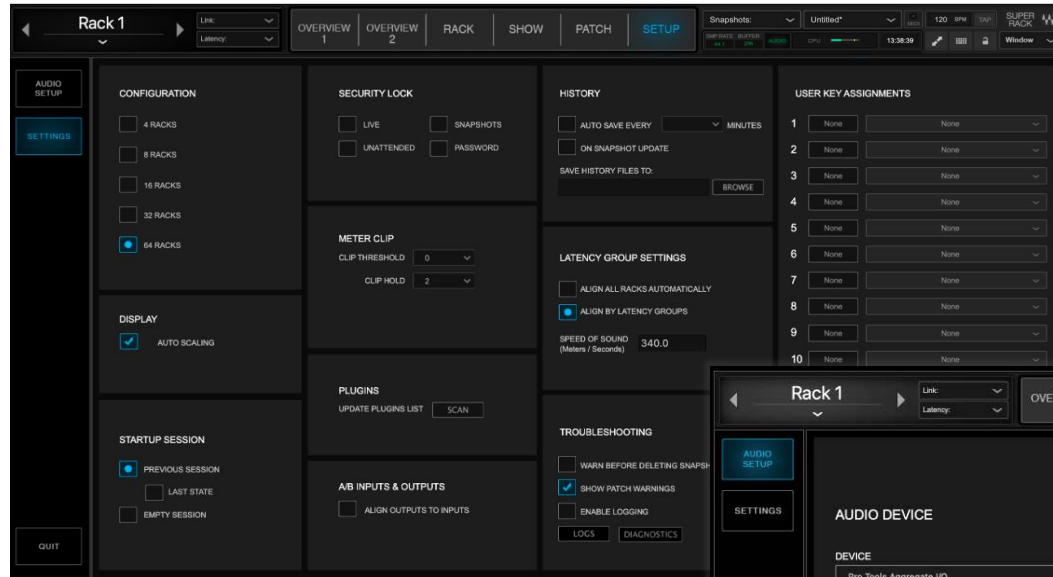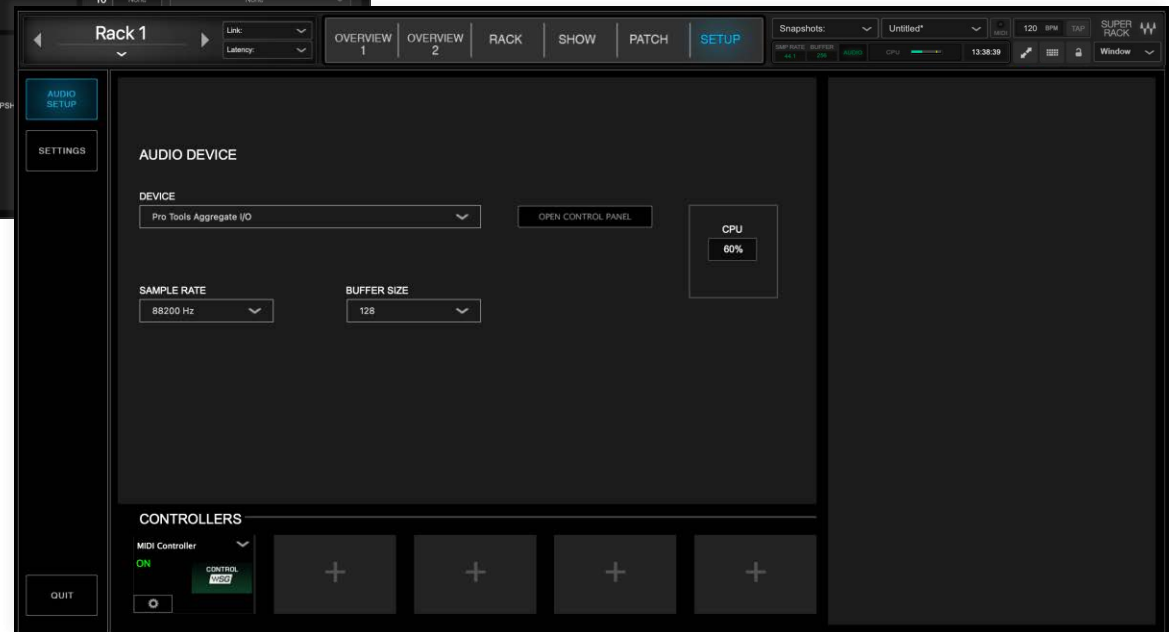


**Settings Page** (left)

Use to set the number of racks in the session, set preferences, and assign user keys.

**Audio Settings Page**
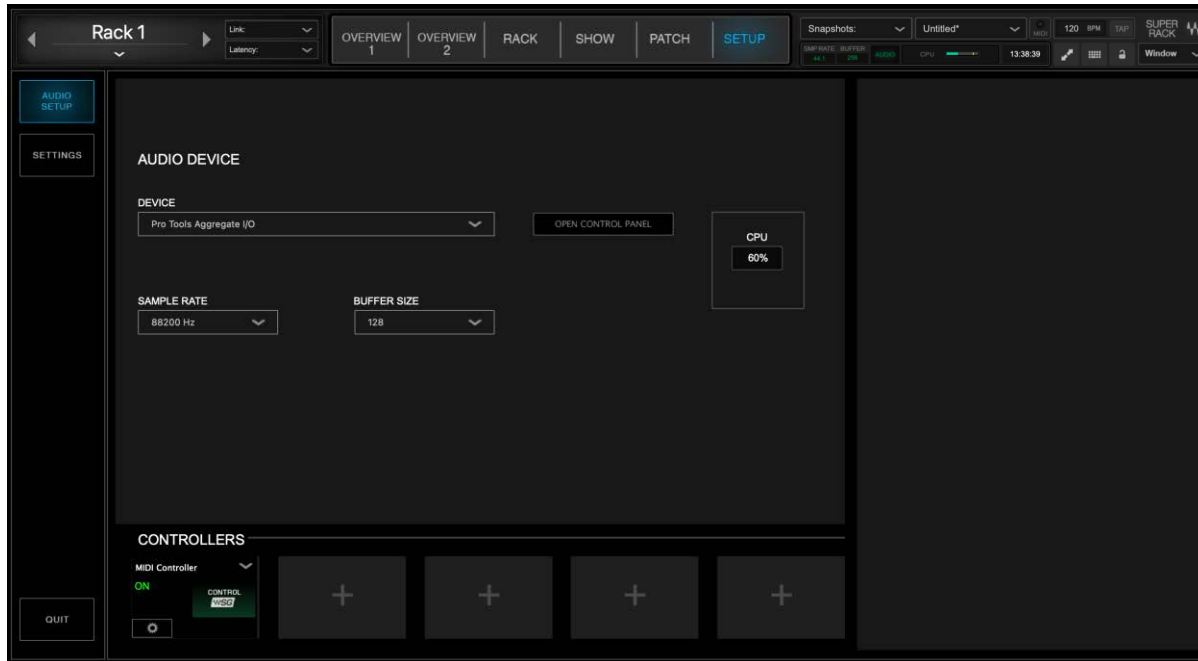
Assign and configure I/O

Use the buttons on the left sidebar to move between Setup pages.

## Audio Setup Page

The Audio Setup page is about assigning a sound card to SuperRack and then setting a few variables that determine how they will behave together. This is also where you can assign external controllers to SuperRack.



**1** All available ASIO/Core Audio drivers are displayed in the **Device** drop-down menu. Device selection is stored with the SuperRack preferences, not with a session, so if a session requires a different device than the one currently in use, the device must be changed manually.
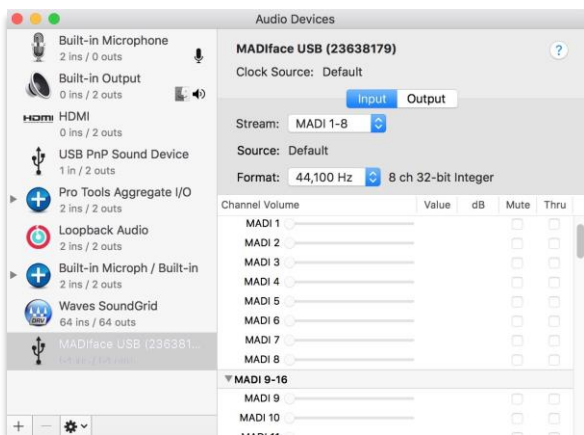


**2** Once a device is selected, you can open its **Control Panel** to access driver settings (left).

**3** If the device can reset its **Sample Rate** from an external command (i.e., SuperRack Performer), the Control Panel Sample Rate indicator will reflect that value. If the device cannot be reset externally, then it must be set here.

④ Use the **Buffer** menu indicator shows the how much of the selected buffer is being used. When this value becomes excessive, or if you are experiencing audio drops, you may need to remove some heavy plugins or increase the buffer size. When many channels are going in/out of the driver to several destinations, the driver buffer size may need to be increased.

⑤ The **CPU** value box indicates the CPU load of the host processor, expressed as a percentage of CPU available to the application.

## CONTROLLERS

The Controllers slots at the bottom of the System Inventory page are used to assign up to five control devices. These devices can be used to control SuperRack functions. Click on a controller slot to open the drop-down menu and select a controller protocol. All installed controller drivers appear in the list, whether the device is present or not.
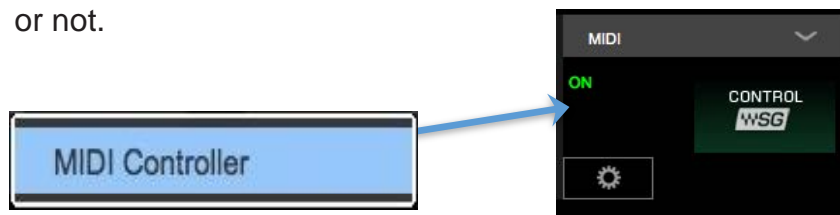


Controller device status is displayed on the device icon.

N/A: Device corresponding to selected protocol is not present or not functioning properly.

On: Device is present and operational.

Once a controller is selected and functioning properly, click on the Gear button to open its control panel.Using SuperRack with controllers is discussed in detail at the end of this user guide.

## Settings Page

Use the Settings page to set overall system preferences and to assign user keys that can be recalled in the Rack and Overview windows.

SuperRack Performer / User Guide

## SETTINGS PAGE SECTIONS

**①  SuperRack Configuration**

Sets the number of racks in the session. Limiting the number of racks in a session to no more than needed makes for a cleaner display.

Configuration is normally established when a session is created, but you can change the number of racks in an existing session. However, if you reduce the number of racks in a session, the settings in racks that are no longer part of the session will be discarded. Save a session under a revised name before you reduce its size.

Range: 4, 8, 16, 32, 64 racks

**②  Display**
SuperRack's native display resolution is 1920x1080 (HD). The Display control sets how the SuperRack window relates to displays.

**Auto Scaling On** Scales SuperRack's interface to occupy 90% of the screen of each connected display. Aspect ratio is maintained.

**Auto Scaling Off** (default): SuperRack maintains its native size, regardless of the resolution of the display or displays.

**③  Startup Session**

Determines the SuperRack Performer startup condition.

| | |
|---|---|
| **Previous Session** | Loads the most recent session to the last user save. |
| **Last State** | Loads the most recent session to its last state before quitting. |
| **Empty Session** | Mixer opens with a blank session. |

**④ Security Lock**

Determines which actions are disabled when the Lock button in the top bar is engaged.

- Live          Routing and plugin exchange are locked
- Unattended    Entire GUI is locked
- Snapshots     Snapshots cannot be changed, fired, etc.
- Password      Lets you set a password for the entire lock.

When neither "Live" nor "Unattended" are selected, routing and plugin exchange are enabled.

**⑤ Meter Clip Settings**

Clip Threshold determines the level at which the clip light turns red. When Clip Threshold is set below 0 dBFS, a warning appears before clipping actually occurs.
Range: 0 dBFS to -18 dBFS,
Clip Hold: 0 seconds–5 seconds

**Plugins**

**⑥**

Rescans the plugins folder. This is useful, for example, if you download a demo plugin and you don't want to restart SuperRack. Use this as well when you configure a session offline.

**A/B Inputs & Outputs** (Link A/B Inputs and Outputs)

**⑦**

Each rack has inputs A and B, and outputs A and B. Linking between them means that switching from input A to input B will switch the outputs correspondingly. When not selected, inputs and outputs act independently of each other.

**8 History**

Establishes preferences for auto-saving.

**Autosave Every xx Minutes:** Makes a complete copy the current SuperRack condition at defined intervals.

Range: 3 minutes–30 minutes

**On Snapshot Update**: Auto-save each time a snapshot is stored, recalled, or modified.

**Save History Files To:** Each time SuperRack does an auto-save, a new History file is created. Auto-saved files are not deleted; new saves do not replace old saves. SuperRack provides a default location for history files:

Mac: Users/Shared/Waves Audio/SuperRack/history
Windows: Users\Public\Waves\SuperRack\history

Use the **Browse** button to select a new location. This path is saved in the session preferences.

User-saved session files are saved in the adjacent Sessions folder. Delete history files and session files using the host computer, not the SuperRack application.

**9 Latency Group Settings**

**Align All Racks Automatically**:

All racks are time-aligned to one delay value, which can be the main output of the mixing desk or another buss. The rack with the greatest latency sets the latency for the entire session. In this mode, individual latency groups cannot be delayed.

**Align by Latency Group**

All of the racks within each rack will be aligned together, but the latency groups will not be aligned.

Latency values are set in the Patch window.

**Speed of Sound**

User-determined speed of sound measurement for use in delay-related calculations. Display is in meters/second**.**

Default: 340 meters/second

### 10  Troubleshooting

**Warn Before Deleting Snapshots**

Presents a prompt before deleting any snapshot.

**Show Patch Warnings**

Displays a warning when attempting to change a patch.

**Logging**

SuperRack constantly logs its activity. Select **Enable Logging** to provide verbose logging for troubleshooting purposes. Click the **Logs** button to view or copy the log files.

Waves technical support may ask you to create and send a comprehensive diagnostics report of the SG operating environment, including certain details of your computer. To scan your computer and create a report, click **Diagnostics**— you will be presented a privacy notice. If you agree to its conditions, the diagnostics file will be placed on your desktop.

### 11  User Keys

In the Overview windows and the Rack window, there is a panel with 16 programmable buttons that can be assigned to important or often-used commands. This, among other things, lets you issue commands that are in a different window, without leaving your current view. It also lets you immediately access certain menu items that are deep inside multi-level, drop-down menus.

The User Keys panel can be torn off and floated to any location on the display. Click the arrow in the top left corner of the panel to tear it off and to reattach it. User-assignable keys can also be recalled with keyboard Function Keys.

Refer to the Floating Panels section for details about undocking panels.

## ASSIGNING USER KEYS
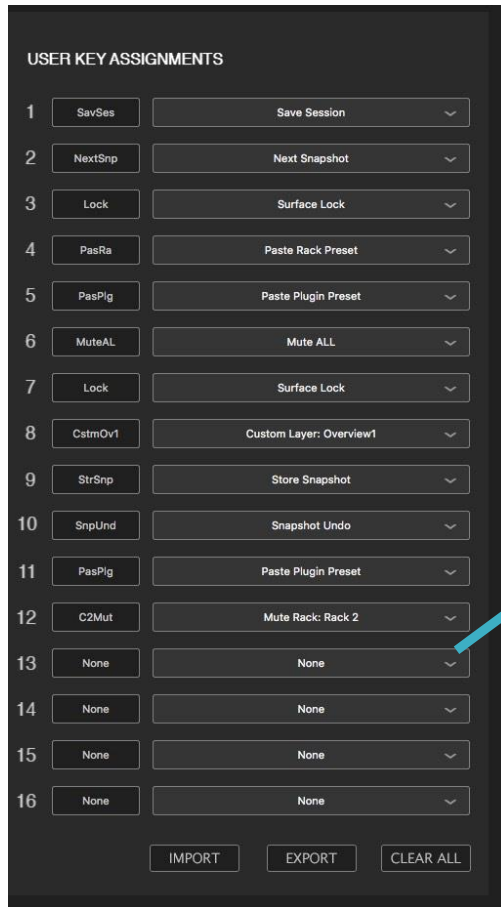


User Keys are assigned in the User Key Assignments panel on the right side of the Settings page. Select one of the 16 buttons, open the drop-down menu, and choose a function or command.
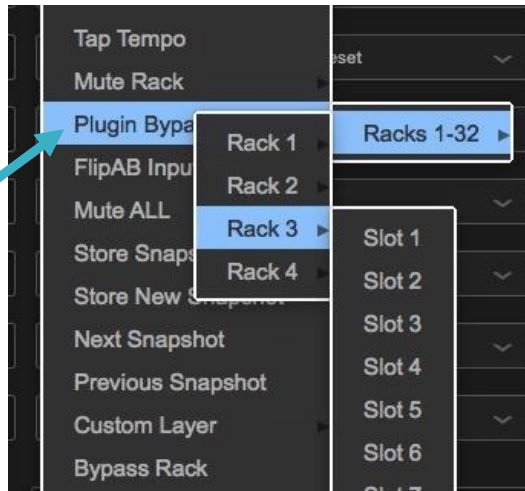
Use the buttons at the bottom of the panel to import and export user-assignable keys. Clear All removes all User Key assignments.

