QUANTUM HD SERIES

SOFTWARE USER MANUAL

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1 Overview

This Software User Manual details how to use Universal Control to control Quantum HD audio interface. Before jumping in, make sure you've registered your device and installed Universal Control, as it provides updates and upgrades for your Quantum interface.

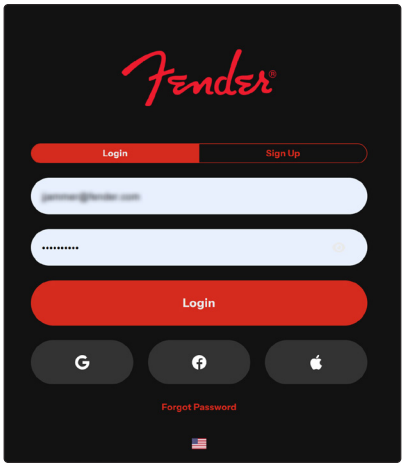
*For more information about the Quantum HD, including hardware features, hookup diagrams, and getting started with the interface, please review your **Quantum owner's manual**.*

1.1 Product Registration and Installation Process

Your Quantum HD is a powerful audio interface, loaded with professional audio tools and flexible monitoring controls. Before connecting to a computer, please visit ***www.fender.com*** and navigate to the Quantum HD product page to verify the latest system requirements for your interface.

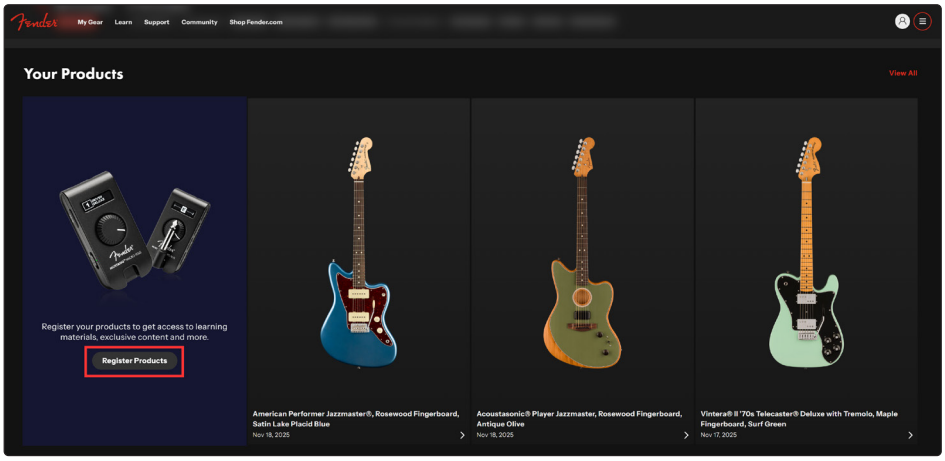
Once you've verified that you meet the latest system requirements, follow these steps:

1. Visit ***My.Fender.com*** and create or log into your user account.



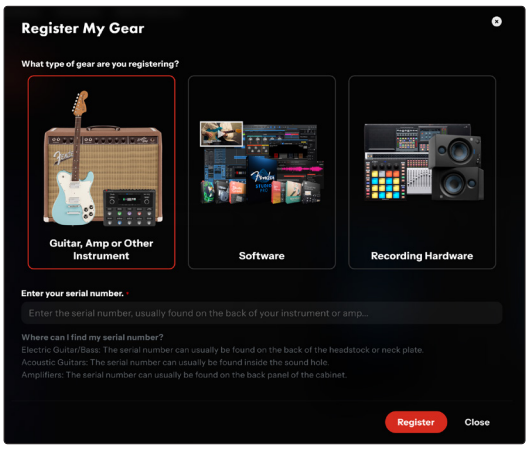
Note: *If you have previously created a **MyPreSonus** account, you can use these credentials on **MyFender.com** to log in. All of your previous registered PreSonus products will be available from the new unified MyFender account experience.*

2. At the top of your MyFender homepage, click onto the "Register Products" button. After clicking, a dialog window will appear.



1.1 Product Registration and Installation Process

3. From the dialog window, specify the date you purchased the interface and the serial number on your interface. After you're done, click "Register."



4. After clicking Register, another dialog window will appear where you can initiate your Fender Studio Pro downloads.
5. To download Universal Control, navigate to the Quantum HD product page from your MyFender homepage.

   Note: *The speed of your processor, amount of RAM, and capacity, size, and speed of your hard drives will greatly affect the overall performance of your recording system. A faster processor and more RAM can reduce signal latency (delay) and improve overall performance.*

When connecting to Universal Control, you have two options:

- Connect and sync your Quantum HD interface to your desktop via USB-C connection. This option allows you to use Universal Control while recording and playing back audio through Fender Studio® Pro or a third-party DAW of your choice.
- Connect your desktop, Apple iOS / Android device, or iPad to the same wireless network. This option will allow you to use any or all of these devices to remote control your Quantum interface anywhere in the studio or venue.

The following sections detail the Universal Control installation process for Windows, Mac, iPad, and Apple iOS / iPadOS / Android devices.

Note: *Make sure your Quantum interface* ***firmware version is up to date*** *from your computer before connecting to the device any other way.*

1.1.1 Universal Control Installation for Windows

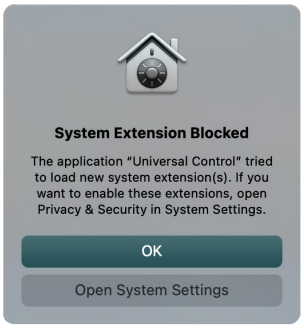
Connect your Quantum interface to an available USB-C port and launch the installer. The Universal Control installer will take you through each step of the installation process. This application will install the ASIO drivers. Please read each message carefully. It is recommended that you quit all applications before you start the installation.

1.1.2 Universal Control Installation for macOS

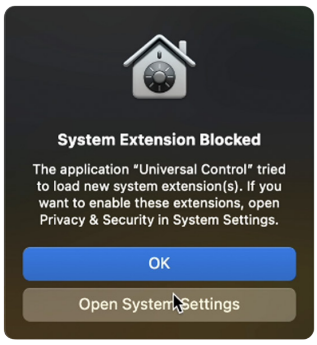
Connect your Quantum interface to an available USB-C port and launch the installer. The Universal Control installer will take you through each step of the installation process.

