StudioLive AI and RM Family 1.5 Release Addendum
Includes StudioLive AI Console and RM mixers, CS18AI, Capture 2.2, and Studio One 3.2

The StudioLive AI and RM Family 1.5 Release includes many new features and workflow updates. The new features are centered primarily around the new RM Cascading functionality and updated Stagebox connection functionality between AI Consoles and RM Mixers, but the changes, bug fixes, updates, and new features span the entire AI family of hardware and software. The following document details and explains what's new in this release.

Network IP Address Modes

The StudioLive AI and RM Family 1.5 Release brings some important new changes to user control over network connection, on both the Software and Hardware sides. There are now three types of IP configuration schemes available for the Wired ethernet interface on AI Consoles, RM Mixers, and the CS18.

An Important Note about Direct Ethernet Connection scenarios: *When two network devices are directly connected to each other via an ethernet cable instead of to a router or network, there will be no way for these devices to get a Dynamic IP address, so both devices must be able to Self-Assign an IP address.*

*When using any AI mixer family devices in a direct ethernet connection scenario, you must set them all to **Static Self-Assigned** IP mode. This includes both the AI Consoles and the RM mixers in an AVB Stagebox setup where direct ethernet connection is used, both the CS18 and the RM mixers when directly connected via an ethernet cable, as well as the CS18 when directly connected via ethernet to a computer for Studio One control (most computers will automatically self-assign an IP address when no network is present).*

This is a departure from previous firmware releases where the device would automatically switch to Self-Assigned IP mode after a set period of time when no DHCP server is detected. This automatic behavior posed a problem for many customers, so in response, the network modes now remain fixed until changed by the user. You can read more about each network mode below.

Dynamic IP Mode**:** This is the most common and also the default setting for StudioLive AI family devices. In Dynamic mode, the mixer is assigned an IP Address by a DHCP server, which is a feature included in most routers. When a mixer is powered on, it requests an IP address from the DHCP server, which then answers and assigns the mixer a unique IP Address. The mixer will continue to send and wait for an answer to its DHCP requests.

NOTE: AI Consoles, RM Mixers, and CS18 will use this mode by default. If the user sets a Static IP for any of these devices, it will be retained and applied each time the unit is powered on until it is changed again by the user.

Static Self-assigned IP Mode: This mode is used primarily for when you're setting up a direct ethernet connection between the mixer and another device like an AI Console mixer or CS18AI, but without the use of a router. In this mode the mixer will automatically assign itself an IP Address in the 169.254.0.0/16 range, allowing connection with other devices in the same IP address range.

Static Manual IP Mode: This mode is typically reserved for more complex networking installations or situations that otherwise require setting Static IP addresses. In this mode you can manually assign an IP Address, Subnet Mask, and Gateway. If you're not sure how to manually configure static IP address assignments, please consult your IT Administrator before attempting to configure the AI device in Static Manual IP Address mode. Unless you have a specific need for static IP address assignment, most users would be advised to use Dynamic mode and let IP addressing be handled automatically by your router/network DHCP server.

NOTE: Setting up the Network IP Address modes can be done from the on-screen menus of the CS18 and AI console, from UC Surface under the Setting > Network tab, and additionally for RM mixers, by holding a front panel button during bootup (see below)

Network mode options are only available for the Wired Ethernet interface. The Wireless interface requires a Wifi Router to give out IP addresses. Network modes are not intended to be changed on the fly, so to ensure proper network configuration and connection, it's strongly suggested to always power cycle the device after the change to its Network Mode has been applied.

**Configuring Network IP Address Modes**

NOTE: If choosing Static Manual mode, you must also enter the necessary IP address info. Please consult an IT professional if you're not sure how to configure Static IP addresses.