# Part 4: Patch Window

The Rack Window is a grid that lets you quickly view and patch assignments for link groups and latency groups. Racks can be assigned to link groups and latency groups on a rack-by-rack basis in the Top Bar, but the Patch window provides an overview of all assignments.

## PATCH VIEW SELECTION

Use the buttons on the left side of the Patch Window to choose between Link Groups or Latency Groups patching.

## *Link Groups*
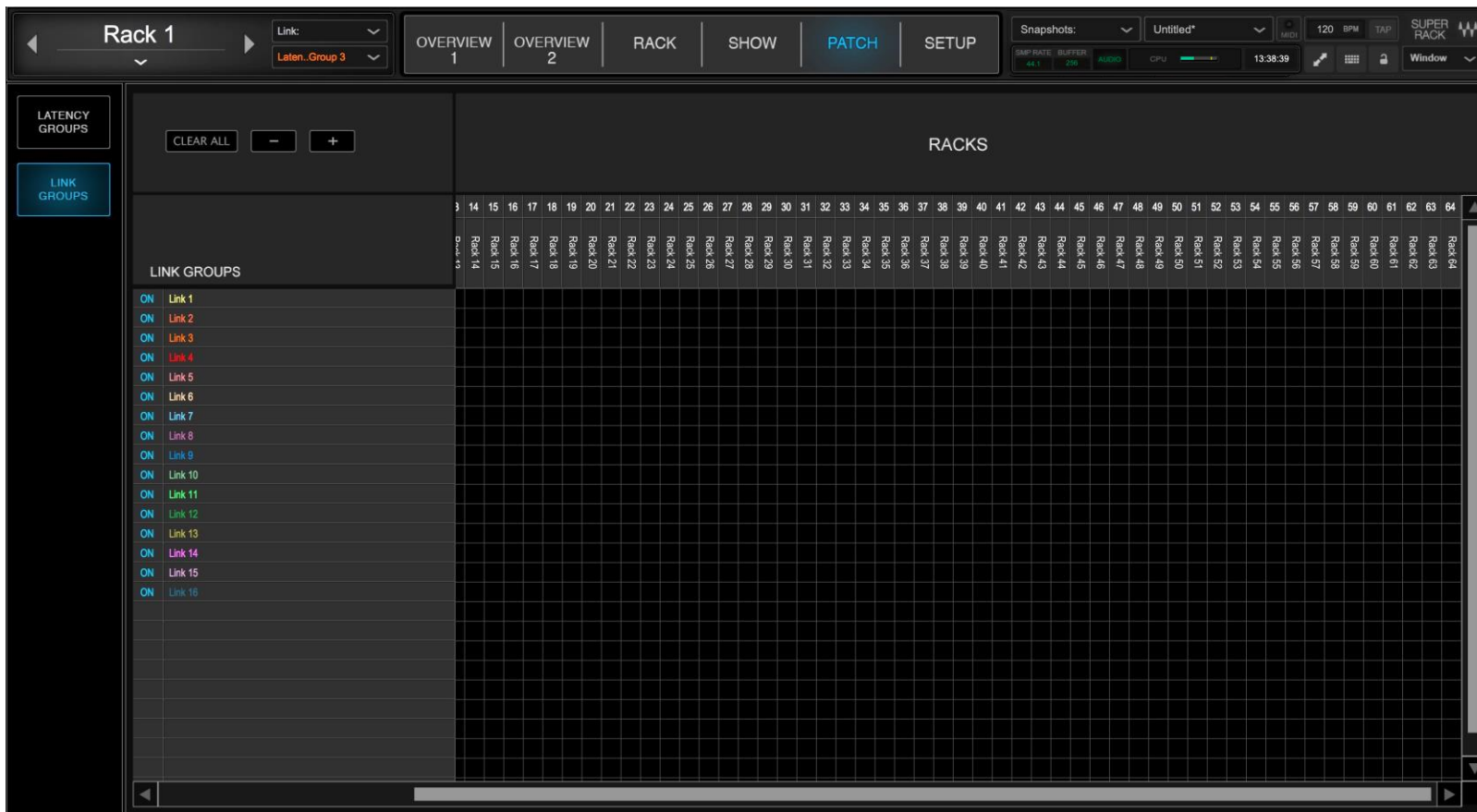
When racks are linked, the identical controls of all members of the group move together. Variable controls are linked relatively. If controls are set to different values before they are linked, they will move together, and their offsets will be preserved.

Controls that are linked:

- A/B input and output selection
- Input and output gain
- Plugin In/Out
- Mute

Plugin controls are not linked.

Assign a rack to a link group by clicking on the intersection of the Link and the Rack. Click again to cancel the link.



There are 16 link groups, shown on the left. Any link group can include up to 64 racks (top), depending on the size of the session, but a single rack can be a member of only one link group. The Patch window is an easy way to assign racks to link groups and to gain an overview of all link patches in the session.

Use the ON button on the left to engage or disengage a link group.
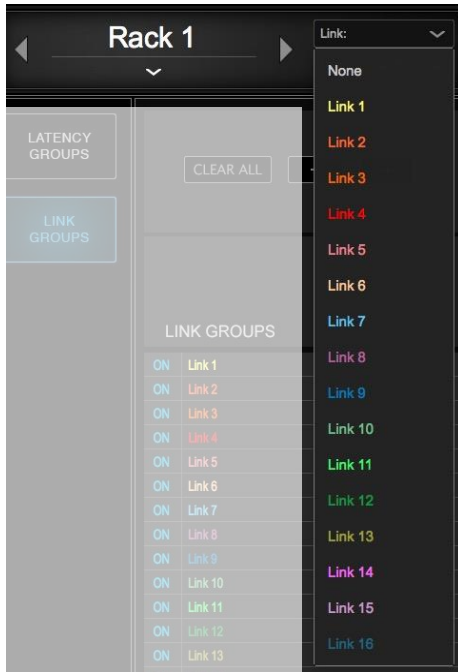
You can also use the Link Groups Assignment drop-down menu in the Top Bar to assign the selected rack to one of sixteen link groups. This assignment is reflected in the Link Groups patch.

## Latency Groups

The Latency Groups page provides an overview of assignments between racks and latency groups. This is also where you assign group latency.

### Managing Latency in SuperRack

Latency is the delay imposed by the rack's processing chain. Plugin processing is the most common cause of latency. Many plugins have zero latency, others a moderate amount, and some have a great deal. These signals must be time-aligned at the rack's output, otherwise the signals will be out of sync with each other.

Use the Latency Groups framework in the Patch window to assign racks to latency groups, define the group's behavior, and assign delay values per rack. You can also assign a rack to a latency group in the Top Bar.

1. RACK NUMBER

2. RACK NAME

3. LATENCY GROUP ON/OFF
   Turning off a latency group suspends it from latency compensation calculations.

4. LATENCY GROUP NAME
   Double-click to rename the group

5. ASSIGNMENT MODE
   **Auto**: Group latency group is calculated automatically. It varies depending on the latency of plugins in the group.
   **Manual**: In this mode, you can assign a latency value to the latency group.

**6** LATENCY GROUP VALUE

In the Manual Assignment mode, this setting provides a fixed group latency. Group latency will never be less or more than this value. This value box is disabled in the Auto Assignment Mode.

**7** DELAY CALCULATION UNIT

Unit of measurement used for displaying the delay of a latency group. This selection does not affect the value, only the display. The delay value can be entered in samples, milliseconds, feet, or meters.

## LATENCY COMPENSATION

Latency compensation assures that signals are time-aligned, regardless of how they are processed or routed. Depending on settings, SuperRack can compensate for latency differences in two ways:

- Align the racks in a latency group
- Align every rack and plugin to one delay group

### ALIGNING PLUGINS IN A LATENCY GROUP

The diagram below illustrates three racks, each with a single plugin. Each rack has a different latency, so the racks are not time-aligned in the rack. Latency compensation delays the racks with the least latencies (in this case, rack #2 and rack #3) to match the plugin with the greatest latency (plugin #1). In this example, rack #2 was delayed by an additional 55 samples and rack #2 an additional 97 samples. The three plugins in the rack are now aligned with each other. The rack reports a latency of 100 samples.

**Align Racks**

| | | |
|---|---|---|
| Rack #1 | 100 samples | 100 samples +0 samples |
| Rack #2 | 45 samples | 45 samples +55 samples |
| Rack #3 | 3 samples | 3 +97 samples |

**Set Latency Compensation Off**
Latency: 0.0ms (1 samples)
Rack Latency: 1.4ms (66 samples)
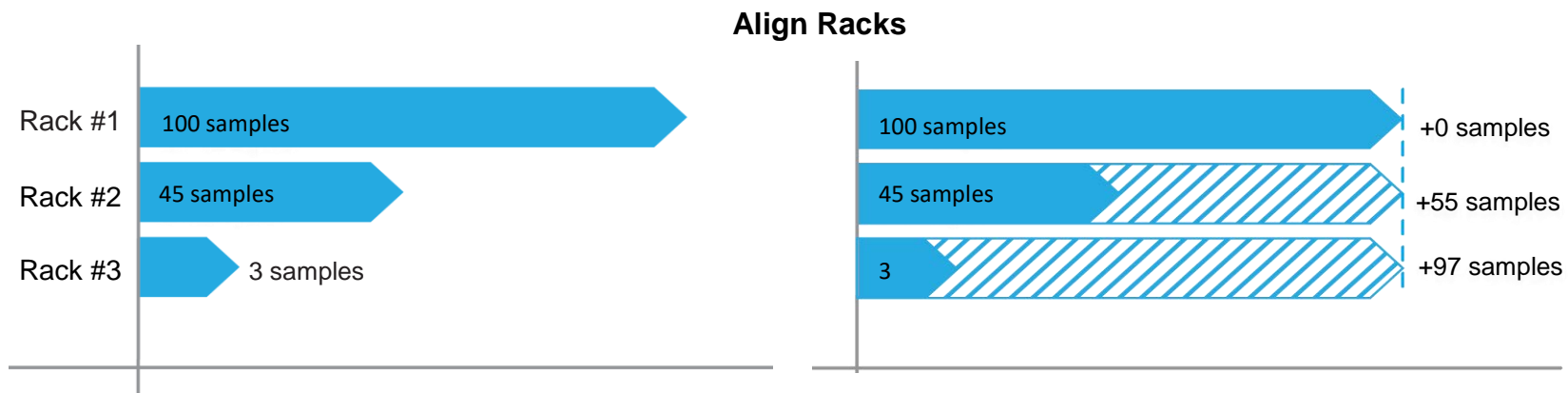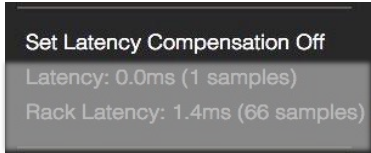
You can remove individual plugins from the rack's latency compensation calculations. This is done in the plugin's drop-down menu. Turning off a plugin's latency compensation does not affect its actual latency: it merely takes it out of latency calculations. If, in the example above, plugin #1 is removed from latency compensation, the rack will report a latency of only 45 samples. Plugin #1 will still have a latency of 100 samples, but it will not affect the latencies of the other plugins in the rack.

## Latency Groups

A latency group is a collection of racks whose delays are controlled together, whether for latency compensation or group delay. Assign racks to latency groups using the Latency Groups drop-down menu in the Top Bar or the Patch Window, Latency Group page.

Plugins and racks can be aligned to one common latency or assigned to latency groups. This is selected in the Settings page.



**LATENCY GROUP SETTINGS**
ALIGN ALL RACKS AUTOMATICALLY
ALLIGN BY LATENCY GROUPS
SPEED OF SOUND (Meters / seconds)  340.0

**Align all Racks Automatically**  Latency compensation is calculated across the entire session; all racks are time-aligned together. Latency for the entire session is calculated based on the rack with the greatest latency.

**Align by Latency Groups**  Several racks can be combined to form up to 16 latency groups. All of the racks in a latency group are time aligned with each other, so that when their signals return to the sound card or interface, they are all in sync. There are,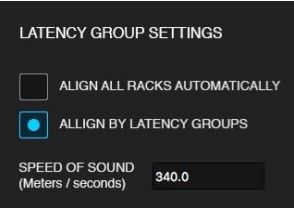 in addition, two modes within the Align by Latency Groups setting. Latency groups can be delayed so that racks to specific I/Os and their delays controlled.

Align by Latency Groups offers two modes for managing each latency group. Choose between these modes in the Patch window (Patch>Latency Groups).



| LATENCY GROUPS | | SETTINGS | | |
|---|---|---|---|---|
| ON | Latency Group 1 | Manual | 0 sam | Samples |
| ON | Latency Group 2 | Auto | 0 sam | Samples |
| ON | Latency Group 3 | Auto | 0 sam | Samples |

**Auto mode** calculates latency compensation dynamically. Rack latency adjusts to match the delay of the plugin in the group with the highest latency.

**Manual mode** lets you set a specific delay for the group. Latency will never go above or below the specified value. You cannot insert a plugin if it will result in this latency value being exceeded.

To manually set a group's latency value, toggle the Auto/Manual button to Manual. Double-click on the value box to enter a number.

## Latency Group Alignment

In the earlier example, three *plugins* in a rack were time aligned so that all were in sync at the rack output. In the following example, three *racks* are assigned to a latency group. All the racks are latency corrected internally, but each rack has its own latency, so they must be time aligned.

This latency group consists to three racks. Rack #1 has a latency of 100 samples. This is the rack that we aligned in the previous example. Rack #13 and Rack #27 have lower latencies.

**Align Racks in a Latency Group**

| | | |
|---|---|---|
| Rack #1 | 100 samples | 100 samples — +32 samples |
| Rack #13 | 132 samples | 132 samples — +0 samples |
| Rack #27 | 8 samples | 8 — +124 samples |
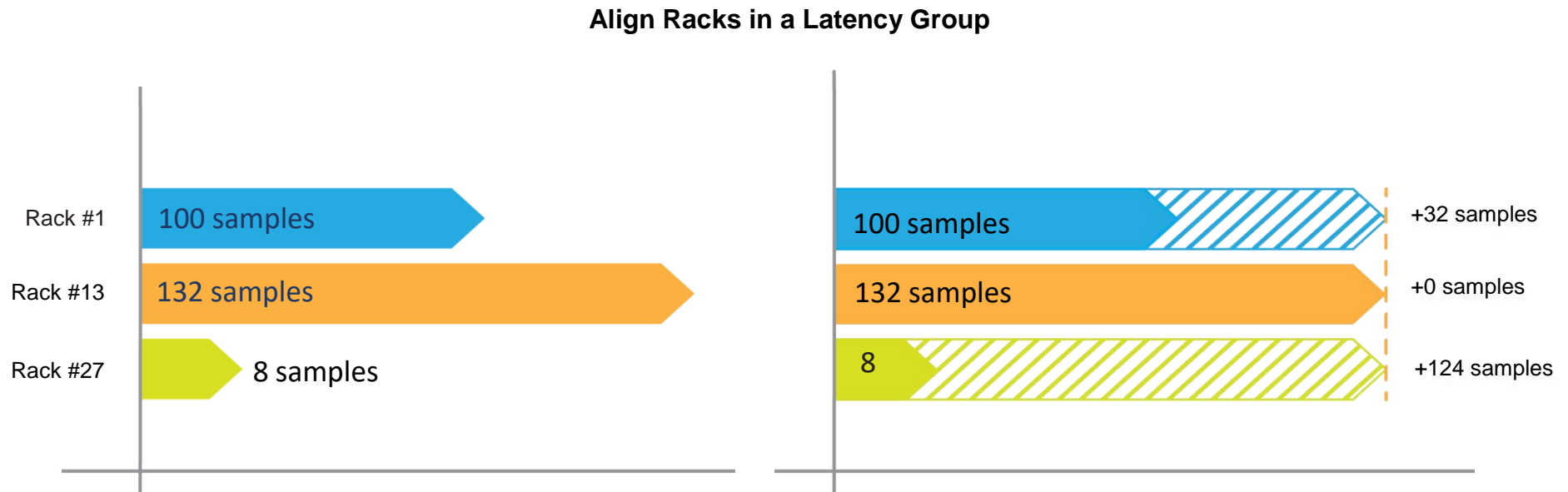
Delay was added to Rack #1 and Rack #27 to align with rack #13, the rack with the greatest latency. The resulting Latency Group delay is 132 samples.