Quantum series devices require a custom driver. This driver is included in the Universal Control app.

After installing and launching Universal Control, macOS security may prompt you to "Approve the Audio Driver System Extension."



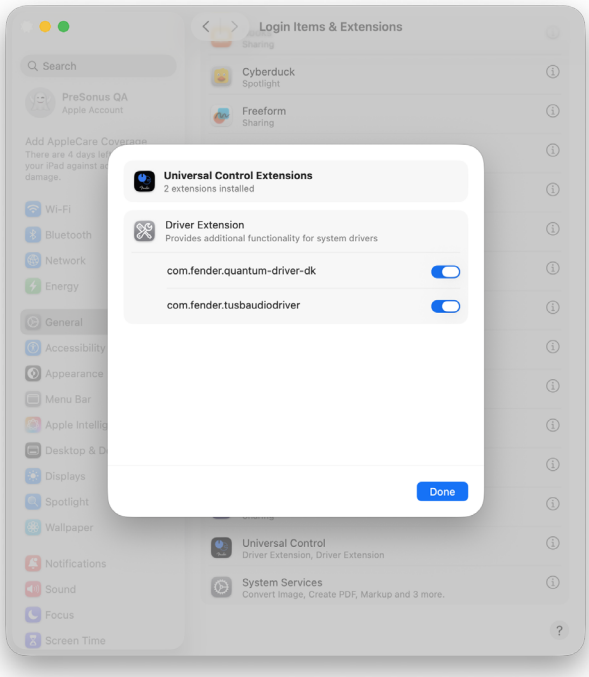
macOS 12 & 13



macOS 14

1.1 Product Registration and Installation Process

For macOS 15/26 Users: Open System Settings → General → Login Items & Extensions → click the "i" icon next to Universal Control.



The operating system will give you the choice of "OK" or "Open System Settings." Choose "Open System Settings," or if you have already clicked "Ok," open **System Settings > Privacy & Security**.

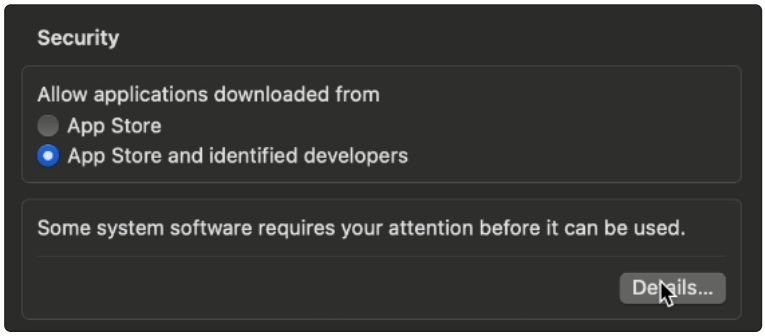
Note for macOS users: When the installation is complete, you will find the Universal Control application in your Applications folder. It is recommended that you place this in your Dock for easy access.

For macOS 12/13 Users:

Select "App Store and identified developers" if that is not already set. Select "Allow" so Universal Control can add the Quantum driver. Enter your System password as requested.

For macOS 14 Users:

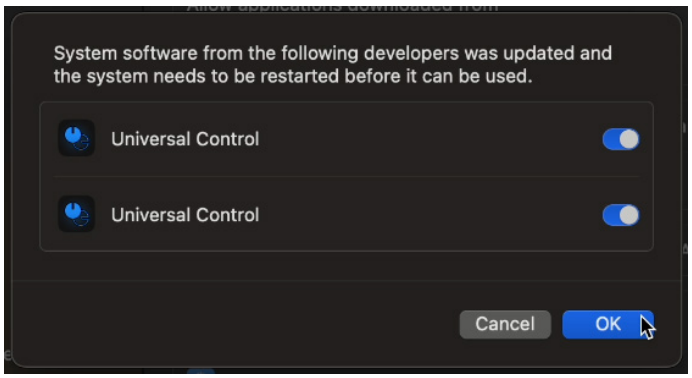
Select "App Store and identified developers" if that is not already set. Click "Details."



1.1 Product Registration and Installation Process

Select your method of authentication.

Activate the Universal Control Options and click OK.



You are now ready to use your new Quantum!

1.1.3 Universal Control Installation for Apple iOS / iPadOS / Android

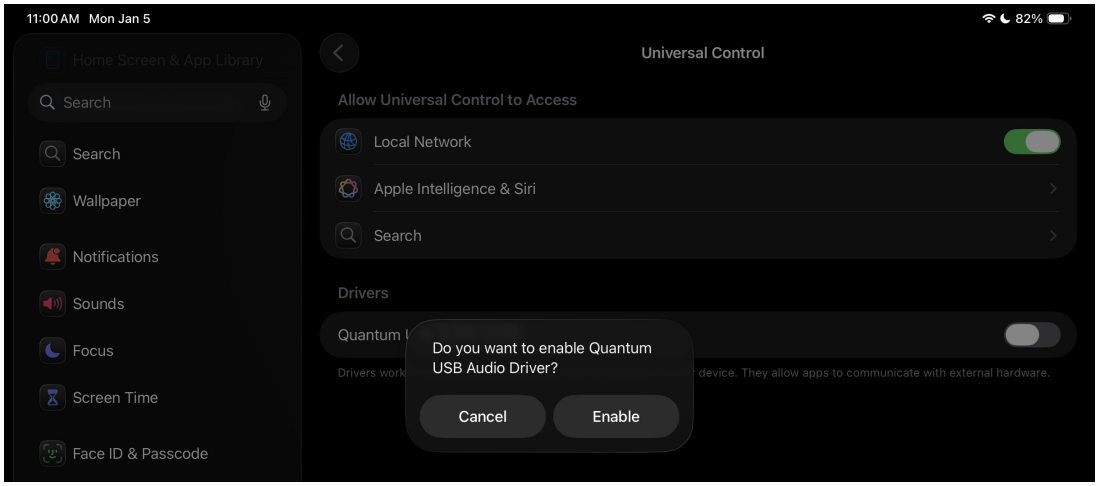
To remote control your Quantum interface with Apple iOS / iPadOS / Android devices, you must first locate and install the Universal Control application onto your Apple iOS / iPadOS / Android device from your app store.

