UAD-2 Live Rack

MADI Effects Processor



Operation Manual

Manual Version 180518

UNIVERSAL AUDIO

www.uaudio.com

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Chapter 1: Introduction

16-channel MADI Effects Processor For Live Mixing With UAD Plug-Ins

UAD-2 Live Rack is a 16-channel MADI effects processor for live sound engineers to craft their mixes using Realtime UAD Processing and industry-leading UAD plug-ins — including Antares Auto-Tune Realtime — right out of the box. Up to four UAD-2 Live Rack units can be combined for up to 64 channels of MADI signal processing via Mac Thunderbolt.

Realtime UAD Plug-In Processing

With its Realtime UAD QUAD Core Processing, UAD-2 Live Rack lets engineers enhance their live mixes with the world's best analog emulations, courtesy of Universal Audio's acclaimed UAD Powered Plug-Ins library.

This sleek 1U rackmount processor is available in two bundled plug-in configurations:

UAD-2 Live Rack Core – Includes a generous suite of UAD plug-ins, including legendary 1176 and Teletronix LA-2A compressors, and Pultec EQs.

UAD-2 Live Rack Ultimate – Includes over 90 UAD plug-ins, with exclusive titles from SSL®, Studer,® SSL,® Neve,® Manley,® Lexicon,® API,® Fender,® Moog,® and many more.

Included with both UAD-2 Live Rack configurations is the Antares Auto-Tune Realtime plug-in. Legendary for its vocal enhancing and creative applications, genuine Antares Auto-Tuning can be used in real time for pitch correction and modern pop vocal effects. And existing UAD plug-in users can readily use their licensed UAD plug-ins with UAD-2 Live Rack.

> ***Note:*** *A small number of UAD plug-ins are incompatible with UAD-2 Live Rack. For full details, visit help.uaudio.com.*

Live Rack Application

With the Live Rack application, front-of-house engineers can take advantage of intuitive features such as drag and drop, copy and paste, keyboard navigation, plug-in zoom, and the ability to store and recall channel strip presets and/or complete setup configuration Snapshots. Designed for seamless operation in a live setting, the Live Rack app features large text and GUI elements making it easy to quickly tweak parameters.

The Live Rack app also features MIDI snapshot recall capabilities as well as networked software integration with select Soundcraft Vi consoles.

Fail-Safe Features

UAD-2 Live Rack includes professional, fail-safe features for reliable live sound use. Redundant internal power supplies ensure that UAD-2 Live Rack will continue to process audio if one power supply fails. If the Live Rack application or computer fails, or its Thunderbolt cable is disconnected, UAD-2 Live Rack will still process audio with the last known plug-in state intact. And with the Live Rack app in Safe mode, destructive setting changes are prevented during a live show.

UAD-2 Live Rack Features

Hardware

- Durable 1U Rack enclosure
- 4 SHARC DSPs on-board
- Dual-redundant internal power supplies with failover detection
- Each UAD-2 Live Rack unit processes up to 16 channels of a MADI stream
- Add additional units for 32, 48, or 64 MADI channels
- Runs a huge library of UAD Powered Plug-Ins & UAD Direct Developer Plug-Ins
- Dual-Thunderbolt 3 host connectivity
- One set of MADI optical I/O (64 channels @ 48 kHz)
- Word Clock I/O (BNC) and input termination
- Sample Rate support from 44.1 kHz to 96 kHz
- Clock Support for the following formats: Internal, MADI, Word Clock

Software

- Purpose-built UAD-2 Live Rack application for inserting UAD Powered Plug-Ins
- Networked integration with select Soundcraft Vi Series consoles – allows full remote snapshot triggering and storing
- Create, store, and recall channel strip presets
- Create, store, and recall snapshots
- Up to eight UAD Powered Plug-Ins per-channel
- Meter bridge always displays signal levels on all channels
- Plug-ins are categorized by type for quick assignments
- Large text and graphics for high visibility in live sound environments
- SAFE Mode ensures destructive changes do not occur during a live scenario
- Edit Mode ensures changes can be made as quickly as possible
- Intuitive drag/drop functionality for copy/paste, navigation, and moving plug-ins between inserts and/or tracks
- Most functions can be navigated and executed without a mouse (via computer keyboard)
- Full screen application minimizes visual clutter
- Delay compensation group channels for maintaining phase alignment (critical for drums)
- Application and Snapshots can be configured without connected hardware for offline setup and/or sharing with other operators

Package Contents

- UAD-2 Live Rack hardware unit
- IEC power cables: (1) USA, (1) Europe
- Set of four rack screw with washers
- Getting Started URL card
- For installation software, visit www.uaudio.com/downloads

UAD-2 Live Rack System Overview

UAD-2 Live Rack has several components that comprise the complete UAD-2 Live Rack system. A brief description of each component is provided below, along with a link to complete details about the component.

UAD-2 Live Rack Hardware

The UAD-2 Live Rack unit is the 1U rack hardware that performs audio signal processing on digital audio streams via MADI. The hardware unit contains four SHARC DSPs that process the UAD Powered Plug-In algorithms. Each unit can process up to 16 MADI streams, and up to four units can be combined to process a total of 64 MADI streams.

The UAD-2 Live Rack hardware is configured and controlled by the UAD-2 Live Rack software application.

For complete hardware details, see "Chapter 2: Hardware" beginning on page 19.

Live Rack Software Application

The Live Rack application is the software interface for the UAD-2 Live Rack hardware unit. The software configures and controls the hardware unit(s) and UAD Powered Plug-Ins. The application runs on select Mac computers and it interfaces to the UAD-2 Live Rack hardware via Thunderbolt.

> ***Note:*** *Although UAD Powered Plug-Ins are operated via the Live Rack software, the signal processing is performed on the hardware unit's SHARC DSP, not the computer's CPU.*

For complete details about the software application, see "Chapter 4: Live Rack Application" beginning on page 39.

UAD Powered Plug-Ins

UAD Powered Plug-Ins are software plug-in titles containing DSP algorithms. UAD plug-ins are loaded and controlled within the Live Rack software for signal processing on the four SHARC DSPs in the UAD-2 Live Rack hardware. Each UAD plug-in contains a graphical user interface (GUI) and various control parameters that can be manipulated to achieve the desired sonic results.



Typical UAD plug-in interface

UAD Powered Plug-Ins are developed by Universal Audio and also by Direct Developer (3rd-party) partners. A wide range of titles are available that are suitable for nearly every application. The UAD Powered Plug-In titles that are included with UAD-2 Live Rack depend on the bundle included with the retail product package:

Core Live – The Core Live bundle includes 15 UAD plug-in titles that were selected as a fundamental base set for live sound applications.

Ultimate Live 2 – The Ultimate Live 2 bundle includes 84 UA-developed titles. Note that Direct Developer titles are not included.

UAD plug-ins that are not included in the retail bundles are optional and purchased separately. Optional UAD plug-ins can be individually evaluated without functional limitations for 14 days in demo mode, and can be purchased anytime at the UA store at www.uaudio.com.

For complete details about how UAD Powered Plug-Ins are used within UAD-2 Live Rack, see "Chapter 6: Using UAD Plug-Ins" beginning on page 133. For complete details about individual UAD Powered Plug-Ins, see the UAD Plug-Ins Manual which is placed on the startup disk during software installation.

> ***Note:*** *UAD-2 Live Rack, like other UAD devices, can only use UAD Powered Plug-Ins which are developed specifically for the UAD DSP accelerator platform. Plug-ins developed for other hosts and platforms (VST, RTAS, AAX, Audio Units, native, etc) cannot be used with the UAD-2 Live Rack system.*

UAD Meter & Control Panel Software Application

The UAD Meter & Control Panel is used to authorize licensed UAD plug-ins and configure global functionality that pertains to all UAD devices in the same system (the application is used for all UAD products).

The application consists of two components: The UAD Meter and the UAD Control Panels. Complete documentation for the UAD Meter & Control Panel application is in "Chapter 5: UAD Meter & Control Panel" beginning on page 120.

UAD Meter

The UAD Meter window (shown at right) displays the current DSP and memory status of all active UAD-2 Live Rack hardware (including multiple devices).



> ***Note:*** *These meters are also represented within the UAD-2 Live Rack application.*

UAD Control Panels

The UAD Control Panel window has multiple panels that display, and enable control of, various UAD system, plug-in, and global configuration parameters.

The screenshot at right shows the System Info panel, one of four control panel windows in the UAD Meter & Control Panel application.



UA Store

The UA store at www.uaudio.com is where optional UAD plug-in licenses can be purchased. Promotional coupons are also redeemed here. All UAD device registrations and plug-in authorizations are managed here as well.

For complete details, see "Chapter 7: UA Account & Store" beginning on page 140.

Soundcraft Vi Series Consoles

Note: *UAD-2 Live Rack can be used with any compatible MADI system.*

Soundcraft Vi Series consoles are digital mixing/processing systems designed for use in a live sound environment.

UAD-2 Live Rack includes Vi console integration. Vi consoles integrate with UAD-2 Live Rack via two simultaneous control protocols:

MADI – Digital audio streams are routed between Vi consoles and the UAD-2 Live Rack hardware unit for signal processing via MADI optical I/O (note that all UAD plug-in signals are processed in the UAD-2 Live Rack hardware unit, not in the Vi console). Use the Vi Console's powerful Insert and patching system to route signals to and from the Vi console via MADI.

Ethernet – Digital control signals, for saving and loading UAD-2 Live Rack configuration Snapshots (Vi CUEs), are routed between Vi consoles and the Mac computer running UAD-2 Live Rack software via Ethernet.

Soundcraft Realtime Rack

Soundcraft Realtime Rack was designed and manufactured by Universal Audio, but sold and distributed through Soundcraft by Harman.



Realtime Rack is functionally similar to UAD-2 Live Rack. The main difference between the two is that Realtime Rack has Thunderbolt 2 ports (some earliest units have Thunderbolt 1 ports), while UAD-2 Live Rack has Thunderbolt 3 ports. UAD-2 Live Rack software can be used with Realtime Rack, and Realtime Rack can be combined with UAD-2 Live Rack in multi-unit systems with appropriate Thunderbolt adapters and cabling.

Realtime Rack Support

For Realtime Rack *hardware* and repair support, visit www.soundcraft.com. For Realtime Rack *software* support, see "Technical Support" on page 154.

Documentation Overview

UAD-2 Live Rack instructions are separated by areas of functionality, as detailed below. Documentation is copied to the computer during software installation (documentation can also be downloaded here).

All manuals are available in PDF format only. PDF files require a free PDF reader application such as Preview (included with macOS) or Adobe Reader.

After software installation, all UAD-2 Live Rack documentation can be found on the computer at the following location:

- /Applications/Universal Audio/

Tip: *Documentation can also be accessed by clicking the "View Documentation" button in the Help panel within the UAD Meter & Control Panel application.*

UAD-2 Live Rack Manual

The UAD-2 Live Rack Manual (this document) contains complete information about the hardware unit and how to configure and operate the UAD-2 Live Rack software. Included are detailed descriptions for all connections, features, and control functions.

This manual also contains details about the UAD Meter & Control Panel application, obtaining optional UAD plug-in licenses at the UA online store, and more.

UAD Plug-Ins Manual

The features and functionality of all individual UAD Powered Plug-Ins is detailed in the UAD Plug-Ins Manual. Refer to that document to learn about the operation, controls, and user interface of each plug-in that is developed by Universal Audio.

Direct Developer Plug-Ins

UAD Powered Plug-Ins includes plug-ins from Direct Developer partners. Documentation for these 3rd-party plug-ins are separate files that are written and provided by the plug-in developers themselves. The filenames for these plug-ins are the same as the plug-in title names.

Soundcraft Vi Series Consoles

Operating instructions for Vi Series consoles is beyond the scope of UAD-2 Live Rack documentation. Refer to Soundcraft documentation for all Vi system operating details.

Hyperlinks

Hyperlinks to other pages in the same file and web pages are highlighted in blue text. Click a hyperlink to jump directly to the linked item.

Tip: *Use the "back" button in the PDF reader application to return to the previous page after clicking a hyperlink.*

Technical Support

To contact Universal Audio for help, see "Technical Support" on page 154.

Chapter 2: Hardware

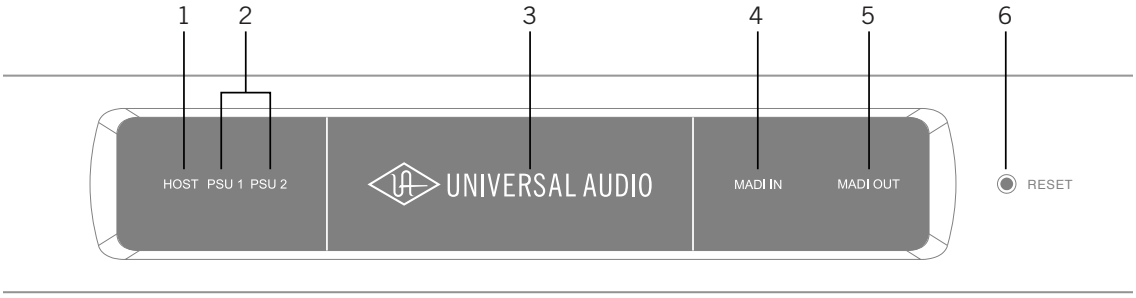
Hardware Overview

The UAD-2 Live Rack hardware is the 1U rack device that performs audio signal processing on digital audio streams via MADI optical I/O. The hardware unit contains four SHARC DSPs that process the UAD Powered Plug-In algorithms. Each unit can process up to 16 MADI streams, and up to four units can be combined to process a total of 64 MADI streams. Additionally, each unit has dual-redundant internal power supplies and automatic failover protection.

Each UAD-2 Live Rack hardware unit is configured and controlled by the UAD-2 Live Rack software application. The MADI channels being processed by each hardware unit is specified in the Settings tab in the UAD-2 Live Rack software.

Front Panel

This section describes the function of all visual indicators and controls on the UAD-2 Live Rack front panel. There are five visual-only elements and one recessed hardware RESET button.



(1) HOST Indicator

The HOST indicator displays the status of the rear panel Thunderbolt connection to the host computer system. The indicator is lit when UAD-2 Live Rack is connected to, and properly communicating with, the Mac computer that is running UAD-2 Live Rack software.

The UAD-2 Live Rack software must be properly installed and configured on the host computer to enable driver connectivity, and the HOST indicator must be illuminated to use UAD-2 Live Rack with all computer and Vi console operations.

(2) PSU Indicators

These indicators display the status of the rear panel dual redundant internal power supply units (PSU). There is one indicator for each power supply unit (PSU 1 and PSU 2). The color of each indicator displays the status of the PSU as follows:

White – The PSU is operating normally. The PSU is connected to AC power, and the power switch for the PSU (rear panel) is in the ON position.

Red – The PSU is not delivering power. This state is caused by one or more of the following conditions:

- The PSU is not connected to AC power
- The power switch for the PSU is in the OFF position
- The PSU has malfunctioned

PSU Indicator notes:

- If one internal power supply unit fails, UAD-2 Live Rack will continue to process audio signals.
- It is normal for the PSU indicator to flash red upon power up of the hardware

(3) POWER Indicator

The Universal Audio text and logo are lit when the hardware unit is receiving proper operating voltages from one or both internal power supply units.

(4 & 5) MADI Indicators

These indicators represent whether or not MADI digital audio signals are present at the rear panel MADI I/O connectors. There is one indicator for MADI input and one for MADI output. The state of each indicator represents the MADI signals as follows:

White (bright) – The audio level of any channel in the MADI stream is above -60 dB.

White (dim) – The MADI stream is detected but no channels are above -60 dB.

Black (off) – No audio signals are present in the MADI stream.

(4) MADI IN Indicator

Indicates the state of digital audio signals at the rear panel MADI input connector.

(5) MADI OUT Indicator

Indicates the state of digital audio signals at the rear panel MADI output connector.

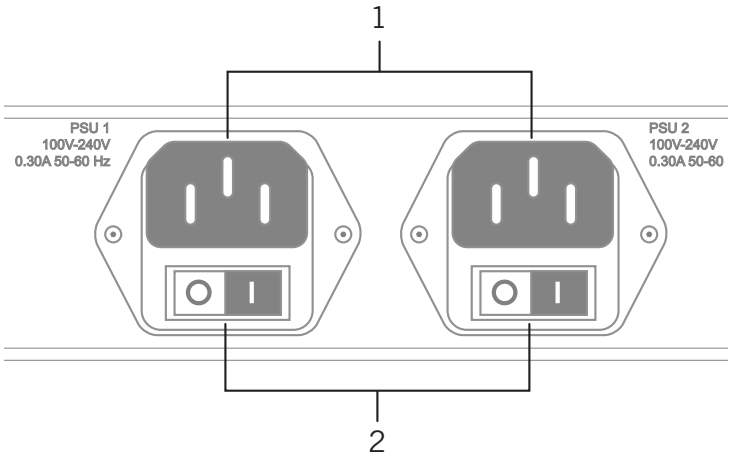
(6) RESET Button

This recessed button executes a hardware reset and initializes the unit. Reset should only be performed if there is an unrecoverable failure and all other troubleshooting techniques are exhausted.

> ***Note:*** *Pressing this switch interrupts power to the UAD-2 Live Rack hardware unit. It performs the same function as manually turning off the unit with the rear panel PSU switches.*

Rear Panel

This section describes the function of all switches and connectors on the UAD-2 Live Rack front panel.



(1) AC Power Inputs

Connect standard detachable IEC power cables to the dual redundant internal power supply units here.

Each PSU accepts 100VAC – 240VAC, 50-60 Hz. The UAD-2 Live Rack hardware unit draws a total maximum of 30 Watts of power.

Note: *One PSU and power cable can be used if failover operation is not desired.*

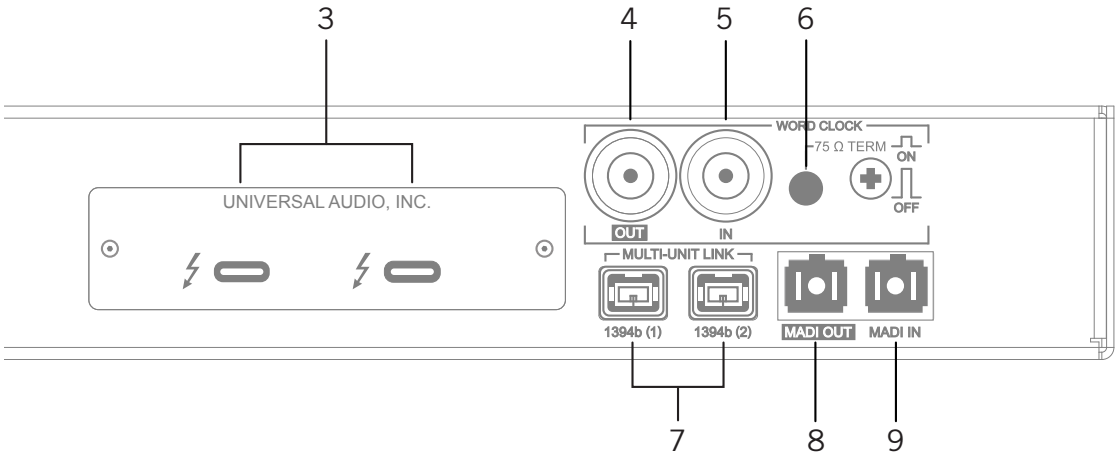
(2) Power Switches

Each power supply unit has its own integrated power switch. AC power is passed to the PSU when the toggle switch is in the in ("I") position.

Automatic Failover

UAD-2 Live Rack's integrated failover circuitry automatically maintains power to the UAD-2 Live Rack hardware. In the event that one of the internal power supplies malfunctions or if power to one of the PSUs is interrupted, UAD-2 Live Rack will continue to process audio.

Rear Panel (continued)



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(3) Thunderbolt 3 Ports

Connect a Thunderbolt cable (not included) between one of these ports and the Thunderbolt 3 port on the Mac host computer that is running the UAD-2 Live Rack software application. The HOST indicator on the front panel is lit when the connection is established.

Either port can be used for the host computer connection. The other port remains available for Thunderbolt 3 daisy-chain connections, for example additional UAD-2 Live Rack units or the Apple Thunderbolt 3 to Gigabit Ethernet Adapter.

> ***Note:*** *Although Thunderbolt 3 always uses USB-C connectors, not all USB-C computer ports are Thunderbolt 3 ports.*

(4) Word Clock Out

This BNC connector transmits a standard (1x) word clock when UAD-2 Live Rack is set to use its internal clock. The clock rate sent by this port matches the current system sample rate, as specified in the Hardware tab within the UAD-2 Live Rack software application.

When UAD-2 Live Rack is set to use external word clock as its clock, UAD-2 Live Rack is a word clock slave. If the incoming external word clock is within ±0.5% of a supported sample rate (44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz), Word Clock Out will mirror Word Clock In with a slight phase delay of about 40 nanoseconds.

(5) Word Clock In

UAD-2 Live Rack's internal clock can be synchronized (slaved) to an external master word clock. This is accomplished by setting UAD-2 Live Rack's clock source to Word Clock in the Hardware tab within the UAD-2 Live Rack software's Settings view, connecting the external word clock's BNC connector to UAD-2 Live Rack's word clock input, and setting the external device to transmit word clock. If UAD-2 Live Rack is the last device in the clock chain, the Termination switch (6) should be engaged.

> ***Note:*** *UAD-2 Live Rack can be synchronized to an external "1x" clock signal only. Superclock, overclocking, and subclocking are not supported.*

(6) Word Clock Termination Switch

This pushbutton switch provides internal 75-ohm word clock input signal termination when required. Word clock termination is active when the switch is engaged (depressed).

UAD-2 Live Rack's termination switch should only be engaged when UAD-2 Live Rack is set to sync to external word clock and it is the last device at the receiving end of a word clock cable. For example, if UAD-2 Live Rack is the last "slave" unit at the end of a clock chain (when UAD-2 Live Rack's word clock out port is not used), termination should be active.

(7) 1394b Ports (no function)

The 1394b ports are for manufacturing purposes only. They have no functionality within the UAD-2 Live Rack system.

> ***Important:*** *Do not attach any devices, including a computer, to the 1394b ports.*

(8 & 9) MADI I/O Ports

The MADI I/O ports are used for the digital audio interconnections between the UAD-2 Live Rack hardware unit and other MADI equipment. Dual Optical SC-Plug (ISO/IEC 9314-3) connectors are provided.

(8) MADI OUT

Connect this port to the MADI optical input on the MADI device.

(9) MADI IN

Connect this port to the MADI optical output on the MADI device.

Standalone Behavior

UAD-2 Live Rack supports limited standalone functionality in the event that the Thunderbolt 3 connection to the host computer is lost, or if the UAD-2 Live Rack hardware unit is power cycled and no host computer is found upon re-powering the hardware.

Thunderbolt 3 connection lost – In the event that the Thunderbolt 3 cable is removed at one or both ends, or if the host computer is otherwise no longer detected, UAD-2 Live Rack will continue to process audio in the same state as when the connection was lost, including UAD plug-in processing. If/when the host connection is reestablished, the UAD-2 Live Rack software will be updated to reflect the current state of the hardware, and software control is resumed.

> ***Important:*** *Reestablishing the Thunderbolt 3 host-to-hardware connection will cause a temporary mute of the audio streams as channels and plug-ins are re-allocated. In the event of a mid-show failure, wait until it is acceptable to hear a mute in the audio path (e.g., not in the middle of a song).*

Power cycled, no host found – In the event that power to the UAD-2 Live Rack hardware unit is completely interrupted then reestablished and/or the unit is manually power cycled or reset, and the host computer cannot be detected after re-powering the hardware, UAD-2 Live Rack will function in “all MADI inputs to all MADI outputs” mode without UAD plug-in processing. This ensures that audio can still be routed by the Vi console, even if the UAD-2 Live Rack software connection cannot be established.

Chapter 3: System Setup

Overview

UAD-2 Live Rack system setup requires these primary procedures, all of which are detailed in this chapter:

- System connections (device wiring)
- UAD-2 Live Rack software installation
- Hardware device registration and UAD plug-in authorization
- Computer operating system software configuration
- UAD-2 Live Rack software configuration

System Requirements

Note: *Cables and adapters are not included.*

- UAD-2 Live Rack hardware unit
- Apple Mac computer with available Thunderbolt 3 port*
- MacOS 10.13.3 High Sierra
- Internet connection to download software and authorize UAD plug-ins
- 6 gigabytes available storage
- Thunderbolt 3 cable for each UAD-2 Live Rack unit
- (2) single MADI Optical SC cables or (1) Duplex MADI optical SC cable for each UAD-2 Live Rack unit (multi-unit setups cannot use duplex MADI cables)

**Macs with Thunderbolt 1 or Thunderbolt 2 ports can be used with appropriate adapters and cables. For details, see "Thunderbolt 1 and 2 Mac Wiring" on page 28.*

If using Soundcraft Vi-Series Console

- Category 5 Ethernet cable
- Belkin USB-C to Gigabit Ethernet Adapter
  - Apple store part number HJKF2ZM/A or MD463LL/A
  - Belkin store part number F2CU040dsWHTAPL

System Connections

Interconnect the UAD-2 Live Rack hardware unit, the Live Rack software host computer, and the MADI device following the illustrations in this section.

About UAD-2 Live Rack system connections

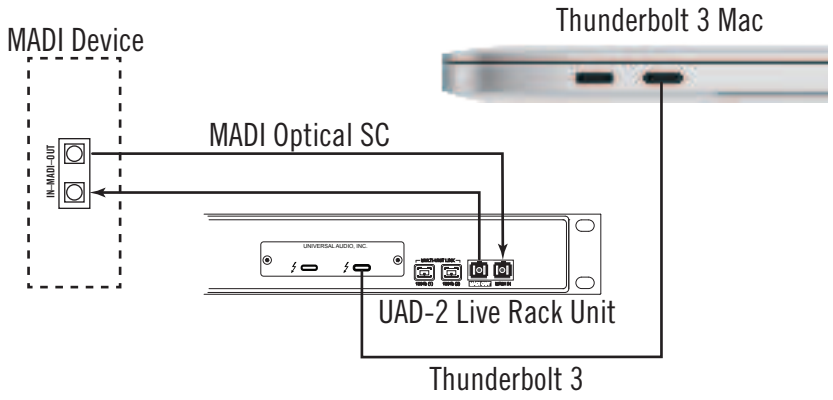
- Do not connect any devices, including a computer, to the UAD-2 Live Rack 1394b ports. These ports are for manufacturing purposes only.
- The MADI channels to be processed by UAD-2 Live Rack are specified in the Hardware panel of the Settings page within the Live Rack software application.
- When synchronizing to external Word Clock, the first UAD-2 Live Rack unit (MADI channels 1 – 16) must receive the Word Clock, then pass the clock to the second unit and so on (via daisy-chaining), for up to four units.
- Duplex MADI cables cannot be used with multi-unit configurations.
- All Live Rack MADI control commands are received via the Audio MIDI Setup application in macOS. Refer to the MIDI control device documentation for setup.
- When operating the UAD-2 Live Rack hardware, the unit must be placed or mounted with the vent holes facing up.

Single Unit Wiring

The diagram below illustrates connections for one UAD-2 Live Rack unit for up to 16 MADI channels of UAD plug-in processing.

Cables Required (not included):

- One Thunderbolt 3 cable between UAD-2 Live Rack and the host computer for software control
- Two MADI optical cables (or a single duplex cable) between UAD-2 Live Rack and the MADI device for digital audio send/return



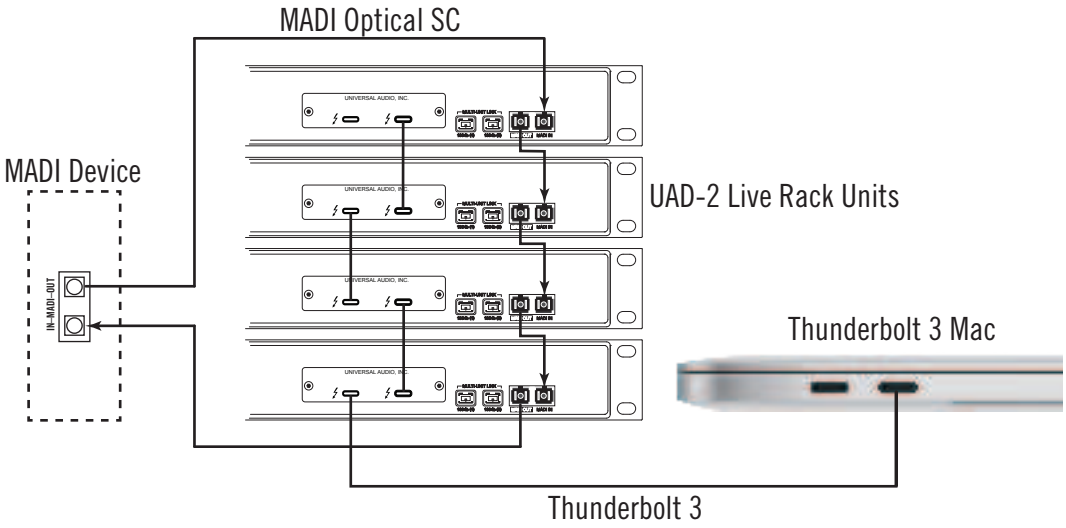
System connections for single unit setup

Multi-Unit Wiring

The diagram below illustrates connections for 2, 3, or 4 UAD-2 Live Rack units for up to 64 MADI channels of UAD plug-in processing (16 MADI channels for each UAD-2 Live Rack unit).

