Matrox MXO2

Quick Installation Guide

January 11, 2013

matrox®
Digital Video Solutions

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About this guide

This guide provides brief instructions for installing your Matrox MXO2 hardware and software. It is intended to help you quickly set up your Matrox MXO2 system. For detailed installation instructions, please refer to your *Matrox MXO2 Installation and User Guide*.

Installing your MXO2 software

In order to provide our customers with products of the highest quality, we are regularly improving our products through frequent software updates. To ensure that you have the latest software version, the Matrox MXO2 software is available on our website. To download the latest version of the MXO2 software and documentation, visit the MXO2 Support section of our website at www.matrox.com/video/support. You can also contact your Matrox representative for the latest software and documentation.

Note You can install the MXO2 software on a computer with or without the MXO2 hardware connected.

Installing your Matrox MXO2 hardware

Installing your PCIe host adapter (for desktops)

The Matrox PCIe host adapter is designed to operate in your desktop computer's PCIe slot. For detailed instructions on how to perform the following steps, refer to your computer's documentation.

Caution Static electricity from your body can damage your Matrox PCIe host adapter or your computer. Once you've opened your computer, drain static electricity from your body by touching a bare metal surface on your computer chassis before you install or remove any parts of your system. If you have a grounding wrist strap, use it while handling and installing any components in your computer. You should avoid touching the chips and other components on the circuit board. Try to handle the card by its edges.

1 Shut down your computer, remove the power cord and all the cables from the computer, and open your computer's chassis.

2 Insert the Matrox PCIe host adapter in an available PCIe slot in your computer, and secure the adapter into place.

3 Close your computer's chassis, and reconnect the power cord and all the cables to the computer. You can now supply power to MXO2 and connect it to your computer as described in this guide.

Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)

The Matrox PCIe host ExpressCard/34 adapter is designed to operate in your laptop's ExpressCard/34 slot. You can install the Matrox PCIe host ExpressCard/34 adapter when your laptop is on or off. Connect the Matrox PCIe cable to the host ExpressCard/34 adapter, and then insert the host adapter in your laptop's ExpressCard/34 slot until the adapter clicks into place.

ExpressCard/34 slot

Matrox PCIe ExpressCard/34 adapter
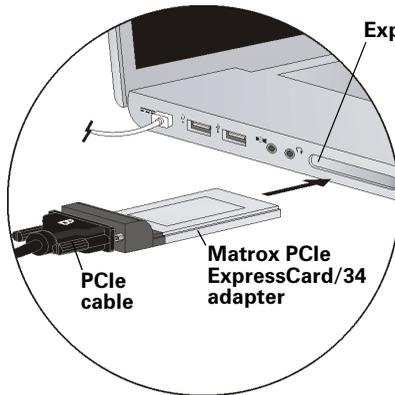
PCIe cable

⚠ Caution To ensure functionality and avoid damaging the PCIe cable or host connector, the side labeled "B" on the PCIe cable connector must face the top of the Matrox PCIe ExpressCard/34 adapter.

For Mac OS systems, you don't have to shut down your laptop, but you must power off the card before removing it from your laptop by clicking the ExpressCard icon (▢▮) from the menu bar, and then clicking **Power off Card**.

Rack mounting your MXO2 Rack

Use the supplied rackmount brackets to mount your Matrox MXO2 Rack to a standard 19-inch rack. The rackmount brackets can be used to either front or rear mount your MXO2 Rack. You can also mount MXO2 Rack so that it's recessed to allow more space for cables. MXO2 Rack takes up two vertical rack unit spaces.

1 Unpack the two rackmount brackets and their eight mounting screws.

⚠ Caution Use only the screws supplied with your MXO2 Rack to attach the rackmount brackets to your MXO2 Rack. If you use screws that are larger or longer than the ones supplied, you can damage your equipment.

2 Depending if you want to front or rear mount your MXO2 Rack, position the rackmount brackets so that the bracket face is either towards the front (connector side) or the back of your MXO2 Rack.

3 MXO2 Rack can be recess mounted to allow extra space for connectors and cables. Depending on your mounting needs, align the screw holes on each rackmount bracket with the desired screw holes on either side of the MXO2 Rack.

⚠️ **Caution** For stability and safety, whichever mounting method you choose, make sure to fasten each rackmount bracket to MXO2 Rack using all four supplied screws.

