

OctaLite™

User Guide

MOTU®

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SAFETY PRECAUTIONS AND ELECTRICAL REQUIREMENTS FOR THE OctaLite ("PRODUCT")

 **CAUTION!** READ THIS SAFETY GUIDE BEFORE YOU BEGIN INSTALLATION OR OPERATION. FAILURE TO COMPLY WITH SAFETY INSTRUCTIONS COULD RESULT IN BODILY INJURY OR EQUIPMENT DAMAGE.

 **HAZARDOUS VOLAGES:** CONTACT MAY CAUSE ELECTRIC SHOCK OR BURN. TURN OFF UNIT BEFORE SERVICING.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR OTHER MOISTURE.

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

IMPORTANT SAFEGUARDS

1. Read these instructions. All the safety and operating instructions should be read before operating the product.
2. Keep these instructions. These safety instructions and the product owner's manual should be retained for future reference.
3. Heed all warnings. All warnings on the product and in the owner's manual should be adhered to.
4. Follow all Instructions. All operating and use instructions should be followed.
5. Do not use the product near water.
6. Cleaning - Unplug the product from the computer and clean only with a dry cloth. Do not use liquid or aerosol cleaners.
7. Ventilation - Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Heat - Do not install the product near any heat sources such as radiators, heat registers, stoves, or another apparatus (including an amplifier) that produces heat.
9. Overloading - Do not overload wall outlets and extension cords as this can result in a risk of fire or electrical shock.
10. Power supply cord - Protect the product power supply cord from being walked on or pinched by items placed upon or against them.
11. Power switch - Install the product so that the power switch can be accessed and operated at all times.
12. Disconnect - The main power supply plug is considered to be the disconnect device for the product and shall remain readily operable.
13. Accessories - Only use attachments/accessories specified by the manufacturer.
14. Surge protection - Unplug the product during lightning storms or when unused for long periods of time.
15. Servicing - Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as when a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.
16. Power Sources - Refer to the manufacturer's operating instructions for power requirements.
17. Installation - Do not install the product in an unventilated rack, or directly above heat-producing equipment such as power amplifiers. Observe the maximum ambient operating temperature listed below.
18. Power amplifiers- Never attach audio power amplifier outputs directly to any of the unit's connectors.
19. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
20. Safety Check - Upon completion of any service or repairs to this MOTU product, ask the service technician to perform safety checks to determine that the product is in safe operating conditions.

ENVIRONMENT, HEAT AND VENTILATION

Operating Temperature: 10°C to 40°C (50°F to 104°F). The product should be situated away from heat sources or other equipment that produces heat. When installing the product in a rack or any other location, be sure there is adequate space around the product to ensure proper ventilation. Improper ventilation will cause overheating and can damage the unit.

TO REDUCE THE RISK OF ELECTRICAL SHOCK OR FIRE

Do not handle the power cord with wet hands. Do not pull on the cord of the power supply when disconnecting it from an AC wall outlet. Grasp it by the power supply unit. Do not expose this apparatus to rain or moisture. Do not place objects containing liquids on it.

DC INPUT

15V DC 2.0A



This equipment has been type 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 instruction manual, 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 interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by any combination of the following measures:

- Relocate or reorient the receiving antenna
- Increase the separation between the equipment and the receiver
- Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

If necessary, you can consult a dealer or experienced radio/television technician for additional assistance.

PLEASE NOTE: only equipment certified to comply with Class B (computer input/output devices, terminals, printers, etc.) should be attached to this equipment, and it must have shielded interface cables in order to comply with the Class B FCC limits on RF emissions.

WARNING: changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Contents

Part 1: Getting Started

- 7 **Quick Start Guide**
- 8 **A Typical OctaLite Setup**
- 9 **OctaLite Front Panel**
- 10 **OctaLite Rear Panel**
- 11 **About the OctaLite**
- 13 **Packing List and System Requirements**
- 15 **Software Installation**
- 17 **Hardware Installation**

Part 2: Using the OctaLite

- 25 **Front Panel Operation**
- 27 **CueMix 5**
- 43 **Working with Host Audio Software**

Part 3: Appendices

- 51 **Troubleshooting**
- 53 **Audio Specifications**
- 55 **Half-rack Mounting Kit**
- 57 **Half-rack Coupler Kit**
- 59 **Index**

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Mark of the Unicorn, Inc. (“MOTU”) warrants this equipment against defects in materials and workmanship under normal use for a period of TWO (2) YEARS from the date of original retail purchase. The Warranty Term begins on the date of purchase from an authorized MOTU reseller and applies solely to the original retail purchaser, who must activate the warranty by creating a user account at motu.com to register the product within 90 days of purchase. This warranty applies only to hardware products; MOTU software is licensed and warranted pursuant to separate written statements.

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- Equipment purchased through any reseller not directly authorized by MOTU or its authorized international distributors.
- “Used” equipment purchased from a third party.
- Equipment purchased in another country.
- Normal cosmetic and mechanical wear of the equipment.
- Equipment damaged by improper installation or connections.
- Equipment damaged in transit to/from MOTU for warranty repair.
- Physically damaged equipment, including but not limited to water damage, cracks or dents, missing or bent parts, burns or other damage caused by faulty or failed electric power

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Version 1.02

Part 1

Getting Started

Quick Start Guide

Thank you for purchasing an OctaLite! Follow these easy steps to get started quickly.

MAC USERS START HERE

- 1 Visit motu.com/OctaLite-start to download and run the *MOTU Gen 5 Installer*.
- 2 Connect the included power supply to your OctaLite unit.
- 3 Connect the OctaLite to your Mac using one of the included USB cables.
- 4 Choose *Apple menu > System Preferences* and click Sound to choose the OctaLite as the input and output device.
- 5 Proceed to “For all users” below.

WINDOWS USERS START HERE

- 1 BEFORE you connect the OctaLite to your computer, visit motu.com/OctaLite-start to download and run *MOTU Gen 5 Setup*.
- 2 Connect the included power supply to your OctaLite unit.
- 3 Connect the OctaLite to your PC using one of the included USB cables.
- 4 Go to the Windows Sound Control Panel and choose OctaLite as the default recording and playback device.
- 5 Proceed to “For all users” below.

FOR ALL USERS

6 As shown on the next page, connect speakers to the OctaLite *Line Out L-R*, or connect a pair of headphones to the headphone jack on the front panel, so you can hear your computer’s audio output.

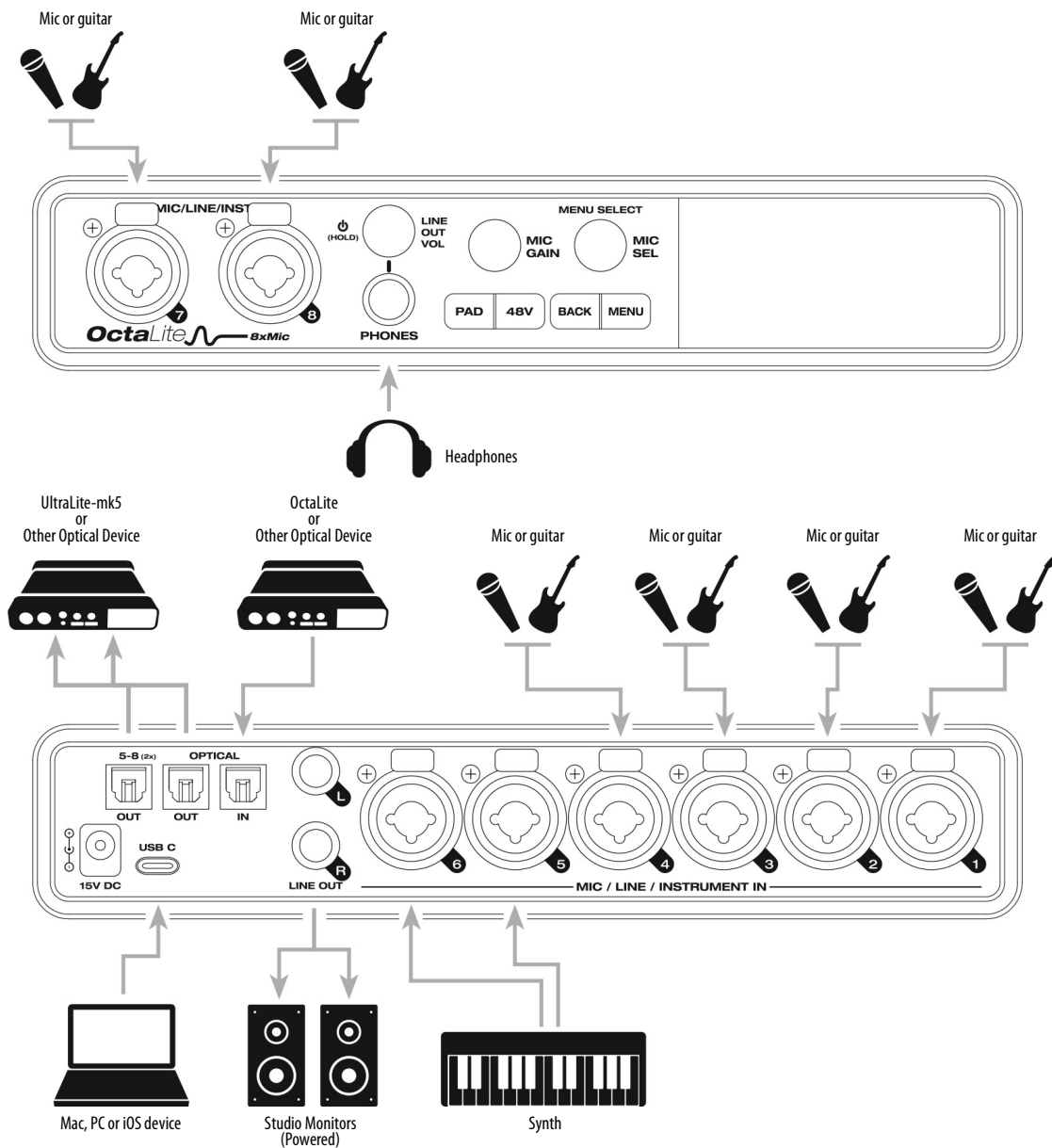
7 You are now ready to start using your OctaLite interface.

8 Visit motu.com/OctaLite-start to register your OctaLite, download the included software and watch brief how-to videos, including:

- How to connect a mic, guitar, keyboard or other audio source.
- How to use the OctaLite with your recording software.
- How to get the most out of the OctaLite.

🔑 Register your OctaLite to gain access to all the software, virtual instruments, loops and sounds that are included with your OctaLite purchase. Registered users also qualify for technical support and information about software updates, so please register today!

A Typical OctaLite Setup



OctaLite Front Panel



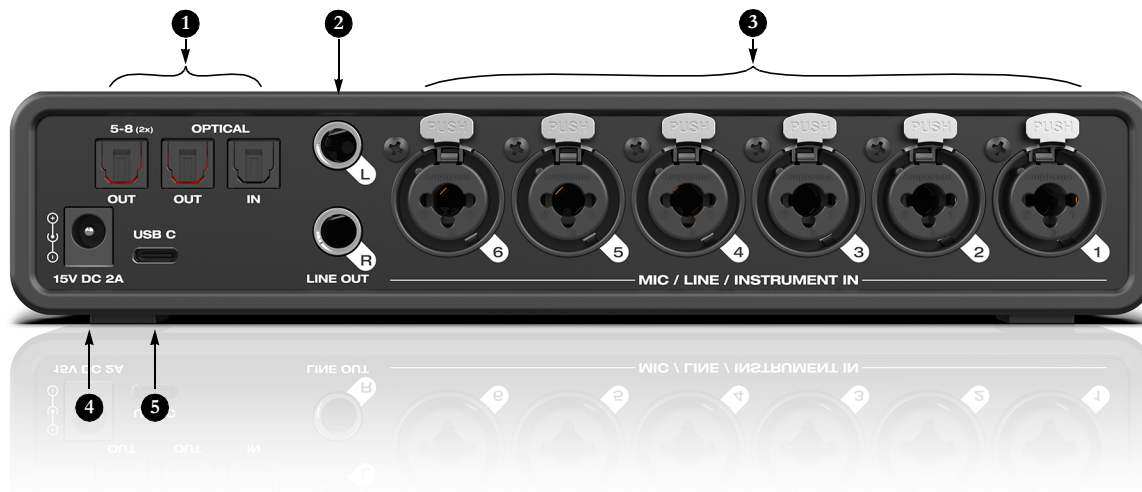
1. These two *Mic/Line/Inst* inputs are XLR/TRS combo jacks that accept either a mic cable or a quarter-inch cable, balanced or unbalanced, from a guitar or line input. Select an input with the MIC SEL (Mic Select) knob (8), as indicated in the STATUS section (6), and then adjust its individual preamp gain (9), instrument input gain (9), 48V phantom power (3), and an optional -20 dB pad for the input (3). Each input includes a *Phase Invert* switch, accessed in the CueMix 5 app. See "Input tab" on page 31.
2. The *Phones* jack (2) accepts a quarter-inch headphone plug. Use the knob above (10) for volume control. The display provides feedback as you turn the knob.
3. 48V phantom power and optional -20 dB pad switches for each combo input (3). Use the MIC SEL (Mic Select) knob (8) to choose the input, as shown in the STATUS section of the display (6).

4. Press MENU (4) to access menu settings. Turn the MENU SELECT knob (8) to navigate menus. Press BACK (4) to exit from the current setting or exit the menu entirely.
5. This portion of the OLED display shows *level meters* for all analog inputs and outputs. It can also show menu settings, using the knobs to the left.
6. This portion of the OLED display shows *optical I/O activity*. It also shows the currently chosen input being controlled by the MIC GAIN knob and PAD / 48V buttons.
7. This portion of the OLED display shows the current *sample rate and clock source*, such as INT (Internal clock mode).
8. Turn the MIC SEL (Mic Select) knob to choose which input to control with the front panel MIC GAIN, PAD and 48V settings. Push the knob (MENU SELECT) to enter

the menu. Turn it to scroll through menu options. Push again to descend into the sub-menus, if applicable. To select the current setting, push *Select* a third time. Push BACK to return to the previous menu level, and do so repeatedly to exit the menu altogether.

9. This MIC GAIN knob provides +74 dB of digitally controlled preamp gain or instrument input gain for the currently chosen mic/instrument input, as shown in the STATUS section of the display (6). Both gain settings are retained independently. Turn the knob to see the gain adjustment in the OLED display.
10. *Power and Volume* control for phones and main outs. Push this knob to toggle between PHONES volume and LINE OUT volume. The screen provides visual feedback. This setting, along with all front panel settings, can also be adjusted from the CueMix 5 app. Push this knob to power on the unit; push and hold for three seconds to power it off.

OctaLite Rear Panel



1. These *OPTICAL* “lightpipe” jacks provide 8 channels of 24-bit ADAT optical digital I/O at 1x sample rates (44.1 or 48 kHz) and 4 channels at 2x sample rates (88.2 or 96 kHz). Alternately, they can operate as stereo TosLink (optical S/PDIF) connectors. At 2x sample rates, the 2nd OUT port provides ADAT OUT channels 5-8. All optical ports are disabled at 4x sample rates (176.4 or 192 kHz). See “Optical I/O” on page 20.
2. The *LINE OUT L-R* pair provides stereo analog output for primary (powered) studio monitors or PA speakers, or any other desired destination. Control volume from the CueMix 5 app or from the front panel volume control.

These connectors are balanced (tip/ring/sleeve), but they also accept an unbalanced plug. They are DC-coupled. Control volume from the CueMix 5 app or your host audio software. For further details, see “Audio connections” on page 18.

To hear audio playback from your host audio software on the LINE OUT pair, assign audio tracks (and master fader) to these line outs. You can also use the CueMix 5 app to route live OctaLite inputs here as well.
3. These six *Mic/Line/Inst* inputs are XLR/TRS combo jacks that accept either a mic cable or a quarter-inch cable, balanced or unbalanced, from a guitar or line input. Use the controls on the front panel (8, 9 and 3 on the previous page) to select an input (1-8) and then adjust its individual preamp gain, instrument input gain, 48V phantom power, and an optional -20 dB pad for the input. Each input includes a *Phase Invert* switch, accessed in the CueMix 5 app. See “Input tab” on page 31.
4. This *DC power* jack accepts any standard 15V DC, 2.0A tip-positive power supply.
5. Connect the OctaLite to the computer here using the included USB-C-to-C or USB-C-to-A cable. If you are connecting to an iOS device, see “iOS setup (USB-C)” on page 17.