Cables Required (not included):

- One Thunderbolt 3 cable between UAD-2 Live Rack and the computer for software control
- One Thunderbolt 3 cable for each additional UAD-2 Live Rack for unit interlinks
- One MADI optical cable between the MADI device and the first UAD-2 Live Rack for digital audio send
- One MADI optical cable between the last UAD-2 Live Rack and Vi console for digital audio return
- One MADI optical cable for each additional UAD-2 Live Rack for unit interlinki



System connections for multi-unit setup

Thunderbolt 1 and 2 Mac Wiring

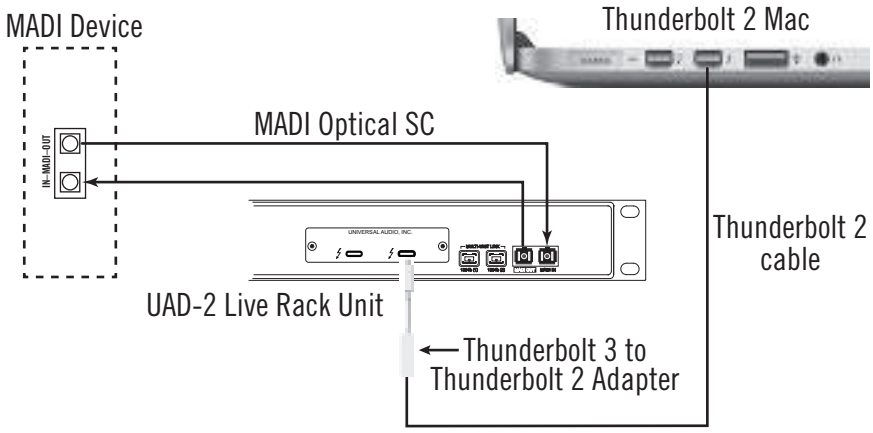
UAD-2 Live Rack is designed for a direct connection to a Thunderbolt 3 Mac. However, older Macs with Thunderbolt 1 or Thunderbolt 2 ports can be used via a Thunderbolt 2 cable and the Apple Thunderbolt 3 to Thunderbolt 2 adapter.

Additional Items Needed with Thunderbolt 1 and Thunderbolt 2 Macs

- (1) Apple Thunderbolt 3 to Thunderbolt 2 Adapter (Apple part number MMEL2AM/A) at the UAD-2 Live Rack port for the Thunderbolt 2 cable connection.
- (1) Thunderbolt 2 cable for the Mac computer connection. Note that this cable replaces the Thunderbolt 3 cable that would be used for a Thunderbolt 3 port at the computer.

Thunderbolt 1 and 2 Mac Connection Notes

- The wiring for Thunderbolt 1 and Thunderbolt 2 Macs is identical.
- A multi-unit system with a Thunderbolt 1 or 2 Mac is similar to Thunderbolt 3 wiring. The only difference is with the host computer connection. The Thunderbolt 2 host computer connection in the diagram below is the same for single and multi-unit setups.



System connections for Thunderbolt 1 and Thunderbolt 2 Macs

SoundCraft Vi-Series Console Connections

Connections to SoundCraft Vi-series consoles are the same as other MADI devices, as shown on previous pages, with the addition of HiQnet™ (Ethernet) wiring for integrated Snapshot control.

Vi-Series Console Connection Notes

- The HiQnet port on early Vi1 consoles (serial numbers lower than 30210956) is only able to drive short cable lengths, with a maximum recommended length 1 meter (3 feet). Therefore, use a network switch positioned close to the rear of the console to extend the cable length if required with these early Vi1 consoles.
- The HiQnet port on other Vi consoles is capable of driving standard Ethernet distances of up to 100 meters.
- The HiQnet port uses the same 8P8C modular connector as the Dante™ ports available on Vi consoles. Connect to the HiQnet port only.



Connect UAD-2 Live Rack to the HiQnet port

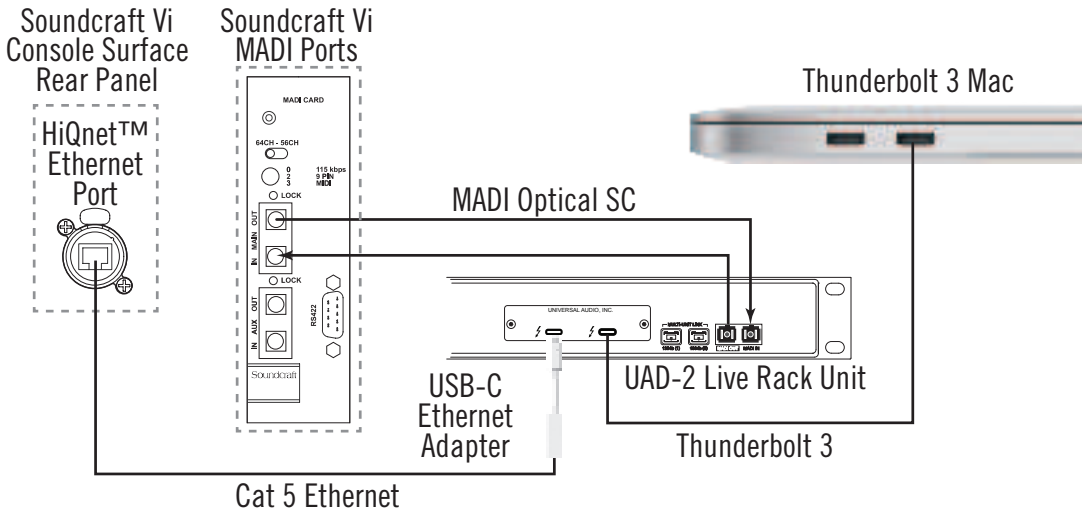
- Macs with Thunderbolt 1 or Thunderbolt 2 ports can be used with additional adapters. For details, see "Thunderbolt 1 and 2 Mac Wiring" on page 28.
- Interconnect the UAD-2 Live Rack hardware unit, the Live Rack software host computer, and the SoundCraft Vi-series console following the illustrations on the following pages.

Single Unit Wiring with SoundCraft Vi Consoles

The diagram below illustrates connections for one UAD-2 Live Rack unit for up to 16 MADI channels of UAD plug-in processing.

Cables Required (not included):

- One Thunderbolt 3 cable between UAD-2 Live Rack and the computer for software control
- Two MADI optical cables (or a single duplex cable) between UAD-2 Live Rack and the Vi console for digital audio send/return
- One Cat 5 Ethernet cable between host Mac and Vi console for snapshot control
- One Belkin USB-C to Gigabit Ethernet Adapter for Vi console Ethernet
    - Apple store part number HJKF2ZM/A or MD463LL/A
    - Belkin store part number F2CU040dsWHTAPL



System connections for single unit setup with SoundCraft Vi console

Multi-Unit Wiring with SoundCraft Vi Consoles

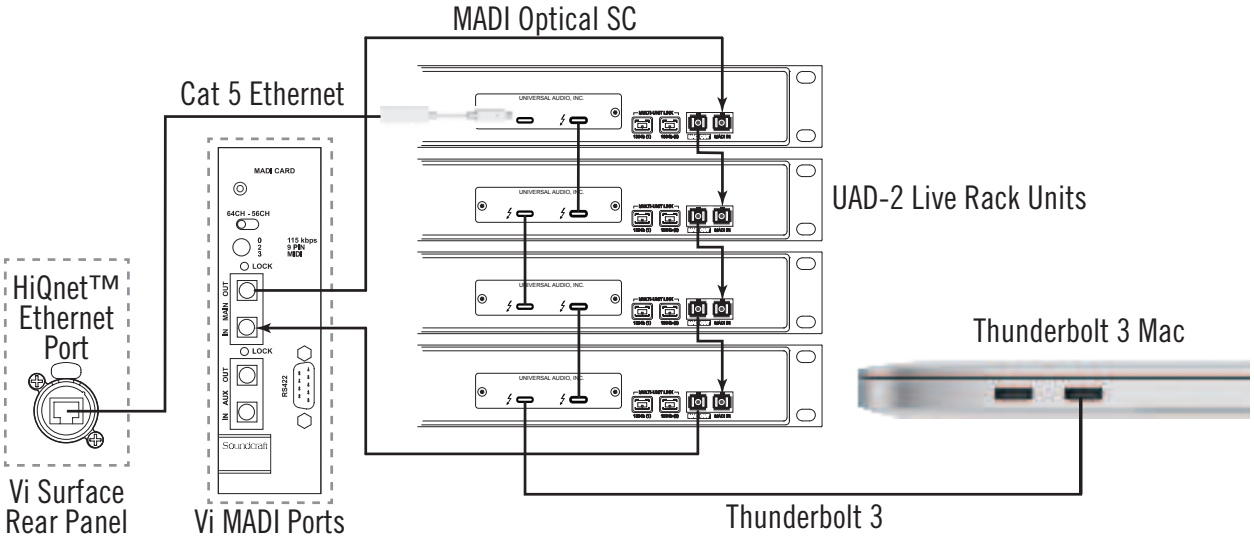
The diagram below illustrates connections for 2, 3, or 4 UAD-2 Live Rack units for up to 64 MADI channels of UAD plug-in processing (16 MADI channels for each UAD-2 Live Rack unit).

Cables Required (not included):

- One Thunderbolt 3 cable between UAD-2 Live Rack and the computer for software control
- One Thunderbolt 3 cable for each additional UAD-2 Live Rack for unit interlinks
- One MADI optical cable between the MADI device and the first UAD-2 Live Rack for digital audio send
- One MADI optical cable between the last UAD-2 Live Rack and Vi console for digital audio return
- One MADI optical cable for each additional UAD-2 Live Rack for unit interlink

Note: *Duplex cables cannot be used with multi-unit configurations.*

- One Cat 5 Ethernet cable between host Mac and Vi console for snapshot control
- One Belkin USB-C to Gigabit Ethernet Adapter for Vi console Ethernet
  - Apple store part number HJKF2ZM/A or MD463LL/A
  - Belkin store part number F2CU040dsWHTAPL



System connections for multi-unit setup with Soundcraft Vi console

Software Installation

Complete UAD-2 Live Rack software installation consists of two main steps:

- UAD-2 Live Rack software installation
- Device registration and UAD plug-in authorization

Preparation

- Close all open files and applications before Live Rack software installation. The installer requires a restart after installation.
- If you are updating to a newer version of Live Rack software or installing additional UAD-2 Live Rack hardware units, it is not necessary to remove or disconnect the previous installations.

Software Installation Procedure

To install the UAD-2 Live Rack software and UAD plug-ins:



1. Verify the UAD-2 Live Rack hardware unit(s) is powered and properly connected to the host computer via Thunderbolt.
2. Download the UAD-2 Live Rack software installer:

   www.uaudio.com/downloads

3. Open the downloaded installer application. The installer will guide you.

   Note: *If prompted to update the firmware, see "About Firmware Updates" below.*

4. Restart the computer when prompted. Software installation is complete.
5. Proceed to Device Registration & Authorization on page 33.

About Firmware Updates

- Firmware updates for the UAD-2 Live Rack hardware may be included within the software to enhance system functionality. The Live Rack software prompts for firmware updates automatically (if available). For optimum results, always update the firmware by clicking "OK" if prompted by the software.
- After "OK" is clicked and the firmware is installed, a notification appears. After the notification, power off the UAD-2 Live Rack hardware. The first time power is reapplied, the hardware will take an extra 20–30 seconds to initialize, after which the firmware update process is complete.

Important: *Do not interrupt system power during the firmware update routine.*

Device Registration & Authorization

The UAD-2 Live Rack hardware unit must be registered and authorized at uaudio.com to unlock UAD plug-ins that are bundled with the product. Registration only needs to be completed once. However, authorization must be completed each time the Live Rack software is updated.

About Registration

UAD-2 Live Rack hardware registration is triggered automatically as part of the initial authorization process. The first time authorization is initiated, the web browser launches and connects to the UA store. Follow the instructions on the web pages to create an account, register the hardware, claim bundled UAD plug-ins, and authorize the system.

About Authorization

The UAD-2 Live Rack hardware stores its UAD plug-in license authorizations in the device itself, so the unit can be connected to a different computer without repeating the authorization process. UAD plug-ins that were not bundled with the product can be evaluated without functional restriction during a Demo Mode that expires after 14 days.

Authorization Procedure

Before proceeding, confirm that the UAD-2 Live Rack software is has already been installed and the UAD-2 Live Rack hardware is powered and connected to the computer via Thunderbolt (the hardware and software systems must be communicating properly).

> ***Important:*** *The following procedure requires an Internet connection to the host computer. To authorize a system that is not connected to the Internet, see the* *Offline Authorization Procedure on page 34**.*

To authorize UAD-2 Live Rack and UAD plug-ins:

1. Launch the UAD Meter & Control Panel. To open the application, click its icon (shown at right) in the macOS Dock.



2. Open the Plug-Ins panel within the UAD Meter & Control Panel application. To access the panel, click the blue UAD-2 button in the UAD Meter window, as shown below.



3. Click the “Authorize Plug-Ins...” button in the Plug-Ins panel. The software connects to the Universal Audio authorization servers.



4. After a few moments, the Authorization Status window appears and "Authorizations successfully updated" is displayed. Click OK to close the window.



5. System authorization is complete. Proceed to Operating System Software Configuration on page 36.

Offline Authorization Procedure

If the UAD-2 Live Rack computer is not connected to the Internet, you will need to manually transfer the registration URL into the browser of a web-enabled computer, download the authorization file on the web computer, then transfer the authorization file back to the UAD-2 Live Rack computer.

> ***Important:*** *If the UAD-2 Live Rack computer is not connected to the internet, you must manually transfer the* ***exact*** *registration URL into the browser of a web-enabled computer.*

To authorize a system that is not connected to the Internet:

1. Install the UAD-2 Live Rack software and hardware using the procedures detailed earlier in this chapter. The UAD-2 Live Rack hardware must be powered on and the system must be communicating properly.

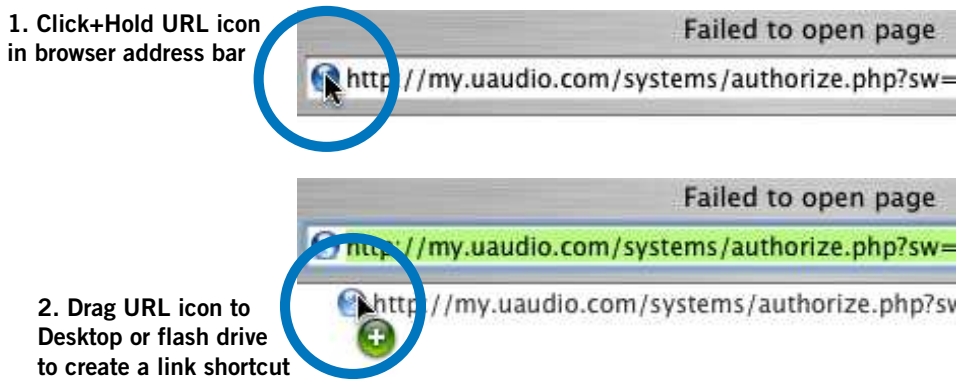
2. Launch the UAD Meter & Control Panel application, open the Plug-Ins Panel, and click the "Authorize Plug-Ins" button by following step numbers 1, 2, and 3 on page 33. The default web browser opens with the registration URL in the address bar, along with an error that the computer is not connected to the Internet.

(continued)

3. You need to enter this URL in a web-connected computer, so either:

   a. Drag the URL icon in the browser's address bar to the Desktop to create a weblink shortcut (recommended, as illustrated below) then transfer the weblink shortcut to the internet computer via a storage device or network, OR

   b. Carefully write down the URL, EXACTLY as it appears in the address field.



Creating a web location shortcut file on the offline system for easier transfer of the URL to an online computer

4. Go to the URL using a web browser on an Internet-connected computer. Either double-click the transferred weblink shortcut, or enter the URL as previously noted.

   - If you don't already have a Universal Audio account, you are directed to create one. Follow the instructions online.
   - If you already have a UA account, login with your email address and password. If your password is lost, the store can email a new one to you.

5. The UAD-2 Live Rack hardware is automatically registered and added to your My UA Hardware group, and your authorization file is generated.

6. The authorization file named "auth.uad2" should begin downloading automatically (if not, click the download authorization link).

7. Transfer the authorization file to the UAD-2 Live Rack computer via a storage device or network.

8. Double-click the authorization file on the UAD-2 Live Rack computer. The authorization is loaded onto the UAD-2 Live Rack unit(s) and after a few seconds the Authorizations Status window appears. Offline registration and authorization is complete.

9. Proceed to Operating System Software Configuration on page 36.

Operating System Software Configuration

Before using UAD-2 Live Rack, the specific settings in this section must be made in the macOS System Preferences>Energy Saver pane to ensure proper operation.

The System Preferences application can be accessed from the Apple Menu (under the Apple icon at the upper left of display). To access the Energy Saver pane, click its icon or name in the main System Preferences window.

Power Adapter and Battery Tabs

The Energy Saver pane has "Battery" and "Power Adapter" tabs for configuring different settings when the computer is running on the power adapter versus running on internal battery power. **The required operating system settings must be set in both tabs.**

> ***Note:*** *The settings are detailed on the next page.*

Note that UAD-2 Live Rack is fully qualified only when the Mac is connected to a power source. However, ensure that Sleep is deactivated in the Battery tab in case the computer's power adapter is inadvertently disconnected.

> ***Important:*** *UAD-2 Live Rack is qualified when the computer is running on AC power, and using UAD-2 Live Rack with battery power is not a supported configuration. When using portable systems such as Macbook series notebook computers, always use the included power adapter for optimum results.*



The required macOS system settings for proper UAD-2 Live Rack operation. Configure the Battery and Power Adapter tabs so both have the same settings.

Required System Settings

Set the Battery and Power Adapter tabs in the Energy Save pane to use these settings:

Disable Display Sleep – Set display sleep to "Never" by dragging the "Turn display off after" slider to the far right position.

Although display sleep is benign to the system, disabling display sleep is recommended to prevent the issuing of inadvertent mouse/keyboard clicks that could send potentially destructive commands to the UAD-2 Live Rack software.

Disable Computer Sleep – In the Power Adapter tab, enable the "Prevent computer from sleeping automatically when the display is off" option.

Disable Hard Disk Sleep – In the Power Adapter tab, disable the "Put hard disks to sleep when possible" option to ensure consistent computer performance.

Enable Wake for network access – In the Power Adapter tab, enable the "Wake for network access" option.

Soundcraft Vi Series consoles require "Wake for network access" to be enabled in macOS in order to prevent losing the communication link between the Mac running Live Rack software and the Soundcraft Vi console if/when the Mac enters Sleep mode.

> ***Important:*** *If "Wake for network access" is disabled and the computer enters System Sleep (either intentionally or unintentionally), the Mac will require a system restart or a disconnect/reconnect of the Thunderbolt cable to recover after waking from sleep*

Operating system configuration is complete. Proceed to UAD-2 Live Rack Software Configuration on page 38.

UAD-2 Live Rack Software Configuration

To properly communicate with the hardware, software settings within the Live Rack application must be configured for the UAD-2 Live Rack system.

To configure the system settings:

1. Confirm that the UAD-2 Live Rack hardware is properly connected and powered.
2. Launch the Live Rack software. Open the application by clicking its icon (shown at right) in the macOS Dock. The software opens and fills the screen.



3. Click the View menu in the upper left corner (INSERTS is displayed here by default) then select SETTINGS from the drop menu. The HARDWARE tab is displayed, containing the system settings below.

Sample Rate

4. From the SAMPLE RATE drop menu, set the sample rate to match the MADI device system sample rate. With SoundCraft Vi consoles, set the sample rate to 48 kHz.

Clock Source

5. From the CLOCK SOURCE drop menu, specify the system clock to be used for digital audio synchronization. This setting is typically set to MADI (except when using external Word Clock).

MADI Bank

6. From the MADI CHANNELS drop menu, specify the 16-channel MADI bank to be processed by UAD-2 Live Rack. This setting should match the channels specified in the MADI device.
7. If multiple UAD-2 Live Rack units are connected concurrently, they are automatically assigned to the next set of 16 MADI channel banks. To change the order and processing bank used by UAD-2 Live Rack, drag and drop the Unit Buttons up or down until they are in the correct order. Use the Identify Unit Buttons to identify the current assignments of each unit.

Important: *The physical MADI cable ordering must match the ordering set with the Unit Buttons.*

After the procedures detailed in this chapter are completed for system connections, software installation, registration, authorization, operating system configuration, and application configuration, the UAD-2 Live Rack system is ready for use.

Chapter 4: Live Rack Application

Application Overview

The Live Rack software application is the software interface for the UAD-2 Live Rack hardware. The application is used to configure the UAD-2 Live Rack hardware and control UAD plug-ins. It can control up to four hardware units concurrently. All application operations are detailed in this chapter.

> ***Note:*** *In this chapter, "Live Rack" refers to the software application (not the hardware unit) unless specifically noted otherwise.*

Key Concepts

Live Rack is optimized for operation in environments where fast navigation and operation are paramount.

The general concept of Live Rack's navigation is a "focus channel" workflow where the operator has a birds-eye view of everything occurring in the application, with the ability to quickly navigate to different channels in order to focus on a channel and edit the channel's parameters.

Once a channel is focused (selected), the various controls and features can be edited, such as any of the eight individual plug-in inserts per channel, UAD plug-in assignments, input/output gains, track names, presets, and more. Parameters, presets, and assignments for individual plug-ins can be edited, or Channel Strip view can be used to control multiple plug-ins concurrently.

> ***Note:*** *Although UAD plug-ins are operated within the application, all signal processing occurs on the SHARC DSPs in the hardware unit(s), not the host computer's CPU.*

View Screens

Live Rack has six primary screens called *Views*. Each View displays related visual and control elements. Items available within each View can vary depending on the active selection or function.

Some Views provide a broader overview of the environment (e.g., Inserts View), while others facilitate deep editing of individual functions (e.g., Channel View) and/or file management (e.g., Snapshots View). Various shortcuts exist for quickly switching between the six View screens.

The currently selected View can be identified by the icon displayed at the top of the Main Column. Views can be selected from the View Menu.

Global Displays

Items that facilitate navigation and visual feedback that is crucial in performance environments are always displayed in the *Meter Bridge* and *Info Bar*. Banks of channels and individual channels can be quickly navigated with the *Bank Bar* and *Channels Bar* to quickly get to a channel for editing.

Navigation

Navigation within the application possible with minimal mouse and/or keyboard motions, and menus are generally only used for less common operations (e.g., global settings).

The application is designed to take extensive advantage of navigation using the computer's QWERTY keyboard for precise operations and to reduce targeting errors.

Keyboard Focus

When elements on the screen have keyboard focus, they can be manipulated with the QWERTY keyboard. Keyboard focus in Live Rack is indicated by a yellow outline box around the screen elements targeted for control with the QWERTY keyboard. These highlighted items can typically be manipulated by using the up/down/left/right arrow keys and/or the Return/Enter keys.

Edit & Safe Modes

To reduce the possibility of unintended results, Live Rack has two operating modes. Operations that can cause significant impact to the audio (such as level changes) can only be performed in Edit mode, while Safe mode is (typically) used during performance to prevent inadvertent changes.

> ***Important:*** *Live Rack does not have an Undo function. Operations performed in Edit mode can only be reverted by loading previously-saved presets and/or Snapshots.*

Offline Configuration

The application can be configured without connected hardware units for offline setup and/or sharing the hardware with other operators. Additionally, import and export functions are provided to simplify transporting user data between different UAD-2 Live Rack systems and/or operators.

Individual Channel DSP

To maintain the lowest possible input latency, UAD plug-ins used on a single channel must run on a single SHARC processor. Therefore, it is possible to get a "DSP load limit exceeded" message on a channel even if the UAD gauges may indicate there is enough DSP available.

Entering & Exiting the Application

> ***Important:*** *To communicate with the UAD-2 Live Rack hardware, software settings within the computer's operating system and the Live Rack application must to be properly configured. For details, see* *"Chapter 3: System Setup" beginning on page 25**.*

Launch

Live Rack can be opened using either of these methods:



- Single-click the Live Rack icon that was placed in the macOS Dock during software installation, or
- Double-click the Live Rack application that is installed at: /Applications/Universal Audio/Live Rack.app

Full Screen Display

When Live Rack is launched, the application expands to fill the entire screen (it cannot be re-sized). To prevent unintended operations, the application does not have a standard macOS Menu Bar at the top of the screen.

> ***Note:*** *Unlike most macOS applications in full screen mode, there is no option to show a menu bar when the mouse is moved to the top of the screen.*

Multiple Display Operation

Multiple display screens are supported. With multiple display systems, when the Monitors preference is set to ALL, the screen on each display can have different View screen so more elements can be displayed concurrently. For details, see "Monitors Menu" on page 114.

Hide/Switch

Live Rack can be used concurrently with other macOS applications.

- To hide the application so other applications can be seen, use the standard macOS keyboard shortcut (Command+H).
- To bring Live Rack back into the foreground when it is hidden, click its icon in the macOS Dock or use the Command+Tab application switching shortcut.
- To bring other running applications to the foreground, use the standard macOS keyboard shortcut for application switching (Command+Tab).

Quit

Live Rack can be closed using either of these methods:

- Select Quit from the application's View menu (upper left by default), or
- Use the standard macOS keyboard shortcut (Command+Q)

Live Rack Terms

For the purpose of describing Live Rack operations in this chapter, the following definitions are used.

Screen – All elements currently visible on the computer display. Some displayed elements are common to all screens, while other elements depend on the active View and/or selected function.

Element – One specific item in the screen. An element can be a menu, control (button, switch, knob), or visual indicator. Some screen elements vary depending on the active view and the functions available within that view.

View – A set of related functions. Live Rack has six primary views, and some views have multiple screens. Items available within each view can vary depending on the active function.

Tab – A button that switches between a set of elements within a view.

Channel – A single MADI channel within the 64-channel MADI stream. Each UAD-2 Live Rack unit can process up to 16 MADI channels.

Plug-In – The UAD plug-in files containing the DSP algorithms. Each plug-in has a unique interface containing a set of controls that adjust its audio processing features.

Insert – A slot within a single channel where plug-ins are loaded and adjusted. Each channel has eight inserts to facilitate serial processing.

Channel Strip – Two or more UAD plug-ins inserted serially in the same channel for stacked signal processing.

Bank – A group of MADI channels that are displayed concurrently. The number of channels displayed in a Live Rack bank can range from four to 64 channels.

Group – A set of specific channels that are grouped together. Live Rack uses groups for latency delay compensation, which is necessary to align channels that must maintain phase coherency (such as drum kits with multiple microphones).

Linked – Two adjacent channels that are combined into a stereo pair. Linked channels operate with one set of controls and pan settings are automatically set to hard left/right.

Focus – A control element that is selected and ready to accept an operational command. Live Rack uses element focus extensively to enable operation with the computer's QWERTY keyboard.

Preset – A complete set of parameter values for an individual plug-in or channel strip that are saved as a named disk file. Presets are used to recall favorite settings for individual plug-ins and/or channel strips.

Snapshot – A complete Live Rack configuration. Snapshots contain all parameter values within the Live Rack application and are used to for total session recall. Snapshots can be loaded via MIDI or directly from within a Soundcraft Vi console via Ethernet using the CUE functions within the Vi console.