Plugin and system latency values depend on the host computer CPU.

# Part 5: Rack Window

The Rack window is used to control all the settings of a rack. It presents the complete interface of any plugin in the rack (up to eight altogether). This enables convenient assignment of input and output I/Os; and it provides for rearranging plugin sequence in a rack, thus altering processing signal flow.

There's a lot of overlap between the Rack window and the Overview windows, but they are used differently. The Overview windows show a condensed view of an *entire layer* of racks so that you can quickly interpret and manage several racks at once. The Rack window, on the other hand, presents you with everything you need to set up and control *one* rack. Use it to set every detail of a rack

The window is divided into four sections.
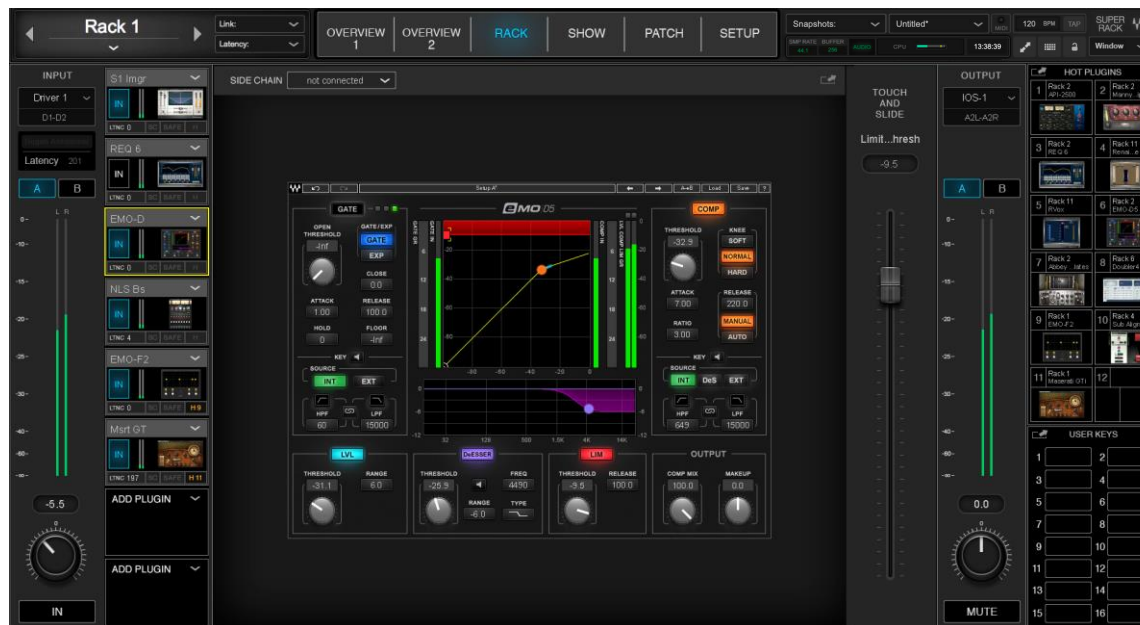


**1** **Input Section**
Select input set A or B, assign I/O channels, and adjust input level. Rack input format is established here.

**2** **Plugins Rack**
Add up to eight plugins and external inserts. Control latency compensation and recall safe.

**3** **Plugin Pane**
The complete plugin interface.

**4** **Output section**
Control rack output routing to I/Os; Control output gain.

## Selecting a Rack

The Rack window is all about controlling a specific selected rack, so you need to be able to get to it quickly. There are three ways to do this:

- Use the Racks drop-down menu to navigate directly to a Rack (Top Bar).
- Use the arrows next to the Rack Name box to move up and down the rack, one rack at a time (Top Bar).
- Select a rack in the Overview window. Touch the plugin icon to open the complete interface.

## Rack Input Section

The Input Strip on the left side of the interface is used to select inputs, choose device I/O device channel, control input gain, and bypass the rack.
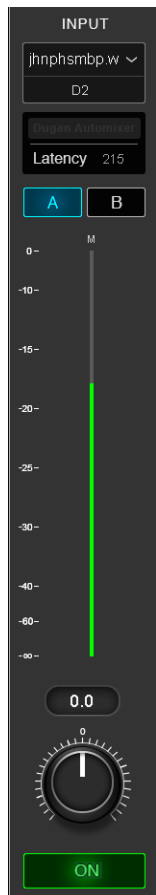
**Input I/O source:** shows your assigned ASIO / Core Audio interface

**Latency Value Box**: shows the total latency of the rack.

**Input Set Select**: lets you select between two input sets: A and B. This is useful, for example, in a situation where two mixers share the same SuperRack, or when different songs use different channels on the main consoles (e.g., singer has moved to another mic). It is also a convenient way to switch between a virtual soundcheck and the show.

The full-scale **Input Meter** displays post-input-trim gain. The number of meter bars reflects the format of the input I/O device. The meter turns red when the input level is clipping. Adjust clip threshold in the Settings page.

The **Input Gain Knob** controls the rack input level. The position of the input knob is shown in the value box. Range: -18 dB to +18 dB.

The **On** button bypasses/unbypasses the rack's plugin processing. The rack still passes audio.

## Assigning Rack Inputs

Rack input is assigned at the top of the rack. The number and format of I/O device channels routed to the rack determines its configuration and define which plugins can be used.
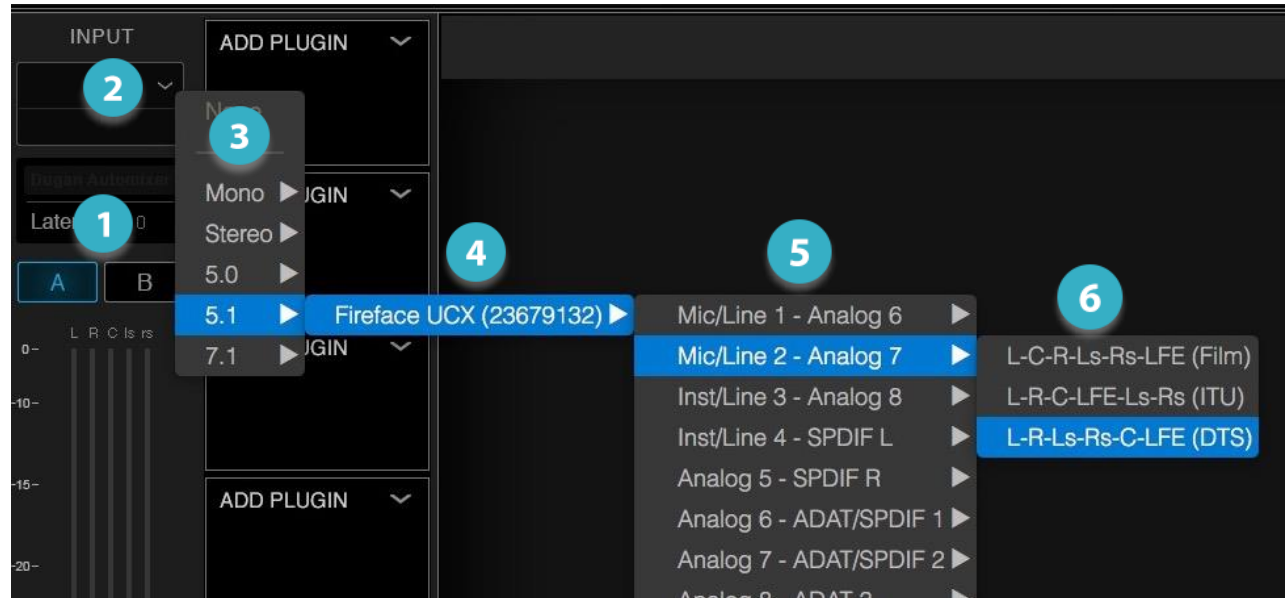


To assign I/O device channels to a rack:

1. Use the **Input A/B Select** button to choose between the two input sets for each rack. Inputs A and B can patch to different device channels, but they must have the same channel formats.

2. Click on the down arrow to open the drop-down **Input Menu**.

3. Select the input format (e.g., mono, stereo, 5.1, 7.1). This sets the number of device I/O channels patched to the rack input and establishes the format of the rack. Some plugins do not have components for all rack chainer formats. Test your plugins with the formats you want to use before you configure lots of tracks. If the plugin does not have a component with the desired format, select another track format or choose another plugin to resolve the problem.

4. The name of the sound card will appear.

5. Select the range of I/O device channels for the input patch.

6. Set the channel format (L-C-R-S, L-CL-C-CR-LS-RS-LFE, etc.). This defines how channels are arranged in the stream. For example, the 5.0 channel stream as shown above can be formatted as L-C-R-Ls-Rs, L-R-C-Ls-Rs, or L-R-Ls-Rs-C. This sequence is displayed at the top of the meter.

Rack input and output do not need to be the same format, but they must be compatible. Some plugins do not have components for all rack formats, so check to see if the plugin has the component you want before committing to a rack format. If you attempt to patch a device channel that is patched elsewhere, you will be prompted. You can accept the new configuration (which will remove the current patches) or select Cancel and try patching to different I/O channels.

The input is now set, as is the structure of the rack. You can later change the number of input channels in the rack, but this will disable plugins that do not have components that support the new channel configuration and may alter the output format.

## Rack Output Section

The output section controls rack output level and assigns I/O devices to the rack output.
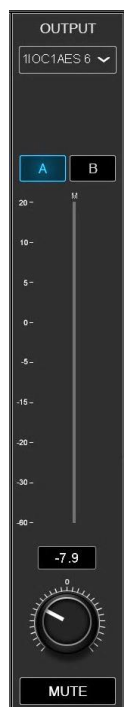


### I/O Channel Select

Choose from any assigned I/O device, anywhere on the SoundGrid network.

### Output A/B

A rack output can be patched to two separate I/O channels. This is useful, for example, in a festival environment where there are two console sets and you need to quickly switch from one to the other. Device I/O patching must be identical for both rack output sets.

### Output Meter

Full-scale output meters. The number of meter bars reflects the format of the output I/O (e.g., stereo, 5.1, 7.0, etc.); range: -INF to 0 dBFS

Adjustable peak and clip indicators. Peak and clip behavior set in the Settings menu. Click on the meter to clear indicators manually.

**Rack Output Control**: Range: -18 dB to +18 dB

**Mute:** mutes the rack.

## Assigning Rack Outputs

Rack outputs are assigned in the same manner as rack inputs. A single rack output can patch to several device I/Os.
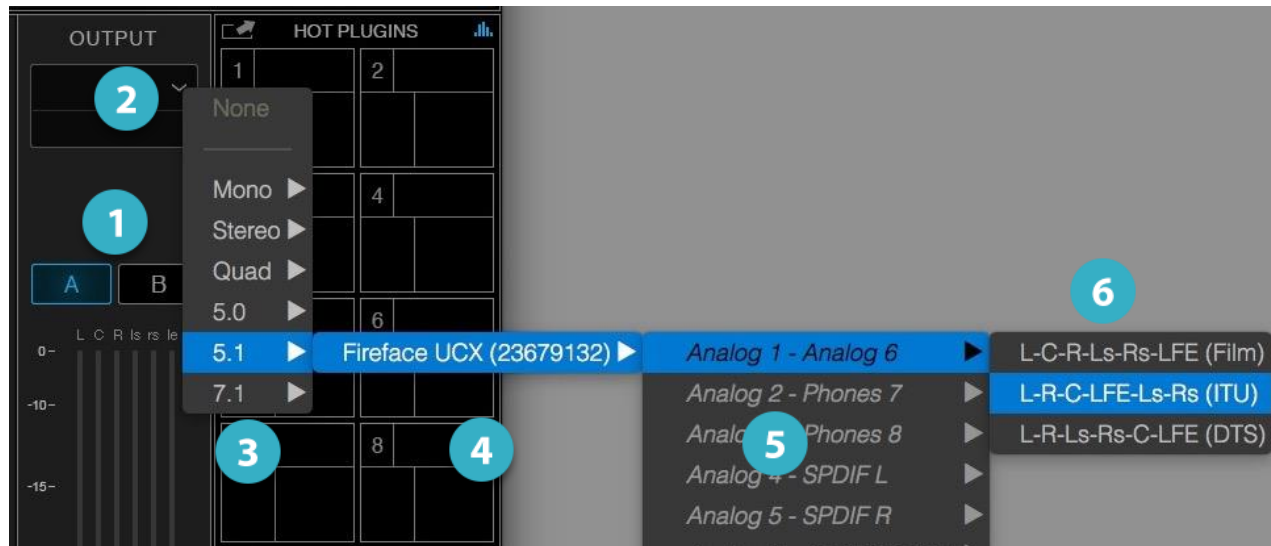


Use the **Output A/B Select** button to choose between the two input sets for each rack. Inputs A and B can patch to different device channels, but they must have the same channel formats.

Open the Output Device drop-down menu.

Select an output format. Choosing an output format incompatible with the input will change the input to a format compatible with the new output format setting.

The name of the sound card will appear.

Select the output device I/O channels. If you select device channels that are already patched to another rack, you will be prompted to change the routing or cancel the rerouting.

Set the channel format (e.g., L-C-R-S, L-CL-C-CR-LS-RS-LFE, etc.) if applicable.

Repeat this procedure for all I/O channels. Rack input and output do not need to be the same format, but they must be compatible. Many plugins do not have components for all rack formats, so test plugin compatibility before committing to a rack format.

## Routing Racks Automatically

SuperRack can automatically route input and output I/O channels to each rack in a session. Routing begins at the first rack, which will be patched to the first available I/O device channel. Patching continues until all racks in the session are routed or all I/O channels have been assigned.

I/O channels are patched into existing rack configurations, so you need to set the number of input and output channels before you start the auto-route routine.

1. Select a SuperRack template that loads the desired framework, void of patches—just the rack structure. If you don't have a template that matches your needs, follow these steps to create an auto-route template:

    a. Create a session with the desired rack input/output configuration and number of tracks. If your hardware I/O devices are not are not assigned in your SuperRack Inventory, use offline devices to build a framework. Make sure that your plugins have components that will support a rack's configuration.

    b. Once you've routed I/O channels to provide the framework you want, select "None" in the input and output drop-down menus.

    c. Save the session as a template.

    d. Load the template.

2. Click Auto Route in the Rack menu to patch the session automatically.

If you want to create a blank session in which all racks are mono-in and mono-out, select "New" in the Sessions page of the Show window.

## *Inserting a Plugin*

1. Click the arrow on a rack slot to open the Plugins menu. Use this menu to add, remove, and manage plugins.
2. Choose a plugin from the Plugin List; its icon will appear in the slot. The list of available plugins is organized by category. Long category lists are divided into groups of about 20 plugins.

The format of the Input I/O sets the input format of the rack, and hence the plugins that you can use. If, for example, the format of the Input I/O is 5.1, then only the plugins that support this channel input format will be displayed in the plugins list.
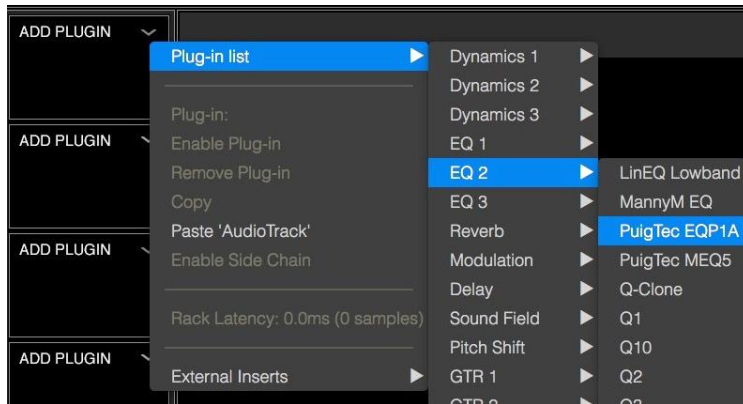


If you change the rack's input format while plugins are installed in the chainer, the plugins will seek a way to remain active. If the plugin has a component that can suit the new rack format, that component will load.

If an appropriate component is not available, the plugin will be disabled.