4 Using a hand screwdriver only (**no power screwdrivers**), carefully tighten each screw until snug. **Do not overtighten!**

5 Fasten your MXO2 Rack to the standard 19-inch rack as per your rack's instructions.

Front rackmounting

Rackmount bracket   **MXO2 Rack**

Rear rackmounting

Recessed rackmounting
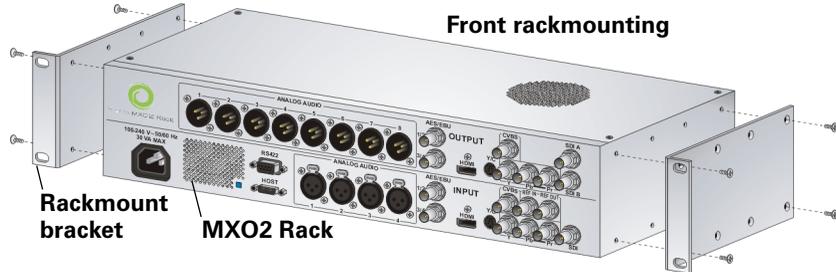
Powering Matrox MXO2

This section describes how to supply power to your MXO2 system.

Matrox MXO2 and MXO2 LE

You can power MXO2 and MXO2 LE using an AC outlet via the Matrox external power supply and a power cord, or using a battery. MXO2 and MXO2 LE feature a power button that you can use to manually turn the unit on and off. To turn your MXO2/MXO2 LE on, press the power button. Press and hold the power button for at least two seconds to turn off the unit.

(i) **Important** When MXO2/MXO2 LE is connected to a computer that is running, do not disconnect the unit from its power source, or power it off. Shut down your computer before removing power from MXO2/MXO2 LE. If using a battery to power MXO2/MXO2 LE, ensure that the battery is sufficiently charged.

Battery requirements and guidelines

As an alternative to using an AC outlet, you can use a battery to power Matrox MXO2 or MXO2 LE. To avoid damage to your MXO2 system and peripheral devices when using a battery, please observe the following requirements and guidelines.

- Use a standard self-protected (fused) battery with a nominal voltage of 12V, 13.2V, or 14.4V. A higher-voltage battery will damage your MXO2 system.

- Disconnect the battery when not in use. Do not leave the unit connected to the battery when not in use as this may damage your MXO2 system and/or battery.

- Do not power your MXO2 system using your vehicle's battery via the power socket.

⚠ **Caution** To avoid damage to your MXO2 system and peripheral devices, use a Matrox-recommended battery. For a list of batteries recommended for use with your MXO2 system, visit the Matrox MXO2 Support section of our website at www.matrox.com/video/support.

Matrox MXO2

**MXO2
(side view)**

Power button

**External
power supply**

OR

⚠ **Caution** When disconnecting the power supply from MXO2, make sure that you slide back the casing on the connector to release the locking mechanism.

**Matrox battery
power cable**

**IEC-C13
power cord**

**Female 4-pin
XLR cable**

**Battery on a
universal battery
adapter**

**To AC
outlet**

Matrox MXO2 LE

**MXO2 LE
(side view)**

+12V 2.0A

HOST

RS422

Power button

**External
power supply**

OR

**Female 4-pin
XLR cable**

Power cord

**Battery on a
universal battery
adapter**

**To AC
outlet**

Powering Matrox MXO2

Matrox MXO2 Rack

You can power MXO2 Rack using an AC outlet and an IEC-C13 power cord.

(i) **Important**   When MXO2 Rack is connected to a computer that is running, do not disconnect MXO2 Rack from its power source. Shut down your computer before removing power from MXO2 Rack.