Navigation Overview

This section provides an introduction to the various screen elements and navigational concepts. Items in this section are explained in greater detail later in this chapter.

Views Overview

Live Rack has six primary screens called *Views*. Each View displays related visual and control elements. The currently selected View can be identified by the icon displayed at the top of the Main Column. Views can be selected from the View Menu. Each View name, its associated icon, and a brief description is below.

Inserts 	Displays banks of channels and all plug-in inserts within the current bank. Inserts View is used to move, copy, and paste plug-ins and channels strips, and their current settings, amongst the available inserts in the bank.
Gains 	Displays channel input/output gain controls and signal I/O level meters for all channels within the Current Bank. Channels can also be stereo linked/unlinked in this view.
Delay Groups 	Displays and assigns delay (latency) compensation groups, and latency values, for all channels within the Current Bank.
Channel 	Displays plug-ins and channel strips within individual channels. Channel View is used for editing plug-in parameters and managing presets for individual and/or stacked plug-ins.
Snapshots 	Displays a file management page to store, recall, and edit snapshots of entire Live Rack configurations.
Settings 	Displays multiple tabs for setting various hardware, display, MIDI, and plug-in settings and preferences.

Global Navigation Elements

The Main Column, Meter Bridge, Channels Bar, and Info Bar can all be used to navigate to different View screens. The location of these elements are illustrated below.



Global elements that appear on all Live Rack screens

Main Column

The Main Column is used to choose the current View and navigate available options within the View. The Main Column contains the View Menu and the View Options.

Meter Bridge

The Meter Bridge is always displayed across the top of all screens. The Meter Bridge contains Input Meters for all MADI channels in the system and can be used for Meter Bridge Navigation within Live Rack.

Channels Bar

The Channels Bar is used for channel navigation and to quickly select channels for editing. The Channels Bar also displays the Current Bank and the Bank Bar.

Info Bar

The Info Bar is always displayed in all screens, providing visual feedback and access to options that are important in performance environments.

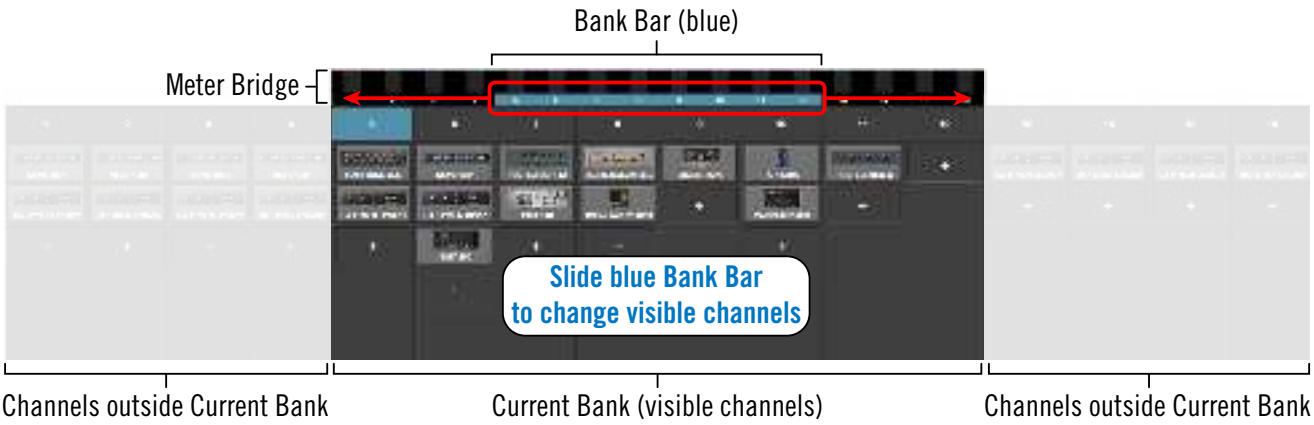
Banks

A fundamental navigational concept in Live Rack is the *Bank*. A Bank is a subset of all available MADI channels.

Current Bank

The Current Bank is all the channels displayed in the Channels Bar. Channels contained within the Current Bank are represented by the Channel Select Buttons and the thin blue Bank Bar.

The Current Bank is changed by sliding the blue Bank Bar, clicking an Input Meter, or using the computer's arrow keys. The number of Current Bank channels can be changed with the Bank Size setting. For details, see "Bank Navigation" on page 52.



Conceptual illustration of a Bank within Live Rack.
In this example, the Current Bank is channels 5 through 12.
Dragging the thin blue Bank Bar brings the other channels into view.

Navigation Scroll Bars

Live Rack software displays vertical and horizontal scroll bars when needed in various views. Scroll bars are used for navigation in the following areas:

- **Channel View / Single view mode –** For horizontal and/or vertical scrolling of a plug-in interface that is too large for the current screen resolution to display.
- **Channel View / Channel Strip view mode –** For horizontal and/or vertical scrolling of a Channel Strip that is too large for the current screen resolution to display
- **All list views –** Plug-in presets, channel presets, assign, snapshots, and settings/plug-ins tab – For vertical scrolling of all files/folders in the current list view.



Typical navigation scroll bars, shown here outlined in red, as they appear with a typical plug-in interface and in the Snapshots list

Keyboard Focus

When elements on the screen have keyboard focus, they can be manipulated with the computer's QWERTY keyboard. Focused items can typically be manipulated by using the up/down/left/right arrow keys and/or the Return/Enter keys.

Focus Indication

Keyboard focus in Live Rack is indicated by a yellow outline box around screen elements targeted for control with the QWERTY keyboard.



Typical focus indication. In this example, the PRESETS folder column on the left has focus (yellow outline) and can be navigated with the up/down arrow keys on the keyboard. The tab key will shift focus between this column and the SUB-FOLDER column.

Focus Navigation

Focus between elements can be changed with the computer's TAB key, or by clicking another area of the screen with the mouse.

Keyboard Shortcuts

In addition to keyboard focus/navigation methods, Live Rack supports the keyboard shortcuts listed in the table below.

Shortcut Name	Keyboard Command	Description
Save Snapshot	COMMAND+S	Saves the current snapshot in place
Save Snapshot As...	COMMAND+SHIFT+S	Saves the current snapshot as a new snapshot and allows renaming
Hide Application	COMMAND+H	Hides the application from view
Quit Application	COMMAND+Q	Quits the Live Rack application
Show Previous View*	COMMAND+LEFT ARROW	Returns to the previous view
Show Next View*	COMMAND+RIGHT ARROW	Returns to the next view
Tab Focus Navigation	TAB	Cycles through various sections of the app that can be focused/controlled/navigated with the arrow keys
Cancel dialog overlay	ESC (escape)	Used to cancel dialog functions like Save As, Tap Tempo, enter Edit Mode, etc.
Confirm dialog overlay	RETURN or ENTER	Used to accept dialog overlays like Save As, Tap Tempo, enter Edit Mode, etc.
Channel Navigation	UP/DOWN/LEFT/RIGHT RETURN/ENTER	Used to navigate through all channels and functions that can be focused and executed
**Previous/Next only shows Views displayed since application was opened*		

Important: *Live Rack does not have an Undo function. Operations performed in Edit mode can only be reverted by loading previously-saved presets and/or Snapshots.*

Global Screen Elements

The Main Column, Current Bank, Meter Bridge, Channel Bar, and Info Bar are groups of elements appear on all screens. These global elements are described in this section.

Refer to the illustration below for descriptions in this section.

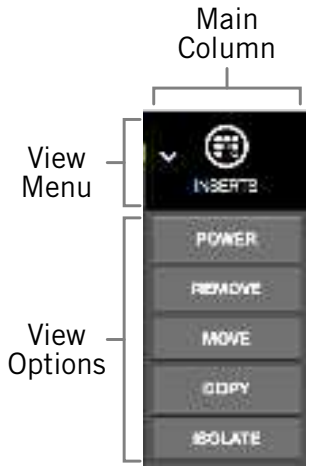


Global elements that appear on all Live Rack screens

View Elements

The View elements that appear in the main area of each View screen (items not within the Main Column, Meter Bridge, Channels Bar, or Info Bar) depend on the View that is currently selected. All View elements are described in the View sections later in this chapter.

Main Column



The Main Column is used to choose the current View and navigate available options within the View. The Main Column contains the View Menu and the View Options, as shown at right.

In the illustration at right, Inserts View is currently active. This is indicated by the INSERTS icon and title at the top of the Main Column.

The View Options shown here are the options available in Inserts View. These options are different for each active View.

Column Placement

By default, the Main Column is at the left side of all screens. However, its placement can be moved to the right side of all screens, by setting the preference at View Menu>Settings>Display Tab>COLUMN LOCATION.

View Menu

The six main Views can be accessed with the View Menu. To access any View, click the View Menu at the top of the Main Column, and select a View from the drop menu, as shown at right.



View Menu

View Options

The View Options are buttons used to activate various control functions within each View. The View Options displayed are contextual; the options change when a different View is selected.

Bank Views

Bank Views are Views that display multiple channels at once. Inserts, Gains, and Delay Groups are the three Bank Views. The Bank Views are grouped within the View Menu; they are not separated by a divider line.

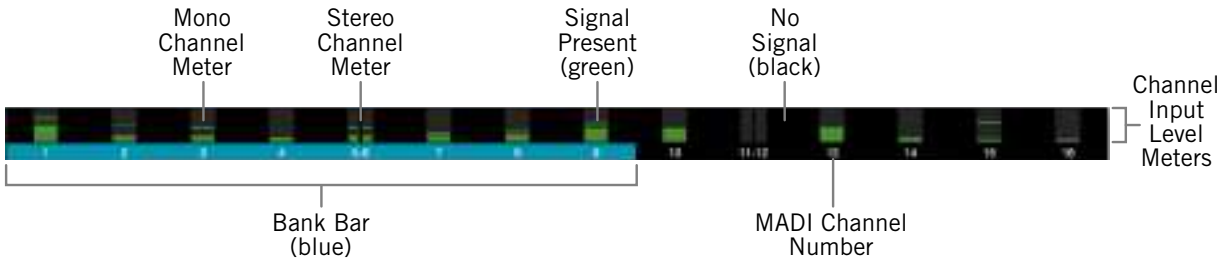
> ***Shortcut:*** *On any screen, click the Meter Bridge to quickly return to the last selected Bank View.*

Quit

At the bottom of the View Menu is the QUIT option. Choose QUIT to close the Live Rack application. The Command+Q keyboard shortcut can also be used.

Meter Bridge

The Meter Bridge is always displayed across the top of all screens. The Meter Bridge contains Input Meters for all MADI channels in the system and can be used for navigation within Live Rack.



Meter Bridge elements as displayed with a 16-channel (single unit) system

Input Meters

Each vertical green meter indicates input signals that are present in the associated MADI channel. The Meter Bridge automatically expands to display additional MADI channels when two, three, and/or four Live Rack hardware units are connected to the system.

> ***Shortcut:*** *Single-click the Input Meters to enter the most recently selected bank view.*

Additional (empty) MADI channels can be manually added to the Meter Bridge by clicking the "+" button at View Menu>Settings>Hardware Tab. This provision is typically used to add empty MADI channels so offline setups can be configured.

Mono/Stereo

A dual/split meter indicates two channels are stereo linked. When a dual/split meter is shown, the meter represents the left and right channels of the stereo signal.

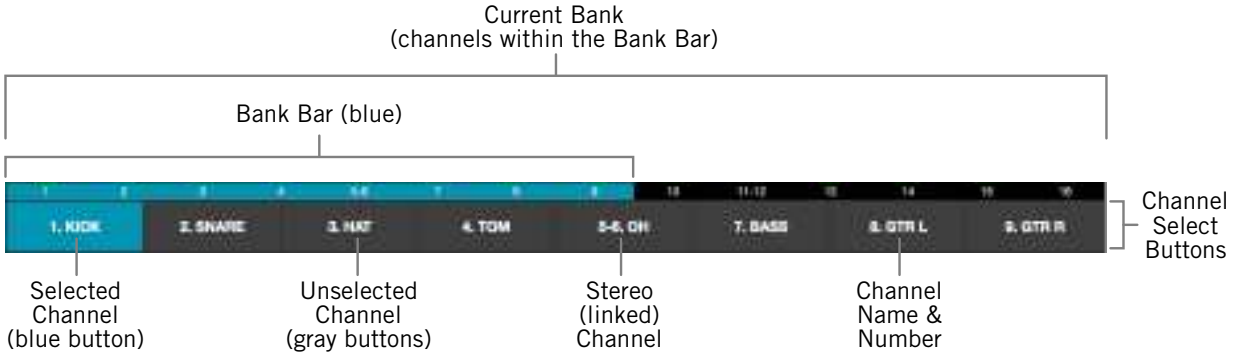
Meter Bridge Navigation

The Meter Bridge can be used as shortcuts for the functions below:

- **Jump to any channel** – Double click any channel's Input Meter in the Meter Bridge to jump directly to Channel View and select the channel.
- **Return to Bank View** – Single click anywhere in the Input Meters area to return to the previously selected Bank View (Inserts, Gains, or Delay Groups).

Channels Bar

The Channels Bar is used for channel navigation and to quickly select channels for editing. Refer to the illustration below for descriptions in this section.



Channels Bar elements as displayed with a Bank Size of 8 channels

Current Bank

The Current Bank is all the channels displayed in the Channels Bar, and is a subset of all available MADI channels. Channels contained within the Current Bank are represented by the Channel Select buttons and the thin blue Bank Bar.

The Current Bank is changed can be changed with several Bank Navigation methods. The number of Current Bank channels can be changed via the Bank Size setting.

Bank Size

The number of channels displayed simultaneously in the Current Bank is determined by the Bank Size setting, which is specified in View Menu>Settings>Display Tab>BANK SIZE.

Bank Bar

The thin blue Bank Bar represents all channels in the Current Bank. The Bank Bar is used for Current Bank navigation within all View screens.

Bank Navigation

The Bank Bar is used to change the Current Bank. Any of the following methods can be used to navigate available channels:

- **Drag** – Drag the blue Bank Bar, or anywhere in the Input Meters area, with the mouse to change the current bank. With this method, the current bank can be shifted by one or more channels.
- **Click Input Meter** – Single click any channel's green input meter to switch directly to the bank that contains the channel. With this method, the number of channels shifted is determined by the BANK SIZE setting.
- **Arrow keys** – When the Bank Bar has keyboard focus, use the left/right arrow keys to shift the current bank. With this method, the number of channels shifted is determined by the BANK SIZE setting.

Channel Select Buttons

The Channel Select buttons represent all Current Bank channels. The Channel Select buttons are displayed in all Bank Views (Inserts, Gains, and Delay Groups).

The Channel Select buttons can be used to quickly put any Current Bank channel into Channel View for loading, editing, and saving plug-in settings.

> ***Shortcut:*** *Single-click any bank channel select button to enter Channel View and select the channel for plug-in editing.*

Channel Number & Name

The channel number and name is displayed in each Channel Select button. If no channel name has been entered, only the channel number is displayed. The channel number cannot be modified.

Channels are named in Channel View by clicking the channel's Channel Name Button within the Main Column, then entering a name in the name field that appears.

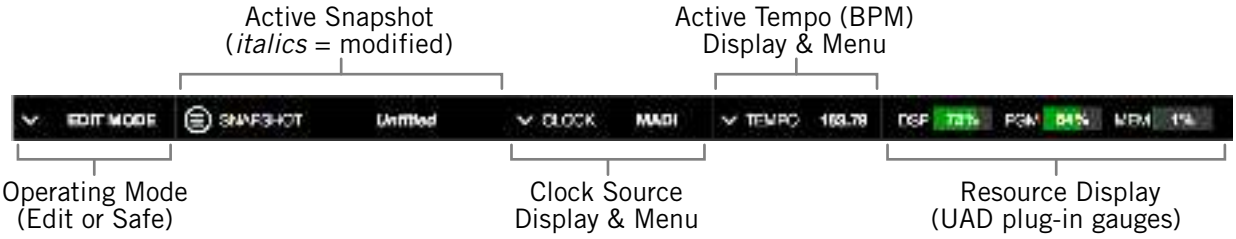
Selected Channel

The currently selected channel within the Current Bank is highlighted by a blue Channel Select button. Functions in Channel View are always performed on the selected channel.

Info Bar

The Info Bar is always displayed in all screens, providing visual feedback and access to options that are important in performance environments.

Refer to the illustration below for all Info Bar descriptions in this section.



Elements within the Info Bar

The Tempo and Operating Mode controls can only be accessed via the Info Bar. All other controls are also available elsewhere in the application. The Resource Display has no controls (it is a visual indicator only).

Info Bar Placement

By default, the Info Bar is at the bottom of all screens. However, its placement can be moved to the top of all screens, by setting the preference at View Menu>Settings>Display Tab>INFO LOCATION.

Info Bar Elements

The Info Bar contains the five main elements below. All elements are described in greater detail later in this section.

- **Operating Mode –** Displays the active Operating Mode (either EDIT or SAFE). Click this area to switch modes.
- **Active Snapshot –** Displays the Active Snapshot name. If the snapshot has been modified since it was loaded, the name is displayed in *italics*. If the Snapshot was loaded via a Soundcraft Vi Console, the name is "[SOUNDCRAFT CUE]."

Shortcut: *Click this area to switch to Snapshots View to load and/or save Snapshots.*

- **Clock Source –** Displays the active clock source (MADI, Word Clock, or Internal). Click this area to select a different clock source from the drop menu. This area flashes red if the currently selected clock signal is not detected (when digital audio is not synchronized).
- **Active Tempo –** Displays the tempo, in beats per minute (BPM), used by UAD plug-ins that are set to use Tempo Sync. Click this area to enter or tap a different tempo.
- **Resource Meters –** Displays resource loads used by UAD plug-ins. This allows you to monitor UAD loads as needed, for example when deciding which UAD plug-ins to load, based upon how much DSP is available.

Operating Mode

Live Rack has two switched operating modes: EDIT and SAFE.

EDIT Mode

Edit mode is typically used for setup and configuration. Edit mode allows all functionality, no matter how potentially destructive, to be executed.

Ideally, settings that can only be modified in Edit mode are set before a live performance to minimize the risk of level changes, clicks/pops, or other audio artifacts that could occur with some operations.

SAFE Mode

Specific parameters and/or functionality are inactive or disabled in Safe mode. This mode is typically used during live performance to prevent inadvertent changes that could significantly impact the audio. See the table on page 56 for the specific Safe mode constraints.

Operating Mode Display

The active Operating Mode is displayed at the far left of the Info Bar. The appearance of each active mode is shown at right.





> ***Note:*** *The Info Bar is the only area within Live Rack where the Operating Mode can be viewed or changed.*

Changing the active operating mode

To switch the active operating mode, single click anywhere in the Operating Mode display element at the left of the Info Bar. Execution occurs as follows:

- **Edit mode to Safe mode –** When EDIT mode is active, clicking the operating mode display instantly switches Live Rack into Safe mode.
- **Safe mode to Edit mode –** When SAFE mode is active, clicking the operating mode area presents a confirmation dialog to prevent inadvertent mode switching. Click OK in the dialog to confirm the change and enter Edit mode.



Safe Mode Constraints

View screen operations that cannot be executed in Safe mode are detailed in the table below.

> ***Caution:*** *When Safe mode is active, Snapshots can still be recalled, which can potentially overwrite current plug-in assignments and cause audio artifacts during a live performance.*

View Screen	SAFE Mode Constraint
INSERTS	• Plug-in REMOVE, MOVE, and COPY/PASTE modifiers are hidden • Empty plug-in inserts are hidden • ASSIGN mode is disabled
GAINS	• Stereo LINK/UNLINK buttons are hidden
DELAY GROUPS	• Latency compensation engine cannot be modified (existing settings persist) • Delay Group buttons are hidden (existing groups persist)
CHANNEL	• Channel ASSIGN tab is hidden • Plug-ins cannot be added or removed • Channel PRESETS tab is hidden (when in Channel Strip mode) • New Channel Strip presets cannot be added or removed
SETTINGS	• Sample Rate, Clock Source, and MADI Channels cannot be modified
INFO BAR	• Clock Source cannot be modified

Snapshot Display

The Snapshot Display shows the filename of the Active Snapshot.



A Snapshot is a complete Live Rack configuration file, containing all parameter values within the application. Snapshots are typically used for total session recall. Snapshots can also be recalled via MIDI or from within a Soundcraft Vi console via Ethernet.

Italic Snapshot Name

Whenever the active snapshot is modified from its last saved state, the Snapshot name is displayed in *italics*, as shown at right.



> ***Tip:*** *Type Command+S at any time to save the current state of the existing Snapshot to disk (overwriting the existing file; note this operation cannot be undone), or type Shift+Command+S to save the Snapshot as a new disk file.*

Soundcraft CUE Name

When a Snapshot is loaded remotely from a Soundcraft Vi Console (via Ethernet), the Active Snapshot is overwritten. When this occurs, [SOUNDCRAFT CUE] is displayed, as shown at right.



> ***Caution:*** *When a Snapshot CUE is loaded from a Soundcraft Vi Console, the Active Snapshot is overwritten, any unsaved changes are lost, and audio artifacts could occur.*

Clock Display

The Clock Display has three functions: It shows the currently selected clock source, facilitates selection of a different clock source, and indicates when the selected clock source signal is not detected.



Clock Source Menu

UAD-2 Live Rack can synchronize to external MADI clock, external word clock, or internal clock. To select a clock source, click anywhere in the clock display area to view the clock source pop-up menu (shown at right), then select a clock source from the menu.



> ***Tip:*** *The clock source can also be specified in View Menu>Settings>Hardware Tab>CLOCK SOURCE.*

In typical use, UAD-2 Live Rack should be set to MADI clock (the default value) for synchronization with the digital audio from/to the MADI device.

> ***Note:*** *The Clock Source cannot be modified in SAFE mode.*

No External Clock

If the Clock Source setting in not set to Internal and the external clock signal cannot be detected and/or resolved, then the text in the Clock Display display flashes RED (shown at right) until a valid clock is detected and/or an alternate clock source is selected. If this occurs, verify connections and external device settings.



> ***Important:*** *Only one device in a digital audio system can be the master clock source. The UAD-2 Live Rack clock setting, and the sample rate, must match the MADI device settings or audio artifacts could occur.*

No Hardware Detected

If the UAD-2 Live Rack hardware unit(s) is not properly connected and/or the software is not properly installed, the clock source will display OFFLINE as shown at right.



Tempo Display



This area displays the tempo value of the Active Snapshot in BPM (beats per minute) and facilitates selection of a different tempo.

The tempo value is used by time-based UAD plug-ins (such as delays and echos) that are set to use their Tempo Sync features. For details about how to use UAD plug-ins with this feature, see "Tempo Sync" on page 137.

The Tempo value is stored within the Snapshot; therefore each Snapshot can contain a unique tempo. The available tempo range is from 1.00 BPM to 999.00 BPM. The default tempo of a new Snapshot is 120 BPM.

Changing tempo values within the tempo dialog



The tempo can be changed within the tempo dialog by entering a text value or using the tap tempo feature.

To view the tempo dialog (shown at right), click anywhere in the Tempo Display within the Info Bar.

> ***Tip:*** *To leave the tempo unchanged after entering an (unwanted) value in the dialog, press the ESC key or click Cancel with the mouse.*

Text Entry

1. Open the tempo dialog by clicking the tempo display in the Info Bar
2. Type a numeric tempo value
3. Press Return or Enter, or click OK with the mouse.

Tap Tempo: QWERTY keyboard

1. Open the tempo dialog by clicking the tempo display in the Info Bar
2. Press the Tab key once to focus the TAP button (yellow outline)
3. Press the "t" key at least four times to establish the tempo
4. Press Return or Enter.

Tap Tempo: Mouse

1. Open the tempo dialog by clicking the tempo display in the Info Bar
2. With the mouse, click the TAP button at least four times to establish the tempo
3. Click the OK button.

Changing tempo values via MIDI

Tap tempo can be used to set a new tempo from incoming MIDI that is received via the macOS operating system. This method requires any external MIDI hardware and/or MIDI software that is recognized by Audio MIDI Setup, which is macOS's MIDI routing utility application (located in /Applications/Utilities).

About external MIDI tap tempo control

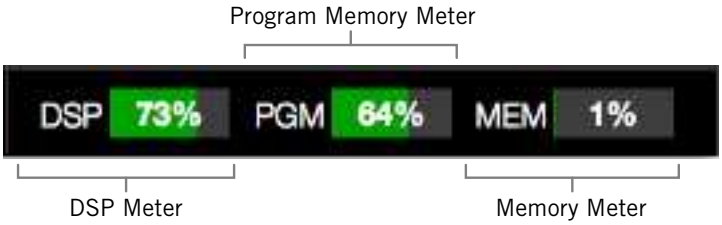
- Audio MIDI Setup must be configured before Live Rack is launched. After it is properly configured, Audio MIDI Setup does not need to remain open.
- MIDI note values or MIDI controller values can be used as the data source.
- Live Rack cannot synchronize the tempo to incoming MIDI beat clock.

MIDI configuration/setup

1. Before Live Rack is opened, verify the MIDI output device and/or MIDI software is configured properly and active in Audio MIDI Setup.
2. In the View Menu>Settings>MIDI Tab (page 115), set the values for MIDI DEVICE, MIDI CHANNEL, DATA TYPE, and DATA VALUE to match the transmitted MIDI data.
3. Transmit the MIDI note or controller (as specified in the previous step) at least four times to establish the tempo. The Tempo Display is RED during this period.
4. After a new tempo value is established, the new tempo is used and the Tempo Display changes back to BLACK. Simply retransmit the MIDI data to apply further tempo updates.

Resource Display

UAD plug-in loads are shown in the Resource Display at the far right of the Info Bar. These three meters (DSP, PGM, and MEM) provide important visual feedback in realtime, by helping to determine which plug-ins to load if available UAD resources are limited.



Resource Display within the Info Bar

The Resource Display mirrors the meters within the UAD Meter & Control Panel application. The details provided in this section is a subset of more complete explanations that are available in "Chapter 5: UAD Meter & Control Panel" beginning on page 120.

UAD Resource Loads

The green bar graph of each meter, and its percentage, represent the amount of the resource that is currently used. 100% is the maximum possible load.

Averaged Loads

The load for each meter represents the average for all UAD devices in use. For example, if one Live Rack hardware unit is installed, the DSP load is an average of the four SHARC DSP processors in the unit. If two units are installed, then the loads of all eight processors are averaged.

Channel Loads

> ***Important:*** *All UAD plug-ins in a single channel must fit on a single DSP. Therefore it is possible to get a "plug-in was unable to load" message when attempting load a plug-in or in a channel that does not have enough UAD resources, even if the Resource Display indicates enough overall resources are available.*

Static Loads

UAD-2 Live Rack uses UAD DSP and memory for its internal DSP mixer, therefore the meters will indicate loads (when the hardware is connected) even if UAD plug-ins are not loaded.

Individual Device Loads

The loads of individual devices in a multi-unit setup, and the individual DSP loads within a single unit) can be viewed in the System Information panel within the UAD Meter & Control Panel application.

UAD Plug-Ins Loads

The amount of UAD resources used by UAD plug-ins vary with each individual plug-in; more complex algorithms require more resources.

The amount of DSP used by each individual UAD plug-in is available in the UAD instance count chart. The chart can help determine which to plug-ins to assign with available resources. The chart is published online at:

- help.uaudio.com/hc/en-us/articles/215262223

DSP

The DSP meter displays the amount of digital signal processing resources that are being used by UAD-2 Live Rack. DSP is the primary hardware resource that powers the UAD plug-in algorithms.

> ***Note:*** *When UAD plug-ins are disabled, DSP requirements are decreased EXCEPT when the plug-in is disabled using the Power control within the plug-in interface.*

Program

This resource meter shows how much program memory (PGM) is in use. Program memory is an on-chip memory that is specific to the SHARC processor(s) and is used for certain UAD plug-in resources.

Each unique UAD plug-in uses a bit of program memory. If many different plug-ins are loaded simultaneously, it is possible for this resource to run out before a DSP overload occurs. This point is considered and factored in by automatic load balancing routines.