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

## Plugins Chainer

You can insert plugins in any slot, in any order. Plugin chainer signal flow is from top to bottom, so plugin sequence determines processing order. Drag a plugin up or down the rack to change its place in the signal flow. Plugin status is indicated directly on the plugin and on the rack slot frame, as shown here:



| | | |
|---|---|---|
| 1 | Plugin Name | Name is abbreviated if necessary. |
| 2 | Plugin Icon | Displays thumbnail of plugin interface. Click on the icon to open the plugin. |
| 3 | Open Plugin Menu | Use the menu to access all plugin management items. |
| 4 | Plugin Latency Indicator | Displays plugin latency. Total rack latency is displayed above the input meter. |
| 5 | Plugin Output Meter | Includes clipping indicator. Number of meters indicates the number of rack output channels. |
| 6 | Sidechain Enabled | Indicates that the plugin is receiving a sidechain signal and its sidechain is active. |
| 7 | Plugin Recall Safe | The plugin is in a snapshot-safe mode. |
| 8 | Mono-to-Stereo Plugin | Inserting a plugin that has a different number of inputs than outputs changes the channel format on all subsequent plugins (see next page). |
| 9 | Plugin In/Out | Turns the plugin on or off. It does not remove it from the processing chain. |
| 10 | Hot Plugin is Assigned | Indicates that the plugin has been assigned to a hot plugin position. |
| 11 | External Insert | Provides up to 32 insert points for external processors. |
| 12 | Disabled Plugin | Plugin is removed from CPU. Plugin settings are restored when the plugin is reenabled. |
| 13 | Empty Plugin Slot | Click on the down arrow to assign a plugin to the slot. |

## Plugins Can Change the Rack Size

While it's true that the number of channels in a rack is defined by its input, certain plugins increase the channel count of the chainer. In a rack that is configured as stereo, stereo plugins will be used to populate the chainer—simple. Certain plugins, however, allow you to increase or decrease the number of rack channels. The most common examples are mono-to-stereo reverb plugins, but there are also larger-format up-mixing and down-mixing plugins. In the example below, a stereo-to-5.1 plugin is inserted in the middle of the chainer. All plugins earlier in the signal flow (above) will remain stereo. Plugins later in the chain are 5.1, and the rack output is in one of the 5.1 formats.

Moving an up-mixing or down-mixing plugin up or down the chain will affect the plugins that are inserted after it. If, for example, you move a stereo-to-5.1 plugin to a slot above an existing stereo plugin, the stereo plugin will become disabled.
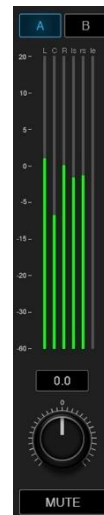
Stereo plugins

Stereo-to-5.1 plugin

All plugins in the chainer *after* the stereo-to-5.1 plugin can only be 5.1 format.

Stereo rack meters

Rack output is 5.1.

## Plugin Pane

Click on a plugin icon to open its plugin pane. This view shows a plugin's entire user interface, from which you can control all plugin settings.
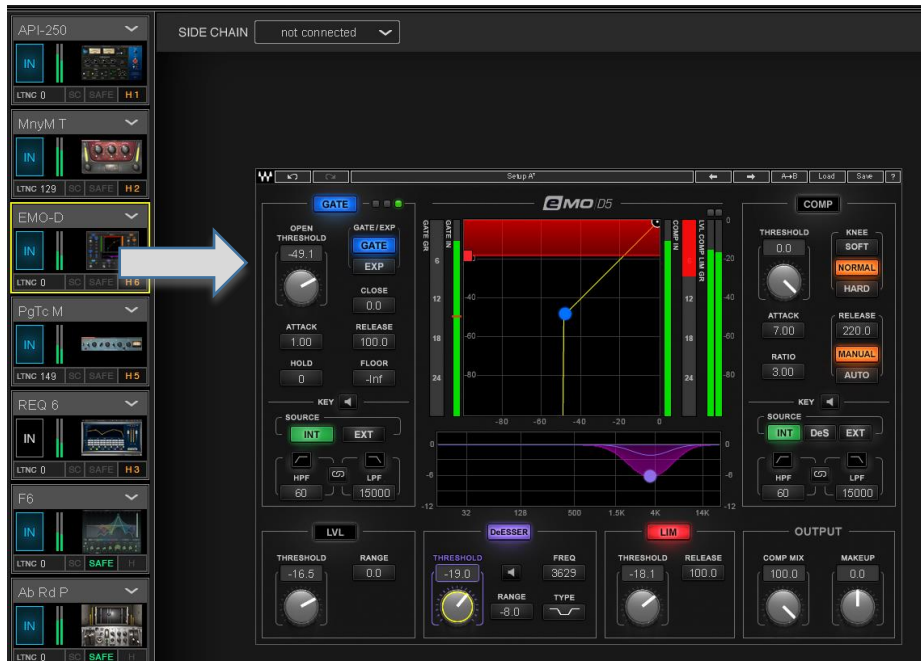


## DETACHED PLUGIN PANES

To float a plugin's control interface, click on the Detach symbol at the upper-right corner of the of the plugin pane.



Bypass or close a floating plugin and check side chain status from the panel above the plugin.

- Deselect the **IN** button to bypass the plugin.
- **X** closes the window; the plugin panel will return to the plugin pane.
- **Close All** closes all floating plugins.
- Side chain status (**SC**) is shown on the left side of the bar.

A floating plugin remains visible in all SuperRack views.

## Using VST3 Plugins in SuperRack Performer

SuperRack Performer is compatible not only with Waves plugins, but also with VST3 plugins from other manufacturers. You can build plugin chains with plugins by diverse brands, including chains where Waves plugins and non-Waves plugins are mixed. Initial setup is slightly different than with Waves plugins, but operation is the same. Under VST3 menu you can scan all or a single VST3 plugin.

> Note: StudioRack Performer supports most VST3 plugins, but it does not support VST2 plugins.

### INSTALL AND SCAN VST3 PLUGINS

Before use, VST3 plugins must be installed and scanned by SuperRack Performer.

Install one or more VST3 plugins to your host computer. The plugins can go wherever you like on the host computer, but we suggest that you use the default folder.

The first time you open SuperRack Performer, you will see a prompt that offers to scan for VST3 plugins. Click "Scan" to scan the host drive and link all VST3 plugins to SuperRack Performer. This adds them to the Plugins menu. If you prefer not to scan immediately, click "Later." Subsequent SuperRack Performer instances will include the scanned VST3 plugins, so you don't need to rescan. You will, however, need to rescan when you add or change VST3 plugins.

Managing VST3 Plugins

Use the VST3 menu at the bottom of the Rack menu to manage scanning, select the plugins folder, and set sort order.
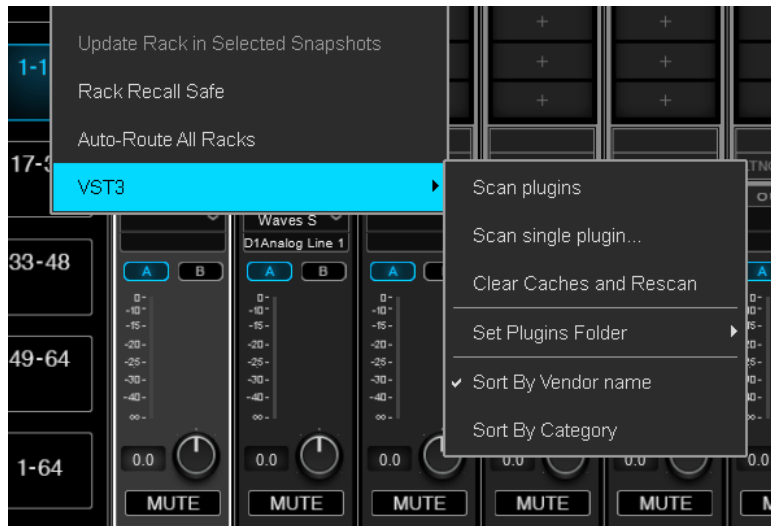
**Scan Plugins** scans the host computer for all VST3 plugins. This may take a few minutes. Once this scan is complete, there is no need to rescan later.

**Scan Single Plugin** lets you browse for a specific VST3 plugin and add it to your plugins list.

**Clear Caches and Rescan** rescans your entire library of VST3 plugins. This also clears the list of plugins that are in the plugins folder and have already been scanned.

**Set Plugins Folder** sets the folder where your VST3 plugins are stored: either in the default folder or in a user-defined location.

**List Order** sorts VST3 plugins list by vendor name or by category.

If a plugin fails the scan procedure, it will be blacklisted and will not appear in SuperRack Performer. The scanner will inform you which plugin failed the scan. In most cases a scan fails due to a buggy or faulty plugin. Click Clear Caches and Rescan to attempt it again. If it continues to fail the scan, report the bug to the plugin manufacturer.

Similarly, if you want to update a plugin that has been blacklisted in a previous scan, clear the cache, which removes the plugin from the blacklisted list.

## LOADING A VST3 PLUGIN IN A RACK.



When the scan is complete, you're ready to insert the plugin.

VST3 plugins are listed on top of the plugin menu, in groups of 16. Select the plugin you want to load, just as you would do with Waves plugins.
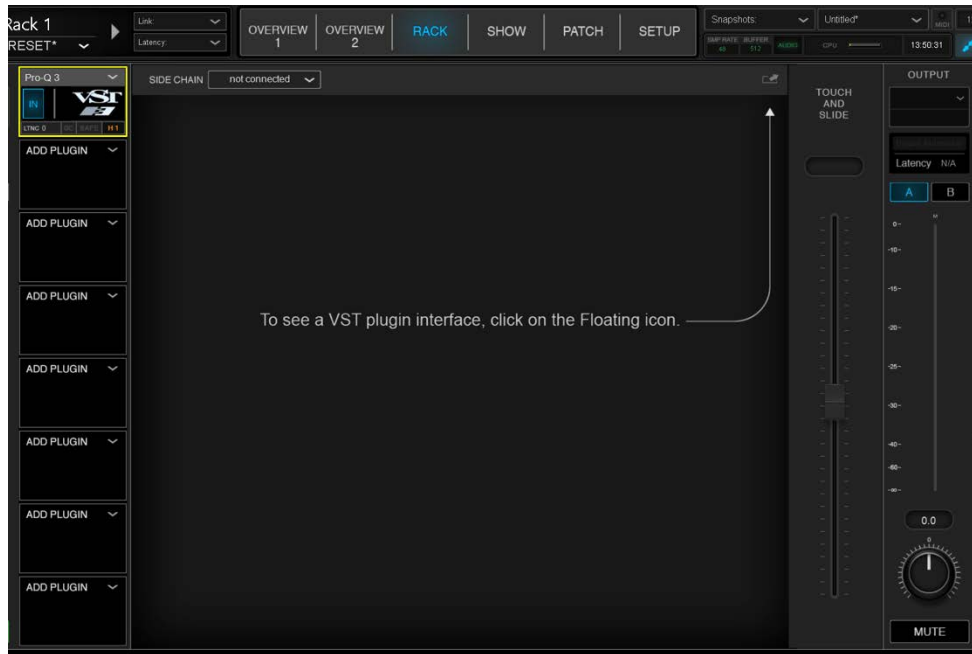
## WORKING WITH VST3 PLUGINS



A VST3 plugin will always open in a floating state.



In some cases, a VST3 plugin will not float automatically. To float the plugin manually, select the plugin and click the Floating icon, as shown here.
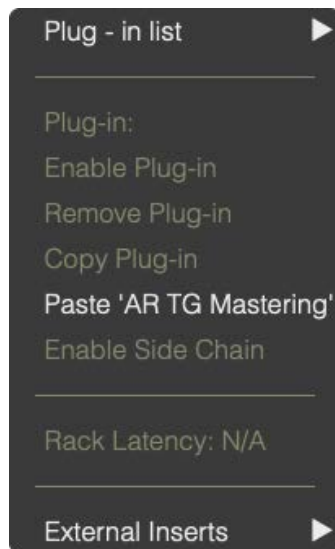
## Managing Plugins

### 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. To manage presets for an entire rack, use the **Racks** menu in the Top Bar. Refer to <u>Part 2: The Top Bar.</u>

The Plugin menu is accessed with the arrow at the top of a rack slot.

#### BASIC PLUGIN MENU

If a plugin slot is empty, the Plugin menu looks like this.

| | |
|---|---|
| **Plug - in list** ▶ | Insert a plugin from the Plugin List. |
| Plug-in:<br>Enable Plug-in<br>Remove Plug-in<br>Copy Plug-in | |
| **Paste 'AR TG Mastering'** | If a plugin has been copied to the clipboard, select "Paste [plugin]" to insert the plugin, with its copied preset, to the empty slot. |
| Enable Side Chain | |
| Rack Latency: N/A | |
| **External Inserts** ▶ | Add external inserts to the rack. |

#### 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 5.0 channels, you will not be given the choice of loading a Q10 or WNS or similar plugins, since they do not have 5.0 components.
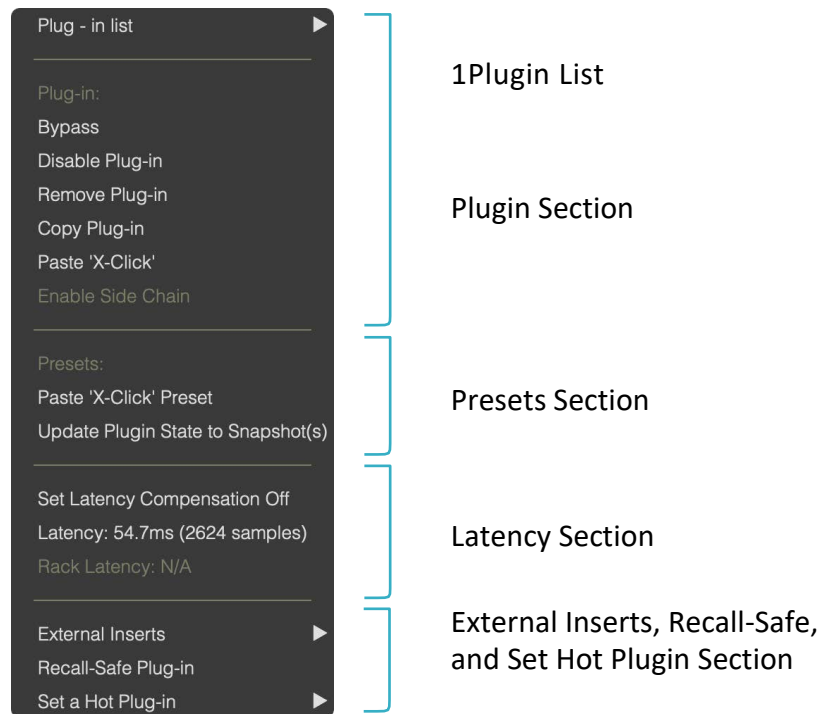
### PASTE [PLUGIN NAME]

If a plugin as been copied to the clipboard, this option is available. 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 (refer to "*Paste [plugin name] Preset"* in the next section).

### EXTERNAL INSERT

Add external inserts to a plugin rack.

## EXPANDED PLUGIN MENU

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

| Menu | Section |
|------|---------|
| Plug - in list ▶ | 1Plugin List |
| Plug-in:<br>Bypass<br>Disable Plug-in<br>Remove Plug-in<br>Copy Plug-in<br>Paste 'X-Click'<br>Enable Side Chain | Plugin Section |
| Presets:<br>Paste 'X-Click' Preset<br>Update Plugin State to Snapshot(s) | Presets Section |
| Set Latency Compensation Off<br>Latency: 54.7ms (2624 samples)<br>Rack Latency: N/A | Latency Section |
| External Inserts ▶<br>Recall-Safe Plug-in<br>Set a Hot Plug-in ▶ | External Inserts, Recall-Safe, and Set Hot Plugin Section |

## Plugin Section

### BYPASS

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

### 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. It also frees 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 replaced with DISABLED. 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 plugin pane.

### COPY PLUG-IN

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] (described here) 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. *When pasting, only the current state is copied.* **Data from other snapshots will not be copied.** 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.