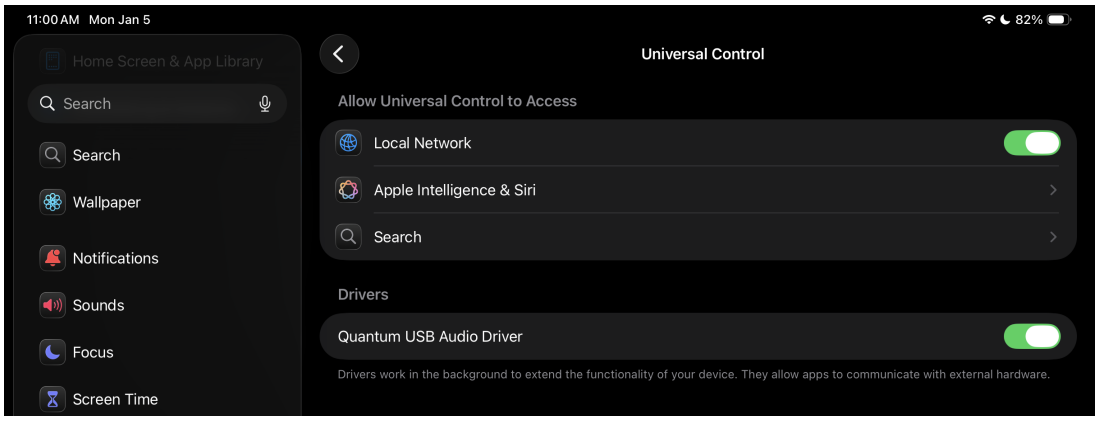
Once downloaded, you can use Universal Control with an Apple iOS / iPadOS / Android device by connecting to the same wireless network as the computer that is connected via USB to your Quantum interface.

Please Note: *Quantum interface firmware* ***can only be updated from your computer****. Firmware updates from Universal Control are not available from Apple iOS / iPadOS / Android mobile devices.*

1.1.4 iPadOS Low Latency Driver

When using the latest iPad Air M3 and iPad Pro M5, round trip lag (latency) can be reduced by up to 40% (2-3ms less latency) by enabling the Quantum USB Audio Driver from your iPad settings. Once Universal Control is installed on your iPad, navigate to iPadOS's Settings > Apps > Universal Control and turn on the Quantum USB Audio Driver.





Note: *This driver only applies to Apple iPadOS 18+. Not applicable to any earlier iPadOS versions nor any version of Android.*

1.1.5 Mobile Compatibility Modes

Due to limitations to some operating systems, the Quantum HD includes various mobile modes, which allows it to be used on Android devices with Android version 14 or later.

When using Quantum HD with a device that has Android 14+, ensure that the correct mobile mode is selected. To change modes from your Quantum HD, press and hold the knob until the "Settings" screen appears. Navigate to "Mobile Mode" (shown as "Device Mode" in Universal Control), then press the knob to select a mode.

- **Off:** Use this mode for macOS, Windows, and iOS / iPadOS devices (no channel or sample rate limitations).
- **Android:** Use this mode for Android OS 14+ devices. This option is best for most applications and supports 2 (QHD 2) or 8 (QHD 8) input channels.
- **Android+:** This mode is also used for Android OS 14+ devices (for use with specific applications that can access full channel counts).

Note: *The maximum sample rate possible for both Android and Android+ modes is 48 kHz.*

2 Universal Control

Universal Control is both a driver-management utility and software control interface for your Quantum Interface.

Universal Control provides the following:

- **Hardware Control**. All of Quantum's front panel hardware controls can be adjusted using Universal Control, facilitating easy hardware manipulation even if Quantum is installed in a location out of reach of the computer operator.
- **Low-Latency Monitoring**. Using Universal Control eliminates the latency associated with DAW I/O buffering that makes monitoring problematic for the performer. By removing the DAW's software input monitoring feature from the monitoring signal flow altogether, the need to adjust I/O buffer sizes and latency is no longer an issue.
- **Send / Cue Buses**. Universal Control has stereo aux buses, with independent send levels per input.
- **Configuration Management (Scenes)**. Universal Control configurations can be saved and loaded to / from disk as Scenes, for convenient and unlimited session management.

Universal Control has two main components: the Start and the Mixer pages. We'll go into more detail about each in the sections below.

2.1 Universal Control Start Page

Universal Control contains driver support, software control, monitor mixing, and firmware management for Fender and PreSonus hardware. After opening Universal Control, you will see the Launch window. From this window, you can manage all the driver settings.

- **Sample Rate.** Changes Sample Rate. You can set the sample rate to 44.1, 48, 88.2, 96, 176.4, or 192 kHz. A higher sample rate will increase the fidelity of the recording, but this will also increase the file size and the amount of system resources necessary to process the audio.
- **Clock Source.** Sets the Digital Clock Source. From this menu, you can set the Clock Source for your Quantum HD interface. Internal, External S/PDIF, External ADAT, or Wordclock (Quantum HD 8 Only).
- **Buffer Size (Windows only).** Sets the Buffer Size. From this menu, you can set the Buffer Size for your Quantum HD interface from 16 to 2048 samples.

  Lowering the buffer size will reduce the overall latency. However, this will also increase performance demands on your computer. In general, you will want to set the buffer size as low as your system can safely support. If you begin to hear pops, clicks or distortion in your audio path, try raising the buffer size.
- **Device Mode (HD8 only):** Displays the current device modee.
- **Input Format.** Details your device Input channels and bitrate.
- **Output Format.** Details your device output channels and bitrate.
- **Firmware.** Displays the current firmware version.
- **Serial Number.** Displays your Quantum serial number.

2.1.1 Launching the Universal Control Mixer

Universal Control's Mixer can be launched from the Universal Control application (Start Page).

1. Open Universal Control.
2. From the Universal Control Start Page, click on the product card for the Quantum HD Control Panel (mixer).
3. The Universal Control Mixer will open in another window.

2.1.2 Quitting Universal Control

For macOS users:

- Select "Quit Universal Control" from the macOS Application Menu when Universal Control is the foreground application.
- Use the standard macOS keyboard shortcut: Command + Q.

For Windows users:

- Click the "X" close button in the Window Title Bar.