CS18AI: The network modes for the CS18's Wired ethernet interface can be configured from the UCNET menu. Press the UCNET button to open the UCNET menu screen, then press the Gear icon for the Wired interface section. Select the desired network mode and press Apply/Renew to apply changes.
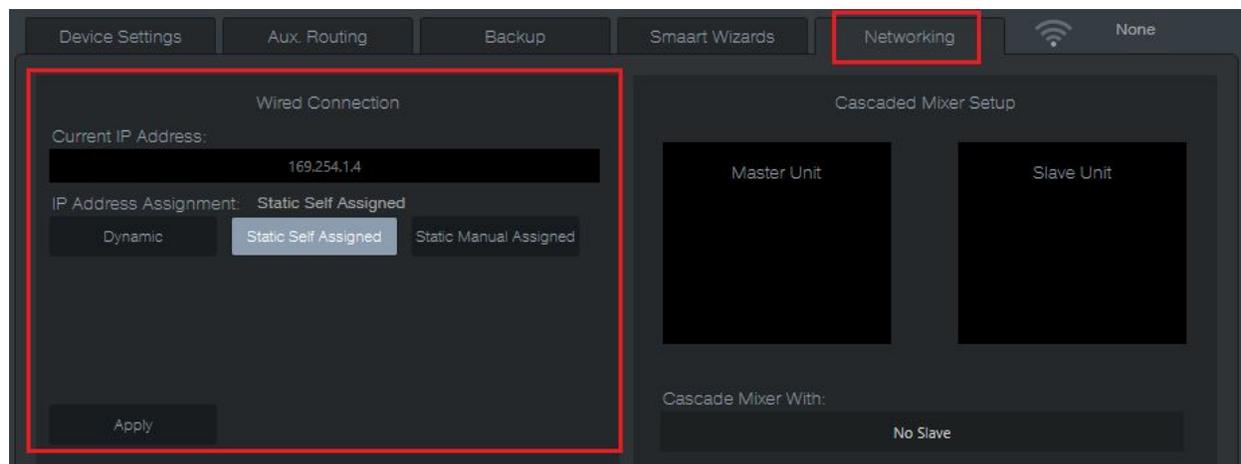

*NOTE: Connecting the CS18's Wireless interface is done in a similar fashion. With the Wifi adapter inserted, press the Gear icon for the Wireless interface, then press the **Network:** button to select your desired Wifi network*

StudioLive AI Consoles: The network modes for the StudioLive AI Console's Wired ethernet interface can be configured from the System menu. Press the System button to open the System menu, page down to Page 3: Wired Network, use the Master Control section encoder knob to select the desired IP address assignment mode and press the Store button to apply changes.
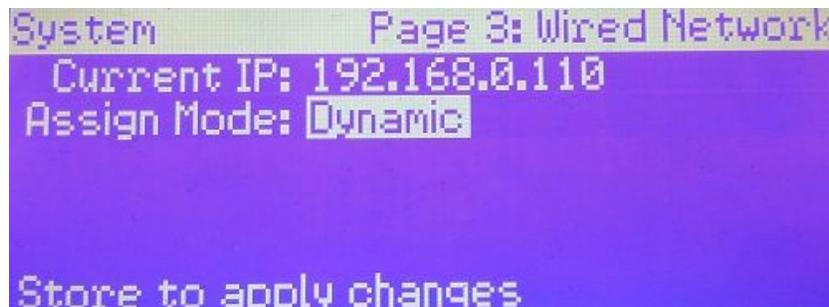

NOTE: The Wireless interface on the Console mixers is now configured separately on pg. 2 of the System menu. The AI Consoles can also be configured from UC Surface, as described below for the RM mixers.

StudioLive RM Series rack mixers: The network modes for the StudioLive RM mixer's Wired ethernet interface can be configured from the Networking tab in UC Surface. Click the Gear icon in the top right corner of UC Surface to open the Settings page, click the Networking tab and under Wired Connection, select the desired IP address assignment mode and press the Apply/Renew button to apply changes. You can also reset the RM mixer to either Dynamic mode or Static Self-Assigned mode directly from the front panel buttons (see below)