### UPDATE PLUGIN STATE TO SNAPSHOT(S)
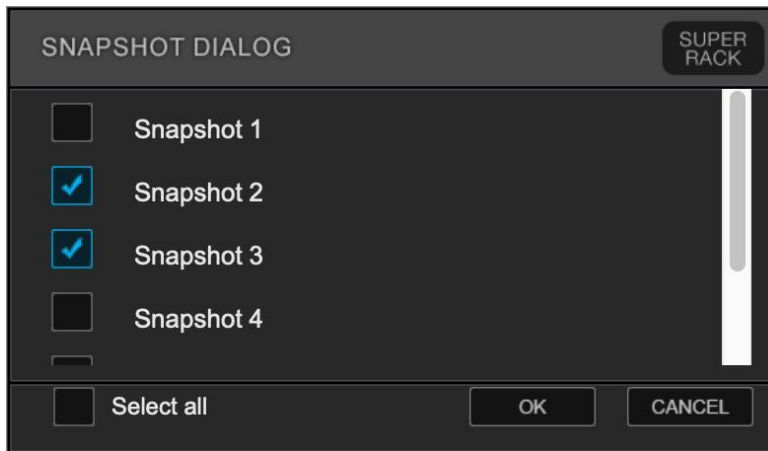


Updates the current plugin's settings in selected snapshots in the current session. A dialog lets you to select the snapshot(s) you want to update.

### 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.
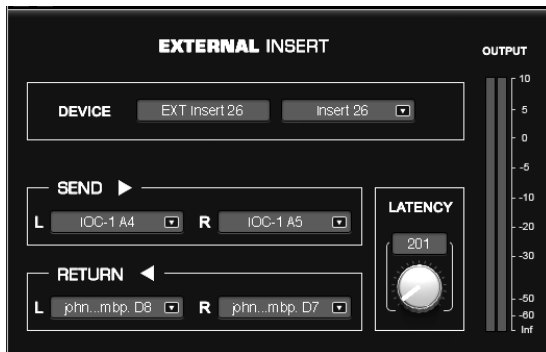
## External Inserts

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**
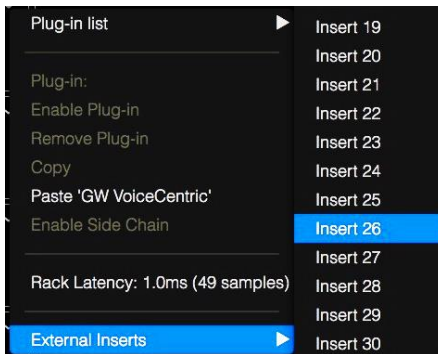


① Choose a plugin slot in the rack.

② Select External Inserts from the Plugin Menu.

③ Choose an available insert from the menu.



④ Click on the External Insert icon to open the control page.

⑤ Select the physical send and return I/Os using the drop-down menus. I/Os must be compatible with the rack configuration.

⑥ 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 multi-channel 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 does not declare its delay to the latency compensation engine, so this must be done manually.

## Recall-Safe Plugin

Recall-Safe Plugin prevents plugin parameter changes during snapshot changes. In this mode, the plugin is unaffected by snapshot changes, even if the plugin is within the scope of a snapshot change and has not been set as recall-safe in the Show window (see Show window > Recall Safe).

Recall Safe is indicated with a green *Safe* indicator beneath the plugin icon.

## Plugin Position in the Rack

Drag a plugin or external insert icon up or down the rack to change its position in the processing chain.

In this example, an API-560 EQ is in slot #3. Slide its icon to slot #1 and the other plugins will ripple downward. This will alter the plugin's place in the signal flow and will likely alter its relationship with the other plugins in the rack.

> **!** Note: Repositioning a plugin requires the rack to re-clock, which may result in a click or dropout. Do not move plugins at times when this is not acceptable. Bypassing a plugin or changing its parameters can be done at any time.

## Touch and Slide Control

Any control can be adjusted with the Touch and Slide control, which is right of the plugin pane. This includes SuperRack controls such as Input Gain, as well as plugin controls.

Touch a controller to assign it to the Touch and Slide controller.

The name of the control being moved by the controller is shown in the bottom value box. The control's value is shown at the top.

## *Rack Presets*

Presets for one entire rack—input, plugins chainer, plugins settings, and output—are managed from the Racks drop-down menu, which is in the Top Bar. Functions include:

- Load factory presets
- Create, load, and export user presets
- Save presets
- Copy, paste, and rename presets
- Update rack to preset
- Turn rack recall-safe on or off

The Racks menu is described in Part 2: Top Bar.

# Part 6: Overview Windows

The Overview Windows provide a side-by-side view of every rack in a session. From here you can easily see the condition of all of your racks and control them. All rack functions, except plugin settings and input and output A/B selections, can be controlled directly from the Overview window. Complete plugin interfaces can be accessed with one click.

**Two Overview windows**

There are two identical Overview windows: Overview 1 and Overview 2. Having two windows lets you view and control two different modes or two different layers at the same time. You can, for example, set one view on Rack mode, Layer 17–32, and the other to Dugan mode, Layer 1–16. This is a fast and efficient way to control your racks.

**Rack controls**

- Rack input and output routing
- Input and output level adjust
- Rack In/Out (bypass)
- Plugins: insert, remove, bypass, disable, load, save, copy, and paste presets
  Click on a plugin's icon to open its plugin pane for complete control. This also opens that rack's Rack window.
- Mute rack

**Rack displays**

- Input and output meters. The number of bars in the input and output meters reflects the number of channels in the rack's I/O device patching.
- Plugins chainer
- Rack latency
- Rack link group and latency group assignments

Rack signal flow is from top to bottom.

> NOTE: Racks in the Overview Window are controlled in the same way as in the Racks view—only their layouts are different. With that in mind, this chapter provides only what is required to patch audio through a rack, control levels, and insert and access plugins. To learn more about controlling a rack and its plugins, refer to Part 5: Rack Window of this user guide.

# Overview Window—Sections

The Overview window is divided into three logical sections: One determines which racks are displayed and available for control, another section sets what kind of action will be applied to the racks, and then there are the racks themselves, where processing is done.
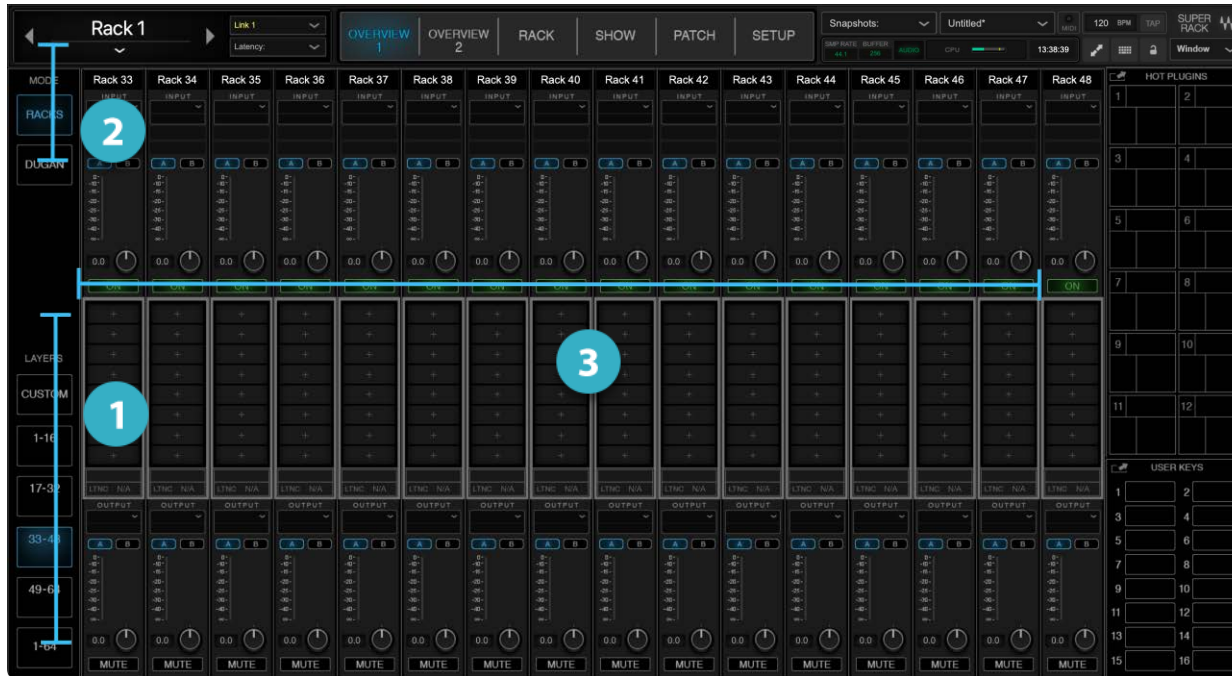


## ① Layers

A SuperRack Performer session can have up to 64 racks. These racks are organized into four layers of racks, each with 16 visible racks. This organization is typical of digital mixing consoles. There are three types of layers:

- Four 16-rack **Factory** layers. These provide complete control of each visible rack.
- A **Wide View** in which you can view and control all the racks at once, up to 64 racks. This affords complete oversight, but it offers less controls per rack.
- A multi-page **Custom** layer that enables you to create a layer consisting of any combination of racks, in any order.

### 2 Modes

A mode determines what sort of processing is currently being controlled on the racks: Plugin (Rack) processing or Dugan Speech automixer processing. Mode selection affects only the center section. It does not affect Input or Output settings, cue, mute, or meters. The Rack mode presents an eight-plugin chainer for each rack.

The Dugan Speech automixer is a processor used to control several microphones in situations where many people are talking, possibly several at the same time. It's described at the end of this chapter.

### 3 Racks

These are the chainers where plugins are inserted and controlled.

## *Layers*

### Factory Layers

Use the Layers buttons to choose one of the four factory layers. A factory layer can have up to 16 racks. The number of racks in a session, and therefore the number of layers, is configured in the Settings page. Inactive layers or parts of layers are empty.

We suggest that you create a session whose size approximately matches the number racks you will be using. Unnecessary layers don't do you any good and can be distracting.
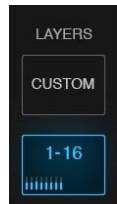
Active layer buttons have small output meters with peak indicators for each rack. Click on the button to clear the indicator.

The sequence of racks in a factory layer is fixed.

### Custom Layers

To re-sequence rack order or combine racks from several layers in one view, create Custom layers. Each of the four custom layer pages can hold up to 16 racks. Racks from any factory layer can be combined in custom layers. This lets you change the sequence of racks in a layer or combine racks from several layers into one custom view. Double-click on a custom layer page to rename it.

## USING CUSTOM LAYERS

To assign racks to a Custom Layer:
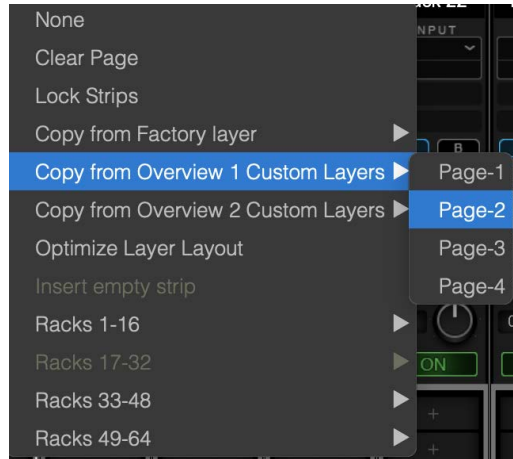


- Chose "Custom Layers."

- Click on an empty strip. Use the drop-down menu to assign a rack to the strip.

- Racks can be added in any order.

- Racks can be assigned from factory layers, racks, or from other custom layers.

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

> If there is already a rack in a slot, hold Ctrl while clicking on the rack to access the menu.

Custom layer drop-down menu:

| | |
|---|---|
| **None** | Removes the selected rack from the custom layer page. |
| **Clear Page** | Removes all racks from the current custom layer page. |
| **Lock Strips** | Prevents rack strips in the current custom layer page from being repositioned. |
| **Copy from Factory Layer** | Copies the racks of a factory layer and pastes them to the current page of the custom layer. |
| **Overview (1 and 2) Custom Layers** | Copies a page of a specified Overview custom layer and pastes it to the current page of the custom layer. |
| **Optimize Layer Layout** | Removes blank slots and moves all populated rack strips to the left. |
| **Insert Empty Strip** | Inserts a blank strip to the left of the selected populated strip. |

## Wide View Layer

The button "1–64" opens a wide view that displays all of the racks in the current session. Each rack shows its name, input and output I/O device assignment menu, output metering, rack latency, and In and Mute buttons.

## *Modes*

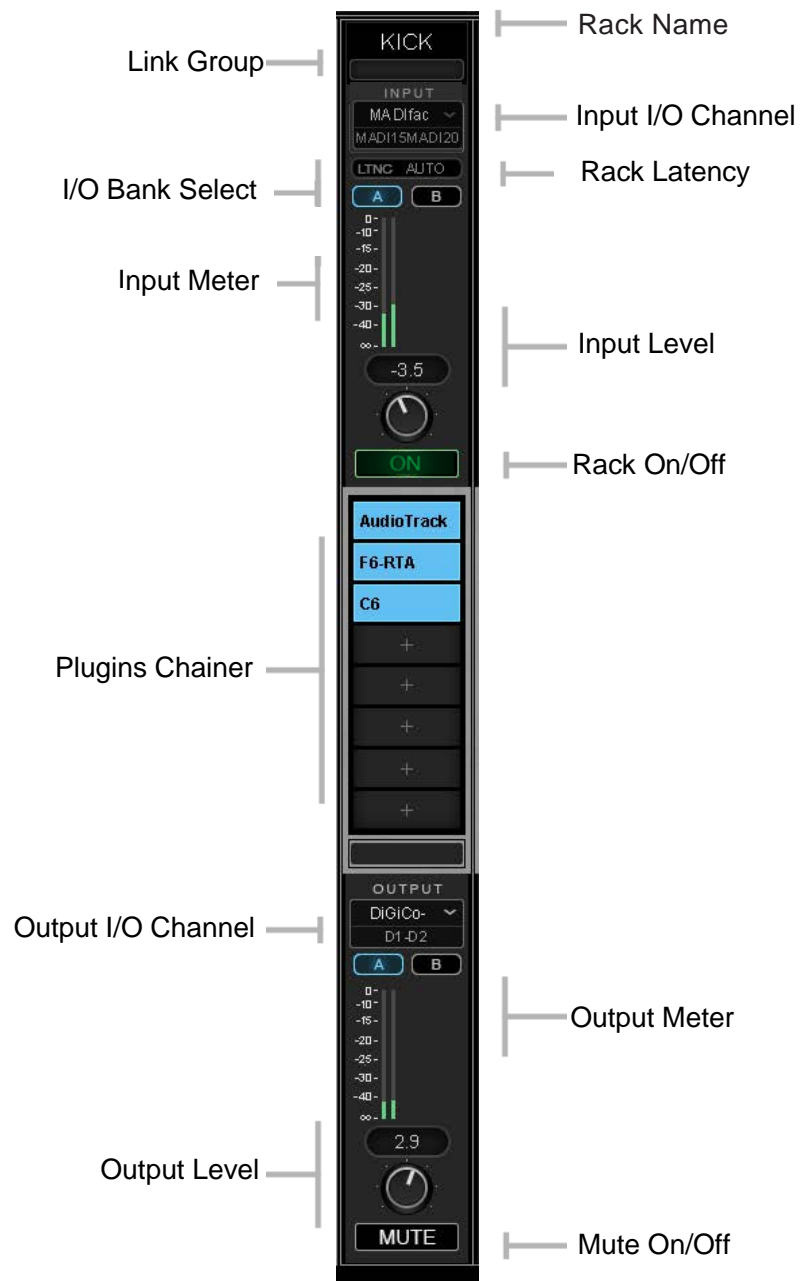The Mode setting determines what is displayed in the Overview window.

In the **Racks** mode, the plugin chainer racks are displayed. Each rack can host up to eight plugins.

In the **Dugan** mode, plugin chainers are replaced with the controls for the Dugan Speech Automixer. This processor is used to control a group of live microphones in multi-speaker environments. It turns up mics where someone is talking and turns them down where people are quiet. It's commonly used in situations such as roundtable discussions, talk shows, debates, and the like, and is based on the hardware Dugan Automatic Microphone Mixer.

The Dugan Speech Automixer requires a separate license. When a license is not present, the Dugan button is grayed out. For more information, refer to the section at the end of this user chapter, "Using the Dugan Speech Automixer."

## ❸ *Racks*

Link Group ——

Rack Name

Input I/O Channel

Rack Latency

I/O Bank Select ——

Input Meter ——

Input Level

Rack On/Off

Plugins Chainer ——

Output I/O Channel ——

Output Meter

Output Level ——

Mute On/Off

In the Overview widow, each rack is a condensed view of the controls, meters and plugins you see in the Rack window. Its organization closely resembles that of a mixing console channel strip. Click on a plugin button to open the complete interface of the plugin.