CHAPTER 1 About the OctaLite

The OctaLite is a 16 x 12 USB audio interface with mixing, DSP effects, and very high quality A/D/A conversion at sample rates up to 192 kHz for on-the-go mobile audio recording.

Hardware-driven DSP delivers on-board mixing with five stereo buses and 32-bit effects processing, including EQ, compression and reverb.

The OctaLite can operate as an audio interface for a studio workstation (DAW), as a standalone mixer, or as an auxiliary monitor mixing system in the studio or on stage. This chapter provides a brief overview of its main features and characteristics.

Comprehensive I/O

The OctaLite provides a variety of analog and digital interconnects, all active simultaneously, designed to provide everything you need for a well-equipped mobile recording studio.

Connection	Input	Output
Quarter-inch analog on bal/unbal TRS	-	2
Mic/guitar inputs on combo XLR/TRS	8	-
Headphone output	-	1 x stereo
ADAT optical digital†	8	8
Total	16	12

† The OctaLite optical connectors support the industry-standard ADAT and TOSLink optical I/O formats, which provide varying channel counts. See “Optical I/O” on page 20 for details about optical bank operation.

All inputs and outputs are discrete.

Universal connectivity

The OctaLite can connect to a computer that supports high-speed USB 2.0 or later (including USB 3.0, 3.1, etc.) It is USB audio class-compliant, which means that it is iOS compatible and does not require driver installation for USB connection to class-compliant Macs. ASIO and Wave drivers are provided (and required) for operation with Windows 11 or later.

Mic/guitar inputs with preamps

The eight mic/line/instrument inputs are equipped with preamps and “combo” XLR/TRS jacks, which accept XLR microphone inputs or quarter-inch line/instruments inputs. Individual 48 volt phantom power and a -20 dB pad can be supplied independently to each mic input. The Precision Digital Gain™ knob on the front panel for each mic/instrument input provides up to 74 dB of boost in precise 1 dB increments.

Superb analog audio quality

Equipped with renowned ESS Sabre32™ DAC technology, the analog outputs offer trim, adjustable in 1 dB increments. You can save your trim configurations as a preset for instant recall.

The quarter-inch outputs are DC-coupled, so they can be used for CV control output.

On-board DSP with mixing and processing

The OctaLite is equipped with a DSP engine that drives a 28 x 12 monitor mixer. Each mix can include any chosen inputs, plus computer outputs and the separate reverb bus. Effects include 4-band parametric EQ, compression, gating and reverb. The included CueMix 5 app provides easy and intuitive on-screen control of everything.

32-bit processing

The DSP engine has a 32-bit data path with 64-bit (double-precision) data processing, which provides 48 dB of headroom (above full scale) inside the mixer for the utmost in sound quality.

Software control

Control the OctaLite preamps, on-board mixing and device settings from the CueMix 5 app software running on a laptop or iOS device.

Stand-alone mixing

Connect a tablet to the OctaLite for complete control of all settings on the road at rehearsals or gigs — great for live sound mixing.

ADAT digital I/O

The OctaLite provides 8-channel optical digital I/O. Connect outboard digital processors, digital mixers or other gear: 8 channels of optical output at all standard sample rates from 44.1 kHz up to 96 kHz, plus 4 channels of optical input at 88.2 or 96 kHz. Alternately, the primary optical IN and OUT ports (not the 5-8 port) can be independently configured to support stereo TOSLink (optical S/PDIF).

The optical input and output operate independently, allowing you to mix and match optical formats. For example, you could receive four channels of 96 kHz S/MUX input while at the same time sending 96 kHz stereo optical S/PDIF (“TOSLink”) to the output.

High-contrast OLED display

The high-contrast OLED display shows all signal activity at a glance with precise, detailed metering for all I/O. You can access many hardware settings directly from the front panel.

Headphone output

The OctaLite front panel provides an independent headphone jack with separate volume control. You can program the phones to mirror the main outs or act as its own independent output.

Rack mount or desktop operation

The OctaLite is housed in a sturdy, metal-alloy half-rack enclosure. Rack mounting brackets are available (sold separately) for mounting the unit in a standard 19-inch equipment rack. A separate half-rack coupler kit is also available (sold separately) to join two OctaLite units together — or join an OctaLite with an UltraLite-mk5 — and mount them side by side in an equipment rack.

Performer Lite

Performer Lite is a full-featured audio workstation software package for Mac and Windows that is available as a free download for you as an OctaLite owner. Visit motu.com/download to obtain your copy. Performer Lite provides multi-track MIDI and audio production, over 100 included virtual instruments, automated virtual mixing, graphic editing, music notation editing, real-time effects plug-ins with crossfades, support for many third-party audio plug-ins, sample-accurate editing and placement of audio, and more.

CHAPTER 2 **Packing List and System Requirements**

PACKING LIST

The OctaLite ships with the items listed below. If any of these items are not present in the box when you first open it, please immediately contact your dealer or MOTU.

- OctaLite audio interface
- USB-C-to-C cable
- USB-C-to-A cable
- DC power adapter
- User guide

SYSTEM REQUIREMENTS

- Apple silicon and Intel processor Macs are supported. macOS 12 or later.
- x86-64 (Intel, AMD) & ARM (Snapdragon) PCs are supported. Windows 11 23H2 or later (x86-64/ARM64).
- Faster CPUs are recommended for best performance.
- 8GB of RAM or more.
- Available high-speed USB 2.0 (or 3.0) port.
- A large hard drive (preferably at least 512 GB).

PLEASE REGISTER TODAY!

Please register the OctaLite today: visit www.motu.com/register.

As a registered user, you will be eligible to receive free bundled software, technical support and announcements about product enhancements as soon as they become available. Only registered users receive these special update notices, so please register today.

Thank you for taking the time to register your new MOTU products!

CHAPTER 3 **Software Installation**

USB audio class-compliant operation 15

Software installation 15

Audio drivers 15

CueMix 5 app..... 16

Performer Lite workstation software 16

Working with host audio software 16

USB AUDIO CLASS-COMPLIANT OPERATION

The OctaLite is a USB audio class-compliant device. This means that you can connect it to your Mac (running macOS 12 or higher) with a USB cable and use it without installing any software drivers. The computer recognizes the OctaLite as a USB audio device and makes its inputs and outputs available to your host audio software. Basic settings, such as the hardware’s sample rate, are made in either your host software or the front-panel menu.

☛ In this scenario, the OctaLite provides basic audio input and output, and no software driver installation is necessary. Use the Mac’s Audio MIDI Setup utility to manage the OctaLite audio inputs and outputs for your Mac.

Connection to iOS devices (iPad and iPhone)

Audio-class compliant operation allows you to connect the OctaLite to any iOS device using either a standard USB-C cable or a standard camera connection kit adapter for iOS devices equipped with a Lightning connector. The OctaLite then provides multi-channel audio I/O to your audio apps. Use your audio app to configure the number of available audio channels.

SOFTWARE INSTALLATION

If you don’t want to operate the OctaLite as a USB audio class compliant device, or if you are using Windows on a PC, install the software as follows.

- 1 Visit www.motu.com/OctaLite-start to download the latest Mac or Windows Gen 5 installer.
- 2 Run the installer and follow the directions it gives you.

☛ We recommend that you run the software installer *before* you connect the OctaLite to your computer and power it on. This ensures that all driver components are properly installed in your system.

AUDIO DRIVERS

The installer provides a USB audio driver for Mac (CoreAudio) and Windows (ASIO and Wave).

Industry-leading I/O latency performance

On macOS and Windows, the OctaLite driver provides exceptionally low I/O latency performance. For example, with a 32-sample buffer size, an OctaLite interface operating at 96 kHz produces round trip latency (RTL) performance of 2.4 milliseconds (ms) on macOS. RTL is the measurement of the time it takes audio to pass from an analog input, through a high-performance DAW host such as Digital Performer, to an analog output.

ASIO Driver support

On Windows, to enable the OctaLite in your ASIO host software, choose the *MOTU Gen 5* ASIO driver, as shown in Figure 7-1 on page 44.

WDM / Wave driver support

On Windows, the MOTU Gen5 driver includes support for WDM (Wave) compatible audio software. See item #12 on page 30.

Host Buffer Size

When connected to a Windows computer, the *Host Buffer Size* menu is available in the Device tab (item #10 on page 29). This setting determines the amount of latency (delay) you may hear when live audio is patched through your Windows audio software. Smaller buffer sizes produce lower latency, with sizes of 256 samples or less producing virtually imperceptible delay. Many host applications report audio hardware I/O latency, so you can see what happens to the reported latency when making adjustments to this setting.

Be careful with very small buffer sizes, as they can cause performance issues from your host software or PC.

☞ At sea level, audio travels approximately one foot (30 cm) per millisecond. A latency of ten milliseconds is about the same as being ten feet (three meters) from an audio source.

Host Safety Offset

When connected to a Windows host, the *Host Safety Offset* menu (item #11 on page 29) also becomes available. This setting allows you to adjust host latency. The *Default* setting allows the driver more time to process audio as it transfers to and from the hardware. The *Lowest Latency* setting produces lower latency but may cause your host software to experience performance issues. Be mindful when using *Lowest Latency*, as this option can have a significant impact on your audio software's performance.

Sync Windows sample rate to device

Enable the *Sync Windows sample rate to device* option (item #13 on page 30) to link the OctaLite sample rate setting with the sample rate setting in

Windows. If you change the sample rate for the OctaLite, it will change the Windows sample rate as well, and vice versa. This option is enabled by default for best performance with many Windows audio applications. When this option is unchecked, the OctaLite driver performs sample rate conversion to reconcile the difference in sample rates between Windows and the OctaLite hardware.

CUEMIX 5 APP

CueMix 5 is an easy-to-use app for macOS, Windows and iOS that gives you complete control over all the settings in your OctaLite interface. For details, see chapter 6, “CueMix 5” (page 27).

PERFORMER LITE WORKSTATION SOFTWARE

Performer Lite is an easy to use audio workstation software package for macOS and Windows that lets you record, edit, mix, process, bounce and master multi-track recording projects. Advanced features include over 100 included virtual instruments, real-time effects processing, recording, and much more.

To obtain Performer Lite, visit motu.com to register your MOTU audio interface, download Performer Lite and activate it on your computer.



Figure 3-1: Performer Lite.

WORKING WITH HOST AUDIO SOFTWARE

For further information about using the OctaLite with host audio software, see chapter 7, “Working with Host Audio Software” (page 43).

CHAPTER 4 Hardware Installation

USB audio interface setup 17

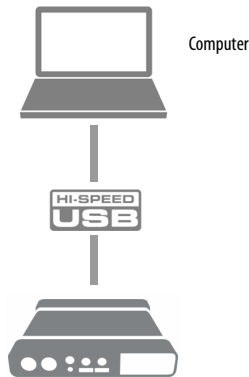
iOS setup (USB-C)..... 17

iOS setup (Lightning) 18

A typical OctaLite setup..... 18

Audio connections 18

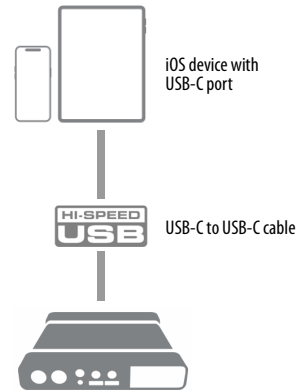
USB AUDIO INTERFACE SETUP



Use this setup if you want to use the OctaLite as a USB audio interface for a computer.

- Use the included USB-C-to-C or USB-C-to-A cable.
- Connect to any USB port (USB 2.0 or 3.0) on your computer.
- See “USB audio class-compliant operation” on page 15.
- For Mac or iOS operation, no driver installation is necessary.

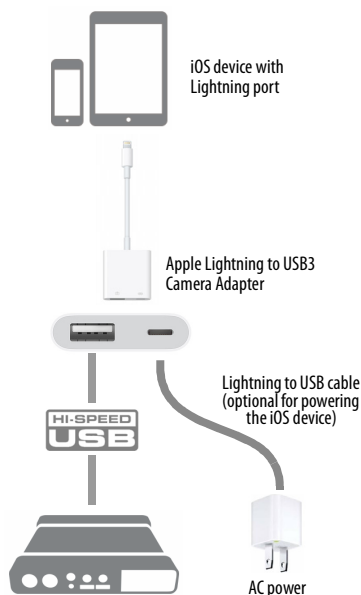
iOS SETUP (USB-C)



Use the OctaLite as an iOS audio interface, or control it from your iOS device.

- Use this setup for iOS devices with a USB-C port.
- Connect the OctaLite directly to the iOS device with the included USB-C-to-C cable.

iOS SETUP (LIGHTNING)



Use the OctaLite as an iOS audio interface, or control it from your iOS device.

- Use this setup for iOS devices with a Lightning port.
- For iOS devices with a Lightning port, an Apple Lightning to USB3 Camera Adapter is required (sold separately), as shown above.

A TYPICAL OCTALITE SETUP

See the diagram on page 8 for an example of typical connections to the OctaLite. The following sections provide important information for achieving best results for each type of connection.

AUDIO CONNECTIONS

Here are a few things to keep in mind as you are making audio connections to your OctaLite interface.

Mic/line/instrument inputs with preamps

Connect a microphone to any XLR/quarter-inch combo jack with a standard XLR mic cable. Connect a guitar or line level input with balanced or unbalanced cable with a quarter-inch plug. Adjust the level with the front-panel MIC GAIN knob for either type of input.

🔊 Use the MIC SEL (Mic Select) knob on the front panel (Figure 4-1) to select a channel to adjust with the MIC GAIN knob, 48V button and PAD button.

🔊 If you connect a +4 dBu (line level) XLR cable to an input, be sure to engage the -20 dB pad switch.

48V phantom power

If you are connecting a condenser microphone or another device that requires phantom power, engage the phantom power switch.

Preamp gain

The OctaLite preamps provides 74 dB of gain. Use the front panel detented gain knob to adjust gain as needed for each input. The front-panel screen provides visual feedback as you turn the knob. Preamp gain is digitally controlled, so you can make fine-tuned adjustments in 1dB increments. You can also adjust preamp gain in the CueMix 5 app. See “Home tab” on page 28.

Figure 4-1: OctaLite front panel



-20 dB pad

Each mic input (XLR jack) is equipped with a -20 dB pad switch, to accommodate input signals that could overdrive the input. The pad switch does not affect the quarter-inch input of the combo jack, which supports line level signals up to +20 dBu.

Combo jack summary

Use these guidelines for 48V phantom power, pad and gain settings on the two combo input jacks:

Input	48V	Pad	Gain
Condenser mic	On	Off	As needed
Dynamic mic	Off	Off	As needed
Guitar	Off	n/a	As needed
-10 dBv line level via TRS	Off	n/a	As needed
-10 dBv line level via XLR	Off	As needed	As needed
+4 dBv line level via XLR	Off	On	As needed
+4 dBv line level via TRS	Off	n/a	As needed

TRS quarter-inch line outputs

The two quarter-inch line outputs are balanced (TRS) connectors that can also accept an unbalanced plug. The outputs are DC-coupled, so they can be used for CV control output.

🔊 Quarter-inch line outputs are not cross-coupled. Therefore, when connecting them to an unbalanced input, use a TRS plug with the ring disconnected. Not floating the negative terminal will short it to the sleeve ground and cause distortion.

Various settings for the line outputs, such as gain, trim, phase invert, etc. can be accessed in the CueMix 5 app. See “Output tab” on page 32.

Like all I/O on the OctaLite, the line outputs operate as an independent pair (they don’t share signal with any other output pair). In a standard studio configuration, the line outs are intended for a pair of primary powered studio monitors, but they can be used as regular outputs for any purpose. With adjustable Precision Digital Trim™, they support a wide range of industry-standard reference levels. Main out volume is controlled by the LINE OUT VOL knob on the front panel (Figure 4-1 on page 18): turn it to view volume knob overlay in the display, then push the knob until you see *Line Out Trim* and turn it to adjust the output volume.