NOTE: Connecting the RM mixer's Wireless interface is done in a similar fashion. With the Wifi adapter inserted, click on the Gear icon next to **Current Network:** in the Wireless Connection section and wait for Wifi networks to be detected. Select the network you wish to join, enter the password, and click Join.
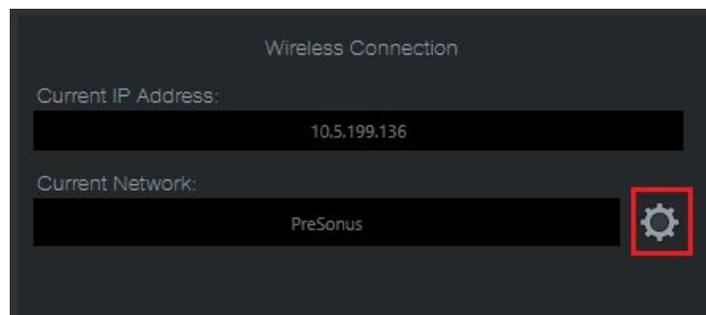
RM Mixer Network Mode Button Press Functions
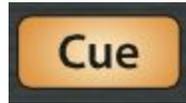
Hold down the Cue source button while booting the mixer to switch to Dynamic IP mode. For this mode to initialize, the Cue button must continue to be held from the moment the mixer is powered on until all channel LEDs flash Green (RM32 Pictured):
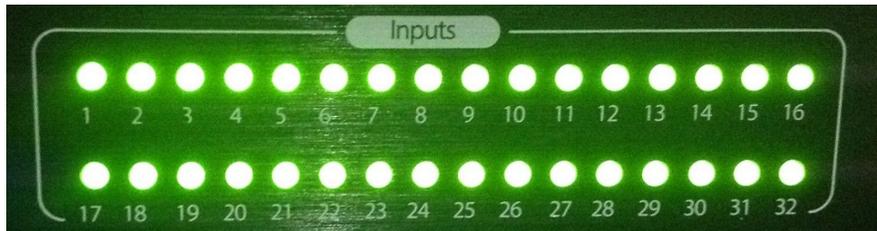
Hold down the Main source button while booting the mixer to switch to Self-Assigned IP mode. For this mode to initialize, the Main button must continue to be held from the moment the mixer is powered on until all channel LEDs flash Red (RM16 Pictured):

RM Stagebox Modes

Stagebox Modes for RM Mixers used in combination with AI consoles have been expanded with this release to include two different stagebox mode settings:

Remote IO / Monitor Mode
- This mode operates the same as the original implementation of the Stagebox setup between AI Consoles and RM Mixers, in which the RM Mixer serves as both a Monitor Mixer and as a remote I/O box for the Console. The RM on stage sends it inputs over the AVB network to the AI Console, and the AI Console's Main FOH mix is sent back to the RM's physical Main L/R outputs. Importantly, in this mode the RM also serves as an independent Monitor Mixer, such that you use UC Surface or a CS18 to control the RM's own Aux buses to do monitor mixes and the RM's physical Mix Outs are used to output to your monitoring system.

Stagebox Mode (i.e. "Simple" Stagebox)
- This is a more traditional Stagebox function, where the RM mixer simply serves as a remote I/O box for the Console at FOH. All mixing, both FOH and Aux mixing, is done on the AI Console at FOH.

- *NOTE: UC Surface/CS18 control of the RM mixer is NOT supported in this mode*

- When using Stagebox mode, the mixer DSP on the RM is bypassed and all RM outputs are copies of the AI Console's Auxes and Subgroup outputs as shown below:

RM Inputs 1-32
32.4.2AI Inputs 1-32
24.4.2AI Inputs 1-24 (RM inputs 25-32 are not available to the AI Console mixer)
16.4.2AI Inputs 1-16 (RM inputs 17-32 are not available to the AI Console mixer)