A selected rack is shaded light gray and is outlined in white. Its name is displayed in the Name box in the Top Bar. To view the Rack view of the selected rack, click on the Rack tab in the Top Bar.

Click on a populated plugin slot to jump to its complete plugin pane in the Rack window.

One rack at a time can be selected.

## Selecting Rack Input

Assigning rack inputs in the Overview window is the same as in the Rack menu.

**Choose an Input Set**
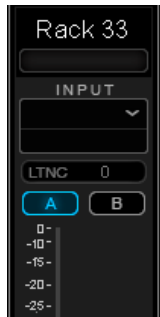


Each rack has two inputs: Input I/O Banks A and B. A rack's inputs can patch to different device channels, but they must have the same channel format. The I/O bank selector is immediately above the input meter.

Once the I/O Bank is set, you are ready to route the input channels.

1. Open the drop-down **Input** menu.

2. **Select the format of the rack you are building** (e.g., mono, stereo, 5.1, 7.1). The Input Format selector determines the devices, I/O channels, and formats that can be selected. It also determines which plugins you can use, since a plugin must have a component that is compatible with the rack format.

3. The name of the **sound card** is shown here.

4. **Select the range of device channels**. If there are not enough free I/O channels on this device, you'll be presented with a list of patches that must be removed in order to make the new assignments. You can accept the new configuration (removing certain patches) or select Cancel, which allows you to reconsider your patching with a different device.

5. **Set the channel format** (e.g., L-C-R-S, L-CL-C-CR-LS-RS-LFE, etc.). This sets how channels in the stream are arranged. For example, as shown above, a 5.0 channel stream can be formatted as L-C-R-Ls-Rs or L-R-C-Ls-Rs or L-R-Ls-Rs-C.

In the example above, this is the rack's input patching:



- Channel size: 5.1
- Fireface UCX. This is the soundcard you selected in the Audio Setup page.
- I/O channels: Mic/Line 2–Analogue 7 (six I/O channels are allotted to the 5.1 channel size)
- Format: L-R-Ls-Rs-C (DTS format).

The selected I/O device and I/O channels are shown in the input cell.
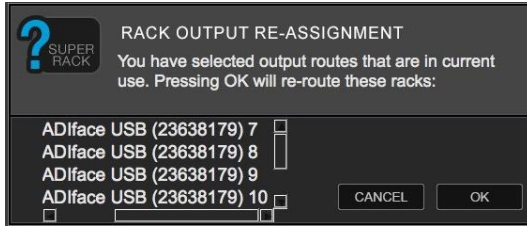
If your I/O selection includes I/O channels that are currently in use, you will see this prompt. Select **OK** to make the new assignment and un-assign the indicated I/O channels. Click **Cancel** to maintain the existing assignments. Choose different I/O channels for the new assignment.

**Input meter**



Each rack has a full-scale Input meter. The number of meter bars reflects the format of the I/O device. The meter on the far left indicates a stereo input, and therefore a stereo rack.

clip level and clip hold are controlled in the Settings page. On the right is a 5.1-channel input.

Input gain is controlled with the knob below the meter. Alt+Click on the knob to reset.

**Input Gain and Bypass**

Use the Input Gain knob to adjust input gain to the rack. Knob position is indicated in the value box.
Range: -18 dB to +18 dB
The On/Off switch serves as the rack's bypass.
On          Normal rack operation
Off          Rack bypass

## Plugin Chainer

The Plugin Chainer provides an overview of all the plugins in a rack. Use it to add, delete, bypass, deactivate, and move/copy plugins.

Click on a plugin button to access the plugin's complete control interface in the Rack window.

## Inserting a Plugin



Inserted plugin
in a chainer slot
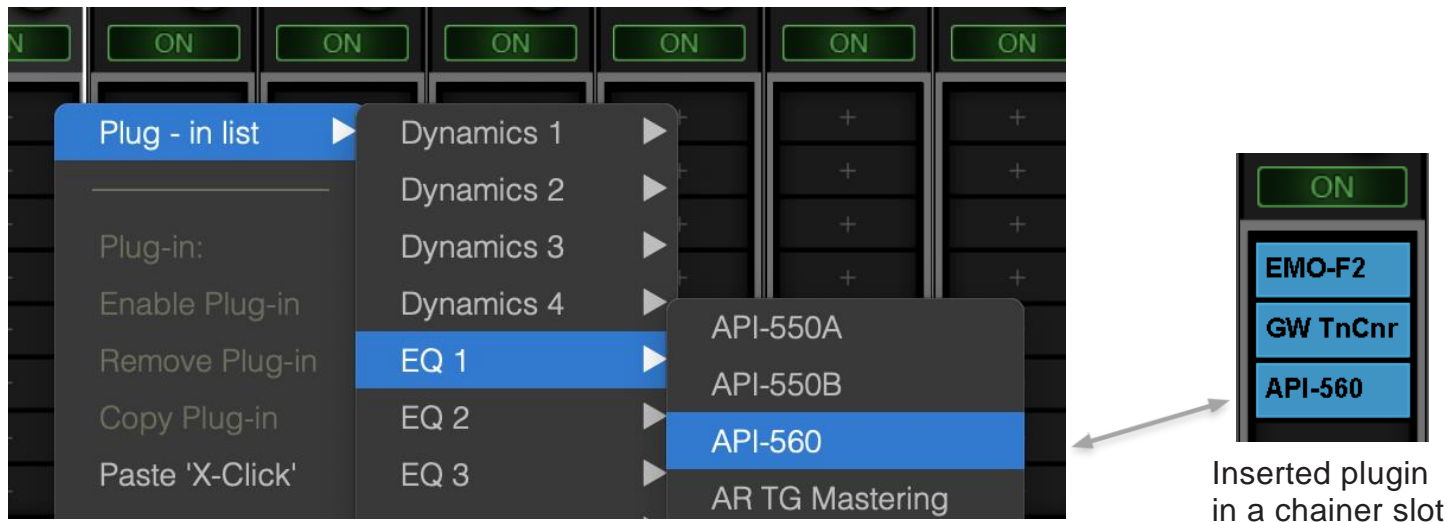
TO ADD A PLUGIN TO A PLUGIN CHAINER:

Click the **+** (plus) symbol on an empty slot. This opens the Plugin menu (note: in the Rack window, click on the down-arrow to open this menu). If the plugin slot is already populated, right-click on the icon. Open the Plugin List sub-menu and choose from among the available plugins. Its name then appears in the chainer slot. Only plugins that are compatible with the rack's channel type will be shown.

## Other Plugin Menu Items
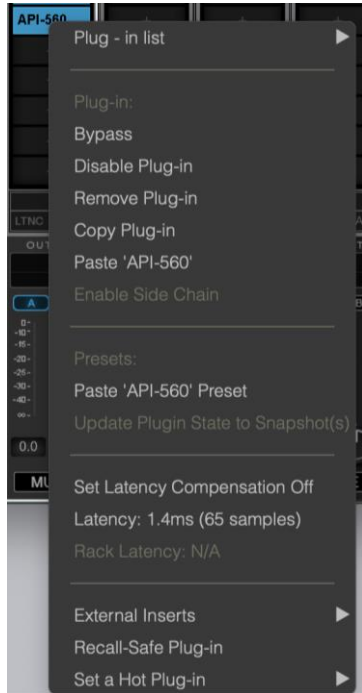
Once a plugin has been instantiated in a plugin slot, more menu items are available in the Plugins menu. These options are used to copy and paste plugin presets, set plugin mode, monitor latency, and more.

> Plugins are managed through the Plugins drop-down menu in both the Rack window and the Overview window. These menu items are explained in Part 5: Rack Window.
> In the current section we cover only the essential Plugins menu items.

### Bypass

Bypasses the plugin while keeping it in the processing chain. Bypassing a plugin does not alter its DSP load. A bypassed plugin button appears white in the Plugin Chainer (to shortcut, hold Ctrl+ALT+click).

### Disable Plugin

Removes the plugin from the processing chain without deleting it from the rack. Disabling plugins may reduce rack latency and DSP load. You can re-enable a disabled 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 settings and control assignments are lost. You can also remove a plugin by dragging it left or right, off the chainer rack.

> Note: Holding the ALT key while selecting Insert, Remove, or Disable extends the action across an entire row.
> This affects ALL layers, not just the visible one.

**Latency Compensation On/Off**

Removes the plugin from plugin latency compensation calculations. The plugin remains active, and its latency does not change, but its latency is no longer reported to the delay compensation engine.

**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.

## Managing Plugin Icons in the Overview Window

**Opening, disabling, and removing plugins directly from the Plugin Chainer**

- Single click: Opens the plugin pane of the plugin or external insert.
- Right click: Opens the plugins menu.
- Ctrl + click: Disables the plugin and removes it from the DSP processor.
- Drag an icon outside the chainer area: Removes the plugin (this cannot be undone).

**Moving and copying plugins**

- Drag a plugin icon vertically from its position in the same rack. Presets are moved with the plugin.
- Drag a plugin horizontally to move it to *another rack*.
- Alt + drag an icon to copy it to another rack.
- Move a mono plugin module to a stereo rack and the plugin becomes a stereo module. The mono plugin's settings will be applied to both sides of the stereo module. If a stereo plugin is moved to a mono channel, the settings of the left stereo channel are applied to the mono.

**Plugin icon indicators**

Plugin status is indicated by its icon's shading.



Plugin enabled and not bypassed

Plugin enabled and bypassed
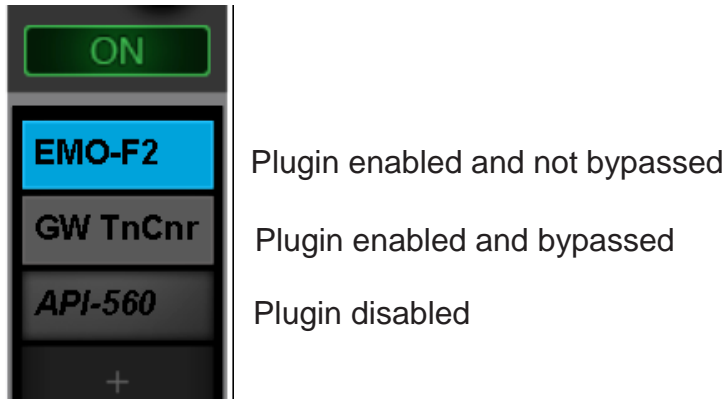
Plugin disabled

! Note: Adding, removing, disabling, or moving a plugin changes the structure of the plugin chainer, which can result in a brief interruption. Do not make these changes when a dropout is not acceptable.
Bypassing a plugin or changing its parameters can be done at any time.

**Latency Indicator**



The latency box displays the total latency of the rack.

## Output Section



The output section patches the rack to an output device. Rack output gain can also be controlled here.

**Output routing**

Use this drop-down menu to select the output I/O device and the rack output type.

**Output Gain and Meter**

Output gain control, -18 dB to +18 dB. Full-scale output meters match the I/O device format. The meter is red when rack output level clips. Clip threshold and clip hold are controlled in the Settings page.

**Mute**

Mutes the rack.

## Dugan Automixer:

The Dugan Speech automixer is a way to control a group of live microphones in multi-speaker environments. It turns up mics where someone is talking and turns them down where people are quiet. It's commonly used in situations such as roundtable discussions, talk shows, debates (and the like) and is based on the hardware Dugan Automatic Microphone Mixer.

| | | | |
|---|---|---|---|
| 1 | Dugan Mode Selector | Select Dugan mode to access the Dugan Speech Automixer |
| 2 | Dugan Engine ON/Off | Turns the Dugan processor on or off |
| 3 | Recall Safe | Sets this rack's Dugan Speech Automixer to recall safe |
| 4 | Reset | Sets this rack's Dugan Speech Automixer to default settings |
| 5 | Mute Channel Group | Selects rack mute groups. |
| 6 | Override Channel Group | Mutes all microphones, except for one (usually the host or chairperson). |
| 7 | Weight Control | Assigns a priority to designated speakers. This governs sensitivity, not level. |
| 8 | Global Mute | When Global Mute is selected, all members of the selected Dugan Speech automix group are muted. |
| 9 | Global Override | Overrides channel mute for specified channels in a group |
| 10 | Operation Mode | When this switch is off, the automix process is ignored and the signal passes through the processor at unity gain. |

## BASIC OPERATION

Automixer's position in the signal flow of a rack is *after processing* and *after fader*. It works on mono or stereo racks.

1. Click the **Dugan Engine On** button in the Global Control panel (left side).

2. Use the D**ugan Speech Plugin button** at the top of each panel to enable the automixer on all racks for which Dugan Speech automixing is desired. Disable all non-live-talking racks where automixing will not be used. Disabled racks are grayed out.

3. Click the **Auto** button to turn on the automixer for that rack. Effective automixing depends on correct input gains for each rack. Adjust each rack's input gain so that the level display is green.

4. Set the **Weight** controls to balance the rack's automix gain and establish the priority of one speaker over others. Weight levels can be changed by dragging the faders up or down.

5. Assign racks to **Dugan groups**. A group functions as a separate and independent automatic mixer. Each rack can be assigned to one of three groups: a, b, or c.

For detailed instructions, please refer to the Waves Dugan Automixer User Guide on the Waves download page.

Dugan Speech requires a separate license. If a license is not found, the Dugan mode selector button will be grayed out.

# Part 7: Show Window

Use the Show Window to set up and manage your sessions, snapshots, and recall safe settings. The Show Window is divided into three pages; select them using the sidebar buttons:
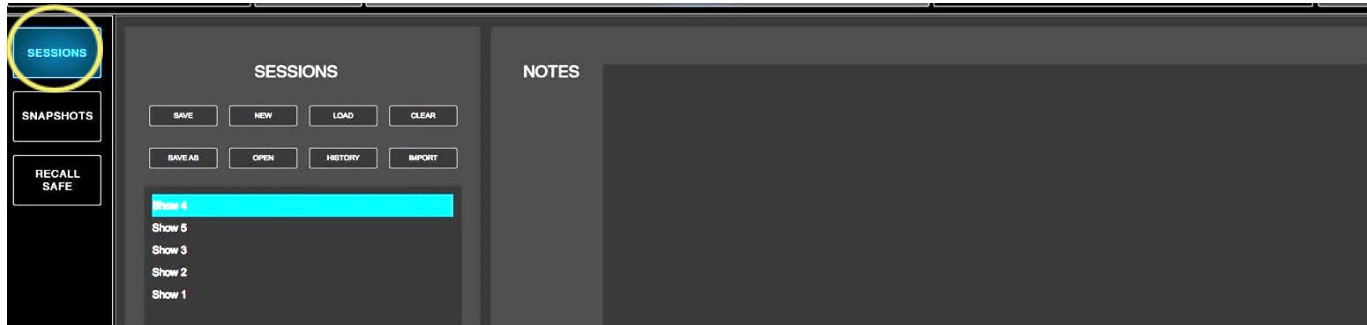


**Sessions Page**
Create, save, and open sessions. Import rack presets from a session file. Open History files.
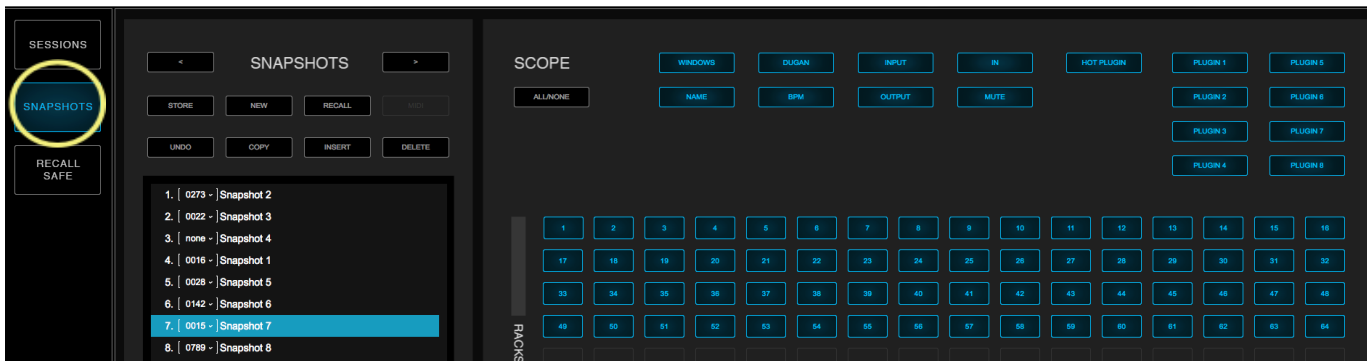