MXO2 Rack
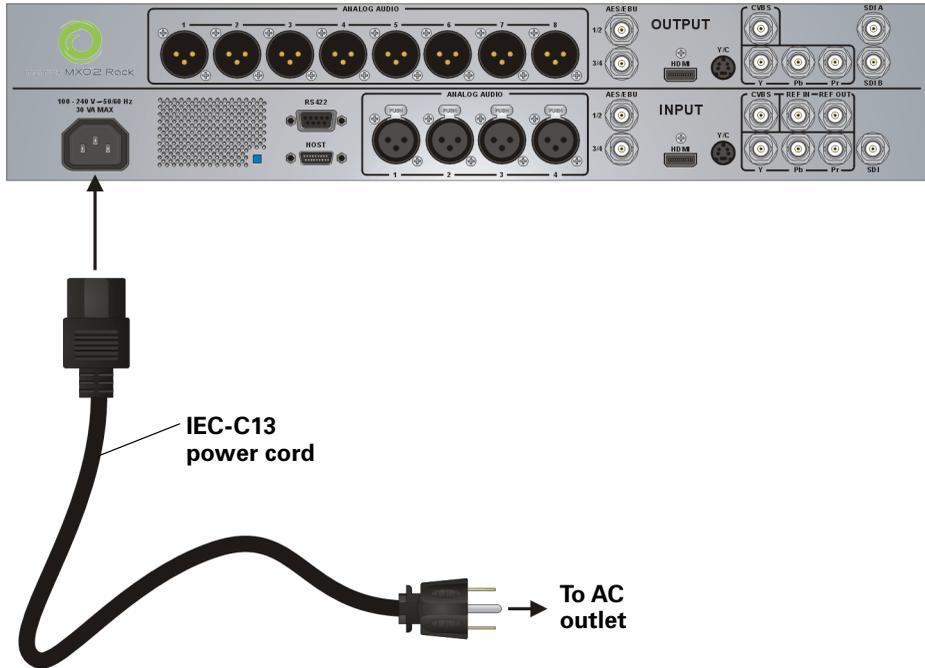
Matrox MXO2 Mini

You can power MXO2 Mini using an AC outlet via the Matrox external power supply cable. MXO2 Mini provides an external power supply cable with international adapter plugs for use in different regions:

- To remove an adapter plug from the Matrox power adapter, hold down the button labeled **PUSH** on the power adapter, and then slide the adapter plug up until it releases from the power adapter.

- To insert an adapter plug into the Matrox power adapter, ensure that the adapter plug is properly aligned with the corresponding slot on the power adapter, and then slide the adapter plug down into the power adapter until it locks into place.

Removing an adapter plug

Inserting an adapter plug

MXO2 Mini

Power supply cable

To AC outlet

Powering Matrox MXO2
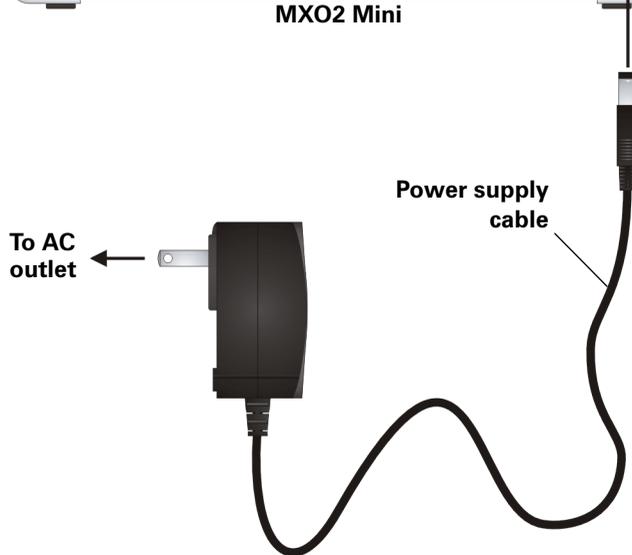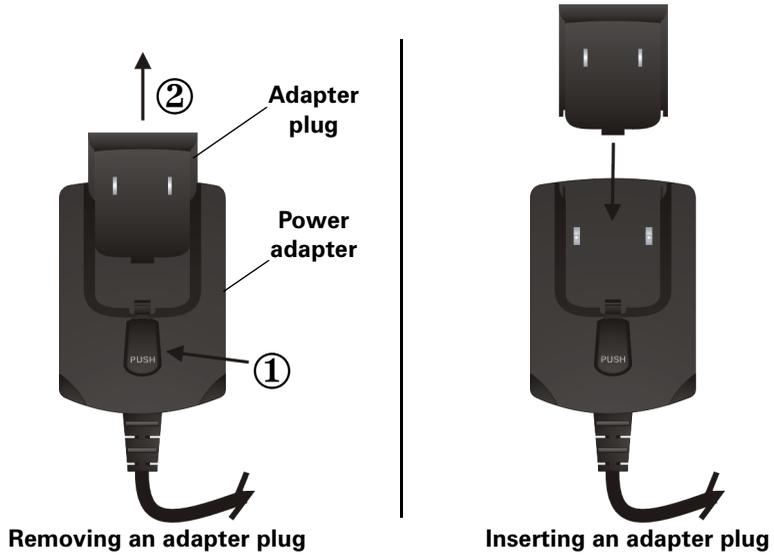
Matrox MXO2 Dock (Mac OS only)