RM Main Outputs Left, Right, Mono
AI Console Mixer Main Outputs Left, Right, and summed Mono

| RM32 Mix Outputs 1-16	RM16 Mix outputs 1-8
32.4.2AI Aux outputs 1-14, Subgroups 1-2	32.4.2AI Aux outputs 1-8
24.4.2AI Aux outputs 1-10, Subgroups 1-4 (last 2 Mix outputs are unused)	24.4.2AI Aux outputs 1-8
16.4.2AI Aux outputs 1-6, Subgroups 1-4 (last 6 Mix outputs are unused)	16.4.2AI Aux outputs 1-6, Subgroups 1-2

Setting up RM Mixer Stagebox:

1. In the AI Console System Menu, page down to the Network Stagebox page. This page contains the connected Mixer option, Stagebox On/Off option, and Stagebox Mode option

2. If an RM mixer is not already selected as the Connected Mixer, use the value encoder to scroll to the desired mixer, and press Store to connect to the selected mixer.

3. Press the next button to move the cursor to the Stagebox On/Off option and enable Stagebox Mode. By default it will enter "Remote IO + Monitor Mixer" mode.

4. To change the mode to Stagebox (Simple Stagebox), press the next button to move the cursor to the Stagebox Mode option and use the value encoder to scroll to "Stagebox"

CS18 New Features

User-Assignable Channel Select Button Colors

On the CS18 channel settings screen, users now have the ability to assign custom channel colors, on a per-channel basis. The custom color controls the color of the channel's Select button, and it overrides the default Select button color (which matches the channel's Layer). To remove a custom color, select the "no color" box in the bottom left corner of the screen. These colors are saved in scenes and don't require any Scene Recall filter to be engaged in order to load with the stored Scene (they will always load).
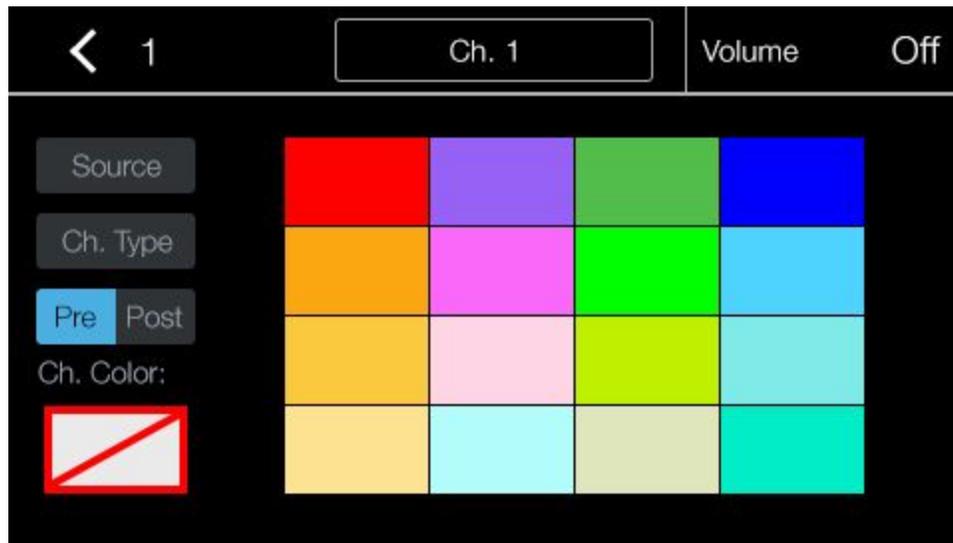
Footswitch Implementation

In the CS18 System Menu, there is a new drop-down list in which individual parameters can be selected to be controlled by a footswitch when it it connected to the CS18 footswitch input. The following controls are available:

- FX Tap
- FX Mute
- Load Scene
- Talkback
- DAW: Rec Start/Stop
- DAW: Drop Marker

Lock Main Mix to Faders

When the CS18 Main Select button is held for 3 seconds, it will flash to indicate Lock Main Mix To Faders is active. In this mode, the CS18 physical faders will always show the Main Mix. Aux/Sub Mixes and FX Mixes will be adjusted from the Fat Channel encoders/meters section (similar to StudioLive Console Mixers).

To exit this mode, simply hold down the Main Select button for 3 seconds and the Main Select button will flash again to indicate the mode is no longer active.