Memory

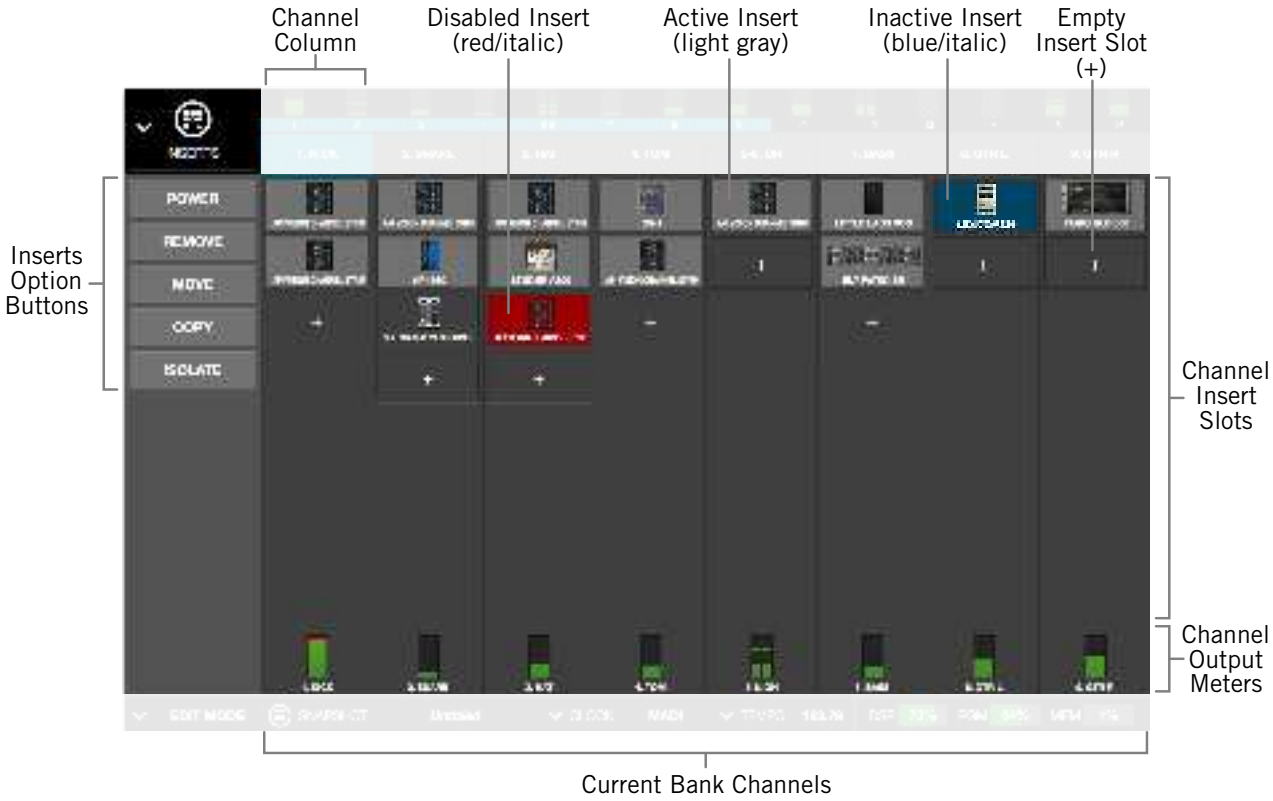
The Memory (MEM) meter indicates the amount of UAD-2 Live Rack hardware RAM that is currently in use.

Memory is used for echo, delay lines, reverb, and similar spatial processing. When UAD plug-ins are disabled but not unloaded, memory requirements are *not* decreased. In this case, the memory remains loaded so that reverb tails and delay lines are not cut off when the plug-in is disabled.

Inserts View

Inserts View displays an overview of the current state of all inserts within all channels within the Current Bank. An insert is a single slot, within a single channel, where UAD plug-ins are instantiated.

This view is where plug-ins can be very rapidly disabled, moved, removed, copied, and isolated using the Inserts Options. All Inserts View functions are detailed in this section.



Main elements within Inserts View

Inserts View is one of the three Bank Views. If Inserts View is active then a non-Bank View (Channel, Snapshots, or Settings) is activated, single-clicking the input meters in the Meter Bridge will return to Inserts View.

Current Bank Channels

Inserts View displays all channels in the Current Bank. The Current Bank is defined by, and navigated with, the blue Bank Bar within the Meter Bridge.

> ***Tip:*** *To change the active bank channels, focus the Bank Bar via the Tab key then use the left/right arrow keys, or drag the Bank Bar with the mouse.*

Bank Size

The total number of channels displayed concurrently in the active bank is a preference specified in View Menu>Settings>Display Tab>BANK SIZE.

Channel Column

The channel column provides an overview of the plug-in state of a single channel, and all channels in the bank are displayed concurrently. All UAD plug-ins loaded in the channel are displayed here, along with an output meter for the channel.

> ***Note:*** *The number of displayed channel columns is defined by the bank size setting in Settings View.*

Insert Slots

The insert slots indicate the current status of each plug-in, and provide a shortcut to Channel View, where the individual plug-ins are manipulated. Up to eight slots are available within each channel to facilitate serial signal processing.

> ***Shortcut:*** *Click anywhere in any empty column space to jump to Channel View for assigning and editing plug-ins in the slot.*

Channel Signal Flow

Audio signals in a channel flow through the inserts serially from top to bottom. Therefore, if more than one plug-in is inserted in a channel, the location of a plug-in within the inserts can impact the sound of the channel. Inserts can be re-ordered in Channels View to change the serial processing order.

State Indication

Populated insert slots contain a thumbnail image of the UAD plug-in that is loaded in the slot. The state of loaded plug-ins within each insert slot can be determined by the background color of the slot, as follows:

Active (light gray) – The plug-in is active and processing audio.

Inactive (dark blue) – The plug-in has been disabled by the power button in Channel View, and the plug-in name is italicized. The EMT 140 slot at right illustrates this state.



Channel column with populated insert slots

> ***Note:*** *Disabling a plug-in via the power control within its graphical interface (versus the Power button in Channel View) does not change the background color or italicize the name.*

Disabled (red) – The plug-in is disabled because there is not enough UAD resources, it is unlicensed and the demo has expired, and/or the UAD authorization needs updating. The plug-in name is also italicized. The EP-34 slot at above right illustrates this state.

Empty (+) – The slot is not populated with a plug-in. Click the"+" symbol to switch to Channel View and insert a plug-in into the slot.

> ***Tip:*** *Click anywhere in any empty column space to insert a plug-in at that location.*

Output Meter – This meter displays the signal level at the output of the channel (after all plug-in processing in the channel).

Inserts Options Overview

The Inserts Options (in the Main Column, below the View Menu) enable various operations to be performed on the plug-ins displayed within Inserts View.



The Inserts Options buttons

The option operations are accomplished by selecting an option to latch the function, executing the operation(s) using Modifiers, then exiting the latched function.

Option Latch



When an Inserts Option button is activated, the button flashes blue, indicating that the function is latched and ready to be executed.

Option Unlatch

The latched option is unlatched (the button stops flashing blue) when:

- Any option button is activated (same or different)
- A different View screen is activated
- No operations are executed during the Timeout Length

Timeout Length

When an option is latched, it is automatically unlatched (times out) after the Timeout Length to prevent inadvertent modifications. The Timeout Length is a preference set in View Menu>Settings>Display Tab>TIMEOUT LENGTH. The default Timeout Length is six seconds.

Modifiers

Modifiers are icons superimposed on various elements when an option is latched. Modifiers are used to execute the operations. The specific modifiers that appear, and where they are located, depend upon the specific option that is latched.

Inserts modifiers are superimposed on insert slots, and smaller column modifiers are superimposed on the Channel Select buttons within the Channels Bar, as shown in the next screenshot.

Modifier Swipe Shortcuts

Modifier functions can be executed extremely rapidly across many channels and/or insert slots in the current bank using the swipe shortcuts. When an Insert Option is latched, click+hold the mouse, then drag vertically and/or horizontally across channels and/or inserts to perform the function on all inserts that are swiped.

> ***Tip:*** *The Modifier swipe shortcuts are (by far) the fastest way to perform the same function on multiple inserts (for example, as compared to equivalent functions in Channel View).*



Inserts View showing the modifiers that appear when the move option is latched. Swipe across channels and/or insert slots to rapidly perform the function on many inserts.

Inserts Option Descriptions

The functions of each Insert Option are detailed below. The descriptions and screenshots are applicable when the option button is latched (blue).

> ***Important:*** *All UAD plug-ins within a single channel must fit on a single DSP. Therefore it is possible to get a "plug-in was unable to load" message when attempting to move or paste a plug-in or channel strip to a channel that does not have enough UAD resources, even if the Resource Display indicates enough overall resources are available.*

Most Inserts Options are only available in EDIT mode. The Power and Isolate options are available in SAFE mode.

> ***Important:*** *Insert Option operations cannot be undone.*

Power

The Power option deactivates an individual plug-in within a single insert slot. When deactivated, the plug-in no longer uses UAD DSP resources. Click the modifier to change the power state.

When Power is latched, deactivated plug-ins are indicated by a red modifier, and active plug-ins have a green modifier.



Caution: *Because this function unloads and loads the plug-in from the DSP, audio artifacts can occur if the power state is changed while audio is being processed by the plug-in. To disable individual plug-in processing without audio artifacts, use the power control within the plug-in interface in Channel View instead (however, the interface control method does not reduce DSP loads).*

Remove

The Remove option permanently deletes the plug-in from the insert slot. When Remove is latched, click the modifier to delete the plug-in.



Important: *If the plug-in settings are modified and unsaved in a preset, the modified settings are lost with this function (Remove cannot be undone).*

Caution: *Because this function unloads the plug-in from the DSP, audio artifacts can occur if a plug-in is removed while audio is being processed by the plug-in.*

Move

The Move option is used to move an individual plug-in (and its active settings) from one insert slot to another insert slot in any channel within the Current Bank.

Move can also be used to move a complete channel strip (all plug-ins in the channel column) from one channel to another channel within the Current Bank.



Move Individual Plug-In

When Move is latched, drag any insert modifier to move the plug-in to another slot. If a plug-in exists in the destination slot, the existing plug-in is bumped to a different slot within the same channel.

Move Channel Strip within same bank

When Move is latched, drag any column modifier (above the plug-in inserts) to another channel to move the all plug-ins in the source column to the destination column.

Important: *If plug-ins exist in the destination channel, all existing plug-ins in the destination channel are deleted. Move operations cannot be undone.*

Copy



The Copy option is used to duplicate an individual plug-in (modifier on plug-in insert) or complete channel strip (modifier above inserts), and their active settings.

Copy can be performed from one insert slot to another insert slot (on the same or a different channel), or from one channel to another channel, within the Current Bank.

> ***Note:*** *To copy settings to a channel that is not within the current bank, use the channels presets function available within Channel View.*

Copy is a two step process. First the insert or channel strip is copied, then the copied data is pasted to the destination insert or channel.

> ***Tip:*** *After copying, the copied modifier remains superimposed on the source element, as an indicator of the data that resides in the copy/paste buffer.*

Paste



After any insert or channel strip is copied, the Copy button changes to Paste. To paste the copied data, click any insert slot and the copied data is placed in the destination. The copied data can be pasted to multiple destinations as long as the paste option remains latched.

> ***Important:*** *If plug-in or channel strip exists in the paste destination(s), existing plug-ins or channel strips in the destination(s) are deleted. Paste operations cannot be undone.*

Copy Individual Plug-In

When Copy is latched, click any insert modifier to copy the plug-in, then click one or more destinations while the paste button is latched.

Copy Channel Strip

When Copy is latched, click any column modifier to copy the channel strip, then click one or more bank channel select buttons while the paste button is latched.

> ***Note:*** *When copying channel strips, the channel's input and output gain settings are also copied/pasted to maintain consistent signal levels.*

Isolate

Isolate prevents a channel's active settings from being modified when a Snapshot (a Live Rack configuration file) is loaded.

Isolate is typically used to prevent channel adjustments made during a live performance from being overwritten by Snapshot changes.

When Isolate is latched, click any column modifier to isolate the channel. Click again to de-isolate the channel.

When a channel is isolated, the text "[ISO]" appears beneath the bank channel name in the Meter Bridge.

Tip: *Channel isolations can also be set in Gains View.*

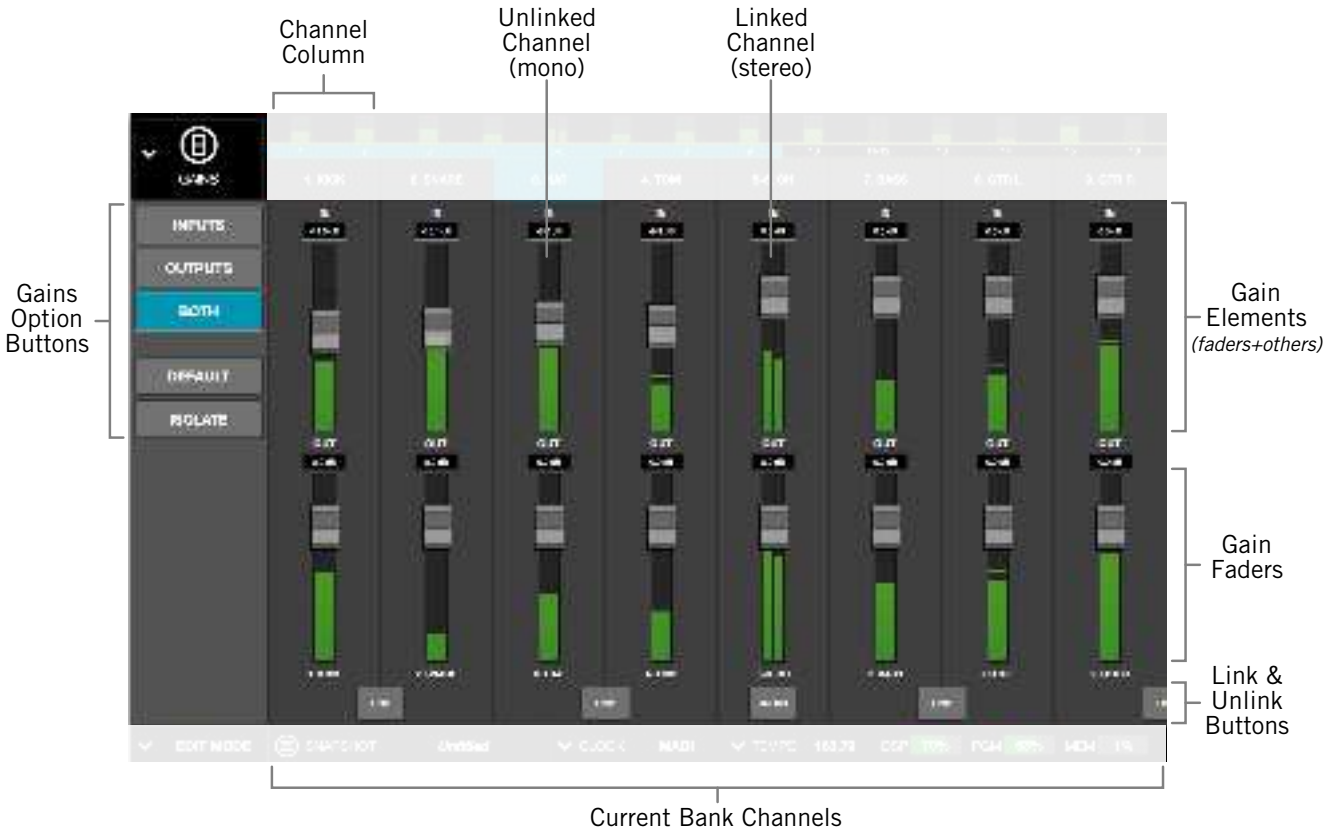


Isolate modifiers and text indication

Gains View

Gains View displays input/output gain level controls, and signal input/output level meters, for all channels within the Current Bank. Channels can also be stereo linked and unlinked in this view.

Refer to the illustration below for all Gains View functions detailed in this section.



Main elements within Gains view

Bank View

Gains View is one of the three Bank Views. If Gains View is active then a non-Bank View (Channel, Snapshots, or Settings) is activated, single-clicking the input meters in the Meter Bridge will return to Gains View.

Channel Column

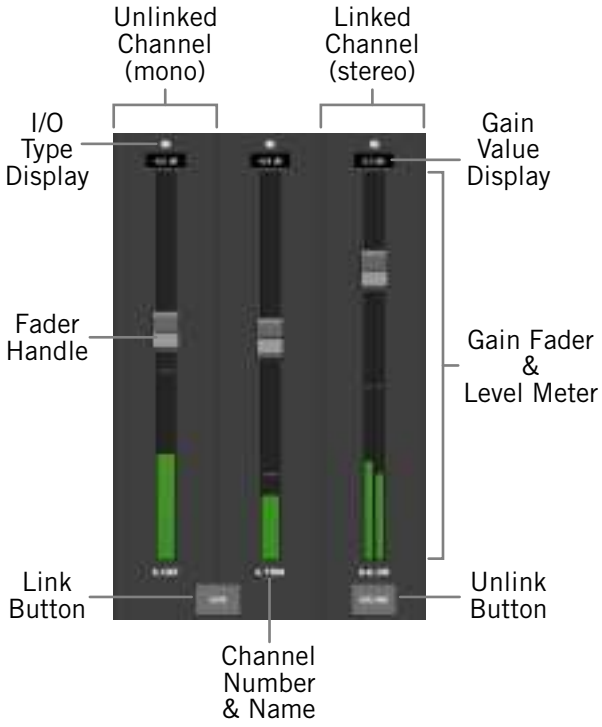
The channel column can display input channels, output channels, or both input and output channels, depending on the Gains Option that is specified.

Bank Channels

As with all Bank Views, the number of channel columns displayed in Gains View is defined by the Current Bank, which can be changed by moving the blue Bank Bar in the Channels Bar.

Gain Elements

Each input and output channel has its own set of gain controls and indicators. Refer to the illustration below for descriptions of the elements that follow.



Gain elements

I/O Type

The IN or OUT text is a label that indicates whether the gain controls are for an input channel or an output channel. Each row of gain controls is always of the same. If the BOTH option is active, input gain controls are above the output controls.

Gain Value

This field displays the current gain setting in dB, with one-tenth dB resolution. The value is changed by moving the fader handle.

Gain Fader

The gain faders are used to set the gain of the I/O channels. Drag the fader handle to change the gain value.

The available gain range for all I/O gain faders is from –INF dB to 12 dB. The default value is 0 dB (unity gain).

> ***Tip:*** *Option+click any gain fader (or anywhere within a channel column) to set its gain to 0 dB. This operation cannot be undone.*

Input Faders

The input faders adjust the level of the MADI signal before plug-in processing.

> ***Tip:*** *By adjusting the input gain, different sonics can be obtained with UAD plug-in emulations that have (desirable) non-linear input distortion characteristics.*

Output Faders

The output faders adjust the level of the MADI signal after plug-in processing. Output adjustments are convenient to compensate for overall level changes that may occur within a plug-in or channel strip.

Fader Handle

Gain values are adjusted with this control. Drag the handle down to lower the gain, or up to increase the gain.

Level Meter

The digital signal level of the channel is represented here in green, using standard digital peak metering. The top of the meter range indicates 0 dBFS (digital full scale). The top bar glows RED when 0 dBFS is exceeded (when digital clipping has occurred).

> ***Note:*** *The fader handles are superimposed on the level meters. Therefore, the signal may appear above the handle position.*

Input Meters

The input meters are pre-fader. The incoming MADI channel's signal level is displayed.

Output Meters

The output meters display the MADI channel's output level after plug-in processing but before the output fader (post plug-ins, pre-fader).

Channel Number & Name

The channel number and name is displayed here. If no channel name has been entered, only the channel number is displayed (the channel number cannot be modified).

> ***Tip:*** *Channels are named in Channel View by clicking the channel's number/name box within the Main Column, then entering a name in the name field that appears.*

Link/Unlink

Two adjacent channels can be combined into a stereo pair. When channels are linked, all control adjustments affect both channels of the stereo signal identically.

> ***Note:*** *The link and unlink cannot be performed in SAFE mode. The link/unlink buttons are hidden when SAFE mode is active.*

> ***Tip:*** *Channels can also be linked/unlinked in Channel View by clicking the channel's number/name box within the main column.*

Activating Link

Stereo pairs are created by clicking the LINK button between two adjacent channels.

> ***Important:*** *When Link is activated, all channel and plug-in settings in the right channel are overwritten by the plug-ins and gains in the left channel. This operation cannot be undone.*

When Link is activated:

- The LINK button text changes to UNLINK
- One set of controls is available for the stereo channel
- All current control settings of the left channel are copied to the right channel
- All inserted plug-ins in the left channel are converted to stereo (parameter values are retained)
- The level meter changes to a stereo level meter

Link Deactivation

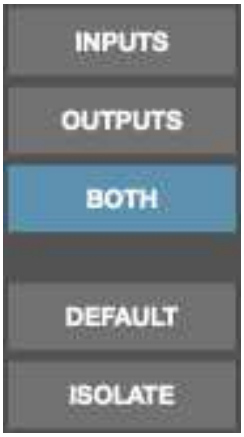
The stereo pair is separated back into individual channels by clicking the UNLINK button. When LINK is deactivated, all current control settings and inserted plug-ins for the stereo channel are copied to both resulting mono channels.

Link Constraint

Odd-numbered channels can only be linked to the next even-numbered channel (for example, channel 1 can be linked to channel 2, but channel 2 cannot be linked to channel 3).

Gains Options

The Gains Options (in the Main Column, below the View Menu) enable various views to be changed, and operations to be performed, on the channels displayed within Gains View.



Gains Options buttons

View Options

The Inputs, Outputs, and Both options change the I/O channels that are displayed. They do not use latching or modifiers.

> ***Note:*** *One of the view options is always active, including when a latched option is being performed.*

Latched Options

The Default and Isolate option operations are accomplished by selecting the option to latch the function, executing the operation(s), then exiting the function.

These latched options use the same methodology as Inserts View. For complete details about latched operations, see "Option Latch" on page 64.

Inputs

When the Inputs option is active (when the button is blue), only the input gains are displayed. This option enables increased resolution of the gain faders and level meters by increasing the vertical space devoted to the input channels (versus the Both option).

Outputs

When the Outputs option is active (when the button is blue), only the output gains are displayed.

> ***Tip:*** *The Inputs and Outputs view options enable increased resolution of the gain faders and level meters by increasing the vertical size of these elements.*

Both

This view option displays all input and output gains in the Current Bank. The vertical size of the gain faders is reduced in this view.

Default

This option facilitates the ability to quickly set one or more displayed gain levels to 0 dB (unity gain). When the Default button is latched, click any gain fader (or anywhere within a channel column) to set its gain to 0 dB.

Note that gain values can be returned to 0 dB without using the Default option. To set a gain value to 0 dB within any screen in Gains View or Channel View, option+click any gain fader.

> ***Important:*** *Gain changes using either of these methods cannot be undone.*

Isolate



Isolate prevents a channel's active settings from being modified when a Snapshot (a Live Rack configuration file) is loaded.

Isolate is typically used to prevent channel adjustments made during a live performance from being overwritten by Snapshot changes.

When Isolate is latched, click any column modifier to isolate the channel. Click again to de-isolate the channel.

When a channel is isolated, the text "[ISO]" appears beneath the bank channel name in the Channels Bar.

> ***Tip:*** *Channel isolations can also be set in Inserts View.*

Delay Groups View

Delay Groups are latency compensation tools used to maintain phase alignment across multiple channels when upsampled UAD plug-ins are used in Live Rack.

Refer to the illustration below for element descriptions in this section.



Elements within Delay Groups View

Bank View

Delay Groups View is one of the three Bank Views. If Delay Groups View is active then a non-Bank View (Channel, Snapshots, or Settings) is activated, single-clicking the input meters in the Meter Bridge will return to Delay Groups View.

Channel Column

The elements displayed in the Channel Column is the same for all channels in the Current Bank, and varies depending on the currently selected Delay Group Option.

Bank Channels

As with all Bank Views, the number of channel columns displayed in Delay Groups View is defined by the Current Bank, which can be changed by moving the thin blue Bank Bar within the Channels Bar.

Delay Groups Overview

Upsampled UAD plug-ins

Some UAD plug-ins are *upsampled*, meaning their internal sample rate is increased to achieve sonic design goals. When upsampled UAD plug-ins are loaded in Live Rack, additional latency delay is induced in the channel(s) using the plug-in(s).

Although the delay added by each upsampled UAD plug-in is negligible (typically between 0-140 samples, depending on the plug-in and sample rate), this extra delay can affect output phase coherency.

For example, if two microphones are used on an acoustic source (such as a drum kit) and an upsampled plug-in is used on one of the mic channels but not the other, the phase of the two mic channels will no longer be aligned.

> ***Note:*** *For the list of upsampled UAD plug-ins and their specific latency values, see the UAD Plug-Ins Manual.*

How Delay Groups work

Delay Groups automatically add small amounts of delay to each channel in the group that are *not* delayed by upsampled plug-ins, so all channels in the group are still phase aligned. In other words, all channels in the Delay Group are delayed by the same amount.

Note that the amount of delay added by the Delay Group engine is automatic. Only the minimum amount of delay actually required to compensate the channel(s) is dynamically applied, maintaining the lowest possible latency required for phase alignment at all times.

Up to 16 unique Delay Groups can be configured. For specific instructions, see "Configuring Delay Groups" on page 78.

When To Use Delay Groups

Delay Groups are required to maintain channel phase alignment only when *both* of these conditions are met:

1. Multiple Live Rack channels are used for a single source (such as a drum kit using multiple microphones), *and*
2. Any of those source channels contain upsampled UAD plug-ins.

Latency compensation using Delay Groups is *not* needed for any these conditions (when phase coherency is not imperative):

- When upsampled plug-ins are not used on the same source
- When upsampled plug-ins are used on different sources

System Latency

Overall system throughput latency with Live Rack is 73 samples when no plug-ins are assigned (and also through non-upsampled plug-ins).

Delay Groups Options

The Delay Groups Options (in the Main Column, below the View Menu) change which Delay Group buttons are displayed and changes the amount of delay compensation that is available.



Delay Groups Options

Delay Group Button Selectors

These buttons determine which Delay Group buttons are displayed in the main screen area. Click these option buttons to display a different set of Delay Group buttons.

The number of buttons that appear here, and their labels (1–8, 9–16, etc), depend on the vertical resolution (pixel count) of the computer's display screen.

Higher resolution displays can show more Delay Group buttons simultaneously, therefore fewer Delay Group buttons are shown in the Main Column in this case. With lower resolution displays, less space is available for the Delay Group buttons, so more Main Column buttons are available to switch between them.

Compensation Menu

This drop menu determines the maximum compensation delay, in samples, that is available for each channel. Click the menu and select any value to change the setting.

Compensation Values

The available Compensation values are listed in the table below.

Delay Group Compensation Values	
Setting Name	**Maximum Available Delay Per Channel (samples)**
OFF (Default)	0
SHORT	100
MEDIUM	200
LONG	1000

UAD Resource Usage

Use these guidelines when selecting values from the Compensation Menu:

- **Off –** When set to OFF, the delay compensation engine is disabled and the Delay Group buttons are hidden.
- **DSP –** Delay Groups use a small percentage of DSP resources. To maximize DSP resource availability for UAD plug-ins, only use Delay Groups when necessary.
- **Memory –** Longer Compensation values use more Memory resources. To maximize Memory resource availability for UAD plug-ins, only the smallest value required. Although UAD Memory resources are typically not constrained, overloading is possible if many time-based plug-ins (reverbs and delays) are active.

Delay Compensation Exceeded

If the maximum available delay compensation amount is exceeded on a channel when inserting an upsampled plug-in, a notification dialog appears. To maintain phase alignment if this occurs, either increase the Compensation Menu value or reduce upsampled plug-ins usage on the channel.

Delay Groups Elements

Refer to the illustration on page 74 for descriptions in this section.

Active Delay Group Display



The Delay Group that the channel currently belongs to is always displayed here. If the channel is not contained within any Delay Group, "Off" is displayed here and the channel is not delay compensated.

A Delay Group number is displayed here by clicking one of the channel's numbered Delay Group buttons below the display.

> ***Note:*** *A channel cannot belong to more than one Delay Group.*

Delay Group Buttons



There are 16 numbered Delay Group buttons and one OFF button for each channel. Each Delay Group button represents one of the 16 available Delay Groups.

> ***Note:*** *All Delay Group buttons are hidden when the Compensation Menu value is set to OFF.*

To add a channel to any Delay Group, click the numbered Delay Group button in the Channel Column. The button is highlighted in blue and the number is reflected in the Active Delay Group display at the top of the channel column.