**Snapshots Page**
Create, store, and recall snapshots. Set snapshot scope.
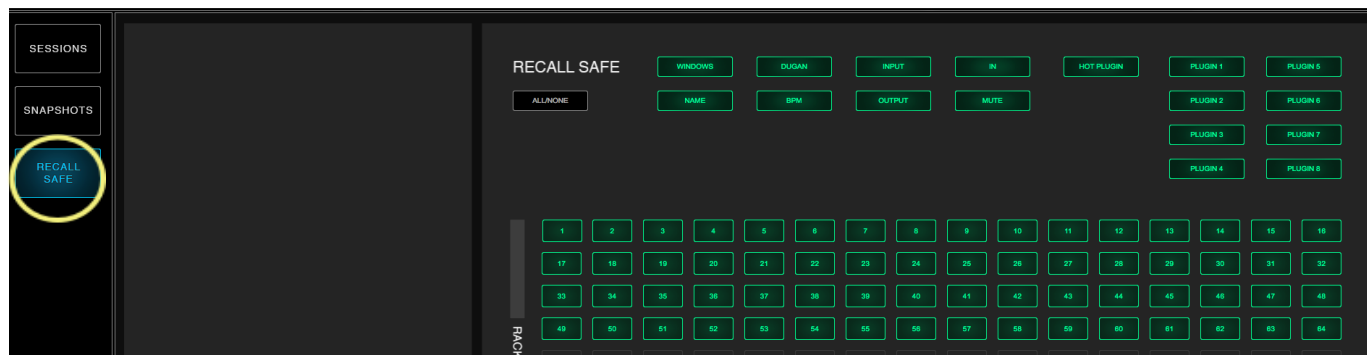


**Recall Safe**
Define recall safe parameters for racks, plugins, hot plugins, and more.

## Sessions Page

All of these settings load with a session:

- Inventory
- External patching
- Channel presets and rack configuration
- Plugin presets
- System preferences
- Settings
- User keys and hot plugins
- All user settings

| | | |
|---|---|---|
| **1** | Save | If a session has not been saved previously, Save will create a new file. Otherwise, it replaces the existing file. A session is normally saved in the default folder:<br>    Mac: /Users/Shared/Waves/SuperRack SoundGrid/Sessions<br>    Windows: Users\Public\Waves\ SuperRack SoundGrid/Sessions<br>A navigation window enables you to place the session anywhere you prefer. See *File Organization*, later in this chapter. |
| **2** | Save As | Saves a copy of the current session. |
| **3** | New | Creates a new session. |
| **4** | Open | Navigates to a session file that is not displayed in the Sessions list. |
| **5** | Load | Loads the selected session displayed in the Sessions list. |
| **9** | History | Opens a browser that shows all auto-saved session files. |
| **11** | Clear | Clears the Sessions List. This does not delete the sessions. Sessions can be returned to the Sessions List using the Open button. |
| **8** | Sessions List | Shows all available sessions created since the last Clear. |
| **9** | Save Template | Saves current session as a template. Templates are stored in the Templates folder. |
| **10** | Load Template | Loads a factory or user-made template. Templates are used to create new sessions based on previous sessions. |
| **11** | User Session Notes | This large notepad is used for notes about the session, the venue, or anything else you want to write. |
| **12** | Session File Details | Displays session file name, creation time, and size, as reported by the operating system. |

## Sessions List
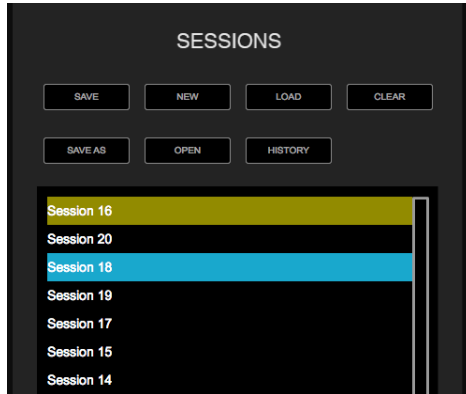


The Sessions list shows the sessions that have been created or modified in the Sessions window. It is used to select, copy, and load sessions.

A selected session is highlighted in blue and the currently loaded one is highlighted in green. Notes associated with the selected session are shown in the Notes section.

## Saving a Session

Sessions can be saved at any user-defined location, but a centralized Sessions folder is provided for convenience.

Mac: /Users/Shared/Waves/SuperRack/Sessions

Windows: Users\Public\Waves\SuperRack/Sessions

SuperRack sessions use the "sprk" extension.

There are two recovery files in this folder: "CurrentSPRK.dat-journal" and "CurrentSPRK.dat." Do not delete or move them.

### SAVING A SESSION AFTER MIXER CONFIGURATION HAS CHANGED
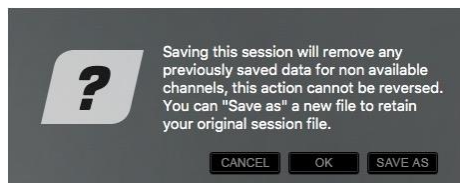


You can change the number of racks at any time. If the number of racks in the session has been reduced since the last time it was saved, this prompt will appear when you save.

Removing racks 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, we suggest you do a **Save As** with a different file name. If you forget to do this, you can always recall a previous History file.

The number of racks is established in the Settings page.

## Loading a Session

Load a session with the "Load" button above the Sessions list or from the Sessions drop-down menu in the Top Bar.

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

### LOADING A SESSION FROM THE SESSIONS LIST

The **Load** command loads the selected session (blue) from the Sessions list. This list includes all sessions that have been created, loaded, or imported since the list was last cleared. **Open** lets you navigate to any session.

If the current session has changed since it was last saved, there will be a prompt asking if you'd like to save it before loading the new session. If the new session has the same number of racks and calls for the same or similar I/O inventory, then the new session will load immediately. When working on the same SuperRack repeatedly, this is often the case.

### LOADING SESSIONS FROM THE SESSION MENU
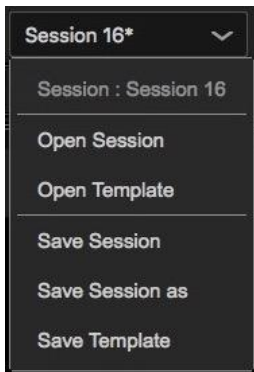
The Session menu is located on the right side of the Top Bar. It's a quick way to load and save sessions and templates.

## Resolving Load Errors

If the system inventory and number of racks of the session you're loading do not match the current configuration, SuperRack must reconcile the mismatch before loading the session.

**Example 1**: The saved session has more racks than does the current SuperRack configuration.
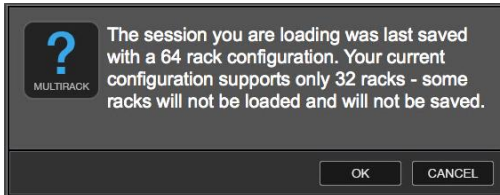


In this case, the new session calls for 64 racks, while the system inventory has only 32. The session will load the first 32 racks and drop the last 32. This structure becomes permanent when the user performs a save on the "reduced" session—it cannot be undone. Make a copy ("Save As") before you save the reduced session.

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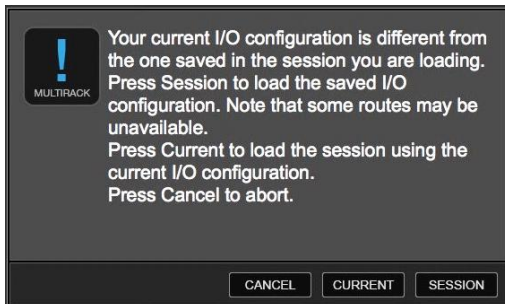


Whenever the saved session's I/O inventory is not the same as that of the mixer, there is a chance that certain routes cannot be supported. If, for example, the session calls for a 128-channel MADI device, while the current driver is stereo, it will be difficult to provide the session with the I/O channels it needs.

The Session Load routine provides two strategies when sessions and inventory are mismatched.

**Option 1: Session** – The new session searches for precisely the inventory that was used to create it. If it cannot find this match, it uses its saved I/O configuration to route to the inventory. This maintains the input/output patching, but certain routes may not be available because the drivers are not the same.

When a correct device is reassigned, the session will load completely. Routing to or from unavailable devices is not possible in any widow.

**Option 2: Current –** The saved session loads into the existing I/O inventory, rather than imposing its structure onto it (as with the "Session" option). This choice may result in a more efficient use of I/O channels, but routing may not match that of the session.

## Templates

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

When creating a new session, it's common to begin with a template from the Presets menu.

A newly loaded template does not appear in the Sessions list. Once you open a template and save it as a session under the desired name, it will show up in the Sessions list. Use the **Template Save** button to create a session template from the current session. Templates are stored in the Templates folder:

      Mac:     Users/Shared/Waves Audio/**SuperRack**/templates
   Windows:    Users\Public\Waves\ **SuperRack** \templates


## Auto-Save Sessions (History)

SuperRack can save sessions automatically, either at user-defined intervals or each time snapshots are saved or recalled. Auto-save settings are controlled in the Mixer Settings page (Setup > Settings > History).

There are three Auto-Save controls:
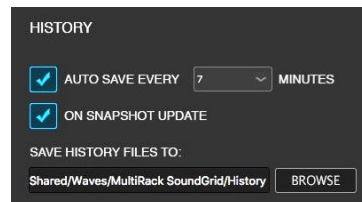
| | |
|---|---|
| No Auto-Save | There are no automatic saves. No History files are created. |
| Auto-Save | New History files are created at user-defined time intervals. |
| On Snapshot Update | A History file is created each time a snapshot is recalled or stored. |

In its default setting, Auto-Save is not active. If you want to use this feature, switch it on manually.

Click the History button in the Sessions page to view all History files.



A history file is a complete SuperRack session. To prevent mishaps, SuperRack does not delete auto-saved files. This provides access to all session information saved throughout a project.

History files are named based on session name, followed by date stamp and series number. Use the host computer to copy, move, and delete files. History files can be saved to any location. Set the save location in the Setup > Settings page. We recommend saving in the default History file folder:

Mac: Users/Shared/Waves Audio/SuperRack/history
Windows: Users\Public\Waves\SuperRack\history

## Snapshots Page

Use the Snapshots page to create, recall, set the scope, and load and save the snapshots in a session. "Snapshot" refers to all settings used in the current SuperRack configuration. In this context, "all settings" refers to:

- Racks and their parameters (in, mute, gains, plugins)
- Plugins and their parameters
- Hot Plugin panel update
- Windows – what windows are open and where they are located on the screen.
- Dugan Automixer settings
- Global BPM
-

| | | |
|---|---|---|
| **1** | Store | Updates the current snapshot and scope settings with the current SuperRack status. Replaces the existing stored snapshot. |
| **2** | Undo | Undoes the previous change. |
| **3** | New | Creates a new snapshot, based on the current SuperRack condition and scope settings. This makes a new snapshot from the current one and serves as a "Save as" function. |
| **4** | Copy | Copies the selected snapshot to the clipboard. This can then be inserted back to the Snapshot list as a copy. |
| **5** | Recall | Recalls the snapshot that's selected in the Snapshot list. The name of the recalled snapshot is displayed in the Snapshots section of the Top Bar. |
| **9** | Insert | Pastes the copied snapshot to the list. It does not recall the snapshot. |
| **11** | Delete | Deletes the selected snapshot (which is not necessarily the current one). |
| **8** | Previous/Next scene | Immediately recalls previous or next scene. |
| **9** | Snapshots List | A list of all snapshots that have been created, imported, or saved with the current session. |
| **10** | Scope Section | Sets which racks, plugins, and other controls and functions will be affected when a specific snapshot is recalled. |
| **11** | All/None | Selects or deselects all Scope buttons. |
| **12** | Hot Snapshot Assignment | Designates the snapshot as a Hot Snapshot, which can be recalled from the Snapshots menu in the Top Bar or by means of User Keys. |
| **13** | Notes | A large space for writing notes about the selected snapshot. |
| **14** | Tear Off Notes Button | Click to disconnect the notes pad and float it anywhere on the screen. |

## Snapshots List

The Snapshots list works in the same manner as the Sessions list.
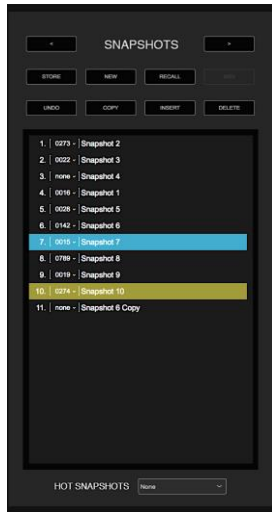


- A selected snapshot is highlighted blue, whether it is the recalled snapshot or not. A highlighted snapshot is not active until it is recalled.
- Notes associated with the selected snapshot are shown in the Notes section.
- If the current snapshot is not selected, it will be highlighted green, and the selected one will be highlighted blue.

Above the Snapshots list are two arrows. Use them to recall snapshots lower or higher than the current one in the Snapshots list.

Double-click on a snapshot to change its name.

! Clicking an arrow loads the snapshot immediately.

### STORING SNAPSHOTS IN THE SNAPSHOTS LIST

**Store** saves all mixer settings to a snapshot. If a snapshot other than the current one is selected, you will be offered two choices:

- Current: Store the settings in the current snapshot.
- Selected: Store the settings in the selected snapshot. This replaces the contents of the selected snapshot.

**New** creates a new snapshot based on the current settings.

Snapshots, unlike sessions, are not separate files. They are embedded in the sessions.

## RECALLING SNAPSHOTS FROM THE SNAPSHOTS LIST

Select a snapshot and click **Recall**.

## CHANGING THE ORDER OF THE SNAPSHOTS LIST

A snapshot's place in the Snapshots list determines its recall number, so it's important to be able to change its position. There are two ways to do this:

- Drag the snapshot to a new location.
- Copy a snapshot with the Copy button. Use the separator line to choose where the pasted snapshot will be located in the list. If the separator line is not used, then the copy will be added to the bottom of the Snapshots List. Double-click on the snapshot to change its name.

## STORING A SNAPSHOT WITH THE TOP BAR SNAPSHOT MENU
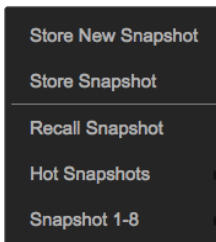
The Snapshot menu it located on the right side of the Top Bar. It's used to store and recall snapshots without leaving your current view.

A snapshot selected in this menu is recalled immediately.

The name of the current snapshot, along with its index number, is displayed in the box. If a scene has been modified since it was recalled, it is followed by an asterisk (*).

The Top Bar Snapshot menu is described in detail in the Top Bar section of this user guide.
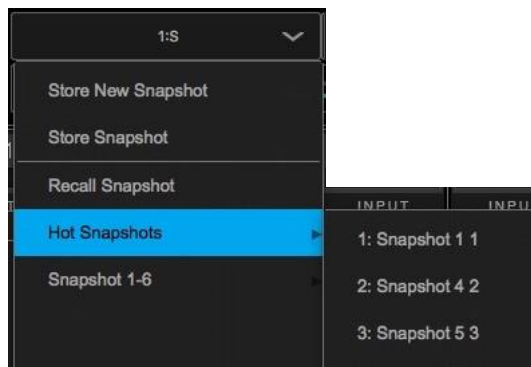
## Hot Snapshots

Hot Snapshots are user-assigned snapshots that are accessible for quick recall from any view.

### ASSIGNING HOT SNAPSHOTS
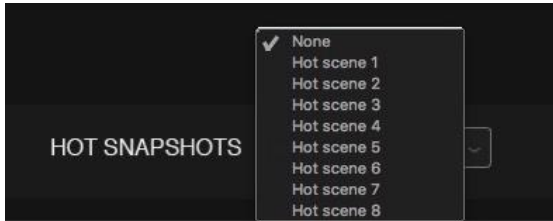


Use the menu at the bottom of the Snapshots list to assign the selected snapshot a Hot Snapshot position.

### RECALLING HOT SNAPSHOTS



Hot Snapshots are recalled from the Snapshots menu on the Top Bar.

## MIDI Control Changes for Snapshots

The Snapshots list can be controlled with MIDI program changes. Use the MIDI control panel to set up Follow Program Change or Generate Program Change commands (Setup > System Inventory > Controllers>Device Control Panel).

## Assigning Remote IDs to Snapshots

You can manually assign a remote ID number to a snapshot. This lets you separate the listing order of the snapshots in the Snapshots List from the remote-control snapshot ordering.

If, for example, you assign snapshot number 5 the remote ID of 130, and in the MIDI Controller you assign CC Number #7 to the 129-256 range, then this MIDI CC #7 with value 1 will recall snapshot 130 (value 0 will recall 129, and so forth).