2.2 Universal Control Mixer

Universal Control's layout and functionality is similar to what is found on analog mixers and shares many elements with Fender Studio Pro's mixer layout.

2.2.1 Navigation Bar

The navigation bar has two options to choose from:

Scenes. Shows / Hides the Scenes panel. *See section 2.2.7 Scenes for more information about how to use this feature.*

Settings Panel. Shows / Hides the Settings panel (replaces the mixer). *See section 2.2.8 Settings Panel for more information about how to use this feature.*

Power Button. Turns the mixer on or off. Turning the mixer "off" bypasses the mixer in Universal Control, which can be helpful if you would like to mix and create cue mixes directly in the DAW.

2.2.2 Channel Overview

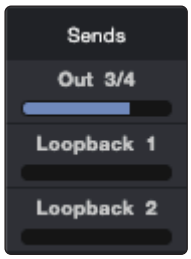
Channel Inputs

Each channel input strip controls a corresponding Quantum hardware input or virtual input. The output of all channel inputs are always routed to the Main 1 and 2 outputs (except when muted). Inputs can be optionally routed to other outputs via Sends and the FlexChannel controls. Universal Control channel inputs are essentially the same for all inputs; however, there are some differences among the analog and digital inputs as noted below.

Channel Input Controls

- **High Pass Filter (HPF).** Engages / disengages a HPF at 80 Hz with a slope of 12 dB per octave.
- **48V.** Engages / disengages 48V phantom power for use with condenser microphones.
- **Autogain.** Automatically sets the gain for the selected channel.
- **Pad.** Cycles through -20 dB or no pad attenuation (default). Pad does not affect the Line or Instrument inputs.
- **Preamp Gain Level.** Use this control to set the gain (0 dB to +75 dB) for your microphone or instrument.
- **Line Input Level.** If a line level signal is connected through the TRS port of the combo jack, then preamp gain control switches to a Line Level control (-12 dB to +12 dB).
- **Gain Value.** Displays the absolute value for the current Gain. Double-click on the value to enter a specific value.

2.2.3 Sends

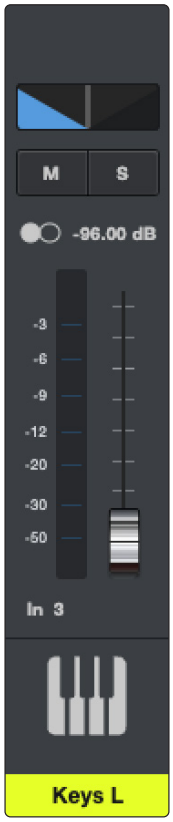


Controls the send level of the audio being sent to the Return FlexChannel. Depending on your hardware, different amounts of outputs will be available as Sends. Loopback virtual outputs can be shown in Settings as well (*see section 2.2.8 Settings Panel*).

- **Send Destination.** Shows the output pair that audio is being sent to.
- **Send Level.** Controls the overall level being sent to an output pair.

Note: *If Speaker Switching is active, outputs 3 - 4 will be disabled for Sends.*

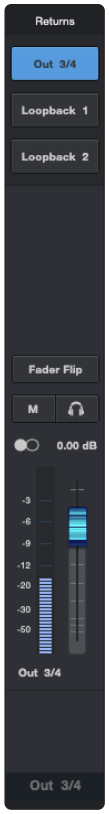
2.2.4 Mix Controls



- **Pan.** Sets the pan position for the signal in a stereo mix (also applies to Sends).
- **Mute.** Mutes the signal (also applies to Sends).
- **Solo.** Solos the signal (mutes all other channels in the Main Mix).
- **Mono / Stereo Link Toggle.** Combines 2 adjacent channels of the same type into a stereo channel.
- **Current Level Value.** Displays the absolute value for the current level. Double-click on the value to enter a specific value.
- **Channel Meter.** Displays the current level of your microphone or instrument pre-fader.
- **Channel Fader.** Controls the overall level of the channel in the Main Mix.
- **Channel Number.** Indicates the channel number.
- **Channel Icon.** Choose from a list of icons for the channel
- **Channel Name.** Double-click to create a custom name for the channel.
- **Channel Color.** Click on the space to show the channel color options.

2.2.5 FlexChannel Return

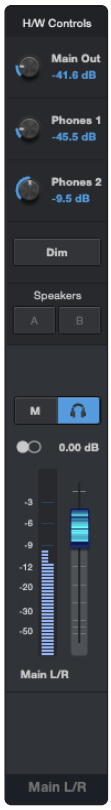
Input channels are always routed to Main Outputs 1 and 2. However, the inputs can be optionally routed to any available hardware output or Loopback stream via Sends and the FlexChannel.



- **Return Select.** Selects the Return or Loopback Stream to be controlled by the channel strip.
- **Copy / Paste Mix:** Copying the current mix allows you to quickly set up multiple mixes. Right-click on the fader for copy and paste options.
- **Fader Flip:** When Flip is activated, fader controls switch to represent the per-channel Send levels of the chosen Send destination. Faders will change to green to indicate Flip is active; when activated, the fader controls the send level rather than the channel volume.
- **Mute.** Mutes the selected Return or Loopback stream.
- **Phones Listen.** You can listen to any of the mixes by clicking on the headphone icon. This will route the selected mix to Headphone 1 (if more than one headphone), so you can audition your cue mixes.
- **Mono / Stereo toggle.** Toggles the channel between a stereo channel or a summed mono channel.
- **Current Level Value.** Displays the absolute value for the current level. Click on the value to enter a specific value.
- **Channel Meter.** Displays the current level.
- **Channel Fader.** Controls the overall level for the selected Return or Loopback stream.
- **Channel Icon.** Choose from a list of icons for the channel
- **Channel Name.** Double-click to create a custom name for the channel.
- **Channel Color.** Click on the space to show the color picker.