GEQ On The Fat Channel Encoders

When the GEQ button is engaged, GEQ bands can now be adjusted from the Fat Channel encoders/meters section as well as on the LCD screen.

Digital Return Source Select

The RM Digital Return can now be sourced from either Firewire Input (a computer) or Network Input (CS18 Input 3&4, or Dante input). To access this selection in UC Surface, select the Digital Return channel strip and select your Input Source. To access this selection on the CS18, press the CS18 Returns Layer button, and then Select the Digital Return (DR) channel. Once the DR is selected, press the Settings icon in the LCD for the DR channel and you will see a drop-down list where this source can be switched.

LED and Button Brightness Dim

On the CS18 Settings Page, there is a new Dim/Full switch to toggle between full brightness of CS18 LEDs and buttons, and a dimmed backlight of the CS18 LEDs and buttons to accommodate for different lighting situations.

Peak Hold Meters Option

On the CS18 Settings Page, a selection has been added to enable/disable peak hold mode for CS18 meters.

CS18AI Physical Input Routing

When input is provided to CS18 inputs 1-4, they will route as follows when connected to an RM Mixer over AVB (direct-connection to the RM or through an AVB switch)

- 1/TB -> RM Ch1 & 31

    - CS18 Input 1 can be set as Talkback Source or it can be used as the Network input source for RM channel 1 and/or RM channel 32

- 2/TB -> RM Ch2 & 32

    - CS18 Input 2 can be set as Talkback Source or it can be used as the Network input source for RM channel 2 and/or RM channel 33

- 3 -> RM Ch3 & Digital Return L

    - CS18 Input 3 can be used as the Network input source for RM channel 3 and/or Digital Return L

- 4 -> RM Ch4 & Digital Return R

    CS18 Input 4 can be used as the Network input source for RM channel 4 and/or Digital Return R

Note: RM channels must be set to Network input source in order for the CS18 local inputs to be routed to the RM channels. When RM Mixers are Cascaded, CS18 inputs 1-4 only route to RM Ch's 31, 32, Dig Ret (L), and Dig Ret (R), respectively.

<u>Capture 2.2 New Feature: Remote Capture Control</u>

Capture 2.2 brings an exciting new feature to the AI mixer family: Remote Control from UC Surface and the CS18AI