There are two ways to assign a remote ID to a snapshot:
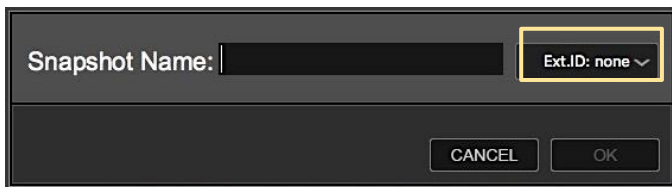


When you initially name a snapshot, you can assign an ID using the External ID drop-down menu.
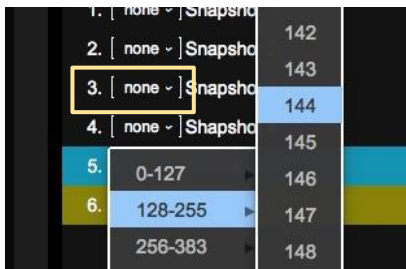


A new snapshot will indicate the external ID as "none." To assign an external ID to a snapshot that's already in the Snapshots List, click on the arrow to open the assignment drop-menu.

## Scope Page

Use the Scope page to select which racks and functions can be modified when a snapshot is recalled. All SuperRack settings are saved when a snapshot is stored. The Scope page filters which of these settings can change upon snapshot recall. The scope of a snapshot can be changed after the snapshot is created.

Scope selections are divided into two categories:

## Scope Parameters

**Functions** can be assigned to the scope of any snapshot:

| | |
|---|---|
| **Hot Plugins** | The contents of the Hot Plugins Panel (HPP) can be changed per snapshot. If Hot Plugins is selected, then when this snapshot loads, it will also read what plugins should be in the HPP and will load them accordingly. If the button is off, then the snapshot won't update the contents of the HPP. |
| **Windows** | Recalls which windows were open and how they were located on the screen when the snapshot was stored. This allows you to create a specific workspace for a snapshot. |
| **Name** | Change rack name. |
| **Dugan** | Dugan Speech settings. Current Dugan settings will be within the scope of the snapshot. |
| **BPM** | Change system BPM. |
| **Input** | Rack input level |
| **Output** | Rack output level |
| **In** | Sets rack processing to In (enabled) or Out (bypassed) |
| **Mute** | Mutes the rack |
| **Plugins** | These switches set whether a snapshot can change the parameters of any plugin in a specific plugin rack slot number, regardless of the plugin. When, for example, "Plugin 7" is deselected, all plugins in slot 7 *in any rack* are in recall safe mode when a snapshot is recalled. |

**Racks** sets which racks are included in the scope of the snapshot. Scope parameters (e.g., Hot Plugins, Dugan, Mute) apply only to highlighted racks, so a rack that is not highlighted will not change with a snapshot recall, regardless of the Function settings. The number of racks in the Scope section reflects the current SuperRack configuration.

**All/None Select:** Resets the Scope selection to "all parameters/channels are within the scope of this snapshot" or "no parameters/channels are within the scope of this snapshot."

## Recall Safe Page

**Recall Safe** prevents changes to specified racks and functions during a snapshot change, regardless of Scope settings. Recall Safe is set for an entire session, not by snapshots. Once Recall Safe is set for the functions and racks of a session, snapshot recalls will not affect their settings. Racks and functions in recall safe mode are highlighted green.

The Recall Safe panel uses the same layout as the Snapshot page. As with the Scope page, there is an All/None button that selects and de-selects all parameters and channels.
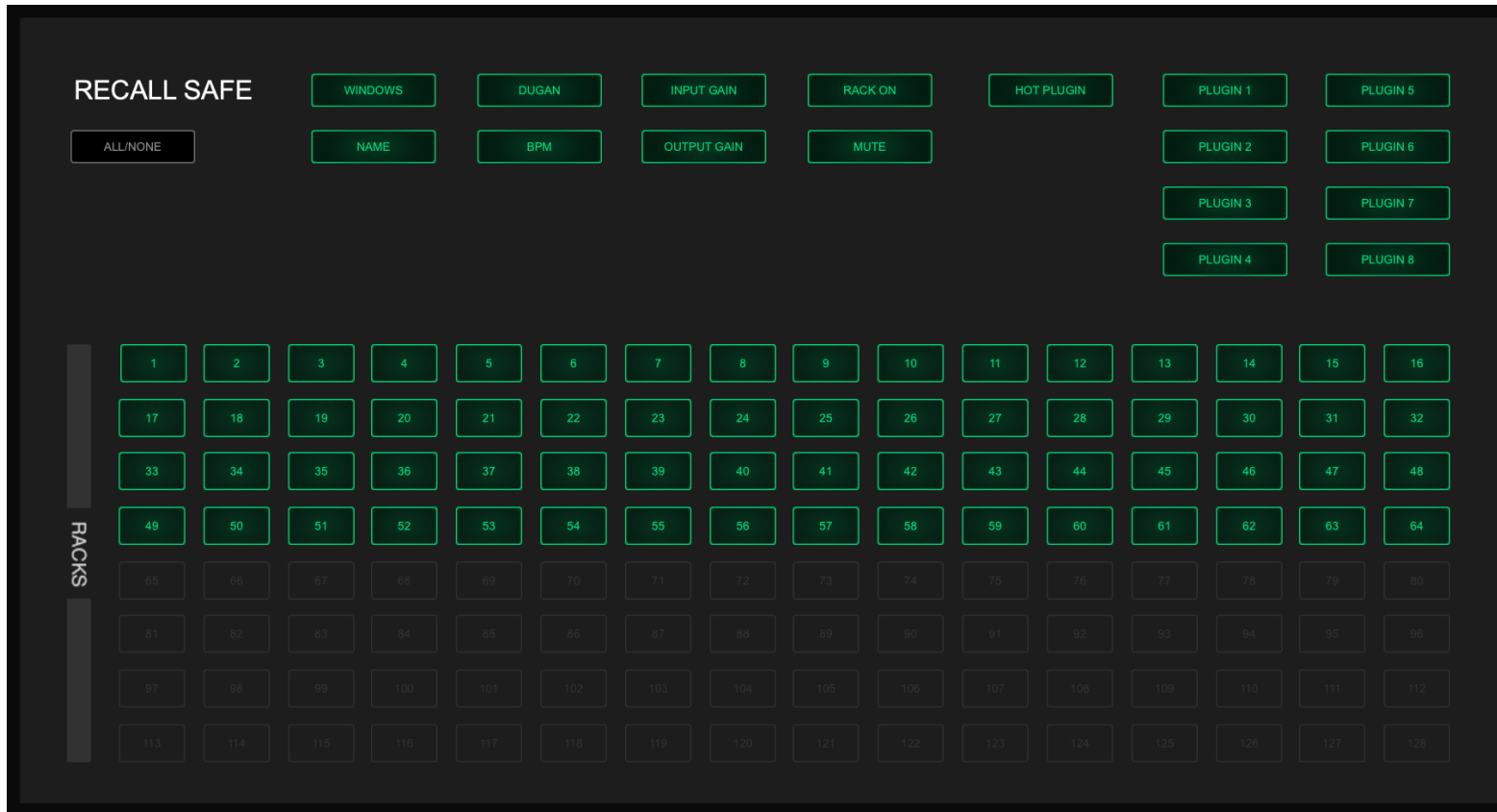
## RECALL SAFE FOR SPECIFIC PLUGINS

When you use the Recall Safe page to set a plugin *position* to Recall Safe, recall changes to *any* plugin in the specified position in *all* active racks will be recall safe.
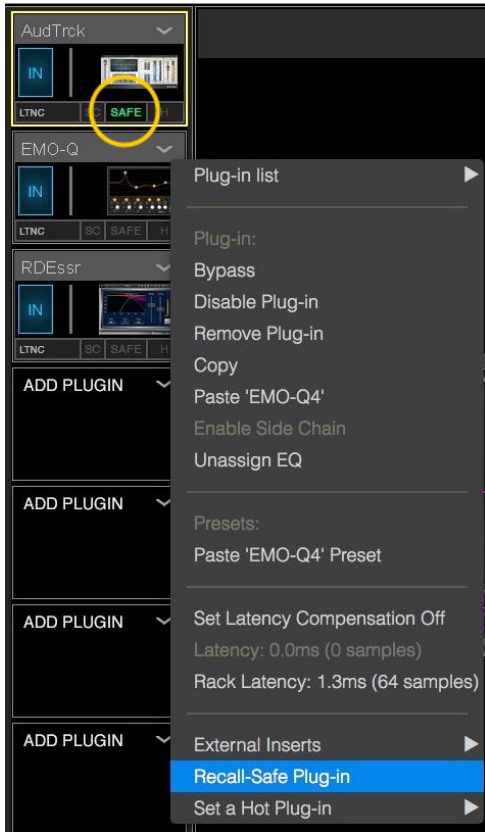
If you want to prevent a specific instance of a plugin from changing during a snapshot recall, use the Recall Safe *Plugin* menu item. This drop-down menu item is located at the bottom of the Plugin menu of the specified plugin.

There is a small indicator on the plugin icon that says "Safe."

The Recall Safe status of the other plugins in the rack, as well as other plugins in the same position of other racks, are not affected by this setting.

## RACK RECALL SAFE
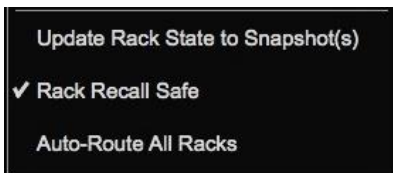
For convenience, a selected rack can also be set to Recall Safe from the Racks drop-down menu in the Top Bar. A small green SAFE indicates rack Recall Safe status.

# Supplementary Material

## Controlling SuperRack Remotely

Many SuperRack functions can be controlled from any MIDI device. Use the MIDI Controller to map most SuperRack functions to an external device.

### Assigning Controls

All Controllers are assigned in the Inventory page of the Setup Window



To add a controller:

1. Click on an empty controller slot.

2. Select a controller from the drop-down menu.

3. Click the controller's "Gear" button to access its control panel.

Up to five controllers can be assigned.

## MIDI CONTROLLER

Use the MIDI Controller to map between hardware MIDI controllers and numerous SuperRack functions. Its interface displays SuperRack functions that can be controlled directly via MIDI, including the eight continuous and eight discrete plugin controls. Assign links to SuperRack controls using a standard "MIDI Learn" routine.

1. Open the MIDI Controller.
2. Select the SuperRack function you wish to control.
3. Move the desired knob or press the desired button on your MIDI controller to establish an assignment.



The MIDI Controller interface displays SuperRack functions that can be assigned to a MIDI controller.

| ① General Settings | Global MIDI Settings<br>Select input MIDI device input and MIDI THRU.<br>*MIDI Takeover:* Actions on the remote controller will not affect the corresponding SuperRack control until their values match.<br>*Display MTC:* When selected, the clock window in the Top Bar displays MIDI timecode. When deselected, the window displays time from the host computer. |
| --- | --- |

| | | |
|---|---|---|
| (2) | Snapshot Recall | Establishes how MIDI controls snapshot recalls.<br>    *Follow Program Changes on Channel* drop-down menu: selects the MIDI channel on which SuperRack will respond to program change messages. Program change messages on other MIDI channels will be ignored.<br>    *Use Control Change Messages*: snapshot recalls for snapshots whose indexes are higher than 128 can be done by mapping snapshot ranges (128–255, 256–384, etc.) to MIDI CCs. |
| (3) | Navigation | Assign navigation between racks and between plugins.<br>    *Prev Rack* and *Next Rack* moves rack selection up and down. Select *Open Rack* to view it in its Rack Window. *Overview* opens the Overview window at the layer that contains the currently selected rack.<br>    P*rev Plugin* and *Next Plugin* move up and down the plugin chainer of the selected rack and opens the plugin's control pane. |
| (4) | Rack Controls | Maps MIDI control messages to control the rack's input gain, output gain, on/off state, and mute on/off. |
| (5) | File | *Import* and *Export* control enable you to save the settings you've made in the MIDI controller panel and export them to another panel. |
| (9) | User Keys | Maps the 16 user-assignable keys that are defined in the Settings page. |
| (11) | Plugin Controls | This panel maps plugin settings control for the selected plugin.<br>    You can map 8 continuous controls and 8 discrete switches per page.<br>    *Next Page/Previous Page* navigate between plugin control pages.<br>See below to learn more about controlling plugins with MIDI. |
| (8) | Snapshots | Maps eight hot snapshots for direct recall via MIDI.<br>    Next/Prev maps recalling the next or previous snapshot. |
| (9) | Tempo | Maps the Tap Tempo button (Top Bar). |
| (10) | Hot Plugins | Maps any of the 12 Hot Plugin assignments to a control. |

## PLUGIN MIDI MAPPING

The Plugin Controls panel is used to assign external control of the currently selected plugin or the plugin that's focused in the plugin pane. This mapping applies also to plugins in detached panels. Plugin controls are mapped to all Waves plugins in groups of eight variable and eight discrete plugin parameters at a time. Use the Next/Prev buttons to move between pages.



A SuperRack Session can have up to 64 racks, each containing up to eight plugins. Since every plugin has several parameter controls, remote control of so many different variables could be a complex task and would require you to re-map MIDI links each time the configuration changes. MIDI mapping is simplified in SuperRack by using a matrix that sits between the plugin and the MIDI controller. This matrix assigns key parameter control knobs and buttons to fixed matrix positions so that MIDI assignments always make sense, regardless of type of processor. For example, when dynamics processors are being used, the matrix usually assigns the first position to Threshold, the second to Ratio, the third to Attack, and so forth. With EQ processors, the first variable position is usually Input Gain, followed by Band One Gain, Band One Frequency, etc. Plugin controls that are currently under MIDI control are outlined in red, as shown below.
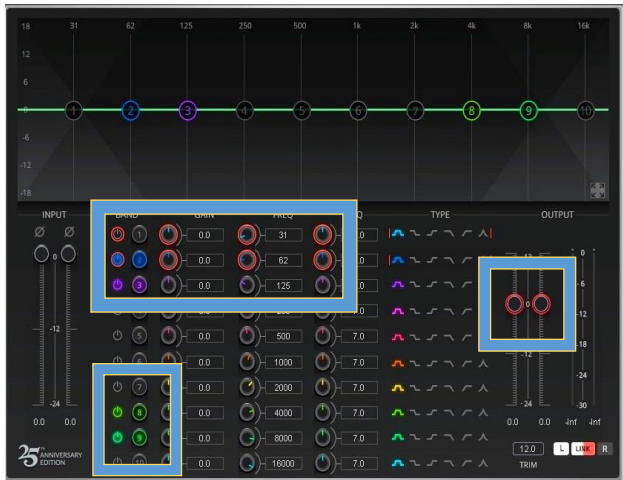
Q10 and Renaissance Equalizers share the same mapping on the current page.

Similarly, TrueVerb and RVerb share the same mapping on the current page.

The relationship between hardware and software needs to be set only once. The specific parameter control will change with each type of plugin, but the logic will remain consistent within categories (e.g., EQs, Dynamics) of Waves plugins.

## Keyboard Shortcuts and Modifiers

| Function | Window | Keystroke | Action |
|---|---|---|---|
| Reset | All | Alt+click on a control | Returns most controls to default value. This is also true with most plugin controls. |
| Insert to all racks | Overview | Alt + right click/insert a plugin | The selected plugin is inserted in the same rack insert position on all channels in the layer. |
| Bypass on all racks | Overview | Alt + right click/bypass a plugin | Bypasses all plugins in the same rack insert position on all channels in the layer. This affects the chosen rack position, regardless of the plugin type. |
| Disable on all racks | Overview | Alt + right click/disable a plugin | Disables all plugins in the same rack insert position on all channels in the layer. This affects the chosen rack position, regardless of the plugin type. |
| Remove from all racks | Overview | Alt + right click/remove a plugin | Removes all plugins in the same rack insert position on all channels in the layer. This affects the chosen rack position, regardless of the plugin type. |
| Disable plugin | Rack / Overview | Ctrl+click on plugin icon | Disables one plugin. |
| Bypass plugin | Rack / Overview | Ctrl+alt+click on plugin | Bypasses one plugin. |
| Move plugin to another rack | Overview | Drag plugin from one rack to another | Moves the plugin and its presets to another rack. |
| Copy plugin to another rack | Overview | Alt+drag plugin from one rack to another | Copies the plugin and its presets to another rack. |
| Remove plugin | Rack / Overview | Swipe plugin icon off of the screen | Removes a plugin from the rack. |
| Save | All | Cmd]/Ctrl + S | Saves the current session. |