2.2.6 Monitor Controls

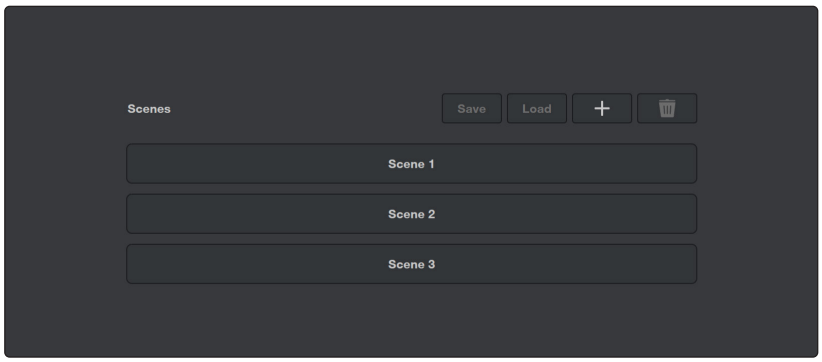
The Monitor Control strip contains elements related to related to the Main Outputs, Headphones, and Speaker Switching.



- **Main Out Level.** This is the master level control for Quantum's Main Outputs 1 and 2. It performs the same function as the Knob on Quantum's front or top panel.
- **Headphone Level.** This is the level controls for Headphone Output 1 and 2. It performs the same function as the Knob on Quantum's front or top panel when the Knob is switched to Headphone control. The Quantum HD 2 only has one headphone output.
- **Dim.** Dims the Main Output by the amount set in Settings (default is -10 dB)
- **Speaker Switching toggle.** When Speaker Switching is active, changes to either speaker set A or speaker set B. Note that this option is not available and grayed out by default.
- **Mute.** Mutes the Main Output. Mute does not affect headphones.
- **Phones Listen.** This will route the Main mix (outputs 1 / 2) to Headphone 1.
- **Level Value.** Displays the absolute value for the current level. Click on the value to enter a specific value.
- **Monitor Meters.** These meters display the signal levels of the monitor mix bus just before the monitor level control.
- **Channel Fader.** Controls the overall level for the Main outputs. This volume control is independent of the Main encoder. If the fader is turned down, audio will not pass to the main volume control.
- **Channel Number.** Indicates the channel numbers.
- **Channel Icon.** Choose from a list of icons for the channel. All Icons can be shown / hidden from the Settings panel.
- **Channel Name.** Double-click to create a custom name for the channel.
- **Channel Color.** Click on the space to show the color picker. The entire channel can be colorized in Settings.

2.2.7 Scenes

Universal Control allows you to create and store a library of "scenes". A scene is like a snapshot of your mix: It stores each channel parameter for every analog input, as well as each fader's position, the aux mixes, channel mutes and solos, etc.



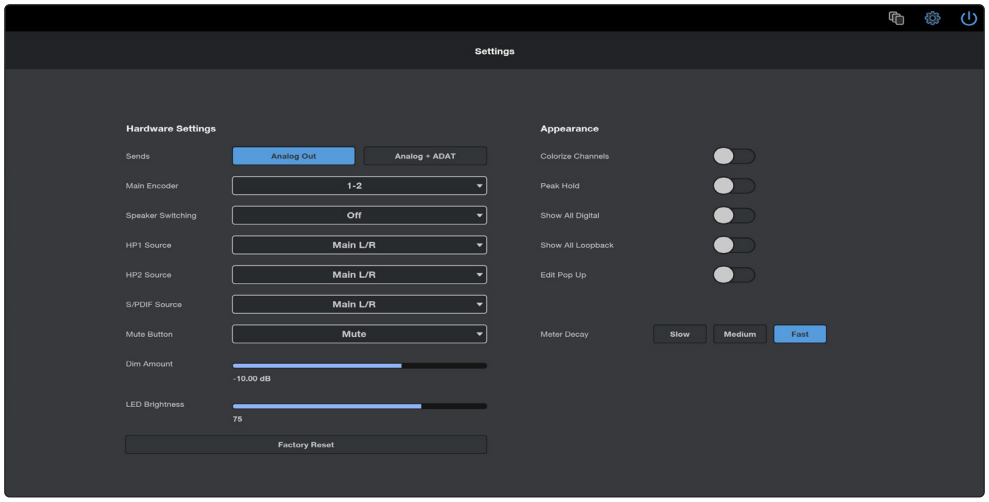
Scenes provide methods for managing Universal Control mixer configurations as custom preset files. When a Universal Control Scene is saved, the current Universal Control configuration is saved to your computer.

When a Scene is subsequently reloaded, Universal Control is returned to the same configuration state, regardless of any changes to Universal Control that were made in the interim.

- **Scenes Icon ( ):** Select to open (blue) and close (gray) the Scenes window.
- **Save:** Saves the current mixer configuration to the selected Scene (overwrite).
- **Load:** Loads the selected Scene (double-clicking the chosen Scene will also load it).
- **Store Scene:** Click the plus icon to save the current mixer configuration and give it a name.
- **Delete Scene:** Deletes the selected Scene.

2.2.8 Settings Panel

Global parameters for Quantum and Universal Control are configured in the Settings pane:



Hardware Settings:

- **Sends.** Changes which outputs are available for Sends *(For more information, check out Section 3.1.2)*.
- **Main Encoder.** Select which speaker(s) are controlled by the knob.
- **Speaker Switching.** Choose the behavior for speaker switching when pressing the Main Control button.
- **Headphone Source Selector ("HP Source").** Selects the source for the Headphone Output 1 or 2. Access to certain headphone sources is dependent on the Quantum model.
- **S/PDIF Output Source.** Selected which source is sent out of the S/PDIF RCA port.
- **Mute Button Behavior.** Choose if the top or front panel Mute button mutes audio at the Main outputs, or Dims the audio.
- **Dim Amount.** Adjusts how much dim is applied when Dim is engaged (default is -10 dB)
- **LED Brightness.** Adjusts the overall brightness of all LEDs (default is 100%)
- **Factory Reset.** Resets all parameters to factory settings.

UI Settings:

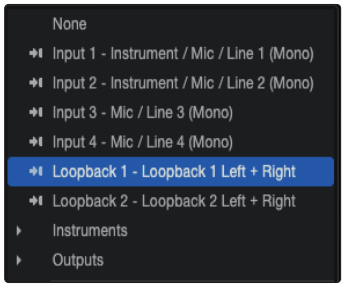
- **Colorize Channels.** Applies the currently selected channel color to the entire Channel Strip.
- **Peak Hold.** Toggles Peak Hold on or off.
- **Show all Digital (Quantum HD only).** Shows or hides all ADAT and S/PDIF inputs in the mixer. Hidden by default.
- **Show all Loopback.** Shows or hides all Loopback Inputs, Stream Mix Sends, and Flex Mix Stream Mixes in the mixer. Hidden by default.
- **Edit Popup:** Shows or hides the popup editor.
- **Meter Decay.** Sets the Meter Decay to either Slow, Medium, or Fast.