You can power MXO2 Dock using an AC outlet via the Matrox external power supply cable. MXO2 Dock provides an external power supply cable with international adapter plugs for use in different regions:

- To remove an adapter plug from the power adapter, hold down the button on the adapter plug, and then slide the adapter plug up until it releases from the power adapter.
- To insert an adapter plug into the power adapter, ensure that the adapter plug is properly aligned with the corresponding slot on the power adapter, and then slide the adapter plug down into the power adapter until it locks into place.

Removing an adapter plug   **Inserting an adapter plug**

MXO2 Dock

To AC outlet

Power supply cable
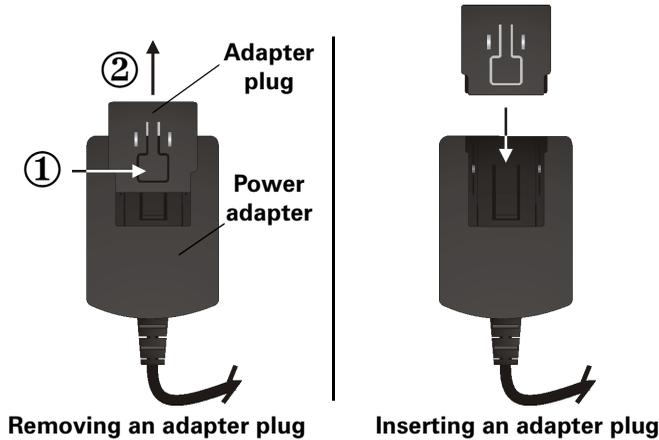
Powering Matrox MXO2

Ensuring proper PCIe cable connection

To ensure functionality and avoid damaging the PCIe cable or host connector when connecting MXO2 to your computer, the PCIe cable must be connected to your MXO2 and host connector as shown below:

To Matrox MXO2

"B" side of PCIe cable must face the side labeled "HOST" on MXO2.
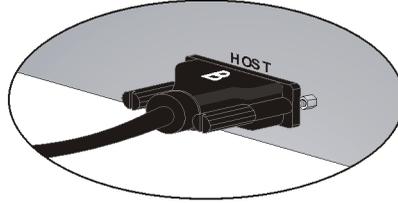
To Matrox PCIe ExpressCard/34 adapter

"B" side of PCIe cable must face the top of the Matrox PCIe ExpressCard/34 adapter.
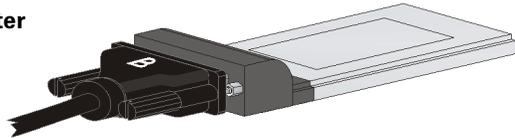
To Matrox MXO2 Thunderbolt adapter (Mac OS only)

"B" side of PCIe cable must face the side labeled "HOST" on the Matrox MXO2 Thunderbolt adapter.

To Matrox MXO2 Dock (Mac OS only)

"B" side of PCIe cable must face the top of MXO2 Dock.
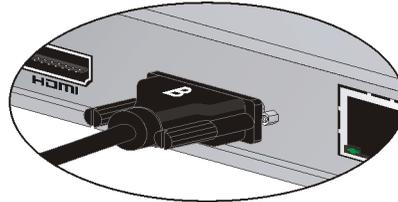
To Matrox PCIe host adapter

"B" side of PCIe cable must face the side labeled "XI LINK" on the Matrox PCIe host adapter.
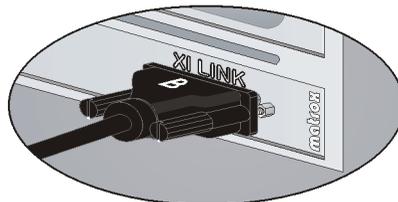
Connecting MXO2 to your computer

Connect MXO2 to your computer using the Matrox PCIe cable and the appropriate Matrox host adapter or MXO2 Dock.