Analog output calibration

The analog outputs can be calibrated to support a variety of standards, including EBU-R68, SMPTE RP-155, +4dBu, -10dBv, 2vRMS and 1vRMS.

The line outputs and headphone outs are equipped with a range of digital trim from 0 to -100 dB, adjustable in 1 dB steps.

Trim and gain controls can be accessed in the CueMix 5 app. See “Input tab” on page 31 and “Output tab” on page 32.

Pre/Post Fx switch for inputs

Each analog input provides EQ, compression, and gating. These effects can be applied to the input as needed (items #1 and 2 on page 35). The *To USB*

Figure 4-2: OctaLite back panel



Host menu for each input (item #3 on page 31) lets you choose whether to send the input signal to your host software with or without these hardware effects applied to the signal. If you want to record the signal dry, *without* the effects applied to it, choose *Pre Fx*. If you want to record the signal *with* the effects applied, choose *Post Fx*.

☛ Once the signal is recorded in your DAW with the *Post Fx* option, the effects cannot be removed from the signal.

Guitar re-amping

Re-amping allows you to record an amplified guitar signal but then change the amp tone later, after recording. This is accomplished by splitting the dry DI guitar signal during recording and separately recording the dry signal (with no amplification) on one track and the mic'd amplifier signal simultaneously on a separate track. You can then choose to use the original recorded amp tone, or you can mute that track and experiment with applying different amp tones to the dry track, either with amp (and pedal) plug-ins or by sending the output of the dry track back to your guitar amp, pedals and other tone gear.

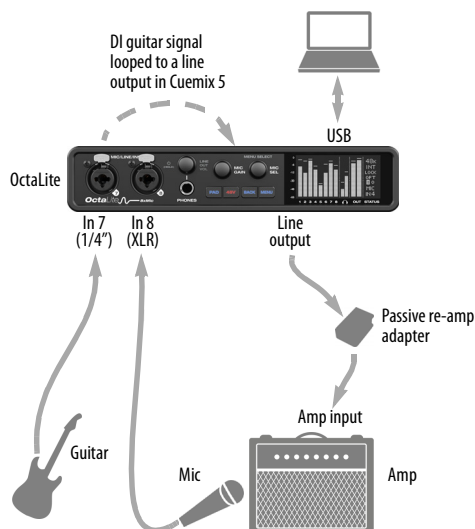


Figure 4-3: Recording guitar for re-amping.

Connections for re-amping

Figure 4-3 shows the connections needed for re-amping. Connect your guitar directly to the quarter-inch jack of any input (input 7 in this example). This is your DI (direct input). The quarter-inch jack has the proper impedance to accept a guitar signal. Mic your amplifier and connect the mic to another input (input 8 in this example). Connect one of the two line outputs to your amp. Note that you may need a re-amp adapter with ground lift and transformer isolation, as shown in Figure 4-3, to remove noise (hum). You can also add pedals or other effects processors to the chain, as usual (after the adapter).

Recording for re-amping

For recording, set up your host DAW software to record Inputs 7 and 8 on separate tracks. Be sure that Patch Thru is disabled for these tracks in your DAW. In CueMix 5, go to the Line Out mix and bring up the fader for Input 7 in the mixer (item #2 on page 34). (Be sure to keep all other faders all the way down). Pan Input 7 hard left or right as needed (depending on which line output you are using for the amp output), or set up the mix as a mono mix (item #13 on page 36). You should now hear your guitar through the amp and you're ready to record. There is no latency because the signal is being looped directly from input to output in the OctaLite mixer hardware (without the computer).

Re-amping after recording

To experiment with different guitar tones after recording, send the dry guitar signal to the same line output to feed it into a different amp, foot pedals or other favorite tone gear. Or apply amp and pedal plug-ins to the dry guitar track.

Optical I/O

The OctaLite provides ADAT optical ("lightpipe") connectors (one input and two outputs). Together, they provide eight (8) channels of ADAT optical digital I/O at 44.1 or 48 kHz. At 2x sample rates (88.2 or 96 kHz), the optical input provides four

(4) channels of SMUX optical input and the two outputs provide eight (8) channels of optical output (channels 1-4 on the first output and channels 5-8 on the second output).

Together, the two optical outputs can route audio signal from all eight mic inputs to another optical device at all sample rates from 44.1 to 96 kHz. This allows the OctaLite to function as an eight-channel optical expander at all 1x and 2x sample rates.

 The optical ports are disabled when the interface is operating at a 176.4 or 192 kHz.

TOSLink (optical S/PDIF)

Alternately, the optical ports can be configured for stereo TOSLink (optical S/PDIF) in the CueMix 5 app (item #4 on page 31). The optical IN and OUT banks can be configured independently. In the case of the optical OUT bank, only the primary bank (next to the IN bank) can be configured for TOSLink.

Choosing a source for the optical output

By default, the audio signal from the optical output comes from your host software (over USB) from any tracks you've assigned to the output. Alternately, you can choose the analog inputs. For further information, see items #5 and 6 on page 32.

Choosing a clock source for optical connections

When connecting an *optical* device, make sure that its digital audio clock is phase-locked (in sync with) the OctaLite. There are two ways to do this:

- A. Resolve the optical device to the OctaLite
- B. Resolve the OctaLite to the optical device

For A, choose *Internal* as the clock source in the Device tab (item #3 on page 29). Then configure the other device to resolve to its optical input.

For B, choose *Optical* as the clock source (item #3 on page 29), and configure the other device to resolve to its own internal clock.

Part 2

Using the OctaLite

CHAPTER 5 Front Panel Operation

The high-resolution OLED screen displays level meters for all analog inputs and outputs and activity indicators for optical I/O. The screen also provides several menus that provide status information and basic hardware settings.

Level meters.....	25
Push-button Knobs.....	25
Power	25
Volume control.....	25
Selecting an input channel	26
Mic Gain, Pad and 48V Phantom Power	26
Menu Navigation.....	26
Channel focus	26

LEVEL METERS

In its default state when the unit is first powered on, the screen displays level meter activity for all analog audio inputs and outputs (Figure 5-1).

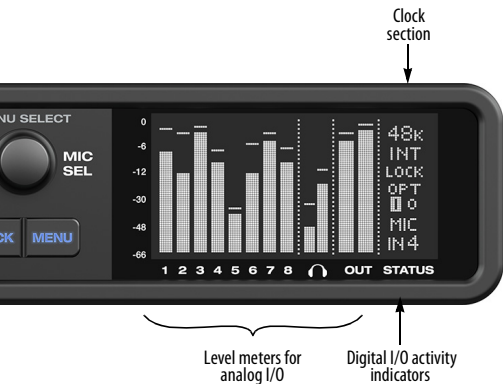


Figure 5-1: Analog metering and activity indicators for optical I/O.

Clock

The Clock section (Figure 5-1) displays the sample rate at which the unit is currently operating, and the current Clock Source setting (item #3 in the

Devices tab on page 29). The Clock Source setting can also be found (and changed) in the front panel screen menu.

PUSH-BUTTON KNOBS

The front-panel knobs (Figure 5-2) are push-button digital rotary encoders. Push the knob for the function labeled in gray.



Figure 5-2: Push the knob to activate the functions labeled in gray.

POWER

Push and hold the power knob (Figure 5-2) to switch the unit on or off. The screen provides feedback as you hold to power down.

VOLUME CONTROL

Use the PHONES knob (Figure 5-2) to control headphone volume. Push the PHONES volume knob to toggle volume control between the phones and the line outputs on the rear panel. The screen provides visual feedback to indicate the current function.

From the factory, the volume knob controls the level of Line Out L-R.

SELECTING AN INPUT CHANNEL

Use the MIC SEL (Mic Select) knob (Figure 5-2) to choose an input to adjust with the MIC GAIN knob and PAD and 48V buttons. The STATUS section (Figure 5-1) indicates the currently selected input channel.

MIC GAIN, PAD AND 48V PHANTOM POWER

Once an input channel is chosen with the MIC SEL knob, the MIC GAIN knob, PAD button and 48V button (Figure 5-2) can be used to adjust those settings for the chosen input.

MENU NAVIGATION

Push the MENU button or MENU SELECT knob to access the menu, which provides settings and status information.

Turn the MENU SELECT knob to scroll through the menu settings.

Push MENU or MENU SELECT to enter the selected sub-menu or to select the currently highlighted parameter.

Push BACK to go to the parent menu.

To exit the menu entirely, push BACK repeatedly until the menu disappears from the display.

Menu setting	What it does
Sample Rate	Sets the sample rate for the device.
Clock Source	Sets the digital audio clock source for the device.
Optical Mode	Specifies the format (8-channel ADAT or stereo TOSLink) for the optical input and output. See "Optical I/O" on page 20.
Optical Source	Specifies the source of the audio signals for the optical outputs. You can choose either USB (your host computer software) or mic inputs.
Display	Provides timeout options for the display (after 3 seconds, 30 seconds, 30 minutes or off). When timed out, the screen goes dark to preserve the lifetime of the OLED elements. The <i>Screen Saver</i> option lets you choose between a completely dark screen (off) or a pong-like screen saver (on). When the <i>Auto Wake</i> option is on, the screen will wake up when any audio signal is detected on any input or output. When Auto Wake is off, push any button or turn any knob to wake up the display.
About	Displays the serial number, firmware version and IP address for the device.
Reset	Restores factory default settings.

CHANNEL FOCUS

When turning the MIC GAIN knob to adjust input gain, the screen displays the current preamp gain level numerically. A few seconds after you stop turning the knob, the screen returns to the standard metering display. To temporarily suspend the focus timeout, push the knob while focused. A “pin” icon appears in the screen to indicate that the focused channel will remain on screen until you push the knob again to dismiss it.

This same technique can be used when selecting a channel with the MIC SEL knob.

CHAPTER 6 CueMix 5

CueMix 5 gives you complete control of all the settings in the OctaLite. It is a standard software application installed on your Mac or PC when you run the MOTU Gen 5 installer or setup app. It can be found in the Applications folder (Mac) or Start menu under MOTU (Windows).

Run the installer, get the app	27
Make hardware connections	27
Home tab	28
Device tab	29
Device tab Continued	30
Input tab	31
Output tab	32
Mix tabs	33
Mix inputs	34
Input channel strip	35
Channel settings	36
Mixer Effects.....	37
Four-band parametric EQ.....	37
Gate.....	38
Compressor	38
Reverb	39
Mix input meters	40
Mix USB Channels	40
Talkback	40
Saving and recalling device presets.....	41
The CueMix 5 iOS app	41
Discovery tab	42

RUN THE INSTALLER, GET THE APP

Visit motu.com/OctaLite-start to get the latest MOTU Gen 5 installer or setup and run it on your computer. Visit the Apple App Store to install the CueMix 5 app on your iOS device.

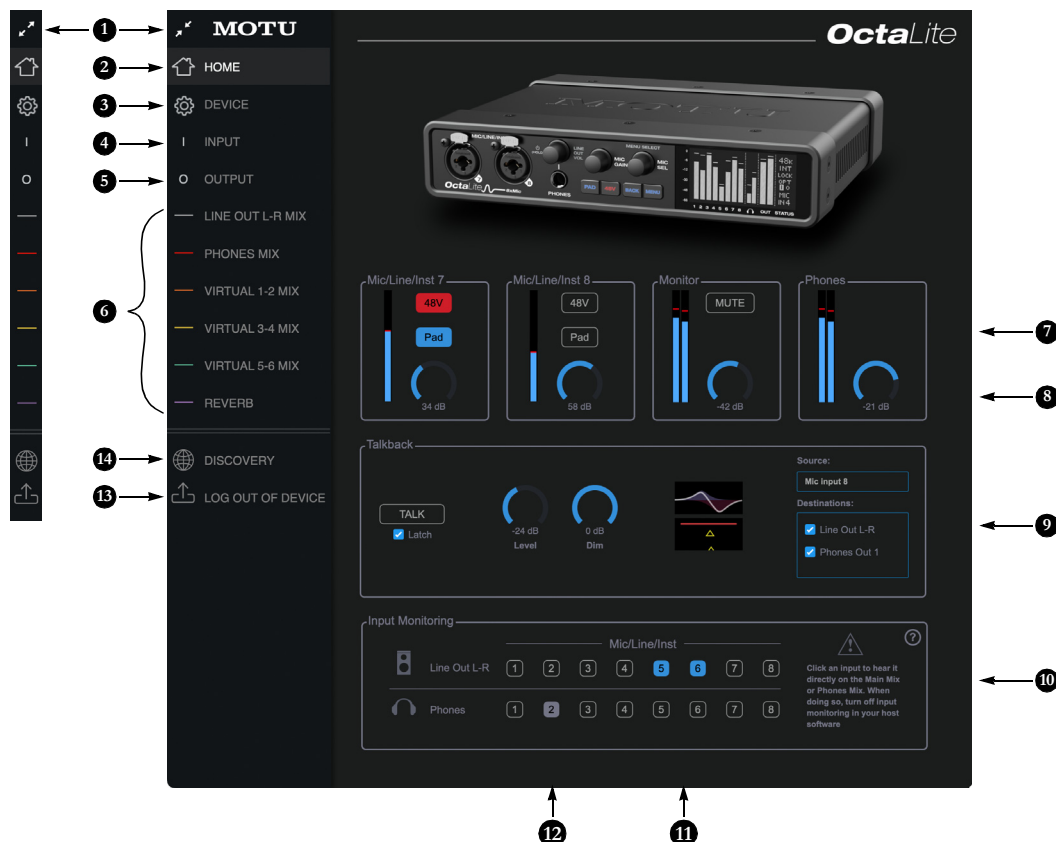
 Look for updated PDF versions of this user guide at the link above, which may document new features and updates to CueMix 5.

MAKE HARDWARE CONNECTIONS

Connect your OctaLite to your computer with one of the supplied USB cables. Or connect to your iOS device as follows:

- If your iOS device has a USB-C port, use the included USB-C-to-C cable.
- If your iOS device has a Lightning port, use an Apple Lightning to USB3 Camera Adapter (sold separately), as shown in “iOS setup (Lightning)” on page 18.

HOME TAB



1. Expands and collapses the sidebar.
2. This is the *Home* tab, which provides quick access to basic settings.
3. The *Device* tab provides basic hardware settings, such as the Sample Rate and Clock Source. See “Device tab” on page 29.
4. The *Input* tab provides settings for the OctaLite’s physical inputs, such as gain levels and phase invert. See “Input tab” on page 31.
5. The *Output* tab provides settings for the OctaLite’s physical outputs, such as trim levels for the line outputs. See “Output tab” on page 32.
6. The *Mix* tabs give you access to the on-board mixing and effects. The OctaLite is a capable 28 x 12 monitor mixer. Each mix includes all inputs, computer audio and the reverb bus. See “Mix tabs” on page 33.
7. The *Mic/Line/Inst 7-8* panels give you software control of the settings for those two front panel inputs. You

can turn on 48V phantom power if you have a condenser mic connected to the input, or engage the -20 dB pad for line level signals. You can also adjust the preamp gain here. These are the same as the controls on the front panel of the unit.

8. Control the unit’s *Monitor* level and *Headphone* level here. These are the same as the controls on the front panel of the unit.
9. The *Talkback* section provides controls for setting up and controlling the OctaLite’s talkback features. See See “Talkback” on page 40.
10. The *Input Monitoring* section lets you patch the analog inputs directly to the Line Outs or Headphones. This is near-zero latency monitoring because the computer (USB) is not involved. To hear an input on the Line Outs, click its button in the top row; to hear it on the Headphones, click its button in the bottom row.