2.3 Using Universal Control's Mixer

2.3.1 Loopback

Loopback audio is the industry term for routing audio from one application to another. Applications that use audio interfaces, like your Quantum interface, are designed to receive audio from one audio device and send audio to one audio device. This means that most applications can only send to and receive from an audio interface, but not from other applications. This can present a challenge in certain situations.

Fortunately, Quantum HD audio interfaces allow you to take audio from any of Universal Control's mixer inputs (mics, guitars, computer audio, etc.) and send the combined audio to another application for the purpose of recording or live streaming.



2.3.2 How to Use Loopback

If you wish to use the Loopback feature, follow the directions below:

1. Make sure that your Quantum HD is selected as the Windows or macOS playback device.
2. In your DAW or software application, choose the channel input labeled Loopback 1 or Loopback 2. Any audio sent to Loopback 1 or 2 will be available as a virtual input in your DAW or other software applications (not all software applications support multichannel inputs).

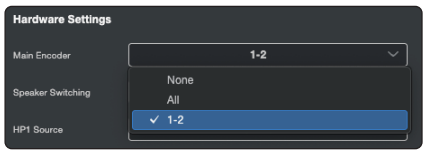
   Note: *Loopback inputs are disabled at sample rates of 176.4 and 192 kHz.*
3. In Universal Control's mixer window, adjust the send level to whichever Loopback send you've selected in Fender Studio Pro.
   - » **Loopback 1 Send Level.** Adjust the amount of audio you would like to send to Loopback stream 1.
   - » **Loopback 2 Send Level.** Adjust the amount of audio you would like to send to Loopback stream 2.
4. After adjusting the Loopback send level, you'll notice metering levels appear within the DAW or software application channel you've set up. Once metering appears, you are ready to start recording audio.

WARNING: Make sure that **the channel in your DAW is muted** before you record enable to avoid feedback loops.

2.3.3 Quantum Multichannel

Multichannel is a hardware and software operating mode that can be configured using Universal Control. Quantum HD 2 and HD 8 interfaces can be used as an all-in-one monitoring hub for some multichannel formats (depending on the amount of analog outs per device).

When a multichannel mode is selected, the knob will control all corresponding speaker volume at once. For more information about each of the Multichannel options, review the list below:



- **None:** Knob control is disabled and unity audio will be sent out of all outputs.
- **All:** The knob will control the output volume for all outputs at the same time.
- **1 - 2:** The default Main Encoder mode. The knob will control the output volume for Main Outputs 1 and 2.
- **1 - 4:** The knob will control the output volume for Outputs 1, 2, 3, and 4 all at the same time.
- **1 - 6 (Quantum HD 8 only):** The knob will control the output volume for Outputs 1, 2, 3, 4, 5, and 6 all at the same time.
- **1 - 8 (Quantum HD 8 only):** The knob will control the output volume for Outputs 1, 2, 3, 4, 5, 6, 7, and 8 all at the same time.
- **All + ADAT:** The knob will control the output volume for all outputs (including the ADAT connected HD 8) at the same time.

WARNING: Full scale audio will be sent out of Main Outputs 1 and 2. Main Outputs 1 and 2 will be muted when this mode is selected to avoid damaging speakers or other equipment.

3 Using Your Quantum Interface

3.1 As an Audio Interface

The Quantum HD functions like other audio interfaces when used without the Universal Control application installed. Quantum HD's class-compliant (macOS) and WDM drivers (Windows) enable it to be used for computer audio I/O routing with any compliant software with some limitations.

3.1.1 Standalone Use (HD 8 ADAT Preamp Expansion)

The Quantum HD 8 can be used to add mic pres to another Quantum HD running in audio interface mode (with Universal Control installed) or a third party audio interface that supports ADAT optical inputs as well as S/MUX and its variants.

To use a second or third Quantum HD as a standalone preamp through ADAT, access the secondary or tertiary Quantum HD's Global Settings when not connected to a computer and set the Standalone mode to "ADAT." By default, this mode is set to "Mixer."

As long as the additional HD 8 is put into ADAT mode, and the clock source is set to externally clock via SPDIF, ADAT, or Word Clock, the 48V and Gain Knob controls will be present at the top of each ADAT fader.

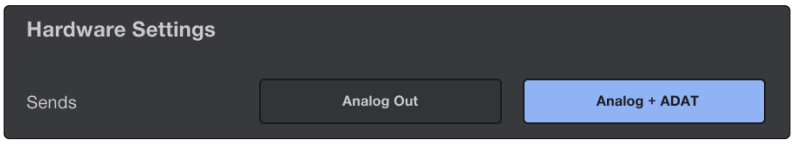
Note: *When in ADAT mode, the knob of the HD 8 expansion will no longer control volume and will blink 3 times if turned in either Main or Headphone control modes. The knob will still control gain level if a channel is selected.*

If you select "All + ADAT" from the Main Encoder settings, the knob will control the output volume for all outputs (including the ADAT connected HD 8) at the same time.

Note: *As with any of the other Main Encoder link modes, as outputs get assigned to be controlled by the knob, those outputs paths become unavailable as Sends for cue mix routing, etc.*

3.1.2 Send Routing Options

Quantum HD interfaces have two send options located in the Universal Control settings panel. Depending on which option is selected, ADAT Sends and computer playback channels (ex., USB 5/6) will become available or unavailable. In either mode, Loopback 1 and Loopback 2 are available as Sends on any input channel.



- **Analog Out (default).** When analog out is selected, Sends can only be routed to the physical analog outputs of Quantum (for example, Out 3/4, Out 5/6, etc.). When this option is selected, ADAT signals can be easily routed from your DAW.
- **Analog + ADAT.** When Analog + ADAT is selected, the mixer is reconfigured so that all analog and ADAT outputs are available as Sends on input channels. When this option is selected, the computer playback input channels (USB 5 - 10) will no longer be available in UC's mixer and all ADAT signal routing must be done through Universal Control. In other words, ADAT will not pass if routed from a DAW.