Note that unless the display monitor has a very high vertical resolution (pixel count), all Delay Group buttons for an individual channel are not displayed concurrently. To view the Delay Group buttons that are not currently visible, use the Delay Group Option buttons in the Main Column.

Samples Display



The Samples display shows the sum of all extra samples (the total latency delay amount) incurred by all upsampled plug-ins inserted in the channel. If a channel is contained within a Delay Group, all channels within the same Delay Group will display the same value, confirming the Delay Group channels are phase aligned.

> ***Note:*** *The Samples Display only shows delay added by upsampled plug-ins. They do not reflect the overall system throughput delay of 73 samples that is inherent on all Live Rack channels.*

Output Meter

The Output Meter displays the MADI channel's output level after plug-in processing but before the output fader (post plug-ins, pre-fader).



The channel number and name are also displayed here. The channel name's proximity to the Samples display facilitates confirmation that related channels are being delay compensated by the same amount.

Configuring Delay Groups

To setup one or more Delay Groups, follow these instructions:

1. Determine if phase alignment is required for two or more channels. Typically, only channels used for the same source need to be phase aligned. For background information, see "When To Use Delay Groups" on page 75.
2. Make note of which channels require phase alignment (for example, all the channel numbers/names used for the drum kit microphones).
3. Enter Delay Groups view by choosing it from the View Menu in the Main Column.
4. Enable the delay compensation engine by setting the Compensation Menu to any value except OFF (off is the default value).
5. Display the Delay Group buttons for the Delay Group to be used by clicking any View Option button in the Main Column. This step is necessary only if the Delay Groups displayed by default are already in use.
6. Add all noted channels to the same Delay Group by clicking the same numbered Delay Group button for each noted channel. The selected buttons are highlighted in blue. All selected buttons must all be in the same row.

   Tip: *To rapidly add multiple channels to the same Delay Group, hold any Delay Group button, then swipe horizontally across multiple channels.*

7. Confirm all the noted channels are in the same Delay Group via the Active Delay Group display at the top of each channel's column. The display must show the same Delay Group value for all the noted channels.
8. Confirm all the noted channels are being compensated equally via the Samples display at the bottom of each channel's column. The display must show the same Samples number for all the noted channels (the Samples value is automatically calculated). If necessary, increase the Compensation Menu value.

Delay Group configuration for the noted channels is complete. Repeat if necessary for another set of channels using a different Delay Group number.

Delay Groups Example

The screenshot below shows an example of a properly configured Delay Group. The TOM and OH channels are assigned to the same Delay Group (Delay Group #1 in this example), and the Samples value is identical for both channels. Note that the Bass channel is not in the Delay Group.



Typical Delay Group implementation.
Channels in the Delay Group have the same SAMPLES value.

Channel View

Channel View displays the plug-ins, channel strips, I/O gains, and other settings within a single channel. Channel View is used to assign and edit UAD plug-ins and manage plug-ins preset settings.

The channel that is currently being viewed can be navigated with the Channel Bar. The currently selected channel is highlighted in blue in the Channel Bar.



Typical appearance in Channel View. In this screenshot, Single view is active and the plug-in tab is selected so the plug-in interface parameters can be adjusted.

Navigating to Channel View

Channel View can be entered using any of these methods.

- Choose Channel View from the View Menu
- Click any Channel Select button in the Channel Bar
- Double-click any channel in the Meter Bridge
- Click any insert slot in Inserts View
- Click any insert plate in Universe View

Tip: *When Channel View is entered using any of the above methods (except via View Menu), the channel is automatically selected and ready for editing.*

Selecting Channels within Channel View

In Channel View, the currently selected channel is displayed. To select any channel for viewing, editing, and/or assigning the plug-ins inserted the channel from within Channel View:

1. Bring the channel into the Current Bank by navigating with the thin blue Bank Bar
2. Click any Channel Select button in the Channel Bar to select the channel.

Shortcut: *Double-click any Input Meter in the Meter Bridge to enter Channel view and select that channel for editing.*

Two View Modes: Single View & Channel Strip View

Channel View has two fundamental modes of operation: *Single* view mode and *Channel Strip* view mode. Single mode facilitates the viewing, editing, and management of individual plug-ins within a channel, while Channel Strip mode facilitates the concurrent viewing, editing, and management of all serially stacked plug-ins within a channel.

View Mode Elements

The screen elements and functions in Channel View depend on the active view mode, and the current selections within the active mode. Some elements and functions are common to both view modes. All elements are detailed later in this section.

Switching View Modes

To enter Channel Strip view, click the Channel Strip Button at the bottom of the Main Column when in Channel View. The button is highlighted blue when Channel Strip view is active. Click the button again, or click any Insert Button, to return to Single view.

Common Elements

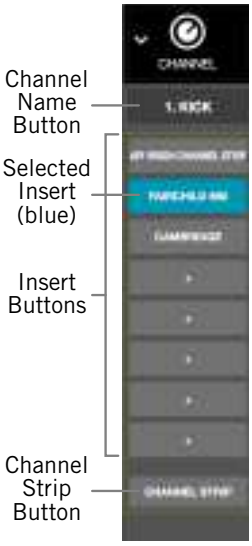
Some elements that appear, and the functions that can be performed, are common to both Single and Channel Strip view modes. The elements common to both views are the Main Column, Channel I/O Gains, PLUG-IN Tab, and the PRESET Tab.

The common elements are described briefly in the table below.

Element	Description
Channel Name Button	Displays the current channel's NAME field. Click the button to create a custom name for the channel.
Insert Buttons	Represent the channel's eight available insert slots. Shows the name of currently loaded channel plug-ins (if any). Switches between the inserts for editing inserts.
Channel Strip Button	Toggles the channel between Single view and Channel Strip view modes. Facilitates the viewing and editing of multiple plug-in interfaces concurrently.
PLUG-IN(S) Tab	Displays the plug-in interface so sonic parameters can be edited. Depending on the view mode (Single or Channel Strip), different supporting tabs are available.
Supporting Tabs	In Single view, PRESETS and ASSIGN tabs are available for selecting presets and plug-ins. In Channel Strip view, the CHANNEL PRESETS tab is available.
Channel I/O Gains	Input/output gain faders and level meters are available for convenient gain staging. These are the same controls available in Gains View.

Channel View Options

In Channel View, the View Options in the Main Column is identical in both Single and Channel Strip view modes. The options in Channel View are the Channel Name button, the Insert buttons, and the Channel Strip button.



Channel Name Button

The Channel Name button is located directly beneath the View Menu in the Main Column. It displays the name of the channel selected in the Channel Bar. The Channel Name appears alongside the MADI channel number.

When the Channel Name button is clicked, the button is highlighted in blue, and the NAME field and LINK (UNLINK) button appears to the right of the Main Column so the channel can be named or stereo linked/unlined.

Note: *The MADI channel number cannot be modified.*

Channel Name Field

To change the channel name, click the Channel Name button to display the NAME field. Type a new value in the NAME field, then type Return (or Enter) or click anywhere outside the field.



At right: Changing the channel name. To see the NAME field and LINK (UNLINK) button, click the Channel Name button.

Tip: *The NAME field remains visible when other Channel Select buttons in the Channel Bar are clicked so other channels can be quickly renamed.*

Channel Link/Unlink

To stereo link or unlink a channel(s) the channel name, click the Channel Name button to display the LINK button (or UNLINK button, if the channels are already stereo linked). Click the Link/Unlink button to change the link state. For specific details about link/unlink behavior, see "Link/Unlink" on page 71.

Caution: *Link/Unlink can cause significant audio changes and can only be performed in EDIT mode.*

Insert Buttons



The Insert Buttons are located in the Main Column. Each Insert Button represents one of the eight insert slots for available for UAD plug-in processing within a single channel.

Populated inserts contain the plug-in name and empty inserts contain the plus "+" symbol.

> ***Note:*** *In SAFE mode, all plus "+" symbols are hidden and plug-ins cannot be assigned to the channel.*

Insert Button Behavior

Insert buttons can be controlled with the mouse or the keyboard, as described below.

Click

Clicking an Insert button with the mouse selects the insert. The insert is selected when its button is highlighted in blue.

If if the insert already contains a plug-in when its button is clicked, its interface is displayed in the PLUG-IN tab so the plug-in parameters can be modified.

If the insert does not already contain a plug-in (any button with the plus "+" symbol), the ASSIGN tab is displayed so a plug-in can be loaded into the insert.

If Channel Strip view is active (if the CHANNEL STRIP button is highlighted blue), the channel is switched to Single view and the buttons behave as described above.

Focus

In Single view, if an Insert button has focus (when the button is selected and its button is highlighted in blue) and the Return or Enter key is typed, the PRESETS tab is selected so plug-in settings files can be navigated and loaded from disk.

In Channel Strip view, if the channel strip has focus (when the CHANNEL STRIP button is highlighted in blue and the FOCUS outline is around the Insert and Channel Strip buttons) and the Return or Enter key is typed, the PRESETS tab is selected so channel strip settings files can be navigated and loaded from disk.

Channel Signal Flow

Audio signals in a channel flow through the inserts serially from top to bottom. Therefore, if more than one plug-in is inserted in a channel, the location of a plug-in within the inserts can impact the sound of the channel.

Insert Reordering



Inserts can be reordered to change the location of a plug-in within the channel signal flow. For example, its possible to move an EQ to be located before or after a compressor to change the processed sound.

To reorder the inserts, drag any Insert Button up or down with the mouse. Existing assignments are automatically reordered as needed to accommodate the change. Inserts can be reordered in Single view and Channel Strip view.

> ***Note:*** *This operation can only be performed in EDIT mode.*

Insert State Indications



The color of each button, as well as *italic plug-in names*, indicate of the current state of each insert. The possible states are shown at right and described below.

Selected (light blue) – The plug-in is active and processing audio, and the insert is selected for editing. The PULTEC EQP-1A insert button at right indicates this state.

Active (light gray) – The plug-in is active and processing audio. The TELETRONIX LA-2A GRAY insert button at right indicates this state.

Inactive (dark blue) – The plug-in has been disabled by the power button in Channel View, and the plug-in name is *italicized*, and the plug-in displays a Status Bar in the PLUG-IN Tab. The EMT 250 insert button at right indicates this state.

> ***Note:*** *Disabling a plug-in via the power control within the plug-in interface (versus the power button in Channel View) does not change the background color nor italicize the name.*

Disabled (red) – The plug-in is disabled because there is not enough UAD resources, it is unlicensed and the demo has expired, and/or the UAD authorization needs updating. The plug-in name is also *italicized* and the plug-in displays a Status Bar in the PLUG-IN Tab. The MANLEY MASSIVE PASSIVE insert button in the screenshot indicates this state.

Italic Name **–** The plug-in is not processing audio because it is either inactive or disabled.

Empty (+) – The insert is not populated with a plug-in. Click the plus "+" symbol to assign a plug-in into the slot.

> ***Note:*** *The plus "+" symbol on all Insert buttons is hidden in SAFE mode.*

Channel Strip Button

The Channel Strip button is used to enter Channel Strip view. Channel Strip view combines all plug-ins in a channel into a single view for convenient editing and settings management.



Activating Channel Strip View

To enter Channel Strip view, click the CHANNEL STRIP button at the bottom of the Main Column. To exit Channel Strip view and enter Single view, click the CHANNEL STRIP button again to change it to gray, or click any Insert button.



Remove Plug-In Shortcut

Plug-ins can also be from inserts in using the shortcut on the Inserts buttons. This operation cannot be performed in SAFE mode.



> ***Tip:*** *Plug-in removal operations in Inserts View can be much quicker, especially when removing numerous plug-ins.*

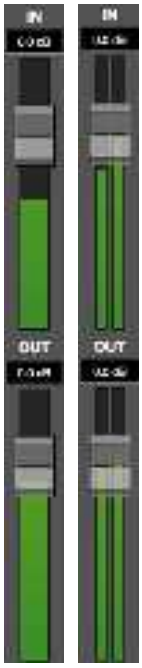
To use the shortcut:

1. Drag any insert button containing a plug-in to the left to reveal the Remove modifier icon
2. Click the Remove icon to delete the plug-in from the insert.

To cancel the operation, click anywhere else in the Insert Buttons area (anywhere *except* the Remove icon).

Channel I/O Gains

Input and output gain faders and signal level meters are displayed within all screens in Channel View, between the Inserts Buttons and the Tab displays. The Channel I/O Gains are used to adjust view and adjust input and output levels for individual channels.



The channel I/O fader and meter functionality is exactly the same as in Gains View, where the I/O gain controls are displayed concurrently for all channels. For details about these controls, see “Gain Elements” on page 70.

PLUG-IN Tab

The PLUG-IN Tab is where the UAD plug-in interface is displayed and plug-in parameters are edited. In Single view, the PLUG-IN Tab displays the plug-in interface of the currently selected Insert Button in the Main Column. In Channel Strip view, the interfaces of all plug-in in the channel are displayed concurrently.



Channel View elements when the PLUG-IN tab is active

General Use

For general information about how to use the UAD plug-in interface (such as how to adjust controls) see "Chapter 6: Using UAD Plug-Ins" beginning on page 133.

Specific Controls

For information about the specific features and controls available within each individual UAD plug-in, see the UAD Plug-Ins Manual.

Channel Strip View

If Channel Strip view is active, the interfaces all inserted plug-ins in the channel are displayed in the PLUG-INS tab concurrently. In Channel Strip view, the Tab name is PLUG-INS (plural) to reflect that multiple plug-in interfaces are displayed in Channel Strip view concurrently.

Channel Strip Button

The Channel Strip button is used to enter Channel Strip view. Channel Strip view combines all plug-ins in a channel into a single view for convenient editing and settings management.



Activating Channel Strip View

To enter Channel Strip view, click the CHANNEL STRIP button at the bottom of the Main Column. To exit Channel Strip view and enter Single view, click the CHANNEL STRIP button again to change it to gray, or click any Insert button.



Navigation Scroll

If the interfaces of all plug-ins in the channel cannot be contained within the available vertical screen space, vertical and/or horizontal scroll bars appear in the PLUG-INS tab to enable the viewing of all interfaces in the channel strip.

Hidden Functions

In Channel Strip view, the ZOOM slider and plug-in DEACTIVATE button are hidden and cannot be modified.

Channel Strip Variances

Channel Strip view is active when the CHANNEL STRIP button is highlighted in blue. Additionally, the following functions are changed to accommodate Channel Strip view:

- All Insert Buttons are grouped and highlighted in blue
- The plug-in ZOOM slider is hidden
- The plug-in DISABLE button is hidden
- PRESETS and ASSIGN tabs are hidden
- The title of the PLUG-IN tab changes to PLUG-INS
- If the interfaces of all plug-ins in the channel cannot be contained within the available vertical screen space, vertical scroll bars appear in the PLUG-INS tab to enable the viewing of all interfaces in the channel strip.

Status Bar

The Status Bar is a horizontal strip below the plug-in interface that appears when there is an exception to the usual operational state of the plug-in. The status bars are described below.



The Status Bar appears beneath the plug-in interface to indicate operating exceptions

- **No Status Bar –** The plug-in is authorized, active, and processing audio.
- **DEMO (days remaining) –** The plug-in is active and processing audio, but it is operating in demonstration mode. The number of days remaining in the demo period is displayed in the Status Bar. Demos can be started for each individual plug-ins in View Menu>Settings>PLUG-INS. For related information, see "Demo Mode" on page 143.
- **POWERED OFF –** The plug-in has been disabled by the Power Button in Channel View or Inserts View.

Note: *Disabling a plug-in via the power control within the plug-in interface (versus the Power button in Channel View) does not display this Status Bar.*

- **DISABLED –** The plug-in is disabled because there is not enough UAD resources, it is unlicensed and the demo has expired, and/or the UAD authorization needs updating.

Power Button

The Power button deactivates the selected plug-in and reduces UAD resource loads. When a plug-in is deactivated with this button, the button is red and POWERED OFF appears in the Status Bar under the plug-in interface.





The Power button is located between the Tabs and the ZOOM slider in Channel View when the PLUG-IN Tab is active. To disable the currently selected plug-in, click the green Power button. To re-enable the plug-in click, the Power button again.

Zoom Slider

The ZOOM slider increases the size of the currently selected plug-in interface. Zooming enlarges all controls in the interface for enhanced visual feedback and controls manipulation.

The Zoom setting is unique for each individual UAD plug-in. The zoom setting for each plug-in is global; the setting is used throughout Channel View wherever the interface appears.

Note: *Zoom is unavailable in Channel Strip view.*



Zoom slider

PRESETS Tab

The PRESETS tab is where UAD plug-in settings are managed after a plug-in is assigned to an Insert. Preset management tasks are performed on the currently selected Insert.



The PRESETS tab displays 3 columns with the currently selected plug-in's presets, sub-folders (if applicable), and the FILE menu for creating user-defined presets and folders.

Presets Defined

A preset is a complete collection of settings for an individual plug-in that is saved as a disk file so the settings can be subsequently recalled. Presets are typically used to save and recall favorite plug-in settings. Thousands of factory presets are installed with the software, or they can be user-created.



> ***Note:*** *Preset files do not contain a channel's I/O gain values. However, I/O gain values are stored within Snapshots (complete Live Rack configuration files).*

Preset files have the ".vst" suffix (file suffixes are only visible in the macOS Finder when the "Show all filename extensions" option is checked in the macOS Finder's Preferences window).

Factory Presets



Factory presets are plug-in settings created by the plug-in developers for typical use case scenarios. All UAD plug-ins developed by Universal Audio include a batch of factory presets. They can be used as-is, or modified as desired.

All factory presets are read-only; they cannot be overwritten, renamed, deleted, or moved. However, factory presets can be saved under a different name or in a different file location. Factory presets are indicated by a lock icon at the left of a preset icon.

> ***Note:*** *Not all Direct Developer (3rd-party) plug-ins include factory presets.*

Presets Folder Location

All factory and user preset files are stored at the following location within the macOS file system:

- Macintosh HD/Library/Application Support/Universal Audio/Presets

Plug-In's Preset Folder



Inside the presets folder are folders named with the title of each UAD plug-in. Each of these folders contain all factory and user presets for that particular plug-in. This is the *plug-in's preset folder*. The contents of this folder is displayed in the PRESETS column when the PRESETS tab is selected.

> ***Note:*** *User presets can only be saved to the plug-in's preset folder. Therefore, the plug-in's preset folder is the starting point, and highest level, for file system navigation within the PRESETS tab.*

Preset Sub-Folders

Each plug-in's preset folder can contain a maximum of one nested sub-folder for additional preset organization capability. This additional folder is the *preset sub-folder*. The contents of this sub-folder (if any) is displayed in the SUB-FOLDER column when a folder in the PRESETS tab is selected.

Channel Strip Defined



A Channel Strip is a complete collection of plug-ins within a single channel, and all parameter settings within those plug-ins, that is saved as a disk file so the channel strip can be subsequently recalled into the same or a different channel. All Channel Strips are user-created.

> ***Note:*** *Channel Strip files do not contain a channel's I/O gain values. However, I/O gain values are stored within Snapshots (complete Live Rack configuration files).*

Channel strip files have the ".uadchannel" suffix. File suffixes are only visible in the macOS Finder when the "Show all filename extensions" option is checked in the macOS Finder's Preferences window.

Channel Strip Folder Location

All Channel Strip files are stored at the following location within the macOS file system:

- Macintosh HD/Library/Application Support/Universal Audio/Presets/Channel Strip

Channel Strip Sub-Folders



The Channel Strip folder can contain a maximum of one nested sub-folder for additional channel strip organization capability. This additional folder is the *Channel Strip sub-folder*. The contents of this sub-folder (if any) is displayed in the SUB-FOLDER column when a folder in the CHANNEL PRESETS tab is selected in Channel Strip view.

> ***Note:*** *Channel Strip presets can only be saved to the Channel Strip folder. Therefore, the Channel Strip folder is the starting point, and highest level, for file system navigation within the CHANNEL PRESETS tab.*

PRESETS Tab Columns

The PRESETS tab contains three columns: FILE, PRESETS, and SUB-FOLDERS. These columns are used to manage and navigate the preset files.

> ***Note:*** *In Channel Strip view mode, the PRESETS tab is named CHANNEL PRESETS.*

FILE Column

The FILE column in the PLUG-IN tab contains buttons used to name, save, and perform other file management tasks. Click the button to perform the operation on the currently selected preset or sub-folder.



SAVE

Saves the current modified preset file in place. The preset file must already exist or the button is unavailable (gray). Use the SAVE AS button to perform the initial save operation.

SAVE AS

Creates a new preset file to disk with the plug-in's current settings. Opens the SAVE PRESET AS file dialog overlay so a new preset name can be entered and saved to a location within the plug-in's preset folder. A sub-folder can be created within the SAVE PRESET AS dialog.

RENAME

Presents the RENAME PRESET dialog overlay so the currently selected preset can be renamed.

DELETE

Presents the DELETE PRESET dialog overlay so the currently selected item can be permanently deleted.

Note: *The Delete operation cannot be undone.*

MOVE

Presents the MOVE dialog overlay so the currently selected item can be moved to another location within the plug-in's preset folder.

PRESETS Column



When the PRESETS tab is selected, the PRESETS column is visible and all items within the plug-in's preset folder are displayed. Actions in the FILE menu can be performed on items selected in the PRESETS column.

Click any preset in the PRESETS column to instantly load it, or click a sub-folder (if any) to display presets within the sub-folder in the SUB-FOLDER column.

SUB-FOLDER Column

If the PRESETS column contains one or more folders, selecting the folder will display items in the sub-folder. Actions in the FILE menu can be performed on any item selected in the SUB-FOLDER column.



The SUB-FOLDER column is displayed when a folder in the PRESETS column is selected

ASSIGN Tab

The ASSIGN tab is used to assign (load) plug-ins into empty inserts and reassign (replace) existing plug-ins that are already assigned in a channel insert. Actions in the ASSIGN tab are performed on the currently selected insert.

Note: *The ASSIGN tab is unavailable in Channel Strip view.*



The ASSIGN tab showing typical selections within the Category menu

CATEGORY Buttons

UAD plug-ins that have similar processing functionality are grouped within categories. The CATEGORY buttons in the ASSIGN tab represent these plug-in categories.



Note: *Some plug-ins are in multiple categories (when applicable).*

Plug-ins are assigned and reassigned by selecting a category button, then choosing a plug-in or preset from the PLUG-IN, PRESETS, or SUB-FOLDER columns that appear when a category is selected.

Making selections

Click a Category button to "drill down" through available selections. Single-click a plug-in to display the PRESETS column (and SUB-FOLDER column, if any) columns. Double-click a plug-in to load it with its default settings. For detailed instructions, see "How To Assign Inserts" on page 95.

PRESETS & SUB-FOLDER Columns

These columns function identically to the same columns in the PRESETS tab. For details, see "PRESETS Tab Columns" on page 92.

Plug-In Categories

Available plug-in categories are listed in the table below.

Note: *Some plug-ins are in multiple categories (when applicable).*

CATEGORY	CONTENTS
NONE	Indicates that no plug-in is assigned. If a plug-in is already assigned, the button can be used to unload the plug-in.
DELAY	Delay and echo plug-ins
DYNAMICS	Compressor and limiter plug-ins
EQUALIZATION	EQ plug-ins
GUITAR & BASS	Guitar and bass amplifiers, pedals, and tuner plug-ins
HARMONIC & TAPE	Filter, saturation, distortion, and analog tape plug-ins
MASTERING	Mastering plug-ins
MICROPHONE	Plug-ins for Townsend Labs Sphere L22 Microphone Modeling System
MODULATION	Chorus, modulation, phaser, and doubler plug-ins
PREAMP & CHANNEL STRIP	Preamps and plug-ins featuring multiple modules
REVERB & ROOM	Digital reverb, analog reverb, and room emulation plug-ins
SPECIAL PROCESSING	Tape machines, enhancers, transient designers, phase tools

How To Assign Inserts

Follow these instructions to assign (load), reassign (change), and de-assign (remove) plug-ins from any insert in Channel View.

Note: *These operations can only be performed in EDIT mode.*

Assign Insert

1. Single-click any empty insert button in any View screen to switch into Channel view and select the insert. The ASSIGN tab and the CATEGORY buttons are displayed, with NONE as the currently selected category.
2. Single-click any CATEGORY button to select it. The plug-ins within the category are displayed in the PLUG-IN column. Use the vertical scroll bar to view all the plug-ins if necessary.
3. Single-click any plug-in the PLUG-IN column to assign it to the insert. The plug-in is loaded with its default preset, it begins processing audio on the channel, and the PRESETS column (and SUB-FOLDER column, if any) are displayed.
4. If desired, single-click any preset in the PRESETS or SUB-FOLDER columns to load a different preset. Use the vertical scroll bar to view all the presets and/or sub-folders if necessary.

Done. Exit assign mode by pressing enter or clicking a different element. Click the PLUG-IN tab to view the plug-in's interface and edit its parameters.

Reassign Insert

1. Single-click any populated insert button in any View screen to switch into Channel view and select the insert. The PLUG-IN tab is selected and the plug-in interface is displayed.
2. Single-click the ASSIGN tab. The CATEGORY button of the current plug-in is selected, along with the PRESET column (and SUB-FOLDER column, if any).
3. Single-click any CATEGORY button to select it. The plug-ins within the category are displayed in the PLUG-IN column. Use the vertical scroll bar to view all the plug-ins if necessary.
4. Single-click any plug-in the PLUG-IN column to assign it to the insert. The old plug-in is replaced by the new plug-in with its default preset, and the PRESETS column (and SUB-FOLDER column, if any) are displayed.
5. If desired, single-click any preset in the PRESETS column (or SUB-FOLDER column, if any) to load the preset. Use the vertical scroll bar to view all the presets and/or sub-folders if necessary.

Done. Exit assign mode by pressing enter or clicking a different element. Click the PLUG-IN tab to view the plug-in's interface and edit parameters.

De-assign Insert

Tip: *Plug-in de-assignment in Inserts View via the Remove function can be much quicker, especially when removing numerous plug-ins.*

1. Single-click any populated insert button in any View screen to switch into Channel view and select the insert. The PLUG-IN tab is selected and the plug-in interface is displayed.
2. Single-click the ASSIGN tab. The CATEGORY button of the current plug-in is selected, along with the PRESET column (and SUB-FOLDER column, if any).
3. Single-click the NONE category button. The plug-in is removed from the insert and UAD resources used by the plug-in are released.

Done. Exit assign mode by pressing enter or clicking a different element.

Tip: *Plug-ins can also be de-assigned using the drag-to-left shortcut on the insert buttons (shown at right). For details, see* *page 85**.*



Snapshots View

A Snapshot is complete Live Rack configuration file used for total session recall. Snapshots contain all parameter values within the Live Rack application.

Snapshots View is a dedicated file management screen for saving, modifying, recalling, importing, and exporting Snapshot files. Snapshots View has the four sections described in the table below.

SNAPSHOTS SECTION	DESCRIPTION
Snapshot Options	The options the Main Column contain the various Snapshot file and folder management functions.
Folders & Snapshots Columns	Displays a list of user-defined folders and Snapshots in two columns.
Recall Panel	Displays the currently loaded Snapshot, the currently primed (selected) snapshot, and the Recall button to load the primed Snapshot.
Universe View	Displays a high-level view of the currently loaded Snapshot. Colored boxes indicate the presence and status of all plug-ins in all channels.

Snapshot Defined



A snapshot is a complete collection of all settings for the entire active Live Rack configuration. “All settings” are all parameter values in all Views, including all plug-in assignments in all channels, the current settings and state (active, disabled, etc) of all assigned plug-ins, and I/O Gain and Delay Group settings for all channels. All Snapshots are user-created.

Snapshots are saved as a disk file so the complete session can be subsequently recalled and/or transferred between systems and operators. Snapshots can be loaded from within Snapshots View, via MIDI, or from within Soundcraft Vi consoles via Ethernet using the Vi CUE functions.

Snapshots files have the “.uadmix” suffix. File suffixes are only visible in the macOS Finder when the “Show all filename extensions” option is checked in the macOS Finder’s Preferences window.

Snapshots Folder Location



All Snapshot files are stored at the following location within the macOS file system:

- Macintosh HD/Users/[account name]/Documents/Universal Audio/Snapshots

Snapshot Versus System Contents

The table details the information that is stored in a Snapshot file and the differences between a Snapshot and what is stored within the system.