UC Surface Control

When an AI Console or RM Mixer is connected to your Mac or PC via firewire, Universal Control AI is running, and Capture Sync is established, a Capture button will appear in the UC Surface Quick Access panel. Selecting this button will show Capture controls in the Fat Channel area of UC Surface as shown below:
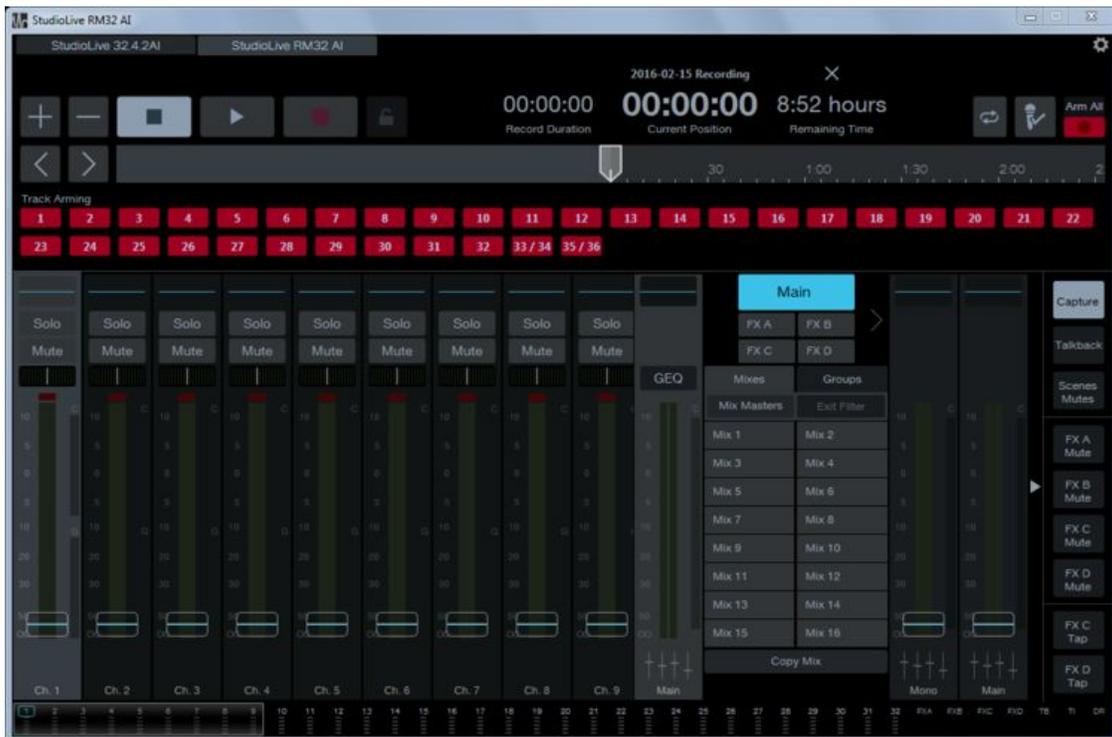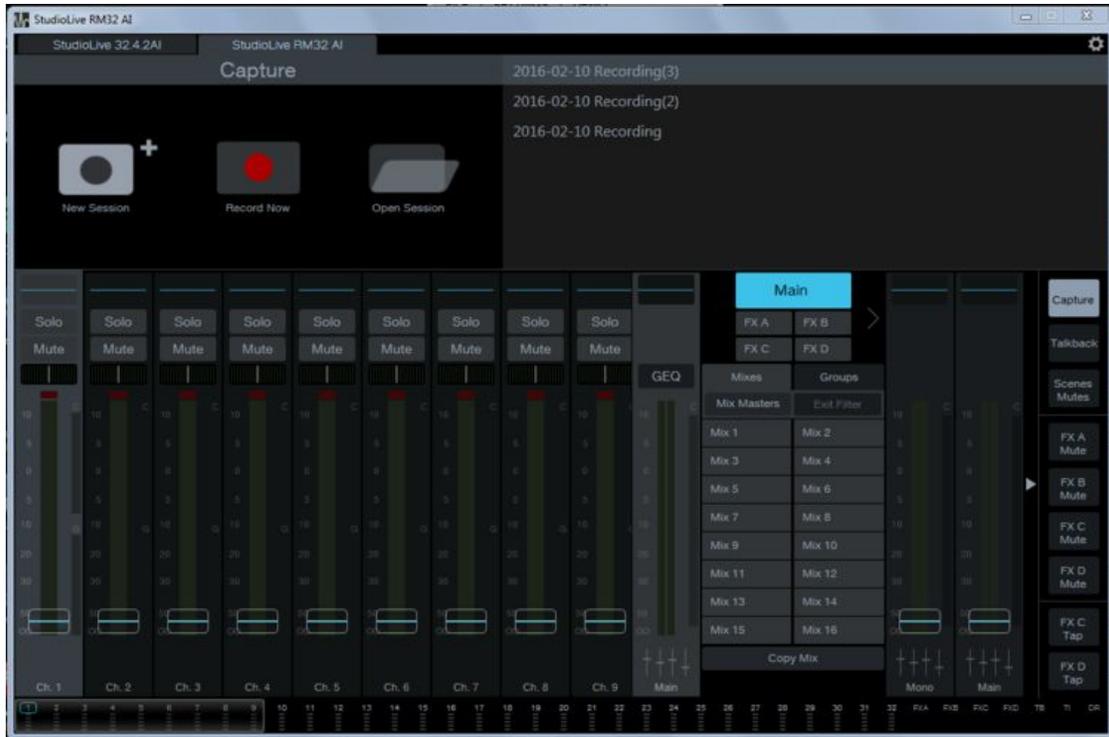
Once a new or existing session is launched, Capture controls and timeline will be displayed. Markers will also be shown and can be added or removed on-the-fly. Track arm buttons and transport controls are also present, as well as control for launching Virtual Sound Check.