NOTE: *At sample rates greater than 96 kHz, all digital inputs are disabled as well as Loopbacks 1 and 2.*

3.2 With Universal Control

Quantum HD and Universal Control can be used without a DAW or any other software. Using Universal Control without a DAW provides access to all Quantum HD functionality and simplifies the use of Quantum HD's digital mixing and monitoring when a DAW is not needed.

3.2.1 Quantum I/O Driver Names

Each Quantum input and output has a channel number and name provided by the Quantum HD drivers on macOS and Windows. If an audio software application can access Core Audio / ASIO devices directly, it may be possible to designate specific inputs and/or outputs within the application.

3.2.2 Universal Control Settings that are Retained after Power Cycle

All currently active Main Mix settings (channel volume level, pan position, solo, mute, and stereo link) and monitor settings (main and headphone output levels) are saved to internal firmware before your Quantum HD are powered down, and recalled when power is reapplied.

Note: *Changes are not saved instantaneously. Please allow up to 10 seconds for the settings to be saved to the device before powering down.*

3.3 With a DAW (without Universal Control)

When used with a DAW but without the Universal Control application, the DAW controls all signal I/O routing and software monitoring.

3.3.1 Monitoring with the DAW

The primary function of Universal Control is monitoring Quantum's inputs during live performance. When software monitoring is enabled in the DAW, Universal Control input monitoring must be disabled to eliminate doubled signals.

Make sure to disable input monitoring in Universal Control when software monitoring via the DAW. If Universal Control's input monitoring isn't disabled (muted channel, fader down, or bypassed mixer), phasing and/or doubling of the monitored signal(s) will occur because the input signal is being heard twice – first from the low-latency DSP mix (Universal Control) and shortly thereafter from the higher latency software mix (DAW).

3.3.2 How to disable input monitoring in Universal Control

To disable input monitoring in Universal Control when using software monitoring in the DAW, open Universal Control and mute all input channels within Universal Control or activate "Bypass Mixer" in the Settings. Universal Control may then be closed.

Using a DAW without Universal Control is a typical workflow during mixdown, where low-latency monitoring is not required and buffering latency is not an issue because the tracks are already recorded. When recording new tracks, the DAW and Universal Control workflow (as described in the following section) is recommended.

In this scenario, Quantum functions as an audio interface. The DAW accesses and routes Quantum's audio interface I/O via the device drivers. Audio I/O latency is determined by the I/O Buffer Size setting.

3.4 With a DAW (with Universal Control)

Universal Control is used concurrently with a DAW when low-latency monitoring is desired. This workflow completely eliminates the I/O buffering latencies associated with software monitoring. In this scenario, Universal Control is used to control all input monitoring when recording, and the DAW's software monitoring feature should be disabled.

3.4.1 Software Monitoring versus Hardware Monitoring

Software monitoring (listening to live inputs via the DAW mixer) has discernible latency due to audio interface I/O buffering. Hardware monitoring via an audio interface's internal DSP mixer (e.g., the Universal Control application) does not have discernible latency because the live audio is internally routed directly from the inputs to the outputs without DAW I/O buffering.

3.4.2 Monitoring with Universal Control

The primary function of Universal Control is monitoring of Quantum inputs during live performance. When used with a DAW, Universal Control is used as a monitor mixer that functions separately from the DAW's software monitoring mixer.

Make sure to disable Software Monitoring in the DAW when using Universal Control. When Universal Control is used for live input monitoring with a DAW, the DAW's software monitoring feature should be disabled. If it isn't, phasing and/or doubling of the monitored signal(s) will occur because the input signal is being heard twice – first from the low-latency DSP mix (Universal Control) and shortly thereafter from the higher latency software mix (DAW).

3.5 Loopback

Quantum's device drivers carry virtual (software only) input and output channels in addition to those directly associated with the hardware inputs and outputs. Loopback facilitates highly flexible signal routing via the DAW, without needing to reach behind the gear rack for manual cable patching. Additionally, since the loopback audio streams are in the digital domain, a pristine audio signal path is maintained without requiring additional A/D - D/A conversions.

Loopback sends enable any input to be routed directly into Universal Control's FlexChannel (*see section 2.3.2 in this manual for more information)*.

3.6 Device Reset

If you encounter a problem with your Quantum and you need to reset the device, you can reset to the default device settings or revert to a previous firmware.

Default Device Settings

If necessary, you can restore the default mixer (preamp gain, output levels, etc.) and system settings (speaker switching modes, headphone mix sources, etc).

To restore the default system settings:

1. In Universal Control, navigate to Settings (gear icon)
2. Press the "Factory Reset" button
3. A confirmation box will appear
4. Select "Reset" to confirm or "Cancel" to cancel the reset

Revert to Previous Firmware

To revert to a previous firmware:

1. Uninstall the current version of Universal Control
2. Install the version of Universal Control that has the previous firmware
3. With the Quantum powered on, open Universal Control and click "Update Firmware"
4. A notification will say that your firmware is up-to-date and to update anyways
5. Select "Update anyways" and follow through the process

   Note: *If your Quantum HD ever becomes unresponsive, press and hold the knob while powering on to enter firmware recovery mode.*

4 Quantum Control from Fender Studio Pro

Your Quantum HD interface can be controlled directly from Fender Studio Pro (only compatible with version 6.6.1 or higher). After configuring the inputs and outputs of your interface within Fender Studio Pro, you'll have easy control over various channel parameters, including channel Preamp Gain, Phantom Power, High Pass Filter, Auto Gain and Pad (HD only). To set up your Quantum Interface in Fender Studio Pro, follow the directions below.

Once all cable connections are made and you have updated the Quantum's firmware:

1. Launch Fender Studio Pro.
2. Navigate to Studio Pro/Options/Audio Setup/Audio Device (macOS: Preferences/Audio Setup/Audio Device) to open the Audio Device settings window.
3. Select Quantum as both the Playback and Recording device.
4. Configure any other Audio Device or Processing settings as desired.
5. Click OK.

4.1 I/O Setup

Before creating your first song, it's recommended that you first configure your Quantum Interface for input and output routing in Fender Studio Pro.

To route Inputs and Outputs, go to Fender Studio Pro Preferences, then select "Audio Setup". In the bottom left corner, select "Song Setup" to enter the Audio I/O Setup tab.