Using Matrox MXO2 Dock (Mac OS only)

Use Matrox MXO2 Dock to connect MXO2 to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 to be detected by your system and its applications.

(i) **Important** Make sure that the Matrox PCIe cable is connected to MXO2 Dock and MXO2 before connecting MXO2 Dock to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from MXO2 Dock, or MXO2, when your Mac system is running.
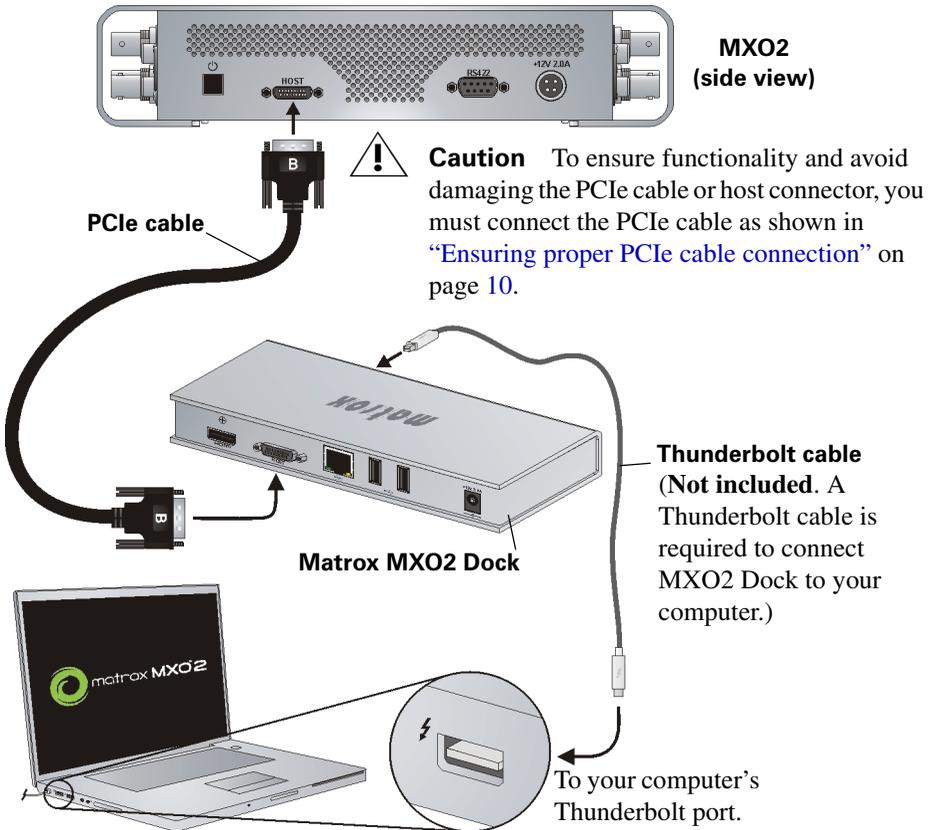
MXO2 (side view)

PCIe cable

/!\ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect MXO2 Dock to your computer.)

Matrox MXO2 Dock

To your computer's Thunderbolt port.

Using the Matrox MXO2 Thunderbolt adapter (Mac OS only)

Use the Matrox MXO2 Thunderbolt adapter to connect MXO2 to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 to be detected by your system and its applications.

(i) **Important** Make sure that the Matrox PCIe cable is connected to the adapter and MXO2 before connecting the adapter to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from the adapter, or MXO2, when your system is running.

MXO2 (side view)

PCIe cable

⚠ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

Matrox MXO2 Thunderbolt adapter

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect the Matrox MXO2 Thunderbolt adapter to your computer.)

matrox MXO2

To your computer's Thunderbolt port.

Connecting MXO2 to your computer

Using the Matrox PCIe host adapters

For MXO2 to be detected on a desktop computer, power must be supplied to MXO2, and it must be connected to your system before starting up your computer.

(i) **Important** Do not disconnect the Matrox PCIe cable from the adapter, or MXO2, when your computer is running. To safely remove the Matrox PCIe host Expresscard/34 adapter, see "Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)" on page 2.