CS18 Control

In the CS18 UCNET section you will see any instance of Capture available to control, provided it is running on a Mac or PC that is on the same network as the CS18.

On the CS18 Home screen, you will then see a Capture button.

When selected, the CS18 will open a Capture control window as seen in the screenshots below. CS18 transport controls will control Capture as they do when the CS18 is controlling Studio One.

In addition, selecting the CS18 "Marker" button will bring up the Markers Screen on the CS18 LCD as shown below.

This screen allows navigation for jumping to individual markers, and markers can be added or removed. Also, the Pan encoder can be used as a jog wheel when the "Jog" button is selected on the LCD.

Studio One v3.2 Hardware Integration for AI family mixers

Studio One v3.1 introduced deep hardware and DSP integration for the powerful PreSonus Studio 192 and Studio 192 Mobile USB 3.0 audio interfaces. With Studio One v3.2, much of the same hardware integration is available for both StudioLive AI Consoles and RM series rack mixers.

Note: *These features requires both the latest version of Studio One v3.2 and the latest Universal Control AI (which must be running on the Studio One computer) in order for Studio One and your mixer to Sync.*

RM Mixer Hardware Integration

When using an RM mixers as the audio interface, Studio One now has the ability to control the Preamps, Pre/Post setting, Polarity, 48v, and Fat Channel of the RM mixer, directly from Studio One's Mix Console view. The Preamp/Polarity/48v functions are accessed in the Mix Console view directly above the channel Input selection on each channel strip. Control of the mixer's Fat Channel is accessed by double clicking on the blue Fat Channel control at the top of each channel strip. Additionally, a Fat Channel plug-in instance can be added to the inserts of any channels, and this can be synced with the Mixer's Fat Channel.

You can control the Pre/Post setting of the channel by clicking on the "Apply DSP to Input Signal" button in the upper left hand corner of the Fat Channel plug-in. This will allow recording your audio with the Fat Channel settings applied:
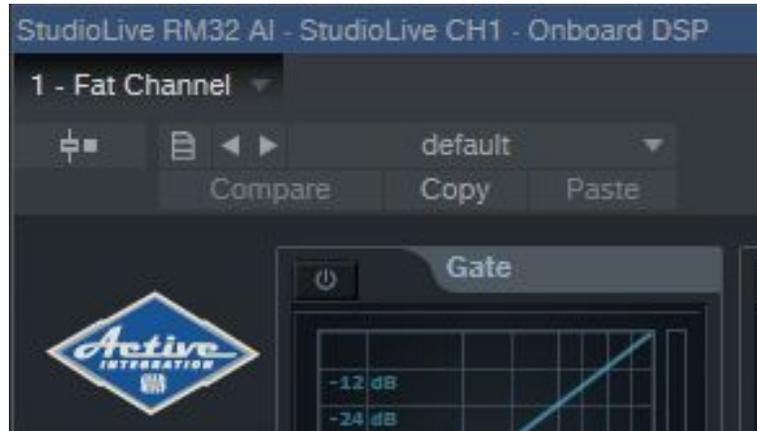
To listen your recordings through the same Fat Channel processing as the audio you are monitoring, simply drag the DSP Fat Channel plugin down to the channel insert to load an instance of the native Fat Channel plugin.

By default, the "link to DSP" button will be enabled. This links the parameters between the Mixer Fat Channel and the Fat Channel plug-in in Studio One. Editing either will change both.

AI Console Hardware Integration

The AI Consoles can be used in the exact same fashion, with the one exception being the Preamp controls. Due to the fact that the AI Console mixers do not have recallable preamps, controlling them is not possible from UC Surface or Studio One v3.2.

StudioLive AI/RM Family 1.5 Release FAQs

Q: Can I cascade RM Mixers on a Dante network?