4.1.1 Assigning Hardware I/O to Software I/O Channels

Hardware inputs and outputs are assigned to software I/O channels in a matrix router, which is a visual representation of the routing. Software channels (mono and stereo) are each given a horizontal row, and hardware inputs and outputs are given vertical columns. The points at which these rows and columns intersect represent potential connections, or routes, between the hardware I/O and software I/O channels.

By default, Fender Studio Pro creates three Input Channels: one stereo and two mono. These channels are labeled Input L+R (stereo), Input L (mono), and Input R (mono). By default, the stereo Input Channel receives input from the first stereo hardware input pair of your selected audio device. The two mono Channels receive input from the same stereo hardware input pair. The Output Channel is labeled Main Out (stereo) and is routed by default to the first stereo hardware output pair of your selected audio device.

To create a route between software I/O channels and hardware I/O, click on the empty square at the intersection of the desired hardware input or output and the software channel input or output. A colored square appears with an M, L, or R label, indicating whether the route is a mono route (M) or the left or right side of a stereo route (L or R).

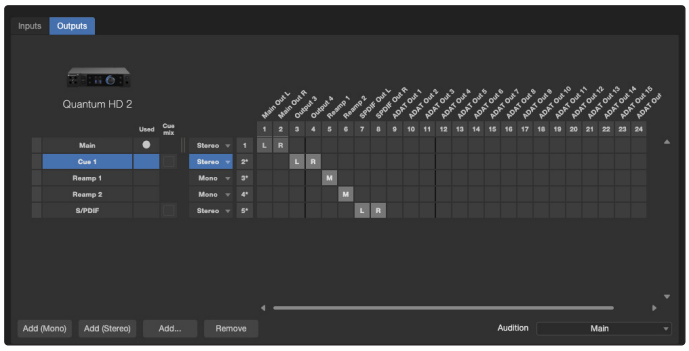
Note: *At higher sample rates, the number of available ADAT Inputs and Outputs are reduced for each port. At 88.2/96 kHz, only ADAT channels 1–8 are available, and all digital is disabled at sample rates higher than 96 kHz. Unavailable ADAT channels are indicated in italic text in the Input, Output, Bus, and Insert pages of the I/O Setup.*

Quantum Input Setup

From the Inputs tab, you can enable any or all of the inputs on your Fender Quantum audio interface that you'd like to have available. Use the "Add" button options below the matrix to add new inputs.

Quantum Output Setup

To edit the output routing, click onto the "Outputs" tab and add outputs using the Add buttons below the matrix router.



4.1.2 Default Device I/O Setup

We recommend that you create a default Audio I/O Setup that can be a starting point for all new Songs. This lets you immediately begin working on your new Song, with little or no preliminary setup.

To do so, create software I/O channels for all of your audio device's commonly used inputs and outputs and name them appropriately. Then, click on the "Make Default" button in the Audio I/O Setup menu, and a pop-up window appears to confirm that you wish to make the current I/O setup the default for new Songs. Click "Yes", and from that point forward, all new Songs will be created with this audio I/O setup.

You can always use the "Reset to Default" button to apply this configuration to a song.

4.2 Integrated Quantum Features

Fender Studio Pro channel strips have integrated Quantum hardware controls built in when Quantum is selected as the Playback and Recording device in Studio One Pro. To access these control features, open the "Mix" console view from the Fender Studio Pro song page.

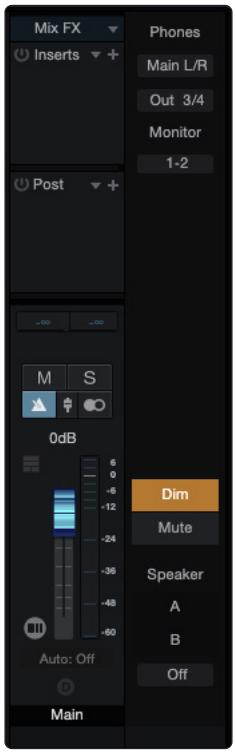
4.2.1 Channel Control Features

The channel control features will be embedded into the top of each channel.

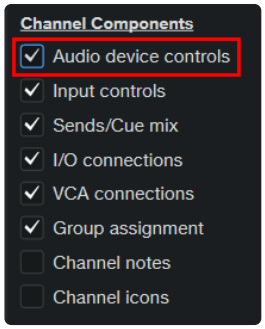
- **Preamp Gain Level.** Use this control to set the gain (0 dB to +75 dB) for your microphone or instrument.
- **Line Input Level.** If a line level signal is connected through the TRS port of the combo jack, then preamp gain control switches to a Line Level control (-12 dB to +12 dB).
- **Gain Value.** Displays the absolute value for the current Gain. Double-click on the value to enter a specific value.
- **High Pass Filter.** Engages / disengages a HPF at 80 Hz with a slope of 12 dB per octave.
- **Phantom Power (48V).** Engages / disengages 48V phantom power for use with condenser microphones.
- **Auto Gain.** Automatically sets the gain level for the selected channel.
- **Pad:** Reduces the overall gain level for the channel by -20 dB (microphone only).

4.2.2 Quantum Hardware Output Controls

Fender Studio Pro has integrated Quantum hardware output controls built in when Quantum is selected as the Playback and Recording device in Fender Studio Pro.



- **Headphone Source Selector.** Select the source for the Headphone Output 1 or 2.
- **Monitor.** Select which speaker(s) are controlled by the knob.
- **Dim.** Dims the Main Output by the amount set in Settings (default is -10 dB).
- **Mute.** Mutes the Main Output. Note that mute does not affect headphones.
- **Speaker Switching toggle.** When Speaker Switching is active, changes to either speaker set A or speaker set B.
- **Speaker Switching.** Choose the behavior for speaker switching when pressing the Monitors Control button.



Note: *If you do not see either of these Quantum controls within Fender Studio Pro, make sure that the "Audio device controls" option is checked in the channel options:*

4.3 Additional Fender Studio Pro Resources

Operating instructions for Fender Studio Pro is beyond the scope of this Owner's Manual, but Fender Studio Pro comes bundled with an array of demo and tutorial materials. For more detailed information about all of the available features in Fender Studio Pro, check out the ***Fender Studio Pro User Manual***. You can access this manual at any time while Fender Studio Pro is open by navigating to Help/Fender Studio Pro User Manual or by pressing the F1 key on your keyboard.

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