MXO2 (side view)

/!\ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

PCIe cable

Matrox PCIe host adapter

Matrox PCIe host ExpressCard/34 adapter

OR

To your laptop's ExpressCard/34 slot (see "Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)" on page 2).

**Connecting MXO2 to your computer**
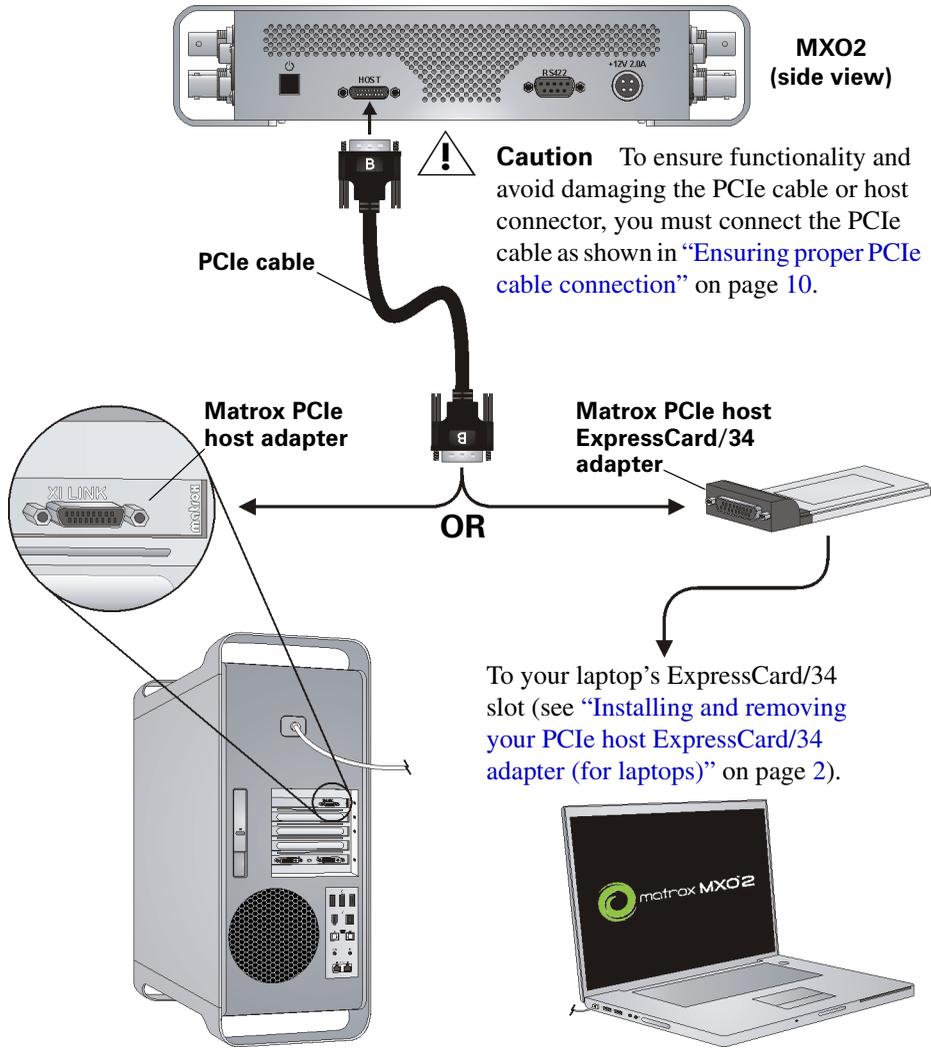
Connecting MXO2 LE to your computer

Connect MXO2 LE to your computer using the Matrox PCIe cable and the appropriate Matrox host adapter or MXO2 Dock.

Using Matrox MXO2 Dock (Mac OS only)

Use Matrox MXO2 Dock to connect MXO2 LE to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 LE to be detected by your system and its applications.