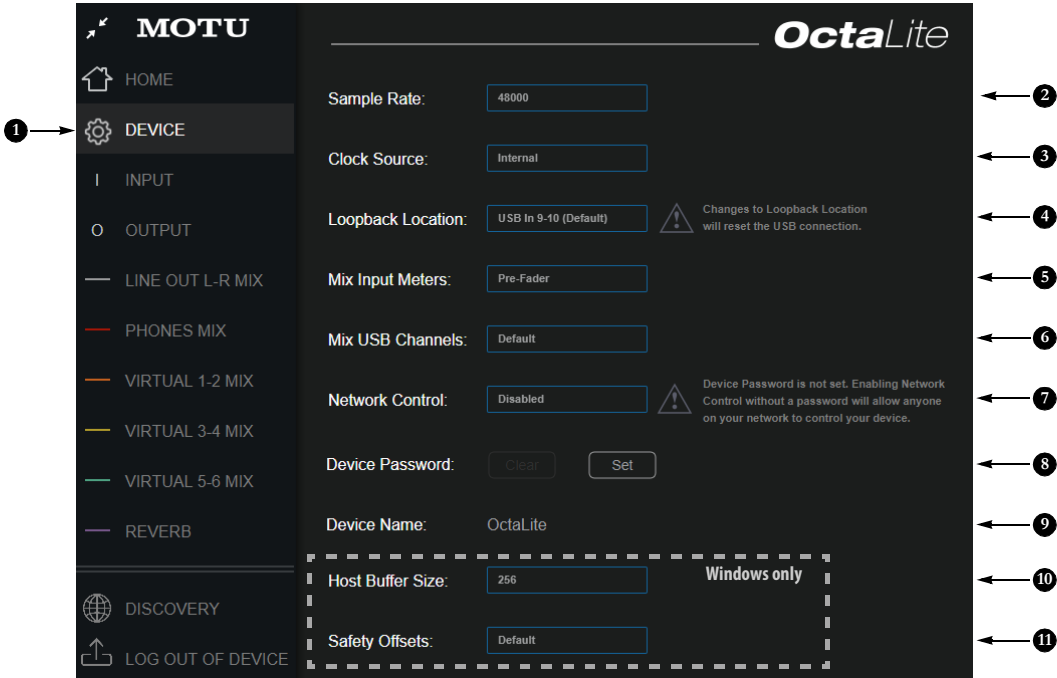
If you use this hardware-based monitoring, be sure to turn off the input monitoring feature in your host software. Otherwise, both the OctaLite *and* your host software will send the input signal to the output and the signal will be doubled, which can cause phasing and/or cancellation problems.

11. Here, *Inputs 5-6* have been routed to the main outs. More specifically, by clicking these buttons, their faders in the *Line Out L-R Mix* tab have been set to unity (maximum) gain and mute has been turned off (if it was on). You can further adjust the input’s volume or other settings in its channel strip in the *Line Out L-R Mix* tab.
12. Here, the *Mic/Line/Inst 2* input has been routed to the headphones. However, the button is gray because the *Mic 2* channel fader has been lowered (from unity gain) in the *Phones Mix* tab. The gray color alerts you that it is no longer being monitored at full scale, or that other

channels settings may have been modified (effects added, channel muted, etc.)

13. If you have password-protected your OctaLite for security purposes while operating the device on a network, you can log out of the device to prevent unauthorized access from the computer on which you were logged in. See “Discovery tab” on page 42.
14. The *Discovery* tab lets you manage access to connected devices and devices on the network. See “Discovery tab” on page 42. On iOS, swipe from the left edge of your screen to access the Discovery tab.

DEVICE TAB

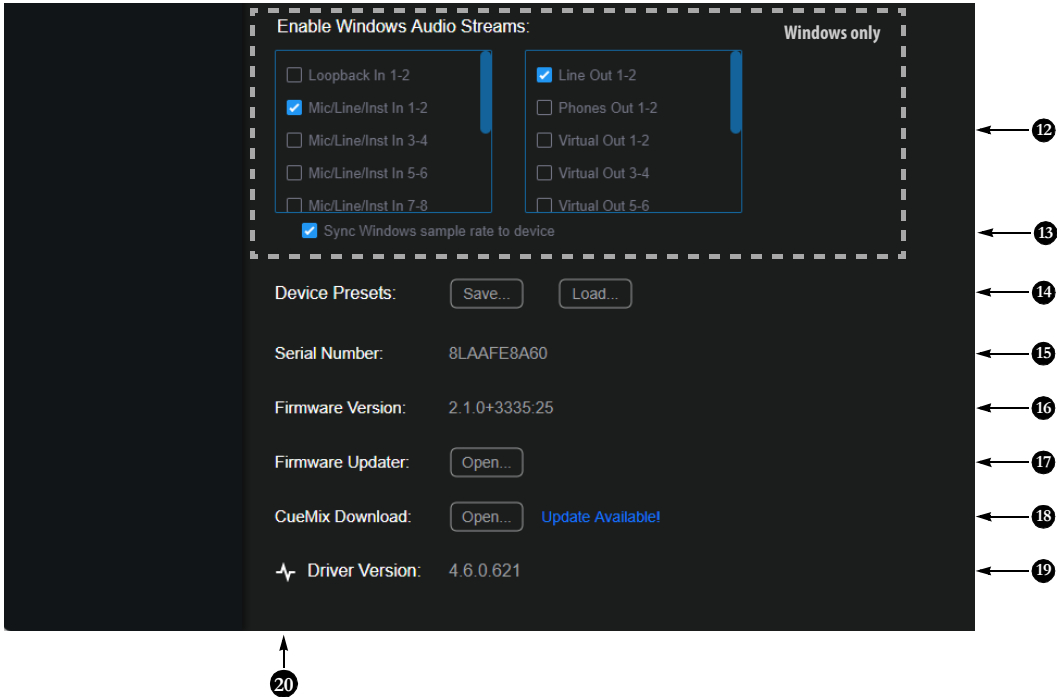


Continued on the next page...

1. This is the *Device* tab, which provides basic hardware settings, such as the Sample Rate and Clock Source.
2. Choose the desired *Sample Rate*. Make sure your host audio software is set to the same rate.
3. Choose the *Clock Source*. Your MOTU device will resolve its digital clock to this master source. Set the clock source to *Internal*, unless you have other devices connected to th optical inputs. If so, see “Optical I/O” on page 20.
4. Choose the *Loopback Location* here. This setting determines the position of the loopback channels in the input channel list. See “Loopback” on page 46.
5. The *Mix Input Meters* in the mix tabs can show level before or after the channel fader setting. See “Mix input meters” on page 40.
6. Each mix (Line Out L-R mix, Phones mix, etc.) includes USB channels coming from the host computer (from your DAW or other audio software) so that you can mix computer output with the OctaLite’s physical inputs. By default, each mix includes the Main 1-2 USB channels. The *Mix USB Channels* setting lets you add *additional* USB channels to each mix, which appear as additional channel strips in each mix tab. See “Mix USB Channels” on page 40.
7. The OctaLite can be controlled from any device on the same network that the host computer is connected to. Use the *Network Control* setting to control whether the OctaLite is available to the network or not. See “Discovery tab” on page 42.
8. Use the *Device Password* to protect the OctaLite when using it on a network. The password is saved in a secure form on the host computer and in the device itself. See “Discovery tab” on page 42.
9. You can give your OctaLite a unique *Device Name*, which appears in the Discovery tab, which allows you to manage multiple devices that are connected or available on the network.
10. (Windows only) Choose the *Host Buffer Size*. Smaller values reduce latency but increase your computer’s CPU load. See “Host Buffer Size” on page 16.
11. (Windows only) Use the *Safety Offsets* setting to fine tune host buffer latency. See “Host Safety Offset” on page 16.

See the next page for more...

DEVICE TAB CONTINUED



12. (Windows only) The OctaLite supports Windows built-in audio. Choose the *Audio Streams* you wish to use with your Windows audio applications that use built-in audio. These settings do not affect the ASIO driver channels.

13. Enable the *Sync Windows sample rate to device* option to link this sample rate setting with the sample rate setting in Windows. If you change the sample rate here, it will change the Windows sample rate as well, and vice versa. This option is checked by default for best performance with most Windows audio applications. See “Sync Windows sample rate to device” on page 16.

14. A *Device Preset* is a ‘snapshot’ of all the settings in the OctaLite, including all the mixes and all the settings in the CueMix 5 tabs (Home, Device, Input and Output). Use these buttons to save your favorite device configurations for tracking, live gigs, rehearsals, etc.

15. Displays the *Serial Number* of your OctaLite unit.

16. Displays the *Firmware Version* currently installed in your OctaLite unit.

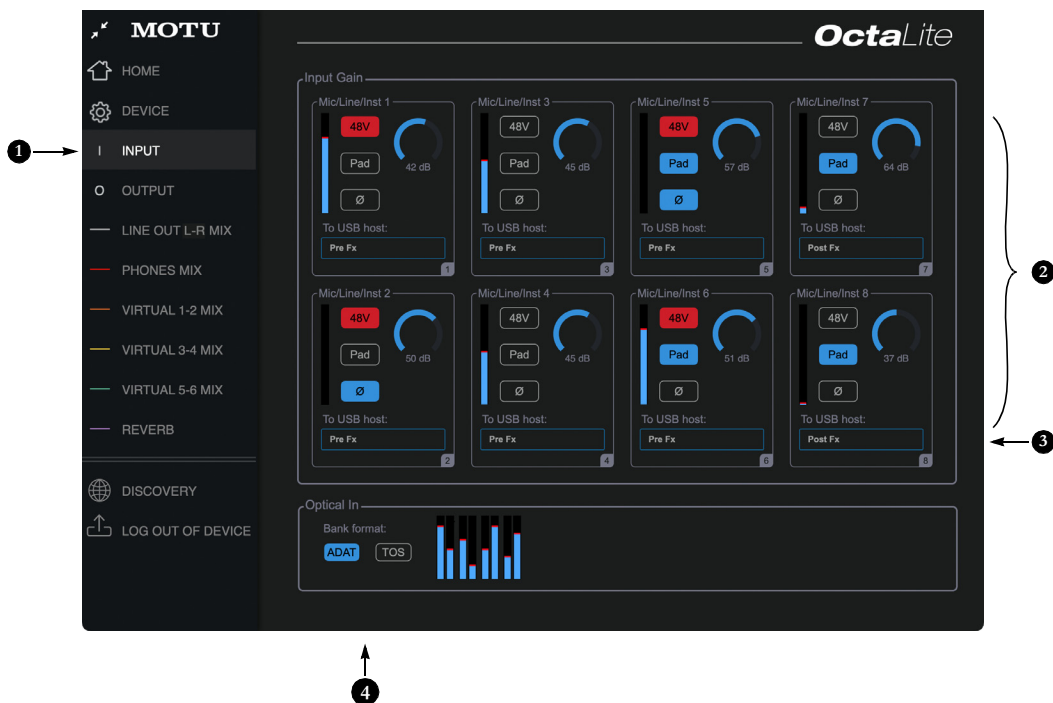
17. If you wish to update the firmware version in your OctaLite, click *Open...* to launch the firmware updater app.

18. If you wish to download the latest version of CueMix 5, click *Open...*

19. Displays the Gen 5 *Driver Version* currently installed on your computer for the OctaLite.

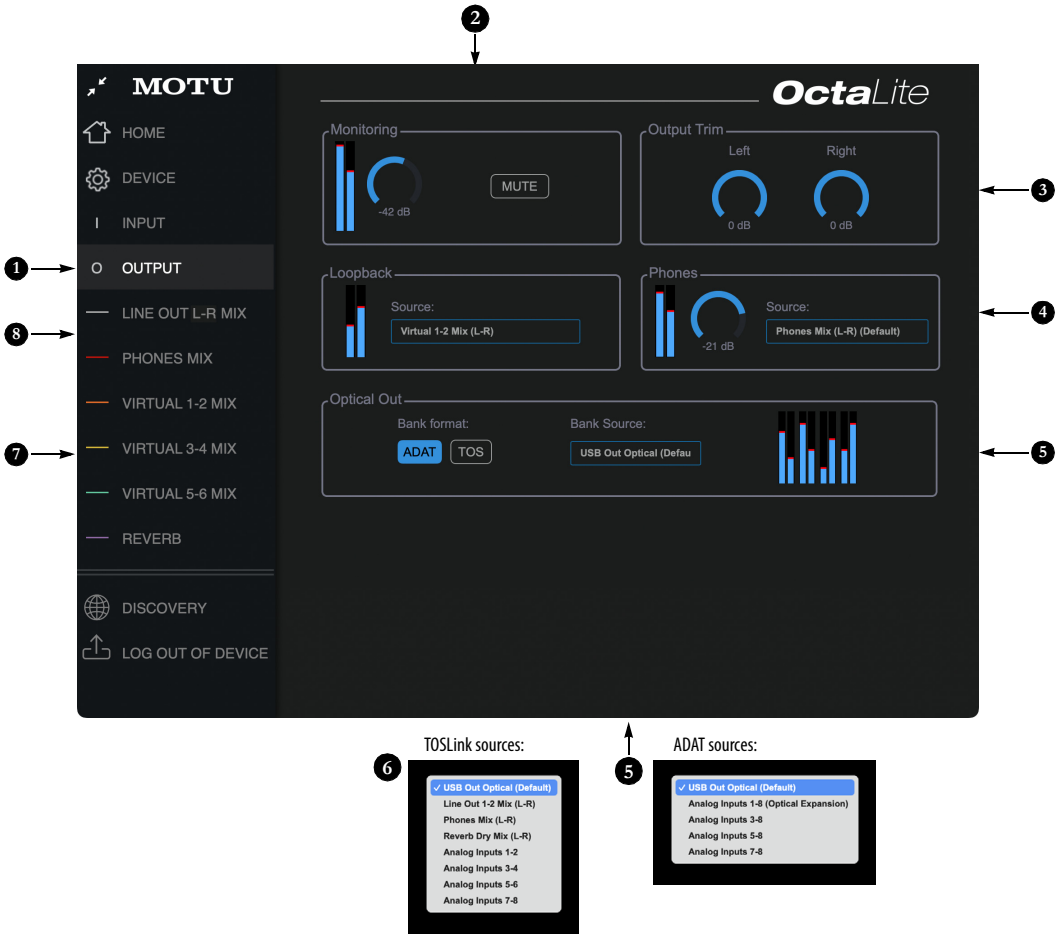
20. (Windows only) Click this icon to open a diagnostics window for troubleshooting purposes. This can be helpful when contacting MOTU Tech Support to diagnose issues.

INPUT TAB



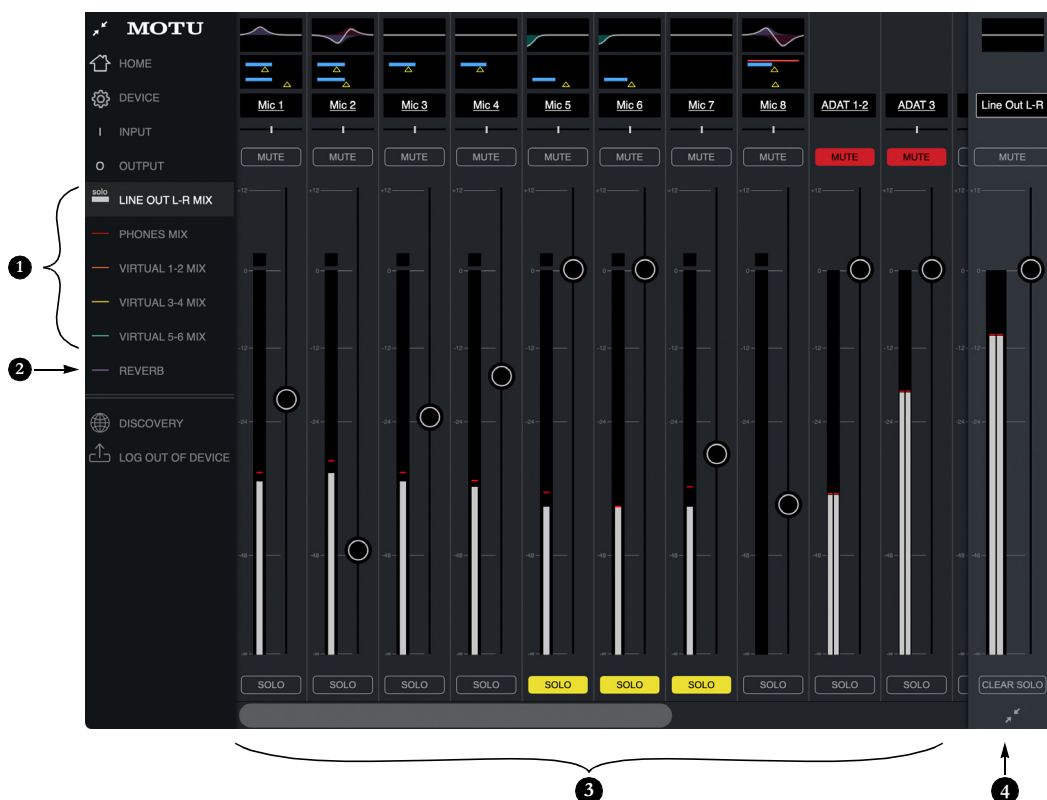
1. This is the *Input* tab, which provides access to settings for the OctaLite analog and digital inputs.
2. These channel settings for the *MicLine/Inst* inputs are the same as those shown in the Home tab (item #7 on page 28) and on the front panel of the OctaLite, including preamp gain, 48V phantom power and -20 dB pad. In addition, a *Phase Invert* switch is also provided for each input.
3. In the Mix tabs (page 33), each analog input channel strip provides EQ, compression, and gating. These effects can be applied to the input as needed (items #1 and 2 on page 35). This *To USB Host* menu for each line input lets you choose whether to send the input signal to your host software with or without these hardware effects applied to the signal. If you want to record the signal dry, *without* the effects applied to it, choose *Pre Fx*. If you want to record the signal *with* the effects applied, choose *Post Fx*. Please note: once the signal is recorded in your DAW with the *Post Fx* option, the effects cannot be removed from the signal.
4. Configure the *Optical Input bank format* for either 8-channel ADAT or stereo TOSLink. At 88.2 or 96 kHz, the ADAT setting supports the 4-channel SMUX format. Note that you can choose a different format for the optical IN and OUT ports. See "Optical I/O" on page 20.