Settings Stored In Snapshots (changed when Snapshot is recalled)	Settings Stored In System (persist when Snapshot is recalled)
Snapshot name	Clock Source setting
Snapshot MIDI Program Change number	Sample Rate setting
Snapshot BPM (Tempo)	MADI process order setting
Session channel-count (16, 32, 48, or 64)	Device order setting
Plug-ins and settings per-channel (includes all parameters and DSP power state)	Channel Name
Input and Output Gain settings per-channel	All screen preferences (as set in the Hardware tab within Settings View)
Stereo Link state per-channel	All MIDI preferences (as set in the MIDI tab within Settings View)
Delay Group setting per-channel	All Plug-Ins preferences (as set in the PLUG-INS tab within Settings View)

Snapshot Key Commands

At any time (not just in Snapshots view), two key commands can be executed for saving the current Snapshot in place (SAVE), or saving the current s\Snapshot as a new Snapshot (SAVE AS).

Key Command Name	Key Command	Description
Save Snapshot	COMMAND+S	Saves the current snapshot in place
Save Snapshot As...	COMMAND+SHIFT+S	Saves the current snapshot as a new snapshot with a new name and/or location

Recalling Snapshots

Recalling a Snapshot can cause destructive actions such as building and/or reordering of plug-in chains. Therefore, when a Snapshot is recalled, channels may be muted to avoid audio artifacts.

If a Snapshot is loaded that has the same plug-in configuration as the currently loaded Snapshot, the plug-ins are not rebuilt and only parameter values are changed, enabling a (mostly) artifact-free Snapshot recall workflow.

> ***Caution:*** *When SAFE mode is active, Snapshots can still be recalled, which can potentially overwrite current plug-in assignments and cause audio artifacts during live a performance.*

Base Snapshot Workflow

Recalling Snapshots can be potentially destructive in that entire plug-ins and plug-in channel strips can be torn down and re-built, potentially causing audio artifacts and/or silence for the duration of the Snapshot loading process.

For this reason, it is highly recommended that a "Base Snapshot" be prepared that contains all of the plug-ins required to get through a show/performance and only create snapshots that are saved as variants of the base snapshot.

> ***Important:*** *Recalling Snapshots created using the method below will result in parameter values being changed without significant glitches or muting.*

To create Snapshots variants from a base Snapshot:

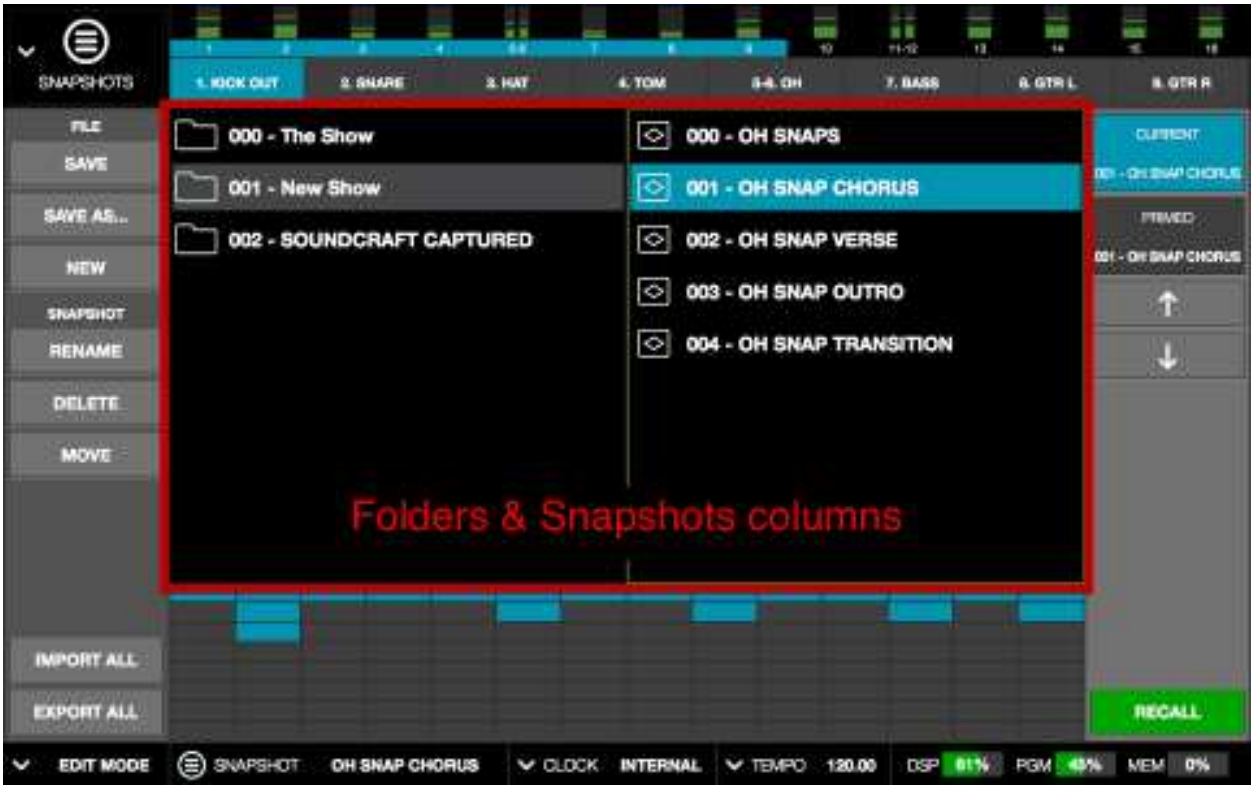
1. Create the base Snapshot by loading as many plug-ins as needed for the show/performance/session.
2. Navigate to Snapshots View.
3. Click SAVE AS to save and name the base Snapshot file.
4. When a change is needed (for example, for a change in the song or a different song that needs new settings), click SAVE AS again to create and name the variant Snapshot.
5. Make the parameter changes needed in the variant Snapshot and press SAVE. This locks the parameter change deltas into the variant Snapshot file.
6. Repeat steps 4 and 5 for all the variant snapshots that are needed.

The base and variant Snapshots can now be switched with minimal artifacts.

File Columns

The upper middle section of the Snapshots View screen shows two columns that display the Snapshot folders and the Snapshot files contained within the folders. Similar to how plug-in and channel strip presets are managed, these folders and files are used to load and manipulate the files in various ways.

However, unlike plug-in and channel strip presets, there are some differences between how Snapshots are loaded and moved. These differences were designed for safety reasons (for example, to prevent accidental triggers during a live show).



Snapshots View columns display the Snapshot folders (left) and Snapshot files (right)

Snapshots Term Definitions

The following terms are used in this section:

Folders Column – The left column in Snapshots View containing the snapshot folders

Snapshots Column – The right column in Snapshots View containing the snapshot files

Slot – A three-digit prefix number automatically used by every Snapshot and Snapshot folder. The slots determine the order that folders and Snapshots are displayed, and they are used for MIDI Bank/Program change commands.

Snapshot – A file containing complete session settings for all channels including plug-ins, gains, and Delay Group values.

Folder – A folder containing one or more Snapshot files.

Prime – Select, but do not load, a Snapshot in the list.

Recall – Loading of a primed Snapshot and recalling all session settings.

Soundcraft Cue – Soundcraft's name for a Snapshot. Cues can contain settings for all aspects of their digital consoles.

Navigate to Snapshots View

All Snapshots operations are performed in Snapshots View. To enter Snapshots View, use either of these methods:

- Choose Snapshots View from the View Menu
- Click anywhere in the Snapshot area in the Info Bar

When Snapshots View is entered, the Snapshots column has keyboard focus.

Keyboard Focus & Navigation

In Snapshots View, QWERTY keyboard focus is targeted on the Snapshots column (the column on the right). The mouse or keyboard UP/DOWN keys can be used to prime a different snapshot. Using the LEFT arrow key, focus can be changed to the Folders column and the UP/DOWN arrow keys can be used to navigate through folders (if they exist).

Folders Column

The Folders column displays a list of user-defined folders that contain the user-defined Snapshots. If no folders exist (for example, if no Snapshots have ever been saved), new folders can be created with the SAVE AS option button. To learn more about creating new snapshots and folders, see "Snapshots Options" on page 104.

There are two color-coded states that a folder display:

Snapshot State	Color	Description	Example
Idle Folder	Black	The folder is present in the system but not selected.	
Selected Folder	Gray	The folder is selected and displaying its contents in the Snapshots column.	

To Select a Folder:

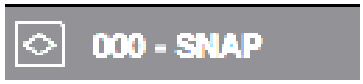
1. Navigate to Snapshots View.
2. Navigate to the folder column using any of these methods:
   • Single-click anywhere in the folders column to give it focus
   • Press the LEFT arrow key to swap keyboard focus from the Snapshots column
   • Press the TAB key three times to cycle focus through the Snapshots column, Meter Bridge, Channel Bar buttons, and the Folders column
3. When the desired folder is selected, the contents of the folder is displayed in the Snapshots column.



Snapshots Column

The Snapshots column displays a list of user-defined Snapshot files. If no Snapshots exist (for example, if no Snapshots have ever been saved), new Snapshots can be created with the NEW or SAVE AS option buttons. To learn more about creating new snapshots and folders, see "Snapshots Options" on page 104.

There are three color-coded states that a Snapshot folder can display:

Snapshot State	Color	Description	Example
Idle Snapshot	Black	The Snapshot is present in the file system but not loaded or primed.	
Primed Snapshot	Gray	The Snapshot is primed (selected) and next in the cue to be recalled if the RECALL button is engaged.	
Current Snapshot	Blue	The selected Snapshot is the currently loaded Snapshot.	

Modified Snapshot

If any settings have changed since the Snapshot was last saved, the name of the Snapshot appears in italics.



To Prime and Recall a Snapshot:

1. Navigate to Snapshots View.
2. Prime a Snapshot. This can be done using any of these methods:

- Click any Snapshot with the mouse
- Click the UP/DOWN buttons in the Recall Panel
- Press the UP/DOWN arrow keys to navigate through available Snapshots

Note: *When a Snapshot is PRIMED, it appears in the Recall Panel.*

3. Load the Snapshot. This can be done using either of these methods:

- Click the green RECALL button with the mouse
- Press the RETURN or ENTER key on the keyboard

The Snapshot is recalled and the session is re-configured.

If the previously-active Snapshot had been modified since it was last saved, the MODIFIED SNAPSHOT dialog overlay appears, providing options to SAVE, DON'T SAVE, or CANCEL the load.

Important: *If the Modified Snapshot dialog overlay appears, the primed Snapshot is not recalled unless/until the SAVE or DON'T SAVE button is clicked.*



MIDI Bank & Program Change Recall

Snapshots can be loaded using MIDI Bank/Program change commands. The three-digit slot prefixes in the Snapshot and Snapshot folder names correspond to received MIDI bank and program numbers that will select the folders and recall the Snapshots.

Snapshot folder slot numbers – These slot numbers correspond to the MIDI bank number needed to select the folder.

Snapshot slot numbers – These slot numbers correspond to the MIDI program number needed to recall the Snapshot.

Snapshots Options

The Snapshots Options (in the Main Column, below the View Menu) enable various operations (save, new, move, etc) to be performed on Snapshots and Snapshot Folders displayed within Snapshots View.

Save Button

Saves the currently loaded (not primed) Snapshot in place. A Snapshot has been modified when its name is displayed in *italics*.



To save the current Snapshot with the same name and location:

1. Navigate to Snapshots View.
2. Confirm you want to overwrite the currently loaded Snapshot. The current Snapshot is indicated in the following ways:

- The CURRENT display in the Recall Panel
- The SNAPSHOT name in the Info Bar
- A blue Snapshot name in the Snapshots column (its parent folder must be selected to see this)

3. Press the SAVE button. The Snapshot file is replaced with current settings.

Save As Button

Saves the currently loaded Snapshot as a new Snapshot file with a new name and the new Snapshot becomes the currently loaded Snapshot.



To save the Snapshot as a different file:

1. Navigate to Snapshots View.
2. Click the SAVE AS button. The SAVE SNAPSHOT AS dialog overlay appears. The name field is highlighted, and the currently selected folder is used as the default destination in the FOLDER drop menu.
3. Type a new name for the Snapshot. Slot number prefixes are added automatically and don't appear in the dialog.
4. Choose the destination for the Snapshot file. By default, the file will be saved to the folder shown in the FOLDER drop menu. Choose a different existing folder from the drop menu, or click the NEW FOLDER button to create a new destination folder.
5. Click SAVE (or press Return). The Snapshot file is created in the destination folder and it is now the currently loaded Snapshot.

New Button

Creates a new empty Snapshot within the currently selected folder. The new Snapshot appears in the column but is not primed or selected.



To create a new empty Snapshot:

1. Navigate to Snapshots View.
2. Click the NEW button. A new empty Snapshot named "Untitled" appears in the Snapshot column within the current folder, but it is not primed or selected.

FOLDER/SNAPSHOT Options

When the folder column is focused, the heading displays FOLDER and the options are performed on the Snapshot folder. When the Snapshot column is focused, the heading displays SNAPSHOT and the options are performed on the Snapshot.

Rename Button

Renames the currently selected folder or Snapshot.



To rename a folder or Snapshot:

1. Navigate to Snapshots View.
2. Click the RENAME button. The RENAME dialog overlay appears and the name field is highlighted.
3. Type a new name for the folder or Snapshot.
4. Click OK (or press Return). The folder or Snapshot is renamed.

Delete Button

Deletes the currently selected folder or Snapshot.



Important: *When a folder is deleted, all Snapshots contained within the folder are also deleted.*

Caution: *Delete operations permanently remove user data and cannot be undone.*

To delete a folder or Snapshot:

1. Navigate to Snapshots View.
2. Click the DELETE button. The DELETE confirmation dialog overlay appears to prevent inadvertently losing data.
3. Click OK (or press Return). The folder or Snapshot is deleted.

Move Button

On folders, Move enables changes the MIDI Bank Change slot order. On Snapshots, Move changes the MIDI Program Change slot order and/or enables moving the selected Snapshot to another folder.



To move a folder to a different MIDI Bank Change slot:

1. Navigate to Snapshots View.
2. Click the MOVE button. The MOVE dialog overlay appears and the name field is highlighted with the current slot number displayed.
3. Type a new slot number between 0 – 999. Do not enter a folder name here (use the Rename button for to rename folders).
4. Click MOVE (or press Return). The folder is renamed with the new slot number. If the slot number already exists, see Move Shuffle below.

To move a Snapshot to a different folder and/or MIDI Program Change slot:

1. Navigate to Snapshots View.
2. Click the MOVE button. The MOVE SNAPSHOT AS dialog overlay appears. The name field is highlighted, and the currently selected folder is used as the default destination in the FOLDER drop menu.
3. Type a new slot number between 0 – 999. Do not enter a Snapshot name here (use the Rename button for to rename folders).
4. Choose the destination for the Snapshot file. By default, the file will be saved to the folder shown in the TO drop menu. Choose a different existing folder from the drop menu, or click the NEW FOLDER button to create a new destination folder.
5. Click MOVE (or press Return). The Snapshot file is moved to the destination folder and it is primed for loading in the Recall Panel. If the slot number already exists, see Move Shuffle below.

Move Shuffle

If a folder or Snapshot already exists at the destination slot, the FOLDER/SNAPSHOT EXISTS dialog overlay appears, presenting the following choices:



- **Shuffle –** Automatically shuffles (moves) populated slots, making room for the moved item so all slot data is retained
- **Overwrite –** Moves the item to the existing slot and deletes the existing item in the destination slot.

IMPORT/EXPORT

Import and export are provisions to simplify transporting all Snapshot files and folders on the host computer between different Live Rack systems and/or operators.

For example, after completion of a concert or other project, the entire Snapshot folder/file hierarchy can be exported to a USB thumb drive connected to the host computer so they can be carried home without the system.

Import/export data file locations are fixed (import does not search the entire source volume for exported data). The file locations are listed below.

Export All

All Snapshot data can be exported to any volume currently mounted on the host computer. The original Snapshots folder hierarchy is retained on export.



The location of the exported data depends on the volume specified during export:

Exported Data Location – Startup Volume Specified

- Macintosh HD/Users/[account name]/Documents/Universal Audio/Exported Snapshots/[user-defined folder name]

Exported Data Location – Alternate Volume Specified

- [Volume Name]/Universal Audio/Exported Snapshots/[user-defined folder name]

To export all Snapshots:

1. Navigate to Snapshots View.
2. Click the EXPORT ALL button in the Main Column. The EXPORT ALL SNAPSHOTS dialog overlay appears. The EXPORT AS name field is highlighted, and the startup volume appears as the default destination in the VOLUME drop menu.
3. Choose a destination volume from the VOLUME drop menu. Only currently mounted volumes appear in the menu.
4. Click the EXPORT ALL button within the dialog overlay. All Snapshot data is exported to the specified volume.

Import All



Snapshot data can be imported from any volume currently mounted on the host computer, if the data exists in an exported data location (the data to be imported must exist at the same location it was exported to).

The original Snapshots folder hierarchy is retained on import if the same items don't already exist in the destination system. If the same destinations exist, options are provided to Append, Replace, or Cancel the import operation.

Imported Data Location

Imported data uses the same location used by Snapshots that aren't imported:

- Macintosh HD/Users/[account name]/Documents/Universal Audio/Exported Snapshots/[user-defined folder name]

To import all Snapshots:

1. Navigate to Snapshots View.
2. Click the IMPORT ALL button in the Main Column. The IMPORT ALL SNAPSHOTS dialog overlay appears.
3. Choose a source volume from the VOLUME drop menu. Only currently mounted volumes appear in the menu. If the volume contains exported data, the exported folder name is displayed.
4. Select the folder to be imported by clicking it so it is highlighted.
5. Click the IMPORT ALL button within the dialog overlay. All Snapshot data is imported to the specified volume.

If Snapshot data already exists, the IMPORT SNAPSHOTS dialog appears, with the following options:

- **Append** – Adds the imported data to the existing data
- **Replace** – Overwrites (deletes) the existing data
- **Cancel** – Cancels the import operation



Recall Panel

The Recall Panel displays the Active Snapshot and the Snapshot that is primed and ready to be loaded. It also contains the Recall button to load the primed Snapshot, and navigation buttons for priming Snapshots.



Recall Panel

Active Snapshot Display

The Active (currently loaded) Snapshot is displayed in the blue CURRENT panel along with its MIDI Program Change slot number prefix. The panel is blue to correspond with currently loaded Snapshot as displayed in the Snapshot column.

> ***Tip:*** *The currently loaded Snapshot is also displayed in the Info Bar in all Views.*

Primed Snapshot Display

The Primed (selected, but not loaded) Snapshot is displayed in the black PRIMED panel along with its MIDI Program Change slot number prefix.

This display is continuously updated as available Snapshots are navigated. The Primed Snapshot is loaded when the RECALL button is pressed.

Recall Snapshot Button

The green RECALL button is used to load the Primed Snapshot shown in the black PRIMED display.

Up/Down Buttons

These buttons can be used to navigate and prime Snapshots in the Snapshots column. Snapshots in the column are highlighted in gray when as they are navigated and primed.

When using these buttons and the last (or first) Snapshot in the column is reached, navigation continues through the contents in the next (or previous) Snapshot folder.

> ***Tip:*** *The equivalent up/down functions can be performed with the QWERTY Up/Down arrow keys when the Snapshots column has focus.*

Universe View

The Universe view displays a high-level overview of assigned plug-ins in the currently loaded snapshot while in Snapshot View. Universe view (the boxes beneath the Snapshot folders and Snapshot files display) provides a simple way of knowing that a plug-in has been loaded and if the plug-in is active, powered off, and/or disabled.

Tip: *For a more detailed view of plug-in states, use Inserts View.*

Plug-In State Buttons

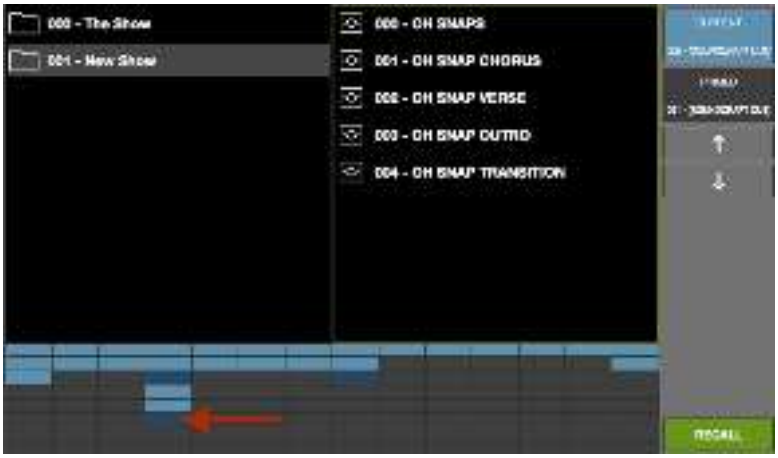
In Universe view, assigned plug-ins are represented by colored state buttons. The state buttons are color coded and mirror the colored state indications in Inserts View and Channels View. The table below describes the button colors.

Plug-In State	Description	Example
Active or Demo	The plug-in is loaded and processing audio. This is also the state when a plug-in's demo is active and not expired.	
Powered Off	The plug-in has been powered off via the Power button in Channel View or Inserts View.	
Disabled	The plug-in has been disabled due unavailable UAD resources, authorization errors, or the demo period is expired.	
Empty	No plug-in is assigned in the insert.	

Navigating with Universe View

Clicking any plug-in state button will switch to Channel View and select the plug-in for editing. This is particularly convenient when a Snapshot is recalled; if there is an unexpected state with a recalled Snapshot's plug-in, the plug-in can be instantly navigated for any needed corrections.

Tip: *Click any plug-in state button in Universe view to switch to Channel View and select the insert for editing.*



The dark blue state button indicates this plug-in is powered off.
Click the button to jump to Channel View so the plug-in can be modified if desired.

Settings View

Settings view allows the user to define various preferences, settings, and behaviors that affect the hardware and operation of Live Rack.

Most of the settings made in the Settings view are global to the system and are not stored in Live Rack snapshot files. All exceptions are noted.

Unlike all other Views, Settings View doesn't have View Options buttons in the Main Column. Instead, settings are arranged in tab views, with each tab displaying a set of related settings.



Typical screen in Settings View. In this screenshot, the DISPLAY tab settings are shown.

Navigating to Settings View

To enter Settings View, choose it from the View Menu in the Main Column.

Settings Tab Names

To see the settings in any tab in Settings View, click the tab name.



Tab names in Settings View

Hardware Tab



Each setting in the Hardware tab is described below.

Sample Rate Menu

Sets the sample rate of the UAD-2 Live Rack system. To change the sample rate, click the SAMPLE RATE drop menu and choose a new value from the menu.

UAD-2 Live Rack supports the following sample rates (kHz): 44.1, 48, 88.2, and 96. Set the sample rate to 48 kHz when using with Soundcraft Vi Consoles.

Clock Source Menu

Sets the digital clock source for the UAD-2 Live Rack system. To change the clock source, click the CLOCK SOURCE drop menu and choose a new value from the menu. The Clock Source cannot be modified in SAFE mode.

The clock source can also be selected in the Info Bar. The Info Bar also includes status indications in the Clock Display.

UAD-2 Live Rack can synchronize to external MADI clock, external word clock, or Internal clock. In typical use, UAD-2 Live Rack should be set to MADI clock (the default value) for synchronization with the digital audio from/to the MADI device.

MADI

When MADI is the clock source and multiple UAD-2 Live Rack units are properly connected, no additional clock distribution is needed (e.g., word clock).

Word Clock

When the clock source is word clock, the first UAD-2 Live Rack unit (MADI channels 1 – 16) must receive the word clock. Then, route the word clock to the second UAD-2 Live Rack unit, and so on, for clocking up to four UAD-2 Live Rack units.

MADI Channels Menu

Specifies the range of contiguous MADI channels to be processed by UAD-2 Live Rack. To change the MADI Channels, click the MADI CHANNELS drop menu and choose a new value from the menu.

The MADI channels to be processed depend on the number of installed UAD-2 Live Rack units. For example, if one UAD-2 Live Rack is installed for 16 channels of processing, the available menu selections are 1–16, 17–32, 33–48, or 49–64.

If two units are installed for 32 channels of processing, the available menu selections are 1–32, 17–48, or 33–64, and so on, for up to four units with 64 channels of processing, in which case only 1–64 is available in the menu.

Device Buttons



Buttons displayed in this area depend on the number of UAD-2 Live Rack units that are connected. The screenshot at shows a two unit system, where one of the systems (in italics) is offline.

Identify Unit Buttons



The Identify Unit buttons (shown as “MADI 1-16” and MADI 17-32” in the screenshot at right) display which MADI channels are being processed by the Realtime rack unit(s).

When the hardware is properly connected, clicking the Identify button(s) will flash the front panel LEDs on the unit processing those MADI channels. This function is convenient when cabling and/or troubleshooting.

Unit Buttons



These buttons perform several functions. They can be used to rename the unit and add/remove units for offline configuration. In a multi-unit system, they can re-order the MADI channels processed by each unit without physically rerouting the MADI cables.

Note: *Italics in a Unit Button indicates the unit is offline.*

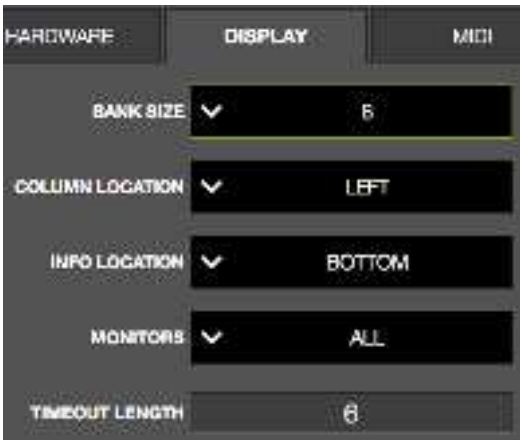
- To rename the unit, double-click the button to enter a different unit name. The default unit name is [Live Rack].
- To add a unit for offline configuration, click the “+” button.
- To delete an offline unit, drag a button to the left then click its red remove icon.
- To re-order the MADI channels processed by each unit, drag and drop these buttons up and down as needed. Note this operation will cause a system reconfiguration and there may be a delay before the operation is completed.



Drag an offline Unit Button to the left to reveal its delete button

Display Tab

Each setting in the Display tab is described below.



Bank Size Menu

Sets the number of channels displayed in the Channels Bar and the blue Bank Bar. To change the bank size, click the BANK SIZE drop menu and choose a new value from the menu.

Column Location Menu

Sets the location of the Main Column in all screens containing the column.

To change the Main Column location, click the COLUMN LOCATION drop menu and choose a new value from the menu.

Info Location Menu

Sets the location of the Info Bar in all screens.

To change the Info Bar location, click the INFO LOCATION drop menu and choose a new value from the menu.

Monitors Menu

With multiple-display systems, determines whether the Live Rack application is shown in ALL displays or only the MAIN display. To change the setting, click the MONITORS drop menu and choose a new value from the menu.

With multiple-display systems, the MAIN display is the display containing the macOS Menu Bar (as defined in /Utilities/System Preferences.app>Displays>Arrangement tab).

Multiple Display Operation

With multiple-display systems, when the Monitors menu is set to ALL, the screen on each display can have different View screen so more elements can be displayed concurrently.

> ***Note:*** *An individual plug-in interface cannot be displayed on two displays concurrently.*

Timeout Length Menu

Sets the period, in seconds, used for Option Latch operations. To change the setting, click the TIMEOUT LENGTH filed and enter a numerical value.

MIDI Tab



Live Rack supports the ability to remotely recall Snapshots via MIDI Bank/Program change commands, and set the tempo used for the Tempo Sync feature.

MIDI data is received by Live Rack via the macOS operating system. To verify and/or configure MIDI devices, use the Audio MIDI Setup application included with the OS at:

- /Utilities/Audio MIDI Setup.app>MIDI Window

MIDI Device Menu

Sets the MIDI device to be used as the source for MIDI control. To set the device, click the MIDI DEVICE drop menu and choose a new device from the menu.

> ***Note:*** *Only devices configured in Audio MIDI Setup.app are available for selection in this menu.*

MIDI Channel Field

Specifies the MIDI channel to be used for MIDI control. To set the channel, click the MIDI CHANNEL field and enter a numerical value between 1 – 16.