A: Not at this time. RM cascading is currently done via AVB only. Cascading RM mixers via Dante is being investigated and considered for possible future implementation.

Q: The CS18 and/or UC Surface can *see* my mixer but I can't *connect to and control it*. What's wrong?

A: The CS18 - or the device running UC Surface - is likely not on the same subnet as the AI Console or RM Mixer you are trying to connect to. All AI family mixers and control instances must be on the same network subnet for connection to occur.

Examples:

Mixer - (IP Address *192.168.1*.2)

UC Surface Device - (IP Address *192.168.1*.3) ✓

Mixer - (IP Address *192.168.1*.2)

UC Surface Device - (IP Address *192.168.6*.3) ✖

Q: My devices are directly connected with an ethernet cable, but they are unable to see or connect to each other. Why?

A: When using any AI mixer family devices in a direct ethernet connection scenario, you *must* set them all to *Static Self-Assigned* IP mode. This includes both the AI Consoles and the RM mixers in an AVB Stagebox setup where direct ethernet connection is used, both the CS18 and the RM mixers when directly connected via an ethernet cable, as well as the CS18 when directly connected via ethernet to a computer for Studio One control (*most computers will automatically self-assign an IP address when no network is present*).

Q: Can I use cascaded AI Consoles with one or two RM Mixers as stageboxes?

A: Yes, though somewhat unofficially. Although it wasn't planned to be implemented and supported at this stage, in preliminary testing it appears to work reasonably well. It will however only work in the simple Stagebox mode. It will NOT work with Remote IO / Monitor mode. We are continuing to test this configuration and will hopefully be able to say soon that we officially support it.

Q: How do Scenes and Presets work for cascaded RM Mixers?

A: Any Scenes saved while RM Mixers are cascaded will save parameters for both mixers, either to the internal mixer Scene Memory slots, or to the computer via the Local tab in the UC Surface Scene Manager. Presets, being channel-specific, work the same as with single mixers.

Q: Can I update firmware while RM Mixers are cascaded?

A: No, neither AI Consoles or RM Mixers should be in any kind of cascade or stagebox mode during firmware update. Unexpected results can occur if this is done and there is risk of losing data or rendering your mixer(s) unusable.

Q: Can I cascade my RM Mixers with a firewire cable instead of an ethernet cable?

A: No, cascading for RM Mixers is done over AVB network connection only, in the same way that AI Console cascading is done over Firewire only. A Firewire connection will be necessary from your Master cascaded RM Mixer to your computer however, if you wish to record.

Q: If I'm cascading an RM16 and an RM32, does it matter which one is the Master mixer?

A: No, either mixer can be the Master cascaded mixer. The only difference will be in the order that inputs are displayed in UC Surface and in your DAW (Master RM channels first, then Slave RM channels). *Note: The Mix outputs are duplicated on both mixers in a cascade pair, so only the first eight mixes are physically available on the RM16. An additional consideration is that the RM16 has GEQ only on the physical Mix outs, and output delay only on the last four physical Mix outs, so using it as Master will restrict you to GEQs only on the first eight Mix outs of either mixer, and output delay only on Mix outs 5-8.*

Q: Why doesn't UC Surface show cascaded AI Consoles as a single mixer window?

A: The architecture of the AI Consoles differs enough from that of the RM Mixers such that it presented too great of a risk to implement a single mixer window for them at this time. We will, however, be evaluating the possibility of implementing this workflow for AI Consoles in the future.

Q: Does QMix-AI see cascaded RM Mixers as a single mixer like UC Surface does?

A: No, currently as with AI Consoles, QMix-AI does not have this functionality implemented. We are working on an updated solution for QMix-AI that will merge cascaded mixers as UC Surface does.

Q: Can I use UC Surface to control an RM configured in Stagebox Mode?

A: In true Stagebox mode ("Simple" Stagebox)? No. The mixer's DSP is bypassed and all of its physical outputs are used for the AI Console bus outputs. In the Remote IO / Monitor mode though, yes. In this mode the RM is still used as your Monitor mixer and it's DSP remains active.