OUTPUT TAB



1. This is the *Output* tab, which provides settings for the OctaLite's analog and digital outputs.
2. The *Monitoring* section provides volume control, meters and a MUTE button for the OctaLite's LINE OUTs. This is the same as the LINE OUT VOL knob on the front panel (and in the Home tab).
3. The LINE OUTs outs can be *trimmed* (in the DAC) from zero to -100 dB. This can be useful for speaker calibration or other situations where you need a fixed amount of level adjustment.
4. Meters and volume control for the *Headphone* out. This is the same as the PHONES volume control on the front panel. You can also choose among many possible *source* signals for the headphone output.
5. The *Bank Source* menu lets you choose the source for the Optical Output. By default, the source is set to USB channels from your host audio software, as shown above in the menus. However, if you would like to use the OctaLite as an ADAT optical expander, choose ADAT as the format and choose *Analog Inputs (Optical Expansion)* in the Source menu. Doing so patches the line inputs directly to their corresponding optical output channel (1 to 1, 2 to 2, etc.)
6. When the Optical Out format is *TOSLink (TOS)*, the *Source* menu lets you send various sources to the optical output, including USB audio, the Line Out mix, Phones mix, Reverb mix bus (dry), or any analog input pair.
7. Configure the *optical out bank format* for either 8-channel ADAT or stereo TOSLink. At 88.2 or 96 kHz, the ADAT setting supports 4-channel SMUX format. Note that you can choose a different format for the IN and OUT. See "Optical I/O" on page 20.
8. Choose the *Loopback Source* here. This is the signal that will be returned to the computer on the Loopback channels. See "Loopback" on page 46.

MIX TABS



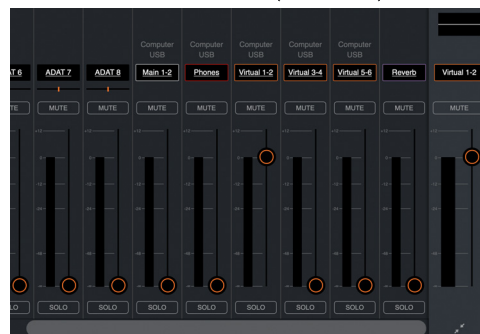
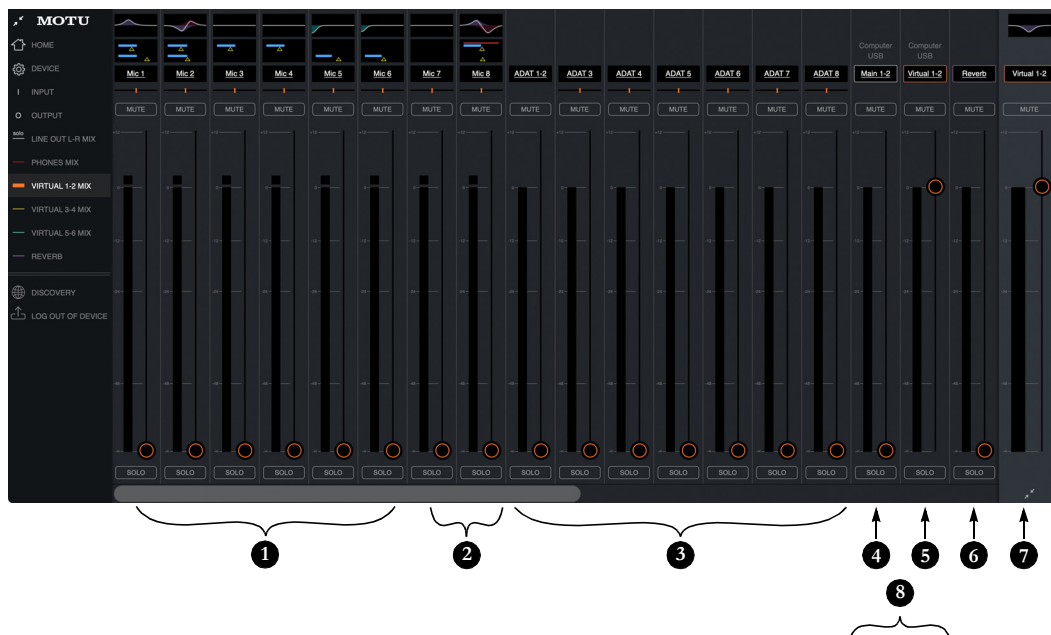
1. The *Mix tabs* provide an independent monitor mix for the Line Outs and the Headphone output, plus three virtual mix buses that can be routed back to the computer as loopback mixes, or used as alternate mixes for the headphones. Click a Mix's tab to access the channels for that mix. Then, just bring up the faders for any inputs (3) you wish to hear on that output.
2. The *Reverb* tab lets you apply the OctaLite's built-in reverb to any input signal: just bring up the fader for that input. To hear the reverb mix on an output, switch to the mix tab for that output and bring up the

Reverb channel fader. Use the fader to control how much of the reverb mix you wish to hear.

3. Available inputs for each mix bus include:
 - The OctaLite's analog and optical inputs
 - Any computer audio being sent to that output pair (available as a channel)
 - The reverb mix (2)
4. This is the *Master Fader* for the current mix, which in this example is the *Line Out L-R* mix. It controls the

overall volume for the mix. It is always visible and pinned to the right side of the window, although you can collapse the strip using the widget at the bottom of the strip. Use the *Clear Solo* button to clear all solos in the mix. When one or more channels are soloed in a mix, the word "Solo" appears next to the mix name in the sidebar on the left (1) to alert you that channels are soloed in the mix (and therefore other channels are muted).

MIX INPUTS



Each mix has the inputs shown here, with a few variations depending on the mix. To hear the input in the mix, just bring up its fader.

1. Each mix can include the signal from the OctaLite's six rear-panel *mic/line/inst* inputs. All mixes include these channels.
2. These are the two *mic/line/inst* inputs (7-8) on the front panel of the OctaLite. All mixes include these channels.
3. These inputs represent the OctaLite's *optical* input channels. If *ADAT* is chosen as the optical format (item #4 on page 31), then you'll see eight

channels of ADAT input at 1x sample rates (or four channels at 2x rates). If *TOSLink* is chosen as the optical format, you'll see a single stereo channel strip instead of the eight shown here. All mixes include the optical channels.

4. On the *Main 1-2* channel (Computer USB), you'll hear the audio you're playing back from your host audio software, assigned to the OctaLite's Line Out L-R. This channel lets you include computer audio in your mix. This channel is available in all mixes.

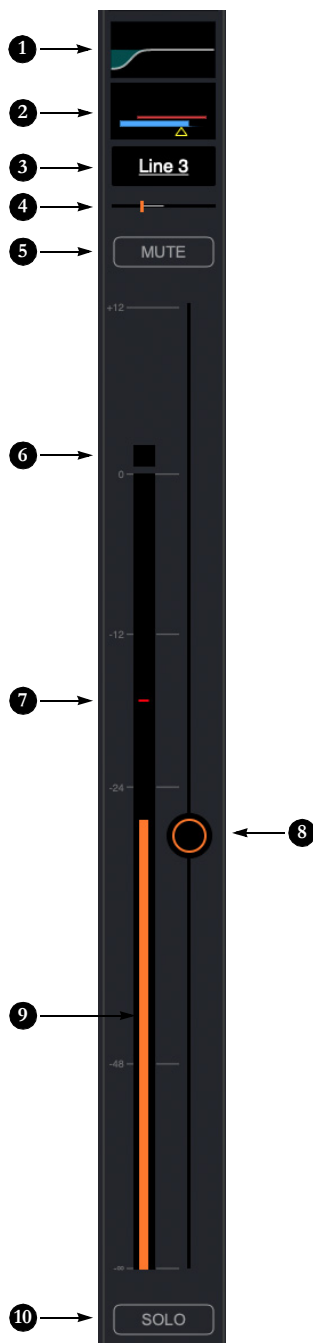
NOTE: if you want the headphone output to mirror the line outs, go to

the *Phones Mix*, bring up the *Main 1-2* fader, and mute the *Phones* channel.

5. This *Computer USB* channel changes, depending on which mix you are viewing. It represents any computer audio being sent to the mix's output pair from host audio software (over USB). In this example, we are viewing the *Virtual 1-2 mix*, so this channel represents signal being sent to virtual outputs 1-2 from host audio software over USB. By default, this fader is set to full scale so that you'll always hear any computer audio being sent to the mix's output.

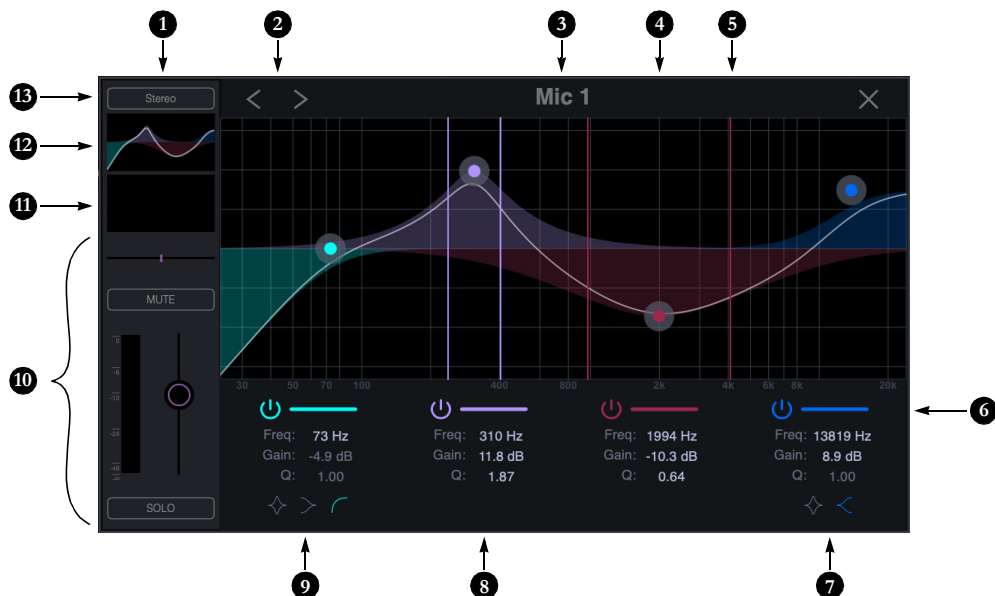
6. This channel is the *Reverb mix* (item #2 on page 33). When you bring up this fader, you'll hear the entire reverb mix. To adjust the amount of reverb on individual channels, go to the *Reverb mix* tab and make the individual adjustments there. All mixes include the *Reverb* channel, except the *Reverb mix* itself.
7. This is the master fader for the mix (item #4 on page 33).
8. The *Mix USB Channels* menu (item #6 on page 29) lets you add additional USB channels from the computer. See "Mix USB Channels" on page 40.

INPUT CHANNEL STRIP



1. Click this EQ thumbnail to access the parametric EQ and other channel settings. EQ is only available on analog inputs and mix bus master faders. See "Four-band parametric EQ" on page 37.
2. Click this thumbnail to access the *Gate*, *Compressor* and other channel settings. Compression is only available on analog inputs. See "Compressor" on page 38. The Gate is only available on mic/line/inst inputs. See "Gate" on page 38.
3. Click the channel name to access the channel settings, where you can rename the channel and make other channel settings.
4. Panning for mono inputs (such as a mic input). Stereo inputs do not have a pan control.
5. Channel mute.
6. Clip indicator.
7. The peak/hold indicator shows where the signal has recently peaked.
8. Use the channel fader to control the input level. Double-click to return to $-\infty$. If the fader is already at $-\infty$, double-clicking moves to unity gain (0 dB).
9. By default, the level meter displays the signal level after the fader (post-fader), but they can be changed to pre-fader, if desired. See "Mix input meters" on page 40.
10. Channel solo. When you solo a channel, it mutes all other inputs on the bus (as is customary in a traditional "solo-in-place" model on a mixing console. In other words, there is no separate solo bus.)

CHANNEL SETTINGS



Click any of the items at the top of a channel strip (items #1, 2 or 3 on page 35) to access the Channel Settings shown here.

1. The *Channel Settings Sidebar* displays basic settings for the channel.

2. The *Next/Previous Channel* buttons display the settings for adjacent channels in the mix.

3. Click the *Channel Name* to rename the channel.

4. Drag the *Frequency/Gain* handle for an EQ band to change the frequency and/or gain for the band.

5. Drag the *Q (bandwidth)* handles for an EQ band to change them. The handles are color-coded to match the color of their respective EQ band.

6. *Enables* (or disables) the EQ band.

7. Click the *Notch/Shelf* switch to toggle the filter type.

8. Click filter settings to edit them directly. See “Four-band parametric EQ” on page 37.

9. Click the *Notch/Shelf/Low-cut* switch to change the filter type.

10. *Basic channel settings* (gain, pan, solo, mute and level meter) are shown here for convenience.

11. Click to access the *Compressor* and *Gate*.

12. Click to access the *Parametric EQ* settings.

13. The *Stereo Link* button links or unlinks the channel to an adjacent channel for stereo pairing.

14. The Gate processor is available on Mic inputs 1 and 2 only. See “Gate” on page 38.

15. The Compressor is available on all analog inputs. See “Compressor” on page 38.



MIXER EFFECTS

The EQ, compressor, gate and reverb processor in the OctaLite are available when operating the unit at 1x and 2x sample rates. At 4x sample rates (176.4 or 192 kHz), the following effects are disabled:

- All input effects
- Reverb

However, all mix bus EQ's (including Phones) remain enabled during 4x operation.

DSP-driven mixing and effects

The OctaLite effects are driven by a powerful DSP that delivers 32-bit precision and plenty of bandwidth for no-latency processing. Effects can be applied when operating as an audio interface or as a stand-alone mixer without a computer.

Advantages over host-based mixing and processing

The hardware mixer in the OctaLite provides several advantages over mixing and processing in your host audio software:

- No buffer latency. The DSP-mixer provides the same near-zero latency throughput performance as a conventional digital mixer. Effects processing doesn't impact your computer's CPU.
- DSP mixing and routing can be maintained independently of individual software applications or projects.
- DSP-driven mixing can function without the computer, allowing the OctaLite to operate as a portable, stand-alone mixer with effects.

Accessing mixer effects

To access the EQ, compressor or gate for a channel, click its thumbnail at the top of the channel strip (item #1, 2 or 3 on page 35).