MIDI Tap Tempo

Live Rack can receive note or controller data for MIDI control of Tap Tempo. These two settings define the MIDI data type and value used for MIDI control. For instructions, see "Changing tempo values via MIDI" on page 59.

MIDI Type Menu

Sets the MIDI data type to be used as the source for MIDI control. To set the data type, click the drop menu and choose CONTROLLER or NOTE from the menu.

MIDI Value Field

Sets the MIDI data value to be used as the source for MIDI control. To set the data value, click the field and enter a numerical value between 0 – 127.

When NOTE is used as the MIDI type, the table below can be used as a reference for MIDI note values.

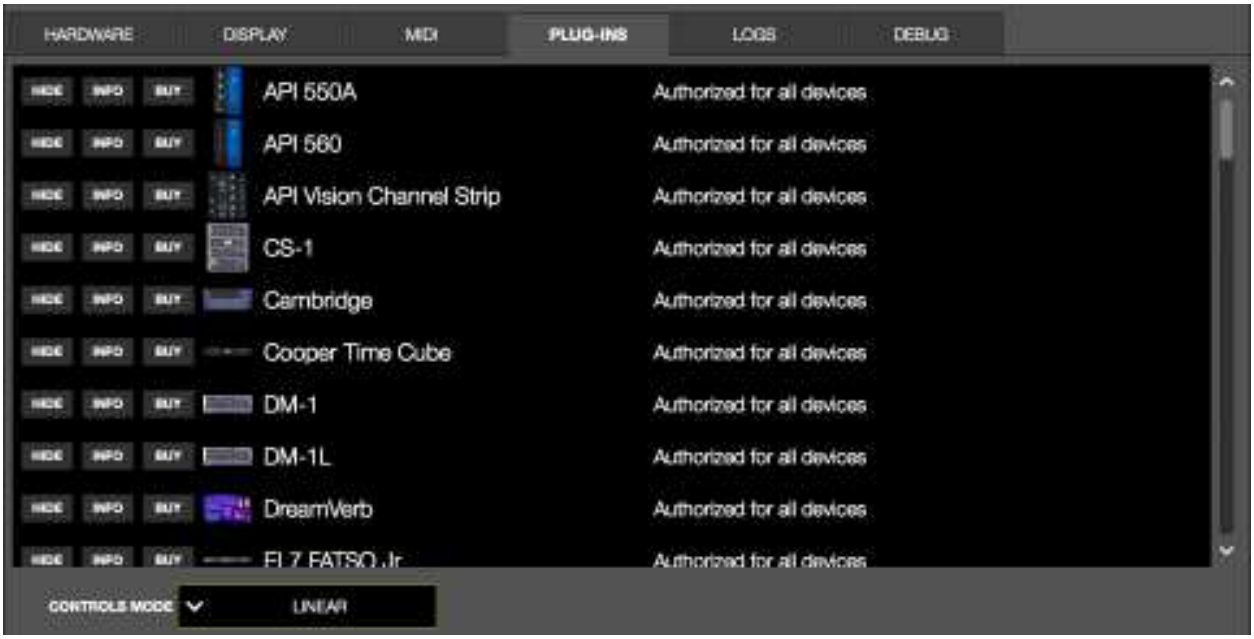
Note	Octave										
	-1	0	1	2	3	4	5	6	7	8	9
C	0	12	24	36	48	60	72	84	96	108	120
C#	1	13	25	37	49	61	73	85	97	109	121
D	2	14	26	38	50	62	74	86	98	110	122
D#	3	15	27	39	51	63	75	87	99	111	123
E	4	16	28	40	52	64	76	88	100	112	124
F	5	17	29	41	53	65	77	89	101	113	125
F#	6	18	30	42	54	66	78	90	102	114	126
G	7	19	31	43	55	67	79	91	103	115	127
G#	8	20	32	44	56	68	80	92	104	116	
A	9	21	33	45	57	69	81	93	105	117	
A#	10	22	34	46	58	70	82	94	106	118	
B	11	23	35	47	59	71	83	95	107	119	

MIDI note numbers by note name and octave

Plug-Ins Tab

The plug-ins tab contains various plug-in management and behavior utilities.

All currently installed plug-ins are displayed, with one plug-in in each row. Use the vertical scroll bars to view the plug-ins that are not visible.



PLUG-INS tab in Settings View

Hide Button

HIDE prevents the plug-in from being visible in the ASSIGN tab in Channel View. To hide a plug-in, click its HIDE button. To make it visible again, click its SHOW button.

This function is used to restrict the availability of assignable plug-ins in plug-in lists. By default, all plug-ins are visible in the ASSIGN tab, even if they are unlicensed or the demo period is expired. By hiding plug-ins that are unlicensed or expired, only plug-ins that can process audio are exposed, which can be convenient for more rapid assignments.

Info Button

Opens the plug-in's product pages at www.uaudio.com, providing a general overview the plug-in.

> ***Tip:*** *For detailed operational info for each plug-in, see the UAD Plug-Ins Manual.*

Buy Button

Adds the plug-in to your shopping cart at the UA store. Confirm you are logged in to the desired account at www.uaudio.com when purchasing plug-ins.

Status Column

The authorization status and/or demo state of the plug-in is displayed. The info shown here mirrors the status shown in the Plug-Ins panel within the UAD Meter & Control Panel application.

> ***Tip:*** *To start a plug-in demo, use the START DEMO button in the Plug-In panel's Status Column within the UAD Meter & Control Panel application.*

Controls Mode Menu



This setting determines how UAD plug-in parameter knobs respond to adjustment. To change the controls mode, click the CONTROLS MODE drop menu and choose a new value from the menu.

Three control modes are offered: Circular, Relative Circular, and Linear. The behavior of each mode is described below.

Linear (slider) – In Linear mode, the knob is adjusted by dragging horizontally or vertically instead of by rotating. This behavior is similar to moving a physical fader.

Circular (jump) – In Circular mode, the software knobs behave similar to physical rotary knobs. Values are changed by clicking on the knob then rotating in a circular direction. When the edge of the knob is clicked, the parameter value jumps to the mouse position.

Relative Circular (grab) – Relative Circular mode operates similar to Circular mode, but the knob value does not jump to the mouse position when clicked. Instead, the knob value is modified relative to its original value.

In Relative Circular mode, click anywhere on the knob to make an adjustment originating at the original value (it's not necessary to click on the current knob position).

> ***Tip:*** *To increase resolution when in adjusting rotary controls in circular and relative circular modes, increase the radius of the mouse relative to the knob while dragging (i.e. move the mouse farther away from the knob while dragging in a circular motion).*

Soundcraft Snapshot Recall

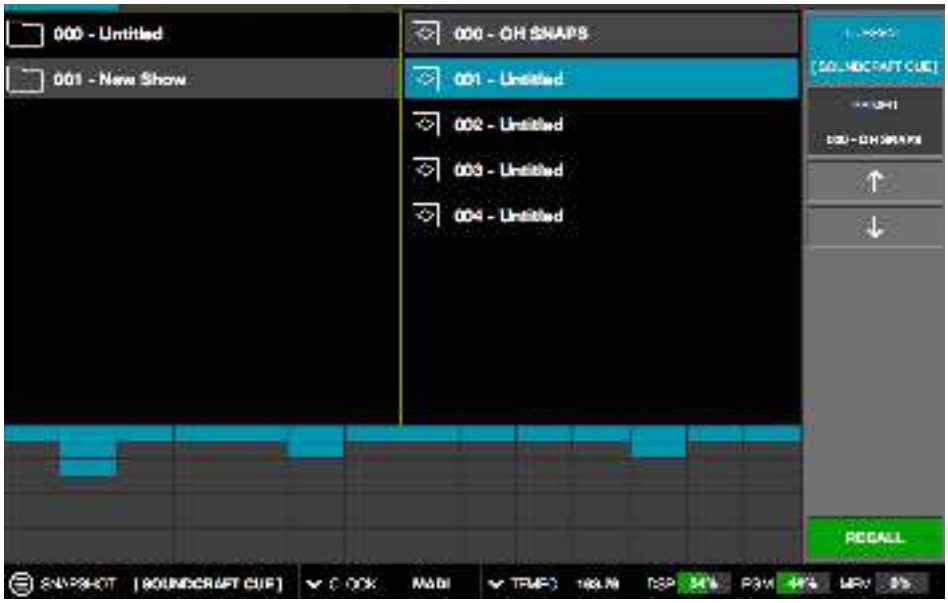
When Snapshots are being recalled from a Soundcraft Vi-series Console, the majority of the features on the Snapshots page are not used. Instead, all Snapshot data is stored and recalled from the Soundcraft Vi Console.

Complete workflows within Vi Console systems is detailed in Soundcraft's documentation, but a general outline is provided below.

> ***Caution:*** *When a Snapshot CUE is loaded from a Soundcraft Vi Console, the Active Snapshot is overwritten, any unsaved changes are lost, and audio artifacts could occur.*

Workflow with Vi Consoles

1. Create a working Snapshot in the Live Rack application.
2. Add as many plug-ins as needed for a show.
3. Confirm the Soundcraft Vi Console and Live Rack are communicating properly via Ethernet. Proper communication is indicated on the Vi Console only (not on Live Rack). The indication is in the form of a UAD status LED.
4. Create a new Show (or open an existing Show) on the Vi Console.
5. In the CUE (Snapshot) list in the Vi Console, there are two dedicated UAD enable-type buttons for linking Soundcraft Cues with Live Rack Snapshots. Ensure that these two buttons are ON, then store the current Cue.
6. As new Cues are created, ensure that these two buttons are linked to the Cue.
7. As changes in the plug-ins are needed, hit Update Cue in the Vi Console.
8. Any parameter changes and plug-in assignments are instantly recalled when hitting the Recall button.

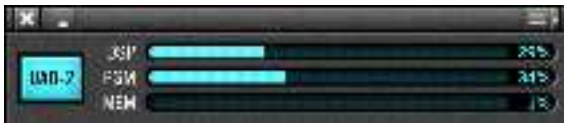


When a Snapshot is recalled remotely from a Soundcraft Vi Console, the Info Bar and Current Snapshot panel both display "[SOUNDCRAFT CUE]"

Chapter 5: UAD Meter & Control Panel

The UAD Meter & Control Panel application is used to authorize UAD plug-ins, monitor UAD device resources, configure the global UAD plug-in system parameters, and confirm the UAD system is operating properly. The application consists of two components: The UAD Meter, and the UAD Control Panels.

UAD Meter – This window displays the current DSP, program, and memory status of the UAD hardware (these gauges are also displayed within the Live Rack application).



UAD Meter Window

UAD Control Panel – This window (see page 124) has multiple panels that display and modify various system, plug-in, and configuration parameters.

With UAD-2 Live Rack, the UAD Meter & Control Panel application is used primarily for UAD plug-in authorization, viewing the individual resources of multiple UAD-2 Live Rack units, and starting demo periods for UAD plug-ins.

Launching the Application



The UAD Meter & Control Panel can be opened using either of these methods:

- Single-click the UAD Meter & Control Panel icon (shown at right) that was placed in the macOS Dock during software installation, or
- Double-click the UAD Meter & Control Panel application that was installed to: /Applications/Universal Audio/

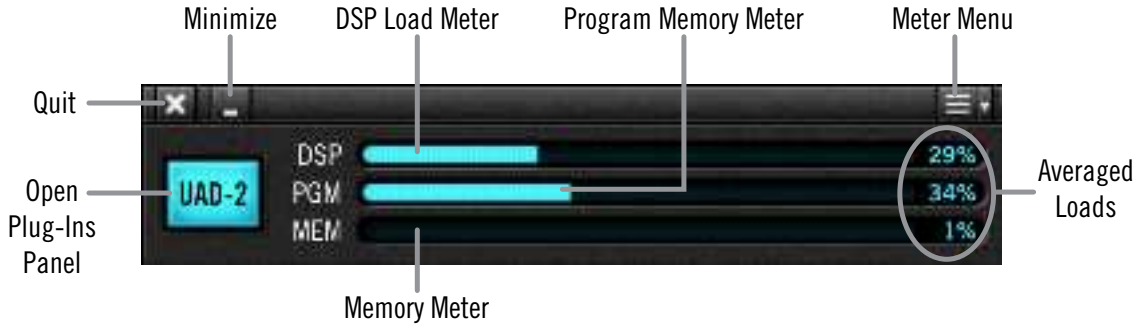
Using the UAD Meter

The UAD Meter & Control Panel can be launched or quit at any time. It does not need to be open or active to use the Live Rack application or UAD plug-ins; it is completely independent. You can move the UAD Meter to a convenient location on your screen by dragging its window title bar.

> ***Note:*** *If "No Devices Found" appears in the UAD Meter window instead of the expected buttons and gauges, the UAD-2 Live Rack drivers are not communicating with the UAD-2 Live Rack hardware. If this occurs, double-check the hardware and software installations, make sure the hardware is powered and connected to the computer, and/or contact customer support.*

UAD Meter Window

Refer to the illustration below for descriptions in this section.



UAD Meter window elements

Title Bar

The Title Bar (the strip across the top of the UAD Meter window) contains buttons to quit the UAD Meter & Control panel application, minimize the UAD Meter window to the macOS Dock, and access the Meter Menu to open the UAD control panels.

Open Plug-Ins Panel Button

Clicking the blue "UAD-2" button opens the Plug-Ins panel. It has the same function as selecting "Plug-Ins..." from the Meter Menu.

UAD Resource Meters

UAD plug-in loads are shown in the UAD Meter window. These three gauges (DSP, PGM, and MEM) provide visual feedback, helping to determine which UAD plug-ins to use if available UAD resources are limited.

The UAD resources are displayed as blue bar graphs and as percentages. These gauges have no controls; they are visual indicators only.

Tip: *The UAD resource gauges are also displayed within the Live Rack application.*

Averaged Loads

The load for each gauge represents the average for all UAD devices in use. For example, if one UAD-2 Live Rack is installed, the UAD DSP load is an average of the four SHARC DSP processors. If additional UAD-2 Live Rack units are added to the system, the average load is automatically adjusted.

Individual Loads

When additional UAD-2 Live Rack units are added to the system, individual DSP loads within the individual units can be viewed in the System Information panel.

UAD Plug-In Loads

The amount of UAD resources used by UAD plug-ins vary with each individual plug-in; more complex algorithms require more resources.

UAD Instance Chart

The amount of DSP used by each individual UAD plug-in is available in the UAD instance count chart. The chart can help determine which to plug-ins to use with available resources. The chart is published online at help.uaudio.com.

Static Loads

UAD-2 Live Rack uses DSP and memory for its internal digital mixer and Input Delay Compensation engine. Therefore, the meters will indicate loads when UAD-2 Live Rack is connected, even if UAD plug-ins are not currently inserted.

> ***Note:*** *UAD-2 Live Rack's Delay Compensation engine can be disabled in Delay Groups View to slightly reduce UAD loads when delay compensation is not needed.*

DSP

The DSP gauge indicates the amount of digital signal processing resources that are being used by all UAD-2 Live Rack devices in the system.

DSP is the primary hardware resource that powers the UAD plug-In algorithms. When UAD plug-ins are disabled, DSP requirements are decreased.

> ***Note:*** *When UAD plug-ins are disabled, DSP requirements are decreased EXCEPT when the plug-in is disabled using the soft bypass control within the plug-in interface. This control may be named bypass or power, depending on the plug-in.*

Program

The Program (PGM) gauge indicates how much UAD program memory is in use. Program memory is an on-chip memory that is specific to the UAD-2 DSP processor and is used for certain UAD plug-in resources.

Each unique UAD plug-in uses a bit of program memory. If many different UAD plug-ins are loaded simultaneously, it is possible for this resource to run out before a DSP overload occurs. This threshold is considered and factored in by the automatic UAD load balancing routines.

Memory

The Memory (MEM) gauge indicates the percentage of UAD RAM that is currently in use. It indicates the total available UAD memory available, regardless of the number of DSP processors that are installed.

Memory is used for echo, delay lines, reverb, and other spatial processing. When UAD plug-ins are disabled but not unloaded, memory requirements are not decreased. In this case, the memory remains loaded so that reverb tails and delay lines are not cut off when the plug-in is disabled.

Meter Menu Button

The Meter Menu button can be used to access the UAD Control Panels and Always On Top mode. To view the Meter Menu, click the menu button in the UAD Meter window title bar as shown below. After clicking the menu button, select an available function from the drop menu.



Accessing the Meter Menu

Control Panels

The UAD Control Panels (System Info, Plug-Ins, Configuration, Help) can be accessed by selecting them from the Meter Menu.

Always On Top

The UAD Meter & Control Panel application windows can be set to either normal or Always on top view modes.

In normal mode, the UAD Meter and UAD Control Panel windows are covered by the windows of the foreground application. Normal mode is active when the Always On Top menu item is unchecked

In Always On Top mode, the UAD Meter and UAD Control Panel windows always float on top of other windows, even when other applications are in the foreground. Always On Top is active when a check mark appears next to the item in the Meter Menu.

UAD Control Panels

The UAD Control Panel is where detailed system information is displayed and global UAD plug-in settings are modified. The UAD Control panel has four panels, organized into similar areas of functionality: System Information, Plug-Ins, Configuration, and Help & Support.

> ***Note:*** *Some controls and/or displays in the UAD Control Panels do not apply with UAD-2 Live Rack and can be ignored. These elements are used with Universal Audio's audio interfaces and DSP accelerators, which also use the UAD Meter & Control Panel application. All exceptions are noted.*

Accessing the Control Panels

Drop Menu

The main UAD Control Panel window is accessed from the UAD Meter window. To open the Control Panel, click the menu button in the UAD Meter window Title Bar. After clicking the menu button, the control panels are listed in the drop menu.

> ***Tip:*** *The Meter Menu functions can also be accessed by using the keyboard shortcuts listed in the menu.*



Control Panels drop menu

Panel Buttons

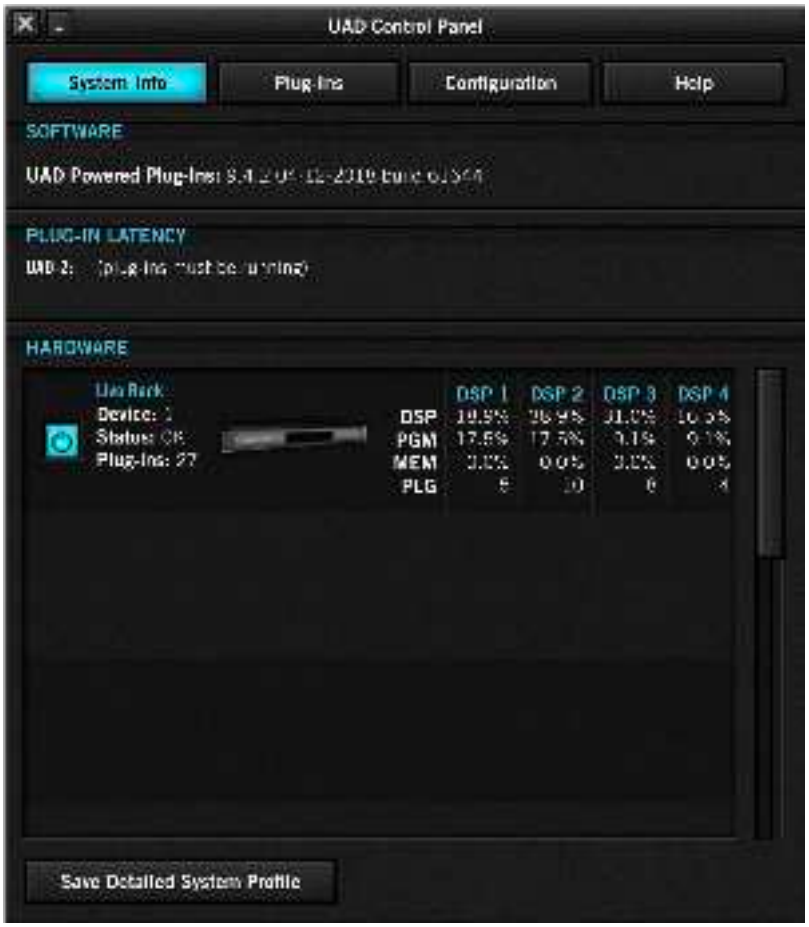
Once the main UAD Control Panel window is open, the individual window panels are accessed by clicking their respective panel title buttons.



The Control Panel window panel buttons with System Info selected

System Information Panel

The System Information panel displays detailed UAD software and hardware information and contains several useful buttons. Refer to the screenshot below for descriptions in this section.



System Info panel

Software Section

The currently installed version of UAD-2 Live Rack software is displayed.

(Plug-In Latency Section)

Latency displayed in this section does not apply with UAD-2 Live Rack and can be ignored.

> ***Note:*** *Overall system throughput latency with UAD-2 Live Rack is 73 samples when no plug-ins are assigned. See "Channel View" on page 80 for related information.*

Hardware Section

Detailed information about each UAD-2 Live Rack unit and its DSP is displayed in the Hardware area. If several units are installed, use the scroll bar to see the other devices if they are out of view.

Device Status

For each installed unit, its status and a small hardware icon are displayed. When the unit displays "Status: OK" the hardware is operating properly. The total number of UAD plug-ins loaded on each unit is also displayed here.

Device Enabled



Individual UAD-2 Live Rack units can be disabled using the Device Enabled button. Click the button to disable an individual device. The device is enabled when the button is blue.

This button can be useful if creating a Snapshot on a system with multiple devices that will be transferred to a system with fewer devices, or to streamline the performance of the host computer when multiple devices are not needed.

Devices remain disabled only while the UAD Meter & Control Panel application is open. When the UAD Meter & Control Panel is quit, any disabled devices are re-enabled.

> ***Note:*** *Disabling devices does not disable plug-ins already running on the device; it only prevents additional plug-ins from being loaded onto the device.*

> ***Important:*** *For optimum results, quit the Live Rack application before disabling/enabling devices.*

DSP Load

Information for each SHARC DSP processor is displayed. DSP, Program (PGM), and Memory (MEM) loads are displayed as a percentage of total available load for that processor.

The number of UAD plug-ins (PLG) running on each individual processor is also displayed.

Save Detailed System Profile

Clicking this button will generate a detailed UAD system profile and prompt you for a location to save the text file to disk. This file contains a greater level of detail than the System Information panel, which may be useful for troubleshooting, or if Customer Support requests this document when providing assistance.

The profile lists the version strings of the individual UAD software components, installed devices with serial and hardware ID numbers, host computer information, detailed authorization status for all UAD plug-ins, and other information.

Plug-Ins Panel

The Plug-Ins panel displays the current authorization and demo status of all installed UAD plug-ins. Use the scroll bar to view plug-ins that are not visible in the list. Refer to the screenshot below for descriptions in this section.

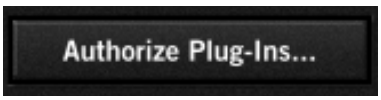
Tip: *Some of the functionality of the Plug-Ins panel is duplicated/available in the Settings page within the Live Rack application.*



Plug-Ins panel

Authorize Plug-Ins button

This important button links directly to your account at the UA store to authorize your licensed UAD plug-ins.



Note: *Click this button whenever you buy a plug-in at the UA online store to manually authorize your new plug-in purchase.*

The complete procedure for UAD device authorization is detailed on page 33. If the computer is not connected to the internet, see the "Offline Authorization Procedure" on page 34.

Important: *UAD plug-ins require authorization before they can be used.*

Plug-In Column

All currently installed UAD Powered Plug-Ins are displayed in the Plug-In column. Plug-Ins are listed by release order, with newest plug-ins at the top of the column. Use the scroll bar to view the entire list if necessary.

Status Column

The Status column reflects the current authorization state of each UAD plug-in. After authorization, the status will show one of the following:

Authorized for devices – When the plug-in is fully licensed and authorized to run on all units in the system, "Authorized for all devices" is displayed here in white text.

When a plug-in is licensed but not all devices in a multi-unit system are authorized with the license, the Status column indicates which of the devices is authorized (e.g., "Authorized for device 1 only").

Start Demo – The demo period has not been started for the plug-in. Click the "START DEMO" button to begin the 14-day trial period. See "Demo Mode" on page 143 for detailed information.

> ***Important:*** *The 14-day demo period for an individual UAD plug-in can only be activated once, and cannot be stopped or restarted during this period. We recommend you do not activate demo mode until you have the time to thoroughly check out the plug-in's sound and functionality.*

Demo Active (days remaining) – If the 14-day trial period has been activated but is not yet expired, the number of days remaining is displayed here in green text.

Demo Expired – If the 14-day trial period has ended, "Demo expired" is displayed here in red text.

Help Column

Clicking the Help button ("?") opens a link to the plug-in product page at the UA store, which contains information about the plug-in.

Buy Column

Clicking the Buy button ("$") adds the plug-in to your shopping card at the UA store. See "Buying UAD Plug-Ins" on page 144 for purchasing details.

> ***Tip:*** *The BUY button provides a quick visual reference to determine which plug-ins are currently authorized.*

Configuration Panel

The Configuration Panel is where most of the global UAD settings and preferences are specified for all UAD devices. Refer to the screenshot below for descriptions in this section.



Configuration panel

UAD-2 DSP

Overview

Without UAD plug-ins, overloading the host computer system with native (host CPU based) plug-ins can cause audio dropouts and other system issues. Some DAWs, for example, provide a switch that allows you to trade latency for stability when the system is overloaded. Similarly, the UAD DSP load cannot exceed 100% without unpredictable behavior.

With the Limit DSP Load feature, the UAD DSP can also be limited so the load cannot exceed 100%, thereby increasing overall system stability in high load situations. With very heavy UAD loads, DSP load limiting may also improve host CPU performance.

There are many variables that affect DSP load (sample rate, parameter values, mono/stereo, automation, host system performance, etc). Although these variables are taken into account, the resulting measurement cannot be absolutely accurate due to variations in system configurations, including computer bus loading, which is impossible to measure.

Systems that are heavily loaded due to the presence of other devices or suboptimal configurations may cause additional DSP loading that cannot be measured by the UAD plug-in load calculator. The DSP load limit should be reduced in this case.

It is possible for certain (atypical) conditions to be met where another UAD plug-in can't be added, even when the UAD Meter says you should have DSP available when compared to the DSP Load Limit value.

> ***Note:*** *When Limit DSP Load is enabled and the DSP load limit is exceeded when instantiating a new UAD plug-in, an overload message will appear and DISABLED will be displayed in the plug-in's status bar. In this case, even though the UAD plug-in loads, it will not process audio.*

Limit DSP Load

This setting determines the maximum UAD DSP load. If performance issues such as overloads, dropouts, stuttering, and/or other artifacts persist, change the UAD DSP load value by clicking the triangles to the right of the percentage display or entering a value directly with text entry.

> ***Note:*** *UAD-2 DSP load limiting is always on. 100% (the default value) is the maximum available setting.*

DSP LoadLock

DSP LoadLock reserves the maximum UAD-2 DSP load required by each plug-in, even if certain plug-in features are disabled. This ensures there will always be enough DSP if those features are later enabled, or when automating parameters that affect the DSP load.

Disabling LoadLock increases available UAD-2 DSP by disabling unused features in certain plug-ins, but may cause problems with previously saved sessions that had all plug-in features enabled, or when automating parameters that affect the DSP load.

The specific UAD plug-ins that have the ability to reduce DSP use when certain features are disabled are listed in the UAD Instance Chart at help.uaudio.com. These plug-ins are marked with an asterisk (*) in the chart.

Enabling DSP LoadLock is recommended for optimum performance. Disable LoadLock only when you need to squeeze in that extra bit of DSP resources.

> ***Note:*** *Changes to this setting do not take effect until Live Rack is quit and reopened.*

(Extra Buffering)

> ***Note:*** *This setting does not apply to UAD-2 Live Rack and can be ignored.*

(Host Compatibility Settings)

Note: *Both settings in this area do not apply to UAD-2 Live Rack and can be ignored.*

(Release all DSP resources on Audio Unit bypass)

(Force Logic to use "live mode" for tracks with UAD plug-ins)

User Interface Settings

Controls Mode

This setting determines how UAD Powered Plug-In parameter knobs respond to adjustment. Three control modes are offered: Circular, Relative Circular, and Linear. Select the desired mode from the drop menu. The behavior of each mode is described below.

Linear (slider) – In Linear mode, the knob is adjusted by dragging horizontally or vertically instead of by rotating. This behavior is similar to moving a physical fader.