FOUR-BAND PARAMETRIC EQ

Analog input channels (items 1 and 2 on page 34) provide four bands of center-frequency parametric EQ filtering as shown on page 36. The High and Low bands include shelf filtering options. Master faders provide three bands of parametric EQ.

Enabling EQ bands

Each band has an *enable/disable* button (item #6 on page 36), allowing you to enable as few or as many bands as needed.

EQ filter controls

The EQ filters have three controls (item #8 on page 36):

Control	unit	range
Frequency	Hertz	20 to 20,000
Gain	dB	-20.00 to +20.00
Bandwidth	Octaves	0.01 to 3.00

Click a value to edit it numerically. Or drag its corresponding control handle in the graph above. Controls for each EQ band are color-coded.

EQ filter characteristics

EQ is one of the most widely used processing tools and can be applied to many different situations, from minor corrective tasks to creative tone sculpting. The four-band EQ has been designed to be flexible enough to cover a broad range of applications. By adjusting Gain and Bandwidth together, you can emulate the smooth and musical character of classic analog EQ circuits.

Filter types

The Low and High bands offer a shelf option that is similar to those found in most conventional parametric EQs. The Low band also provides an additional low-cut filter option to filter out low frequencies below the frequency setting.

GATE

Mic/line/inst channels 1-2 (item 1 on page 34) provide a *Gate* (Figure 6-1).

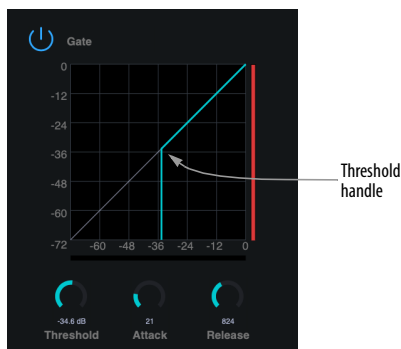


Figure 6-1: The Gate.

To access the gate, click the compressor/gate thumbnail (item #2 on page 35).

The gate silences the signal when the input signal's level drops below the *Threshold*.

The rate at which the gate responds, (opens to let signal through) is determined by the *Attack* parameter. With a short Attack time, the gate will open as soon as the signal crosses the Threshold; with longer Attack times, the gate will gradually open, much like a fade-in.

When the input level falls back below the Threshold, the time it takes for the gate to close (how quickly the signal is attenuated), is determined by the *Release* parameter. Short Release times will close the gate quickly, abruptly attenuating your signal, versus longer release times, which will gradually attenuate your signal, like a natural fade-out.

COMPRESSOR

All analog input channels (items 1 and 2 on page 34) provide a *Compressor* (Figure 6-2).

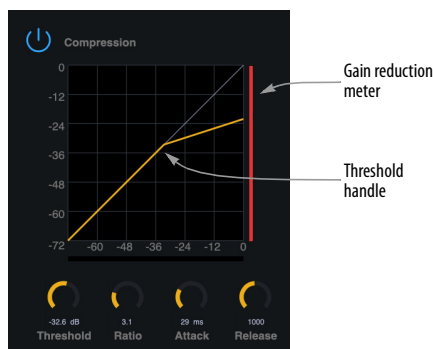


Figure 6-2: The Compressor.

To access the compressor, click the compressor/gate thumbnail (item #2 on page 35).

The *Compressor* lowers the level of the input when amplitude of the signal is above the Threshold. The amount of attenuation is determined by the *Ratio* and the input level. For example, if the input is 6 dB above the *Threshold* and the Ratio is 3:1, the compressor will attenuate the signal to 2 dB above the Threshold. When the input level goes above the threshold, the attenuation is added gradually to reduce distortion. The rate at which the attenuation is added is determined by the *Attack* parameter. Likewise, when the input level falls below the Threshold, the attenuation is removed gradually. The rate at which the attenuation is removed is determined by the *Release* parameter. Long Release times may cause the audio to drop out briefly when a soft passage follows a loud passage. Short Release times may cause the attenuation to “pump”, a term used to describe the sound of the compressor when the average input level quickly fluctuates above and below the Threshold. These issues can be addressed by adjusting the parameters. The *Gain reduction meter* (Figure 6-2) displays the attenuation applied by the compressor.

REVERB

To access the reverb settings: go to the Reverb bus tab (item #2 on page 33) and then click the thumbnail at the top of the reverb bus fader, as shown below.

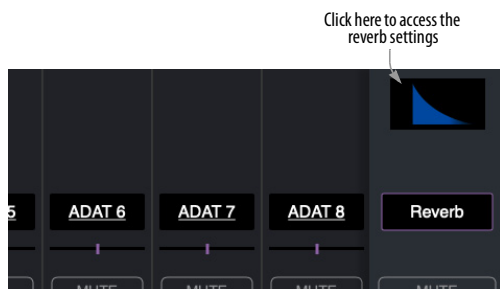


Figure 6-3: Accessing the Reverb processor.

Reverb settings

The Reverb processor (Figure 6-4) provides *Small*, *Medium* and *Large* room sizes, along with *Pre-Delay* (see below), *Damping*, *Decay* (length) and *Width* (stereo image) controls, which you can adjust with the handles on the graph or the settings below.

Predelay

Predelay is the amount of time before the acoustic energy from the source returns to the listener, after reflecting off the surfaces of the listening space. The very first reflections helps you perceive information about the listening space, (size, distance, surface type, etc.) In large rooms, it takes a while (on the order of milliseconds) before the first reflections return to the listener. Predelay is useful for adding clarity, as it delays these reflections, before the onset of full reverberation. For example, with pre-delay added to vocals, the reflections won't start until after the initial sound of a word has been sung.

Routing inputs and groups to the reverb processor

The reverb processor is a single, independent unit that provides stereo reverb. Use the channels in the Reverb mix tab (item #2 on page 33) to route input signals to it. All incoming signals to the reverb processor are merged and processed together. The resulting stereo output from the reverb can then be added into any other mix bus with the Reverb channel strip (item #6 on page 34).



Figure 6-4: The reverb processor.

MIX INPUT METERS

The *Mix input Meters* menu (item #5 on page 29) offers two settings: *Pre-fader* or *Post-fader*. This setting lets you choose whether the input meters in CueMix 5 display levels before or after the signal passes through the fader's gain stage.

Post-fader metering is calculated as the Post-FX send level, plus the fader value. Therefore, if the pre-fader signal goes above zero dBFS, the resulting post-fader meter value will not include the magnitude of the signal above zero dBFS.

MIX USB CHANNELS

The *Mix USB Channels* menu (item #6 on page 29) offers two settings: *Default* or *Additional*.

Default

Each mix (the Line Out L-R mix, Phones mix, etc.) includes USB channels coming from the host computer (from your DAW or other audio software) so that you can mix computer output with the OctaLite's physical inputs. With the *Default* setting chosen, each mix includes the Main 1-2 USB channels, plus the USB channels going to the mix itself (such as the Virtual 5-6 for the Virtual 5-6 mix). See items #4 and 5 on page 34.

Additional

The *Mix USB Channels* setting lets you add *Additional* USB channels to each mix, which appear as additional channel strips in each mix tab, as shown by item #8 on page 34. This allows you to include multi-channel output from your host software as part of the mix, with independent mix control for each USB channel pair (volume, pan, effects, etc.)

TALKBACK

Talkback allows an engineer in the control room to temporarily dim or mute all audio and talk to musicians during a recording session. Talkback requires a microphone located in the control room, near the engineer.

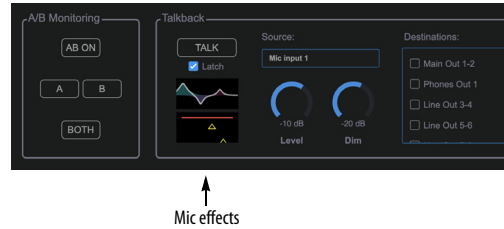


Figure 6-5: talkback settings can be found in the CueMix 5 Home tab.

Talkback setup

To set up talkback:

- 1 Plug in a microphone to any OctaLite mic input. Enable 48V phantom power, if it is a condenser mic.
- 2 In CueMix 5's Home tab, choose the mic input from the Source menu.
- 3 In the Destinations menu, check the outputs you wish to send the talkback signal to.
- 4 Adjust the Talkback settings as explained below.

Talkback settings

Talkback has the following settings (Figure 6-5).

Talk

Press and hold the *Talk* button (Figure 6-5) to engage the talkback mic.

Latch

When *Latch* is engaged (Figure 6-5), the Talk button remains engaged when you click it, until you click it again to disengage, so you don't have to hold it down while speaking.

Level

The Talkback *Level* setting controls the volume of the talkback signal, as an additional gain stage after the talkback mic preamp gain and pad.

Dim

If you are feeding a monitor mix to the musicians on the same Aux bus as your talkback mic, use the *Dim* knob (Figure 6-5) to control how much the monitor mix will be attenuated when talkback is engaged. This gives you control over the relative volume between the talkback mic signal and all other audio on the mix bus. To control overall volume of everything, use the bus fader.

Mic effects

Click the *Mic effects* thumbnails (Figure 6-5) for quick access to the EQ, compressor and gate effects for the mic input you are using for talkback. These are the same settings found in the mix tabs for that mic input (items #1 and 2 on page 35).

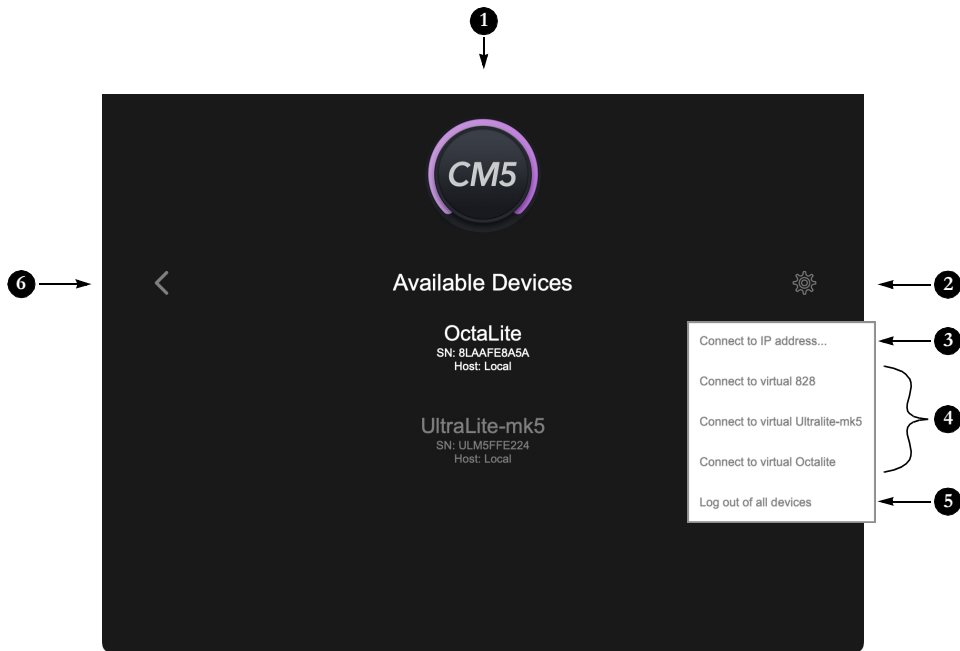
SAVING AND RECALLING DEVICE PRESETS

Use the *Save* and *Load* buttons in the CueMix 5 Device tab (item #14 on page 30) to save and recall OctaLite device presets to your computer hard drive. A preset saves the entire state of the OctaLite interface, including all device settings, mixes and effects settings.

THE CUEMIX 5 IOS APP

CueMix 5 is also available as an app for iOS and allows you to control the OctaLite from your iOS device. Simply download it from the App Store. Also see “iOS setup (USB-C)” on page 17 and “iOS setup (Lightning)” on page 18.

DISCOVERY TAB



Click *Discovery* in the CueMix 5 side bar (item #14 on page 28) to access the Discovery tab, which allows you to access any available MOTU Gen 5 devices (such as the OctaLite and 828) connected to your host computer, or any MOTU Gen 5 devices on your local area network (LAN) via Ethernet or Wi-Fi.

1. The *Available Devices* list displays Any MOTU devices that are connected to the computer you are running CueMix 5 on, or any devices connected to a computer on the same Ethernet/Wi-Fi network. Click any device in the list to view its settings in CueMix 5. CueMix can only access one device at a time, so use this tab to switch between multiple devices, if you have them. You can freely switch devices at any time. Note that if any of the devices are password-protected (see

below), you do not need to log out to switch to another device. You can stay logged in while switching to and from a password-protected device.

IMPORTANT NOTE: if you are using your MOTU Gen 5 device with a computer that is on a network, security can be an issue. You can assign a password to your device to prevent unauthorized access to its settings. You can also control whether it is visible on the network, and you can give it a name for easy identification. See items 7, 8 and 9 on page 29.

ALSO NOTE: to access a MOTU device connected to another computer on the network, CueMix 5 must be installed on the computer.

2. This menu (the gear icon) provides access to the menu items shown below.
3. *Connect to IP address* lets you connect directly to a MOTU device by entering its IP address on the network. You can then view all of its settings in the other CueMix 5 tabs.
4. *Connect to virtual 828* (or *UltraLite-mk5* or *OctaLite*) lets you work with CueMix 5 off line, when no device is accessible or available (i.e. there is no OctaLite present in the list of available devices). You can look at all CueMix 5 settings and create and save presets off line. You can then load presets into the hardware, once it is back on line.
5. If you have password-protected multiple MOTU Gen 5 devices for security purposes while operating them on a network, choose *Log out of all devices* to prevent unauthorized access from the computer on which you were logged in. To log out of an individual device, switch to that device and use *Log out of Device* (item #13 on page 28).
6. Click this *Back button* to return to the other CueMix 5 tabs for the currently selected device.

CHAPTER 7 Working with Host Audio Software

The OctaLite provides multi-channel audio input and output for Core Audio compatible audio applications on the Mac and ASIO or Wave compatible applications on Windows, including MOTU’s Digital Performer and Performer Lite, Apple’s Logic Pro and GarageBand, and other third-party software applications such as Ableton Live, Avid Pro Tools, Cockos Reaper, Propellerhead Reason, Steinberg Cubase and Nuendo, PreSonus Studio One, Bitwig, and others.

Performer Lite is available as a free download for OctaLite owners from their motu.com account page. For complete information about all of Performer Lite’s powerful workstation features, refer to the *Performer Lite User Guide.pdf* found in the Help menu of the Performer Lite application.

Digital Performer, MOTU’s state-of-the-art digital audio workstation software, is available separately; for details about upgrading from Performer Lite to Digital Performer, talk to your authorized MOTU dealer or visit motu.com.

Preparation	43
Run the CueMix 5 app	43
Choose the OctaLite	43
Reducing monitoring latency	44
Loopback	46

PREPARATION

Install your host audio software first if you haven’t already done so, and complete these chapters before proceeding:

- chapter 3, “Software Installation” (page 15)
- chapter 4, “Hardware Installation” (page 17)

RUN THE CUEMIX 5 APP

Before you run your host audio software, launch CueMix 5 to configure your MOTU hardware.

Sample Rate

Choose the desired sample rate for the OctaLite (item #2 in the Devices tab on page 29) and your host audio software. Make sure the sample rates for the hardware and software match. Newly recorded audio will have this sample rate.

 Optical channels are disabled when the interface is operating at a 176.4 or 192 kHz.

Clock Mode

The *Clock Source* setting (item #3 in the Devices tab on page 29) is important because it determines the master digital audio clock for your system.

If you do not have any digital audio connections to your MOTU device (you are using the analog inputs and outputs only), and you will not be resolving your host software to optical or another external clock source, choose *Internal*.

If you have devices connected to the optical ports, see “Choosing a clock source for optical connections” on page 21.

CHOOSE THE OCTALITE

Once you’ve made the preparations described so far in this chapter, you’re ready to run your host audio software and choose the OctaLite as your audio interface (“soundcard”).

For macOS audio software

For audio software running under macOS, go to the menu item or preference where you choose the audio device (Core Audio driver) you wish to use, and then select the OctaLite by name.

For Windows audio software

For audio software running under Windows, go to the menu item or preference where you choose the ASIO driver you wish to use, and then choose *MOTU Gen5*. If your host audio software doesn't support ASIO, choose the OctaLite Wave driver instead.

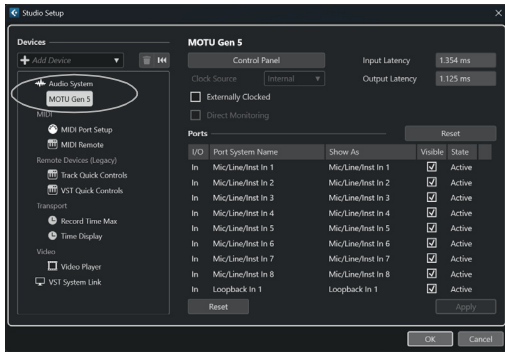


Figure 7-1: Choosing the MOTU Pro Audio ASIO driver in Cubase.

Where to go in popular audio hosts

Here is the location for this setting in various popular audio software host applications:

Host software	Location for choosing the OctaLite
Digital Performer and Performer Lite	Setup menu > Configure Audio System > Configure Hardware Driver
Pro Tools	Setup menu > Playback Engine or Current Engine
Logic Pro	Preferences > Audio tab > Devices tab > Core Audio tab
Garage Band	Garage Band menu > Preferences > Audio/MIDI > Audio Output/Input menus
Cubase and Nuendo	Device Setup > Devices list > VST Audio System menu
Live	Preferences > Audio tab
Reason	Preferences > Audio preferences
Reaper	Preferences > Audio prefs > Devices
Studio One Pro	Preferences > Audio Setup

Other audio software

Consult your software's manual for further information.

REDUCING MONITORING LATENCY

Monitoring latency is a slight delay caused by running an input signal through your host audio software and back out. For example, you might hear it when you drive a live guitar input signal through an amp modeling plug-in running in your audio sequencer.

This delay is caused by the amount of time it takes for audio to make the entire round trip through your computer, from when it first enters an input on the OctaLite, passes through the interface hardware into the computer, through your host audio software, and then back out to an output.

Monitoring through the OctaLite

If you don't need to process a live input with plug-ins, the easiest way to avoid monitoring latency is to disable your DAW's live monitoring feature and instead use the digital mixer in the OctaLite to route the input directly to your outputs. For details, see "Mix tabs" on page 33. The mixer in the OctaLite even provides zero latency effects processing (EQ, compression and reverb), which can be applied to the signal.

Direct hardware playthrough / Direct ASIO monitoring

When managing your live monitor mix through the OctaLite mixer, remember to disable your DAW's live monitoring features, so that you won't hear record-enabled tracks in your DAW. Also note that the OctaLite does not support *Direct Hardware Playthrough* in Digital Performer, or the *Direct ASIO Monitoring* feature (or similar) offered and other DAWs, which lets you control no-latency hardware monitoring from within the host application. Instead, you can use the CueMix 5 app mixer ("Mix tabs" on page 33) to set up these monitor mixes manually.

If you don't require any effects processing on the input signal (no reverb or compression, for example), all this takes is one click on a fader to route the input being recorded to the output you are using for monitoring.

If you are recording a mono input that you'd like to monitor in stereo, or if you need to apply effects to the monitored signal, you can use the OctaLite mixer for that, too. Use the mix tabs and reverb mix (page 33) to apply effects as desired, and perhaps include other channels to the mix.

Monitoring through your host audio software

If you *do* need to process a live input with host software plug-ins, or if you are playing virtual instruments live through your MOTU audio hardware, you can significantly reduce latency by adjusting the audio buffer setting in your host audio software, as explained in the next section.

☞ It is important to note that monitoring delay has no effect on the recording, or playback, of audio data from disk. The actual recording and playback is extremely precise, it is only the monitoring of your live input signal which may be delayed.

Adjusting your host software audio buffer

Buffers are small bundles of audio data. The OctaLite “speaks” to your computer in buffers, rather than one sample at a time. The size of these buffers determine how much delay you hear when monitoring live inputs through your audio software: larger buffers produce more delay; smaller buffers produce less.

Adjusting buffer size on macOS

Under macOS, audio I/O buffer size is handled by the host audio application (not by the OctaLite Core Audio driver). Most audio software applications provide an adjustable audio buffer setting that lets you control the amount of delay

you'll hear when monitoring live inputs or processing them with software plug-ins. Here are a few examples.

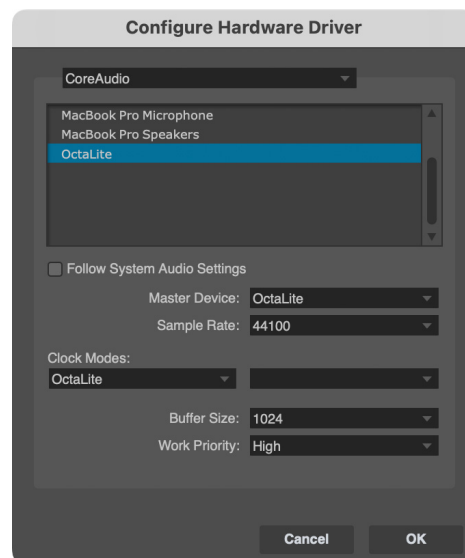


Figure 7-2: In Digital Performer and Performer Lite, choose Setup menu > Configure Audio System > Configure Hardware Driver to open the dialog shown above and access the Buffer Size setting.

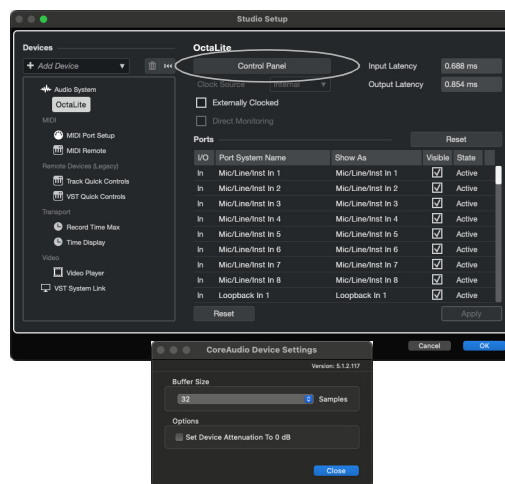


Figure 7-3: In Cubase or Nuendo, choose Devices menu > Device Setup. Select your interface (OctaLite), then click the Control Panel button to access the window above and the Buffer Size setting.

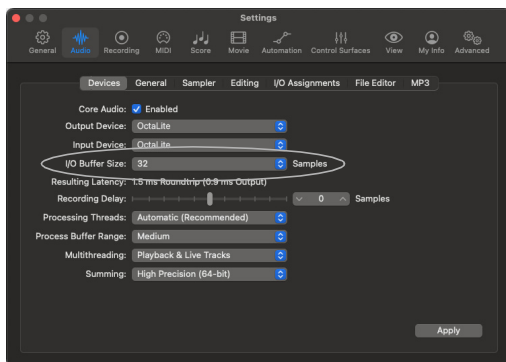


Figure 7-4: In Logic Pro, go to the Audio Driver preferences to access the Buffer Size option shown above.

Adjusting buffer size on Windows

On Windows, the buffer size is adjusted in the CueMix 5 app Device tab (items #10 and 11 in the Devices tab on page 29).

Lower latency versus higher CPU overhead

Buffer size has a large impact on the following:

- Monitoring latency
- The load on your computer's CPU
- Responsiveness of transport controls and effect knobs in Performer Lite, Digital Performer or other audio software.
- Real-time virtual instrument latency.

The buffer setting presents you with a trade-off between the processing power of your computer and the delay of live audio as it is being patched through your software. If you reduce the size, you reduce monitoring latency, but significantly increase the overall processing load on your computer, leaving less CPU bandwidth for things like real-time effects processing. On the other hand, if you increase the buffer size, you reduce the load on your computer, freeing up bandwidth for effects, mixing and other real-time operations.

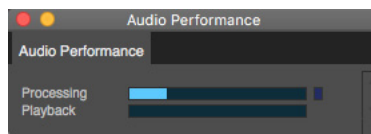


Figure 7-5: When adjusting the buffer size to reduce monitoring latency, watch the 'processor' meter in Digital Performer's Performance Monitor. If you hear distortion, or if the Performance meter is peaking, try raising the buffer size.

If you are at a point in your recording project where you are not currently working with live, patched-thru material (e.g. you're not recording vocals), or if you have a way of externally processing inputs, choose a higher buffer size. Depending on your computer's CPU speed, you might find that settings in the middle work best (256 to 1024).

Transport responsiveness

Buffer size also impacts how quickly your audio software will respond when you begin playback, although not by amounts that are very noticeable. Lowering the buffer size will make your software respond faster; raising the buffer size will make it a little bit slower.

Effects processing and automated mixing

Reducing latency with the buffer size setting has another benefit: it lets you route live inputs through the real-time effects processing and mix automation of your audio software.

LOOPBACK

Use the *Loopback 1-2* input channels provided by the OctaLite audio driver to send USB audio output from your computer – or any OctaLite mix – back to the computer.

Choose the desired source from the *Loopback* menu (item #8 on page 32).

The loopback channels return the chosen signal back to the computer so that you can capture the signal in your host software, stream it to the web or broadcast it with podcasting software.

Loopback location

The *Loopback Location* setting (item #4 on page 29) determines the placement of the loopback channels within the list of input channels available in your host audio software. There are two choices.

The default location is *USB In 9-10*, which is just after the eight analog input channels. Alternately, you could choose *USB In 1-2* (the first two channels in the list).

If your host audio software presents all OctaLite input channels in its UI (wherever input channels are displayed), then this setting is mostly comes down to personal preference. However, some host audio applications don't provide a way to choose from among several input channel pairs, or they can only present a few choices for input channels. This can especially be true for video-conferencing or podcasting-related applications, for which the loopback feature is crucial. In cases like these, choosing the *USB In 1-2* option guarantees that the host software has access to the loopback

channels because they are the first channels in the list, which may be the only two channels that the software can access.

Mixing loopback with live inputs and disk tracks

If you need to mix the loopback channels with live inputs, do the following:

- 1 Choose a mix from the Loopback menu.
- 2 Go to the mix tab for that mix (item #1 on page 33) and bring up the fader(s) for the *computer USB* channels you want to hear.
- 3 Bring up the faders for any live inputs you want to add to the mix. When you do so, their signal is mixed with the computer USB channels.

☞ Remember, be careful! When monitoring loopback channels and live inputs, your host software can cause loud feedback loops. Be sure to disable the monitoring of loopback tracks to avoid feedback.

Part 3

Appendices

APPENDIX A **Troubleshooting**

My MOTU interface isn't showing up in Audio MIDI Setup on my Mac.

Due to the updated architecture of the new macOS High Sierra (10.13 and above), the system extensions for all newly-installed third-party software will automatically be blocked from running. If your MOTU interface is not showing up in Audio MIDI Setup, CueMix 5 or your DAW, you might need to enable the driver in your System Preferences. To do so, first download and install the very latest installer for your MOTU interface. After restarting, open System Preferences. Select Security & Privacy. In the General section, click the Allow button. The Allow button will disappear 30 minutes after installation. To display the Allow button, run the installer for the MOTU driver again.

I have absolutely no audio input or output happening to or from my interface. Why?

Make sure that the unit has a stable sample rate (the word *LOCK* in the front panel displays will flash if the clock hasn't settled yet). Try setting the unit's clock source to *Internal* if you can't sync to any external clock sources. Check that audio is working with Internal sync, and if so, then work on establishing a stable external clock.

I can't hear computer audio output through my MOTU interface.

In the Sound panel of System Preferences, the OctaLite should be selected as the output device.

How do I monitor live inputs?

Please refer to the documentation for the audio application that you are using. If your application does not support input monitoring, you will need to use the mixer in the OctaLite. Please see "Monitoring through the OctaLite" on page 44.

How do I control monitoring latency?

See "Reducing monitoring latency" on page 44.

How do I factory reset my device?

Push the SELECT knob to enter the main menu. Navigate to *RESET* and push the SELECT knob twice to reset.

I hear clicks and pops under optical sync.

Many problems result from incorrect sync settings. See "Choosing a clock source for optical connections" on page 21. Whenever there is any unexpected noise or distortion, suspect digital clocking issues.

Clicks and pops due to hard drive problems...

If you have checked your clock settings and you are still getting clicks and pops in your audio, you may have a drive related problem. Set your Clock Source to *Internal* and try recording just using the analog inputs and outputs on the OctaLite. If you encounter the same artifacts you may want try using another drive in your computer. Clicks and pops can also occur when the drive is severely fragmented or there are other drive-related issues.

Connecting or powering gear during operation...

It is not recommended that you connect/disconnect, or power cycle connected devices while recording or playing back audio. Doing so may cause a brief glitch in the audio.

CUSTOMER SUPPORT

We are happy to provide complimentary customer support to our registered users. If you haven't already done so, please take a moment to register online at MOTU.com, or fill out and mail the included registration card. Doing so entitles you to technical support and notices about new products and software updates.

TECHNICAL SUPPORT

If you are unable, with your dealer's help, to solve problems you encounter with your MOTU device, you may contact our technical support department in one of the following ways:

- **Live Chat:** You can connect directly with a technician Monday through Friday between 10 AM and 5 PM Eastern Time.
- **Schedule a call:** You can schedule a callback time to speak with a technician by phone Monday through Friday between 1 PM - 5 PM Eastern time.
- **Support ticket:** You can submit an online support ticket at any time, 24 hours a day, 7 days a week. A technician will get back to you in 1-2 business days.

Please provide the following information to help us solve your problem as quickly as possible:

- The serial number of your MOTU device. This is printed on a label placed on the bottom of the unit. It is also displayed in the display menu on the

front panel of the unit and at the bottom of the Device tab in the CueMix 5 app (item #15 on page 30). You must be able to supply this number to receive technical support.

- A brief explanation of the problem, including the exact sequence of actions which cause it, and the contents of any error messages which appear on the screen.
- The pages in the manual that refer to the features or operation of your MOTU Device or Performer Lite with which you are having trouble.
- The version of your computer's operating system.

We're not able to solve every problem immediately, but a quick call to us may yield a suggestion for a problem which you might otherwise spend hours trying to track down.

If you have features or ideas you would like to see implemented, we'd like to hear from you. Please use our online suggestion box at www.motu.com/suggestions.

APPENDIX B

Audio Specifications

MIC in		
Connector Type	Combo-style, XLR / TRS	Pin 2 hot, tip hot
XLR		
Impedance load	2.8 k ohm	
Pad	-20 dB, Switchable per channel	
Phantom power	+48V, switchable per channel	DIN 45596 / IEC 61938-P48
EIN	-129 dBu	A-weighted, 20-20k, 150 ohm
Dynamic Range	115 dB	A-weighted
THD+N	-113 dB	Unweighted
Frequency Response	+0.05 -0.2 dB, 26 Hz/20 kHz	Ref. 1 kHz
Max Level In with Pad	+20 dBu	
Max Level In without Pad	0 dBu	
Gain range	0 to +74 dB in 1 dB steps	
TRS		
Description	Balanced or single ended	Suitable for line or instrument (guitar)
Impedance Load	1 meg ohm 2 meg ohm	unbalanced balanced
Pad	None	
Phantom power	None	
Dynamic Range	115 dB	A-weighted
THD+N	-109 dB	-2 dBFS, Unweighted
Frequency Response	+0 -0.1 dB, 20 Hz/20 kHz	Ref. 1 kHz
Max Level	+20 dBu	Balanced; +18 dBu unbalanced
Gain range	0 to +74 dB in 1 dB steps	

Line Out

Connector Type	1/4" Female, TRS	Balanced, tip hot
Output Impedance	220 ohm	Per leg
Dynamic Range	125 dB	A-weighted
THD+N	-114 dB	-2 dBFS, Unweighted, 1 kHz
Frequency Response	+0, -0.15 dB, 20 Hz/20 kHz	Ref. 1 kHz
Max Level Out	+21 dBu	
Trim Range	0 to -∞ (-127)	Digitally controlled in 1 dB steps

Phones

Connector Type	1/4" Female, TRS Stereo	Tip Left, Ring Right
Dynamic Range	118 dB	A-Weighted
THD+N	-110 dB	Unweighted, -1 dBFS, 1 kHz
Frequency Response	±0.05 dB, 22 Hz/20 kHz	Ref. 1 kHz
Trim Range	0 to -99 dB, plus mute	0 to -99 dB in 1 dB steps
Max output	14.4 dBu	Unloaded

APPENDIX C Half-rack Mounting Kit

The *Half-Rack Mounting Kit* (sold separately) lets you mount the OctaLite in a standard 19-inch equipment rack. Visit the web store at motu.com to purchase this kit or contact your authorized MOTU reseller.