Circular (jump) – In Circular mode, the software knobs behave similar to physical rotary knobs. Values are changed by clicking on the knob then rotating in a circular direction. When the edge of the knob is clicked, the parameter value jumps to the mouse position.

Relative Circular (grab) – Relative Circular mode operates similar to Circular mode, but the knob value does not jump to the mouse position when clicked. Instead, the knob value is modified relative to its original value.

In Relative Circular mode you can click anywhere on the knob to make an adjustment originating at the original value. You don't have to click on the current knob position.

Tip: *To increase resolution when in adjusting rotary controls in circular and relative circular modes, increase the radius of the mouse relative to the knob while dragging (i.e. move the mouse farther away from the knob while dragging in a circular motion).*

Use Host Mode

Important: *This box should remain UNCHECKED with the UAD-2 Live Rack system.*

When Use Host Mode is checked, the control mode set within the host application preferences is used if this feature is supported by the host. This setting forces the host to override the control mode set in the UAD user interface settings.

Note: *When Use Host Mode is checked, the UAD Meter user interface settings have no effect unless control mode is NOT supported by the host.*

Toggle initial value modifier

Holding the specified modifier key while clicking a parameter control will toggle between the value of the control when the editor was opened and its last edited value.

This parameter also affects the “select + click” modifier. For a complete list of keyboard shortcuts for plug-ins, see page 135.

Info Display

This area displays helpful text about parameters in the Configuration panel. Hover the mouse over a Configuration setting to view the informational text.

Help Panel

The Help & Support panel contains numerous helpful weblinks to help you get the most out your UAD-2 Live Rack experience.

The button names are self-explanatory. Click a button to open its page on the internet. If the UAD computer isn’t online, much of the information is in the manual you’re reading now; find the topic in the Table of Contents or the PDF reader’s search feature.

View Documentation is the only button that doesn’t link to the internet. Instead, clicking this button opens the Documentation folder containing all the PDF user manuals at / Applications/Universal Audio (see “Documentation Overview” on page 18).



Help panel

Chapter 6: Using UAD Plug-Ins

Note: *This chapter provides a global overview of UAD plug-in operation. Complete operating instructions for individual plug-ins are in the UAD Plug-Ins Manual.*

The UAD Plug-In Interface

A typical UAD plug-in window is shown below. The graphical user interface (GUI) typically contains several control parameters for modifying the behavior of the plug-in, and display elements such as meters, for visual feedback.



Typical UAD plug-in window

Status Bar

Under certain conditions, information about the current operating state of individual UAD plug-ins is displayed in a status bar beneath the main plug-in window.



UAD plug-in status bar (at bottom)

The status bar states are as follows:

Not shown – The plug-in is authorized and operating normally.

Not Authorized – The plug-in authorization is not current or the demo is not yet started.

Demo – The demo period is active; days remaining in the demo are displayed.

Powered Off – The plug-in is inactive. It has been disabled via the Power button in single plug-in view or from the Inserts view.

> ***Note:*** *Powered Off does not appear if the plug-in is disabled from within its graphical interface.*

Disabled – The plug-in is not running because there were not enough available UAD DSP resources when attempting to load the plug-in or the demo period is expired.

Adjusting Parameters

The parameter settings within each UAD plug-in can be adjusted to achieve a desired sonic effect. Parameter values are easily modified by dragging sliders, rotating knobs, clicking switches and buttons, or by selecting values from a drop menu. The functions of all parameters are detailed in the UAD plug-in manuals.

The parameter adjustment style can be Circular, Relative Circular, or Linear. For descriptions of these options, see "Controls Mode Menu" on page 118.

> ***Note:*** *To increase resolution when adjusting rotary controls in circular and relative circular modes, increase the radius of the mouse relative to the knob while dragging (i.e., move the mouse farther away from the knob while dragging).*

Text Entry

Parameters that have a value display field can be modified directly with text entry. To enter a parameter value using text entry, single-click the parameter value text field. The text value will highlight, indicating it is ready to receive a new value. Type in a new value, then press Return, Enter, or Tab, or click outside of the text box. Press Esc if you want to revert to the prior setting without entering the new value.

Values entered via text entry are rounded to the closest significant digit. If an entered value is out of range, it will be ignored.

Time Values

To enter time values, the units must be specified; m = milliseconds, and s = seconds. For example: To enter 400 milliseconds, type 0.400s or 400m. To enter 1.5 seconds, type 1.5s or 1500m.

Mouse/Wheel Scroll

If your input device has a scroll function, it can be used to adjust knob and slider controls. Place the mouse cursor over any knob or slider control, then use the scroll function to change the parameter value.

Keyboard Control

If you control-click a control it selects that control for keyboard control. This is useful for when you're in circular mode, and you want to finely adjust a value.

Normally, clicking on a control in circular mode makes the value jump to the location clicked. Control+clicking selects the control so the keyboard can be used to adjust the value without causing its value to jump to the cursor location first.

Shortcuts

The table below lists the keyboard shortcuts that are available for modifying parameter values. When using keyboard shortcuts, the last edited control will be modified (or, on Mac, you can use control-click to select a different control as the target for keyboard shortcuts without changing the control's value).

Keyboard Action	Result
Control + Click Parameter	Select parameter for keyboard control (without changing its value)
Shift + Drag	Fine Control
UpArrow RightArrow Shift + PageUp	Increment Fine
DownArrow LeftArrow Shift + PageDown	Decrement Fine
Shift + UpArrow Shift + RightArrow PageUp	Increment Coarse
Shift + DownArrow Shift + LeftArrow PageDown	Decrement Coarse
Modifier* + Click parameter	Toggle initial editor setting (the value when the editor window was last opened)
Modifier* + Shift + Click parameter	Revert to initial editor setting (the value when the editor window was last opened)
*Modifier key set in UAD Meter & Control Panel application's Configuration panel	

UAD plug-in keyboard control shortcuts

DSP Loading Notes

- Each UAD-2 Live Rack hardware unit features four on-board SHARC DSP cores for UAD plug-in processing.
- Multi-unit UAD-2 Live Rack systems use sophisticated load balancing routines. UAD plug-ins are always allocated as efficiently as possible, which is not necessarily on the DSP with the lowest resource usage.
- UAD DSP use is proportional to the sample rate. Twice as many UAD plug-ins can be used at a 48 kHz sample rate versus a 96 kHz sample rate, and so forth.
- Bypassing individual components within some UAD plug-ins can conserve UAD resources. For example, bypassing the compressor in the Precision Channel Strip when only the EQ is in use, and/or bypassing any of the unused bands of the Precision Channel Strip EQ will use less UAD DSP (unless DSP LoadLock is enabled).
- The UAD Instance Chart at help.uaudio.com lists the amount of DSP used by each UAD plug-in. The chart can help determine which UAD plug-ins to use within available UAD resources.
- Specific UAD plug-ins have the ability to conserve UAD resources when individual features within the plug-in are inactive. These plug-ins are marked with an asterisk (*) in the UAD Instance Chart at help.uaudio.com. Note that DSP LoadLock must disabled to take advantage of this feature.
- UAD-2 Live Rack uses UAD DSP and memory for its internal digital mixer and Input Delay Compensation engine. Therefore, the UAD Meter gauges will indicate loads (when UAD hardware is connected) even if UAD plug-ins are not inserted in Live Rack.
- The host computer system memory and CPU are never used for UAD plug-in processing. However, there will be a small additional load on the host CPU induced by data transfers and user interface operations. This is unavoidable when using any DSP device.

Tempo Sync

The time-based parameters of numerous UAD plug-ins can be synchronized to the tempo of the Live Rack software using the Tempo Sync feature. Tempo Sync is supported in UAD plug-ins that have a control labeled “Sync” within the plug-in interface.

> ***Note:*** *The tempo used by UAD plug-ins that are set to Tempo Sync is specified in the Info Bar or the Settings>MIDI panel within the Live Rack application.*

When Tempo Sync is activated, the time-based parameters that are available for synchronization are changed to note duration values, and will sync to the tempo of the Live Rack application using the displayed note value.



Tempo Sync switch within Precision Delay Mod

Sync Activation

To activate Tempo Sync, click the “Sync” button within the plug-in interface. The Sync button will illuminate and the time parameters will change from a time-based display to a note value, as shown in the screenshot above.

> ***Note:*** *When Tempo Sync is activated, the plug-in will automatically switch the time or rate parameter(s) to the nearest available note value(s) given the range of the parameter in question and the current tempo.*

Available Tempo Sync Note Values

The note values that are available for selection are listed in the table below. The values are listed in musical notation as a division of measures. For example 1/4 = one quarter note, 1/1 = one whole note, 4/1 = four whole notes, and so forth.

The available note values were chosen to allow syncing to tempo in odd time signatures as well the common 4/4 time signature.

LFO rate parameters have their note values listed from longest to shortest, since long note values correspond to slow LFO rates.

Available Tempo Sync Values				
1/64D*	1/8	5/8	4/1	
1/64	5/32*	1/1T	5/1	
1/32T	1/4T	1/2D	6/1	D = Dotted
1/32	1/8D	1/1	8/1	
1/16T	1/4	5/4	9/1	T = Triplet
1/32D	5/16	1/1D	12/1	
1/16	1/2T	7/4	16/1	* = Galaxy Tape Echo & RE-201 only
1/8T	1/4D	2/1		
1/16D	1/2	3/1		

Tempo Sync available note values

A quarter note is always a quarter note, independent of the time signature. In different time signatures a quarter note can represent different numbers of musical beats (for example, 6/8) or different fractions of a bar (such as 5/4). For example, say the time signature is 6/8 and the delay time tempo sync note value is 1/4. If a sound occurs on beat one of the measure then its delay will occur on beat 3, which is 1/4 note (i.e., two 8th notes) later.

> ***Note:*** *The tempo BPM value in UAD-2 Live Rack's tempo setting always refers to a quarter note, independent of time signature.*

Range Limits

Some Tempo Sync parameters cannot access the entire note range in Available Tempo Sync Note Values. Because the original (non-tempo sync) range of the time-based parameters within each plug-in is limited, if the host tempo is too fast or too slow, the tempo sync note value may not be able to be achieved within the constraints of the original parameter.

Out of range

When a parameter note value is out of range of the current tempo note value, the note value is displayed in parentheses. In this case, the parameter's minimum (slow tempo) or maximum (fast tempo) value is used instead of the displayed value.



Tempo Sync value out of range (parentheses)

Entering Tempo Values

In addition to adjusting the parameter knob, the two following methods can be used for entering Tempo Sync values.

Arrow Keys

After clicking the parameter to select it, the arrow keys can be used to scroll through available note values.

Text Entry

Direct text entry is also available (see "Shortcuts" on page 135). Any notation values can be entered (fraction or decimal), and the values are automatically converted to the nearest appropriate setting.

For example: If 3/4 or 6/8 is entered using text entry, 1/2D is displayed because a dotted half note equals three quarter notes, which is the duration of one measure in a time signature of 3/4 or 6/8. If 12/8 is entered with text entry, 1/1D is displayed because a dotted whole note equals six quarter notes, which is the duration of one measure in a time signature of 12/8 (or two measures in a time signature of 3/4 or 6/8).

This means you can create a tempo sync duration of one measure for any time signature by simply typing in the time signature (assuming there is a match in the beat table).

Similarly, if 1/12 is entered with text entry, 1/8T is displayed because an eighth note triplet is equivalent to one-twelfth of a measure (if in 4/4 time).

Precision Delay Modes with Tempo Sync

The UAD Precision Delay Mod and UAD Precision Delay Mod L plug-ins have a Mode menu that switches the plug-in operation between delay, chorus, and flanger mode. In these plug-ins, when the Mode is set to DUAL DELAY and PING PONG, the delay Time and modulation Rate parameters are simultaneously available for Tempo Sync.

However, when the plug-in is set to a CHORUS or FLANGER mode, only the Rate is available for Tempo Sync. This enables the more typical and musical chorus/flange effect by only syncing the modulation Rate to the tevmpo while the delay time remains constant.

Galaxy Tape Echo & Roland RE-201 Sync



When the Galaxy Tape Echo and Roland RE-201 plug-ins are in Tempo Sync mode, note values can be imprecise due to the fixed tape head relationships.

Values that are imprecise approximations (but are within the available delay time range) are displayed with a "+" or "-" symbol. The leading head in the current mode is accurately synced; the other values are based on the fixed tape head relationship.

> ***Note:*** *When a parameter note value is out of range of the current tempo note value in these plug-ins, the note value flashes instead of in being parentheses.*

Chapter 7: UA Account & Store

Account Overview

Your Universal Audio account is where all your UAD-2 Live Rack (and other UAD products), and its associated UAD plug-ins, is registered and managed. The UA account is required to register and authorize your UAD-2 Live Rack hardware, download UAD software, and receive customer support.

This chapter provides complete details about the UA store, your UA account, and UAD plug-in authorization

Device Registration

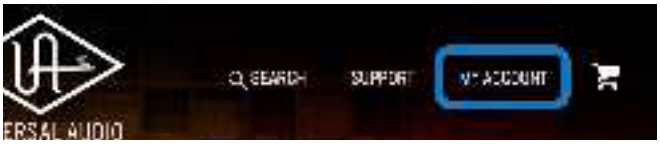
The account creation and device registration process is triggered automatically whenever a new UAD device is recognized by the UAD software. The UA web pages guide you through the registration process. To begin the registration process, visit:

www.uaudio.com/register

> ***Note:*** *To trigger the process with UAD-2 Live Rack if the software is already installed, open the UAD-2 Meter & Control Panel application.*

Accessing Your Account

To view your account pages, click the MY ACCOUNT link at the top of web of pages at www.uaudio.com.



MY ACCOUNT link at www.uaudio.com

When you're not already logged in, the LOG IN link appears instead of the MY ACCOUNT link. In this case, click LOG IN to enter your email and password and access your account.

You have the option to stay logged in so you don't have to enter credentials with each visit. If you forget your password, the store can email a password reset link to you.

Account Details



The My Account pages are available when logged in. These pages contain all details about the account such as registered UAD devices, licensed UAD plug-ins, and account preferences.

The account menu, shown at right, is used to navigate the account pages. Click an item in the menu to view that account page.

Store Overview

The Universal Audio online store is where optional UAD plug-in licenses are purchased and UA coupons are redeemed.

Bundled Plug-Ins

UAD plug-ins that are bundled (included) with UAD-2 Live Rack are automatically issued to your UA account when the device is registered. After registration is complete, authorize the UAD system to run the bundled plug-ins.

> ***Note:*** *UAD devices must be registered and authorized to use bundled plug-ins.*

Optional Plug-Ins

UAD plug-ins that are not bundled with the UAD device require an optional license to run without restrictions. After purchasing a UAD plug-in, the UAD device(s) in the system need to be manually authorized to run the additional plug-in.

Our web pages guide you through the purchase and authorization process.

UAD Plug-Ins Are Already Installed

The UAD software installer always installs the complete suite of available UAD plug-ins during installation. When you purchase an optional license, you don't download that individual plug-in. Instead, you simply re-authorize your system, which activates the plug-in file that is already installed.

> ***Important:*** *Older versions of UAD software may not include all the latest UAD plug-ins. To ensure all UAD plug-ins are installed, and for optimum performance, update to the latest UAD version.*

Coupons

Promotional coupons have dollar values that are as "good as cash" for buying UAD plug-ins. Coupons are applied to your UA account automatically. The coupon dollar amount is displayed in your account as a credit, ready to be applied to your store purchase. Coupons expire after a limited time period, and they can be used only once.

> ***Tip:*** *Coupons are a great reason to sign up for UA's promotional email. These options are set in the Newsletter Subscriptions page in My Account.*

UAD Authorization Overview

Note: *This section is an overview of the UAD authorization system. For step-by-step authorization instructions, see the UAD Authorization Procedure.*

My Hardware

The UAD devices (UAD-2 Live Rack is a UAD device) and UAD plug-ins that you own are found on your MY HARDWARE page at www.uaudio.com/my/account/hardware. The My Hardware page keeps track of your registered UAD devices and UAD plug-in licenses and is managed automatically by the UA store and UAD software.

Tip: *The current UAD plug-in license state is also shown in the Plug-Ins panel within the UAD Meter & Control Panel application, and the Settings View>Plug-Ins tab within the Live Rack application.*

UAD System

All UAD devices registered to the UA account, and all UAD plug-in licenses for those devices, are grouped as a system on the My Hardware page. Licensed UAD plug-ins are only authorized to run on the UAD devices associated with the same account and system.

Account Creation and Device Registration

Creating a UA account and registering the UAD hardware is only needed once during initial device installation. After registration, authorization is performed within the UAD Meter & Control Panel application by clicking the Authorize Plug-Ins button.

Adding Additional UAD Devices

If a second (or more) UAD device is added to the computer that already has the UAD software installed, the new device(s) is automatically detected when the UAD Meter & Control Panel application is open. Upon detection, the web browser opens, you are guided to register the new device, and the new device is added to your account.

Authorizing Newly-Purchased UAD Plug-Ins

When a UAD plug-in is purchased at the UA store, it needs to be manually authorized. The store guides you through the process, or see the UAD Authorization Procedure for instructions.

Authorizations Are Stored On UAD Device

During authorization, the UAD plug-in license state is stored on the UAD device. If the device is moved to another computer, it's not necessary to reauthorize the device.

Demo Mode

All unlicensed UAD plug-ins include a free 14-day trial evaluation period. When the demonstration mode is activated, the plug-in runs without functional limitations for 14 days. Demo mode can be activated once only. After the demo trial period has expired, demo mode cannot be activated again on the same UAD device.

If an unlicensed plug-in is loaded and its demo has never been started, a dialog appears with instructions to start the demo and the option to visit the UA store to purchase the license. If you don't start the demo or purchase a license, the plug-in interface appears and its controls can be manipulated, but audio is not processed by the plug-in.

> ***Important:*** *The 14 day demo period can only be activated once, and cannot be stopped or restarted during this period. Activate demo mode only when you have adequate time to thoroughly evaluate its sound and functionality.*

Demo Reset

As a courtesy, each time a new UAD plug-in is purchased, all expired demo periods are automatically reset so all UAD plug-ins with expired demos can be evaluated again.

Demo Activation

To activate demo mode:

1. Ensure the UAD hardware and software is already installed and properly configured.
2. Open the Plug-Ins panel within the UAD Meter & Control Panel application.
3. Locate the row for the UAD plug-in you want to evaluate (scroll if necessary).
4. In the plug-in STATUS column, click the START DEMO button for the UAD plug-in. A confirmation window appears and the timed demo can be activated or demo activation can be cancelled.

> ***Note:*** *Manipulating the computer's system date and time may result in a decreased demo period.*

Buying UAD Plug-Ins

To obtain optional UAD plug-in licenses, visit www.uaudio.com, browse the available plug-ins at the secure UA store, complete your purchase with several payment options, and authorize the new plug-in(s). You can also apply any coupon credit that is available from promotional offers.

Lots of product information such as features, specifications, audio/video examples, and reviews are available on the plug-in product pages to help you make informed buying decisions.

Purchase Procedure

To purchase optional UAD plug-in licenses:

1. Visit the UA store at www.uaudio.com.
2. Add the items you want to purchase to your shopping cart. You'll need to login to your UA account if not already logged in.
3. When ready to complete your purchase, click the Shopping Cart icon at the top of the page, then click the CHECKOUT button. The payment page appears.
4. Select payment method and provide payment details. If applicable, apply any discount coupon codes.
5. Click the PLACE YOUR ORDER button **once only**. The transaction is processed, the order confirmation page appears, a confirmation email is sent, and the UAD plug-in license(s) is issued to your UA account.
6. Authorize the UAD device(s) by following the instructions on the next page.

UAD Authorization Procedure

The UAD-2 Live Rack system must be manually authorized whenever a plug-in is purchased from the UA store.

This procedure applies when the UAD-2 Live Rack hardware is connected to the computer and the computer is connected to the Internet. See "Offline UAD Authorization" on page 146 if the computer is not connected to the Internet.

> ***Important:*** *Follow this procedure to manually authorize a new UAD plug-in purchase whenever you buy a plug-in at the UA store.*

To manually authorize UAD plug-ins to run on the UAD device:

1. Open the UAD Meter & Control Panel application.
2. Access the Plug-Ins panel within the application by clicking the blue "UAD-2" button in the UAD Meter window.



3. Click the "Authorize Plug-Ins" button in the Plug-Ins panel.



4. After a few moments the Authorization Status window appears. Click OK to close the window.



UAD plug-ins are now authorized and ready for use.

Offline UAD Authorization

Important: *UAD devices must be registered and UAD plug-ins must be authorized before they can be used.*

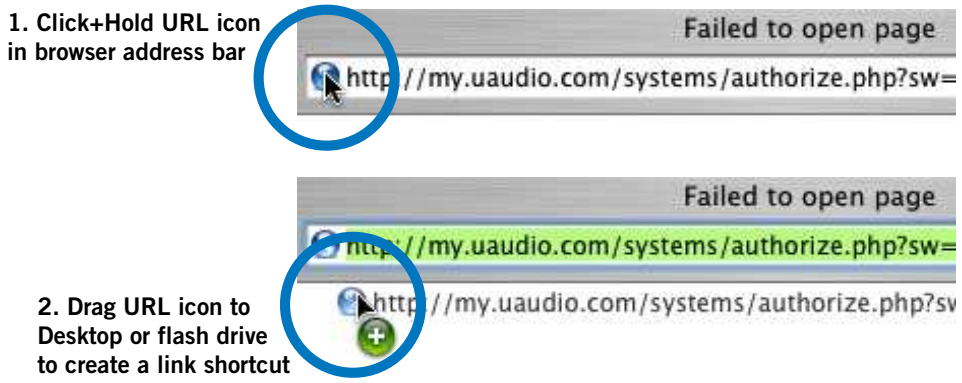
UAD plug-ins are automatically authorized each time the computer is started if the system is connected to the Internet. If the UAD computer is not connected to the Internet, you will need to:

- Manually transfer a URL into the browser of a web-enabled computer
- Download an authorization file onto the web computer
- Transfer the authorization file back to the UAD computer

These steps are detailed below.

To obtain and apply the UAD authorization file if not connected to the internet:

1. Install the UAD software and the UAD hardware before proceeding. The system must be operating properly.
2. Launch the UAD Meter & Control Panel application and open the Plug-Ins Panel.
3. Click the Authorize Plug-ins button. The default web browser opens with the registration URL in the address bar (and you may get an error that the computer is not connected to the Internet).
4. You must enter this URL into a web-connected computer, so either:
   a. Drag the URL icon in the browser's address bar to the Desktop to create a weblink shortcut (preferred, to prevent transcription errors) then transfer the weblink shortcut to the internet computer via a storage device or network, OR
   b. Copy/paste the URL into a file that can be transferred (or carefully write down the URL, EXACTLY as it appears in the address field).



Creating a web location shortcut on the offline UAD system for easier transfer of the URL file to an online system

5. In a web browser on an Internet-connected computer, double-click the transferred weblink shortcut, or enter the URL as previously noted. Make sure you are logged into the correct UA account.
6. The UA authorization servers automatically generate an authorization file. The authorization file named “auth.uad2” should begin downloading automatically (if not, click the download authorization link).
7. Transfer the authorization file to the UAD computer via a storage device or network.
8. For optimum results, quit all open audio host applications (DAWs).
9. Double-click the authorization file. The authorization is loaded onto the UAD device(s) and after a few seconds the “Authorizations Status” window appears.

Offline UAD authorization is complete and UAD plug-ins are ready for use.

Chapter 8: Specifications

Note: *All specifications are subject to change without notice.*

SYSTEM	
I/O Complement	
Thunderbolt 3	Dual ports (Thunderbolt 1 & 2 compatible)
Word Clock	One input, one output
MADI Optical Ports	One input, one output
Supported Sample Rates (kHz)	44.1, 48, 88.2, 96 (one or two units) 44.1, 48 (up to four units)
Bit Depth	24 bits per sample
System Throughput Latency @ 48 kHz	73 samples

DIGITAL I/O	
MADI	
Connector Type	MADI - Dual Optical SC-Plug (ISO/IEC 9314-3)
Format	AES10 (64 channels)
Supported Modes @ Sample Rates of 88.2/96 kHz	Standard, Legacy
Word Clock	
Connector Type	BNC
Lock Range	±0.5% of any supported sample rate
Word Clock Input Termination	75 Ohms, switchable
Syncronization Sources	
Internal, Word Clock, MADI	

ELECTRICAL	
Power Supplies	Dual-redundant internal power supply units with automatic failover detection
AC Connector Type	Male IEC with integrated power switch
AC Requirements	100V – 240V AC, 50 – 60 Hz, 0.3A
Maximum Power Consumption	30 Watts 45 Watts (when bus powering external Thunderbolt peripheral)

(continued)

ENVIRONMENTAL	
Operating Temperature Range	0º Celsius to +45º Celsius
Storage Temperature Range	-40º Celsius to 80º Celsius
Operating Humidity Range	60% Maximum

MECHANICAL	
Dimensions	
Chassis (W x D x H)	431.8 mm (17") x 304.8 mm (12") x 33.8 mm (1.3")
Height	1U
Weight	
Shipping Weight (with box & accessories)	6.3 kg (14 lbs)
Weight (unit only)	4.1 kg (9 lbs)
Package Contents	
UAD-2 Live Rack hardware unit	
(2) IEC AC Power Cables (1 each, Europe & USA)	
Getting Started sheet	
Set of (4) Rack-Mount Screws	

Chapter 9: Notices

Warranty

Universal Audio provides a limited warranty on all UA hardware products. To learn more, visit help.uaudio.com. The limited warranty gives you specific legal rights. You may also have other rights which vary by state or country.

Repair Service

If UAD-2 Live Rack isn't behaving as expected, first check all system setups, connections, cables, and operating instructions. Answers to most questions are available in the Universal Audio Knowledge Base at help.uaudio.com.

If you still need help, or to learn about repair service, please visit help.uaudio.com.

Maintenance

- UAD-2 Live Rack does not contain a fuse or any other user-replaceable parts. The unit is internally calibrated at the factory. No internal user adjustments are available.
- Changes or modifications to the device not expressly approved by the manufacturer could void the user's right to operate the equipment.

Compliance

Important Safety Information

Before using this unit, be sure to carefully read the applicable items of these operating instructions and the safety suggestions. Afterwards, keep them handy for future reference. Take special care to follow the warnings indicated on the unit, as well as in the operating instructions.

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use with attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use the caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

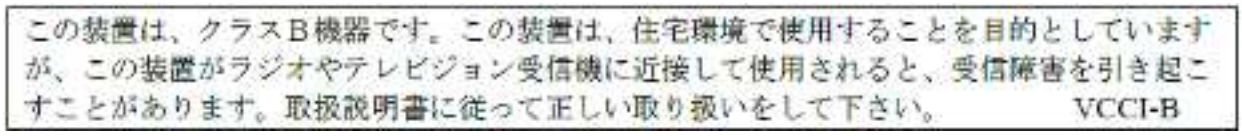
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

United States Class B Manual Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Japanese Class B Manual Statement


この装置は、クラスB機器です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

This is Class B equipment. Although this equipment is intended for use in residential environment, it could case poor reception if used near a radio or television receiver. Please follow instructions in the instruction manual.

EMC and Safety Standards

FCC Part 15 for Class B digital device	EN 55032	KN32/KN35
ICES-003	CISPR 32	UL 60065
VCCI-CISPR 32	EN 55024	CAN/CSA-C22.2 NO 60065
EN 55022	CISPR 24:2010 +A1	IEC 60065
CISPR 22	TCVN 7189	AS/NZS 32

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Technical Support

Universal Audio Knowledge Base

The UA Knowledge Base is your complete online technical resource for configuring, operating, troubleshooting, and repairing all UA products.

You can watch helpful support videos, search the Knowledge Base for answers, get updated technical information that may not be available elsewhere, and more.

UA Knowledge Base

YouTube Support Channel

The Universal Audio Support Channel at youtube.com includes helpful support videos for setting up and using UA products.

UA YouTube Support Channel

Universal Audio Community Forums

The unofficial UA discussion forums are a valuable resource for all Universal Audio product users. This website is independently owned and operated.

www.uadforum.com

Contact Universal Audio Support

To contact the UA support team for UAD-2 Live Rack technical or repair assistance, visit:

help.uaudio.com

Contact Soundcraft Support

To contact Soundcraft support for *Soundcraft Realtime Rack* hardware or repair assistance, visit:

www.soundcraft.com



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