PACKING LIST

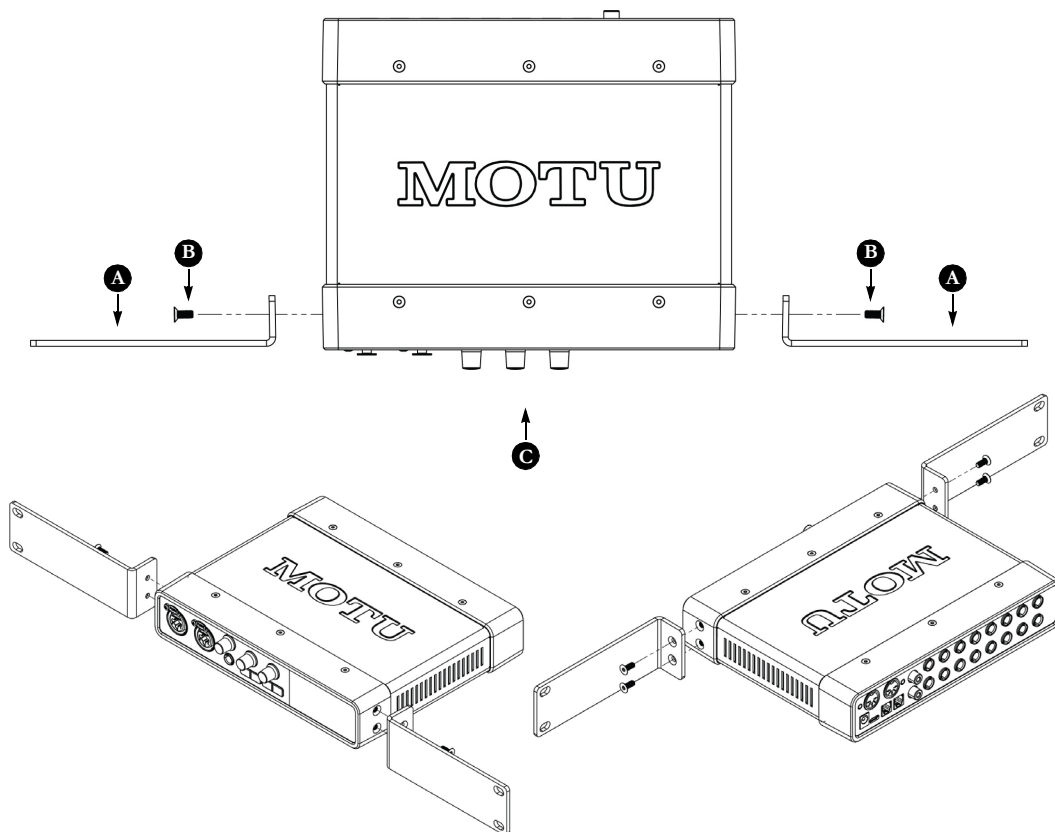
- (2) L-shaped half-rack mounting brackets (A)
- (1) 2.5 mm L-shaped hex wrench (not pictured)
- (1) Instruction sheet (this sheet)

INSTRUCTIONS

Using the included 2.5 mm hex wrench:

- 1** Remove the hex screws (B) on both side panels of the half-rack unit (C).
- 2** Use the removed screws (B) to attach the half-rack mounting brackets (A) as shown.
- 3** Be sure to tighten all screws securely for best results.

Questions? Contact MOTU technical support at motu.com/support.



APPENDIX D Half-rack Coupler Kit

The *Half-Rack Coupler Kit* (sold separately) lets you mount the OctaLite side by side with another OctaLite (or similar unit) in a standard 19-inch equipment rack. Visit the web store at motu.com to purchase this kit or contact your authorized MOTU reseller.

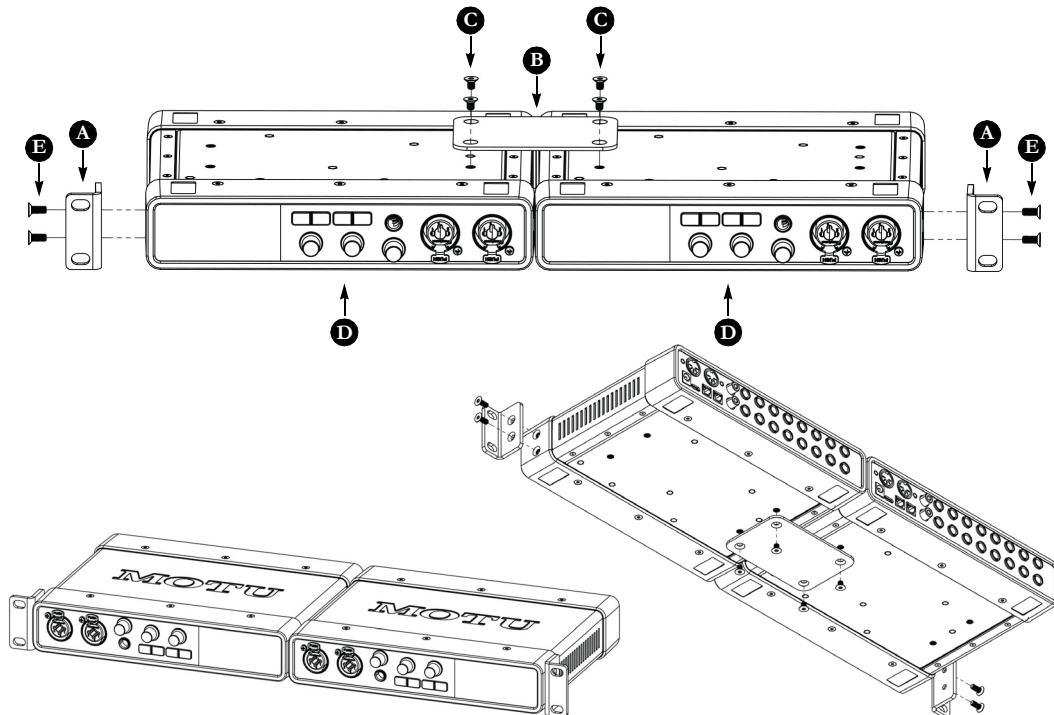
PACKING LIST

- (2) L-shaped rack mounting brackets (A)
- (1) Rectangular joiner bracket (B)
- (4) Hex screws for joiner bracket (C)
- (1) 2.5 mm L-shaped hex wrench (not pictured)
- (1) Instruction sheet (this sheet)

Questions? Contact MOTU technical support at motu.com/support.

INSTRUCTIONS

- 1** On a smooth flat surface, place two half-rack units (D) upside down and side by side. Make sure their front panels are facing in the same direction.
- 2** Using the hex wrench and the four (4) hex screws included with this kit (C), attach the rectangular joiner bracket (B) as shown.
- 3** Using the hex wrench, remove the hex screws (E) on the outer side panels of each half-rack unit (D).
- 4** Use the removed screws (E) to attach the half-rack mounting brackets (A) as shown.
- 5** Be sure to tighten all screws securely for best results.



+4dB analog input 19

-10dB analog input 19

19-inch rack installation 55, 57

-20 dB pad

control from computer 28, 31

control from front panel 9

24-bit

optical 10, 12, 20

2x SMUX mode 20

48V phantom power 31

A

Ableton Live 43, 44

ADAT optical 10, 12, 20

connecting 20

input format 31

monitoring live 34

output format 32

output source 21, 32

Analog inputs

making connections to 19

monitoring live 34

trimming 19

Analog outputs

making connections to 19

monitor mixes for 33

trimming 19

Apple

GarageBand 44

Logic Pro 44

ASIO

driver 44

monitoring 44

Attack

Compressor 38

Gate 38

Auto Wake 26

Available Devices 42

Avid Pro Tools 44

B

Back panel

Main Out 1-2 10

Balanced analog 19

Buffer Size 16, 29

C

Class compliance 15

Clear Solo 33

Clock section (front panel display) 25

Clock Source 29

Cockos Reaper 44

Compressor effect 38

Computer USB channels (CueMix 5) 34

Condenser mic input 19

Connect to IP address 42

Connect to virtual 828 42

Core Audio driver 43

Cubase 43, 44

clock source 43

sample rate 43

CueMix 5 16, 27-41

app 41

channel settings 36

channel strips 35

Device tab 29

Home tab 28

Input tab 31

iOS app 41

mic input settings 31

mix inputs 34

Mix tabs 33

Output tab 32

saving/recalling presets 30, 41

sidebar 28

Customer support 51

D

Device Name 29

Device Password 29

Device tab 29

Clock source 29

device presets 30, 41

Enable windows audio streams 30

Firmware version 30

Host buffer size 29

Loopback 29

Loopback location 47

Mix Input Meters

pre/post fader 29, 40

Mix USB Channels 29, 34, 40

Safety Offsets 29

Sample rate 29

Serial number 30

Digital Performer 43, 44

Direct hardware playthru 44

Dim 41

Direct ASIO monitoring 44

Direct hardware playthru 44

Discovery 28

Display setting 26

Driver

installation 7, 15, 27

loopback channels 29, 46

loopback location 47

DSP

effects 37

Dynamic mic 19

E

Effects 37

Enable Windows Audio Streams 30

EQ 37

enabling 37

filter types 37

frequency 37

gain 37

Q 37

Equipment rack installation 55, 57

F

Factory defaults 26

Firmware

select image 30

updating 30

version 26, 30

Four-band EQ 37

Frequency

EQ 37

Front panel 25

metering 25

Front panel display

menu 26

menu navigation 26

G

Gain

EQ 37

reduction 38

GarageBand 43, 44

clock source 43

sample rate 43

Gate effect 38

GR (gain reduction) 38

Guitar

connecting 19

H

Half-rack

coupler kit 57

mounting kit 55

Headphones

connecting 8, 9

jack 9

mirroring main outs 34

monitoring inputs 28

volume control from computer 28, 32

volume control from front panel 9

Home tab 28

Host

Buffer Size 16, 29

loopback 29, 46

loopback location 47

Safety Offset 16

I

Input Monitoring (CueMix 5) 28

Input tab (CueMix 5) 31

Inputs

analog (balanced TRS) 19

metering (pre/post fader) 29, 40

mic/instrument 9, 10, 18

monitoring 28

optical 10, 20

S/PDIF (TOSLink) 10, 20

Installation

equipment rack 55, 57

hardware 17

iOS connection 17, 18

QuickStart Guide 7

software 15

- USB connection 17
- iOS operation 15, 17, 18, 41
- IP address 26
- iPad/iPhone support 15

L

- Latch 40
- Latency 16, 29, 44, 46
- Level 41
- Lightpipe 20
- Line inputs
 - making connections to 19
 - monitoring live 34
 - trimming 19
- Line Out L-R mix 33
- Line outputs
 - making connections to 19
 - trimming 19, 32
- Live 44
- Log out of all devices 42
- Log out of device 28, 42
- Logic Pro 43, 44
 - clock source 43
 - sample rate 43
- Loopback 29, 46
 - location 47
 - source 32
- Lowest Latency 16

M

- MacOS 43
 - audio software
 - clock source 43
 - sample rate 43
 - system requirements 13
- Main Out 1-2
 - jacks 10
 - making connections to 19
 - monitoring inputs 28
 - volume control from computer 28
 - volume control from front panel 9, 19
- Menu Select knob 26
- MIC GAIN knob 26
- MIC SEL (Select) knob 26
- Mic/instrument inputs 9, 10, 18
 - 48V phantom power 9, 10
 - control from CueMix 5 28, 31
 - control from front panel 9
 - monitoring live 34
 - overview 11
 - pad 9, 10
 - phase invert 9, 10
 - preamp gain/pad/48V 31
- Mirroring main outs 34
- Mix
 - effects 37
 - Input Meters setting 29, 40
 - inputs 34
 - stand-alone operation 37
 - tabs 33
 - USB Channels setting 29, 34, 40
- Mix tabs 33

- Mix tabs (CueMix 5) 33
- Monitor
 - volume control 25
- Monitoring
 - thru headphones 28
 - thru main outs 19, 28
 - with/without FX 19, 31
- MOTU
 - Digital Performer 44
 - Gen5 Installer 7, 27
 - Performer Lite 44

N

- Network Control 29
- Nuendo 43, 44
 - clock source 43
 - sample rate 43

O

- OctaLite
 - ASIO driver 44
 - presets 30, 41
 - setup example 8
 - specifications 53
 - summary of features 11
- Optical
 - connectors 10, 20
 - input format 31
 - monitoring live 34
 - output format 32
 - output source 21, 32
 - overview 12
 - S/PDIF 21
- Optimization 46
- Output tab 32
- Output tab (CueMix 5) 32
- Outputs
 - analog (balanced TRS) 19
 - optical 10, 20
 - S/PDIF (TOSLink) 10, 20

P

- Pad 19, 31
 - control from computer 28, 31
 - control from front panel 9
- Patch thru
 - latency 46
- Performance 46
- Performer Lite 12, 16, 43, 44
- Phantom power 9, 10, 18, 19
 - control from computer 28, 31
 - control from front panel 9
- Phones (see headphones)
- Phones mix 33
- Post Fx option 20, 31
- Power supply
 - jack 10
- Power switch 25
- Pre Fx option 20, 31
- Pre/post fader menu setting 29, 40
- Preamp gain 31

- control from computer 28, 31
- control from front panel 9

- Presets 30, 41
- Presonus
 - Studio One Pro 44
- Pro Tools 43, 44
- Processing 37

Q

- Q 37
- QuickStart Guide 7

R

- Rack installation 55, 57
- Ratio
 - Compressor 38
- Re-amping 20
- Reaper 43, 44
- Reason 43
 - Propellerhead Reason 44
- Registration 13
- Release
 - Compressor 38
 - Gate 38
- Reset 26
- Reverb 39
 - routing to/from 39
- Reverb mix 33
 - monitoring 34

S

- S/PDIF
 - optical 10, 12, 20, 21
 - optical input format 31
 - optical output format 32
 - optical output source 32
 - optical source 21, 32
- Safety Offset 29
- Sample rate 29
- Screen Saver 26
- Select firmware image 30
- Serial number 26, 30
- SMUX 20
- Software installation 7, 15, 27
- Source
 - optical output 32
- Stage monitors
 - connecting 8
- Stand-alone operation 25
- Steinberg
 - Cubase 44
 - Nuendo 44
- Studio One Pro 44
- Studio setup (example) 8
- Sync Windows sample rate to device 16, 30
- Synths
 - connecting 8
- System requirements
 - minimum 13
 - recommended computer 13

T

- Talk button 40
- Talkback 28, 40-41
 - dim 41
 - latch 40
 - level 41
 - settings 40
 - setup 40
- Technical support 51, 52
- Threshold
 - Compressor 38
 - Gate 38
- Timeout (display) 26
- To USB Host 19, 31
- TOSLink 10, 12, 20, 21, 31, 32
 - monitoring live 34
 - output source 21, 32
- Trim 18
- TRS analog inputs/outputs 19
- TRS connectors 19

U

- Unbalanced analog 19
- USB
 - class compliance 15
 - connection 17
 - installing drivers 15
 - loopback channels 29, 46
 - loopback location 47
 - monitoring 34
- User presets 30, 41

V

- Volume control 25

W

- Wave driver 44
- WDM (Wave) Driver 16
- Windows
 - Audio Streams 30
 - Host Buffer Size 29
 - latency 29
 - system requirements 13
 - Wave driver streams 30
 - WDM (Wave) driver 16