(i) **Important** Make sure that the Matrox PCIe cable is connected to MXO2 Dock and MXO2 LE before connecting MXO2 Dock to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 LE when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from MXO2 Dock, or MXO2 LE, when your Mac system is running.
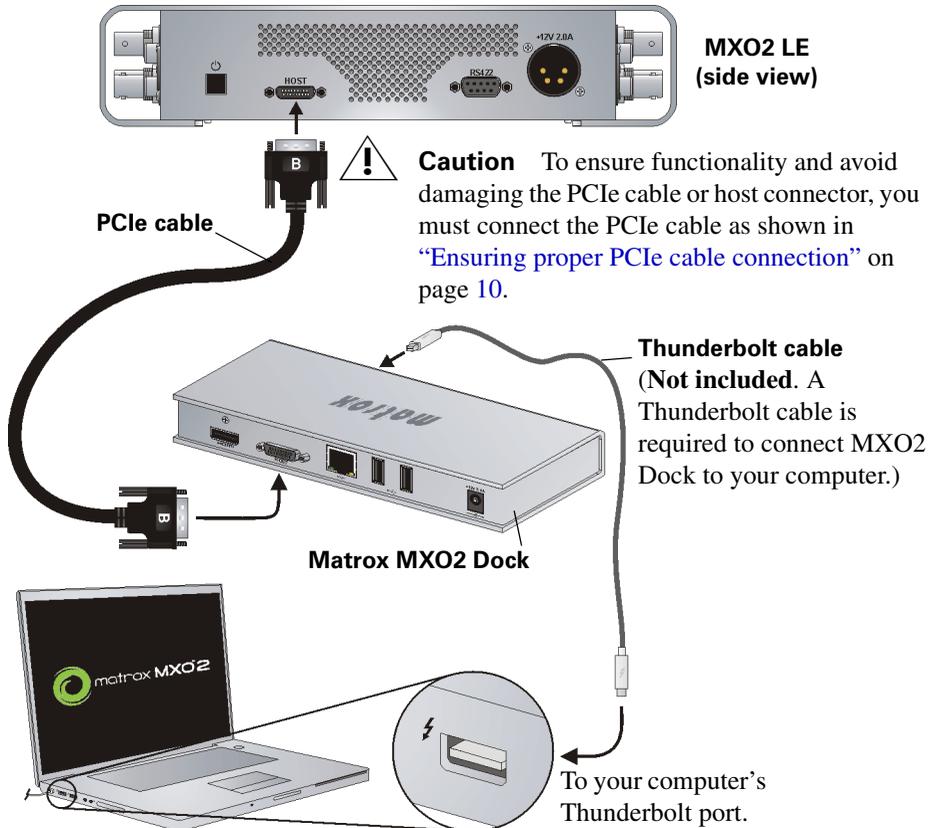
MXO2 LE (side view)

PCIe cable

⚠ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect MXO2 Dock to your computer.)

Matrox MXO2 Dock

To your computer's Thunderbolt port.

Connecting MXO2 LE to your computer

Using the Matrox MXO2 Thunderbolt adapter (Mac OS only)

Use the Matrox MXO2 Thunderbolt adapter to connect MXO2 LE to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 LE to be detected by your system and its applications.

(i) **Important**   Make sure that the Matrox PCIe cable is connected to the adapter and MXO2 LE before connecting the adapter to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 LE when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from the adapter, or MXO2 LE, when your system is running.

MXO2 LE (side view)

PCIe cable

⚠ **Caution**   To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

Matrox MXO2 Thunderbolt adapter

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect the Matrox MXO2 Thunderbolt adapter to your computer.)

To your computer's Thunderbolt port.

Connecting MXO2 LE to your computer

Using the Matrox PCIe host adapters

For MXO2 LE to be detected on a desktop computer, power must be supplied to
MXO2 LE, and it must be connected to your system before starting up your computer.

(i) **Important**   Do not disconnect the Matrox PCIe cable from the adapter, or MXO2
LE, when your computer is running. To safely remove the Matrox PCIe host
Expresscard/34 adapter, see "Installing and removing your PCIe host ExpressCard/34
adapter (for laptops)" on page 2.

**MXO2 LE
(side view)**

/!\ **Caution**   To ensure functionality and
avoid damaging the PCIe cable or host
connector, you must connect the PCIe
cable as shown in "Ensuring proper PCIe
cable connection" on page 10.

PCIe cable

**Matrox PCIe
host adapter**

**Matrox PCIe host
ExpressCard/34
adapter**

OR

To your laptop's ExpressCard/34
slot (see "Installing and removing
your PCIe host ExpressCard/34
adapter (for laptops)" on page 2).

Connecting MXO2 LE to your computer
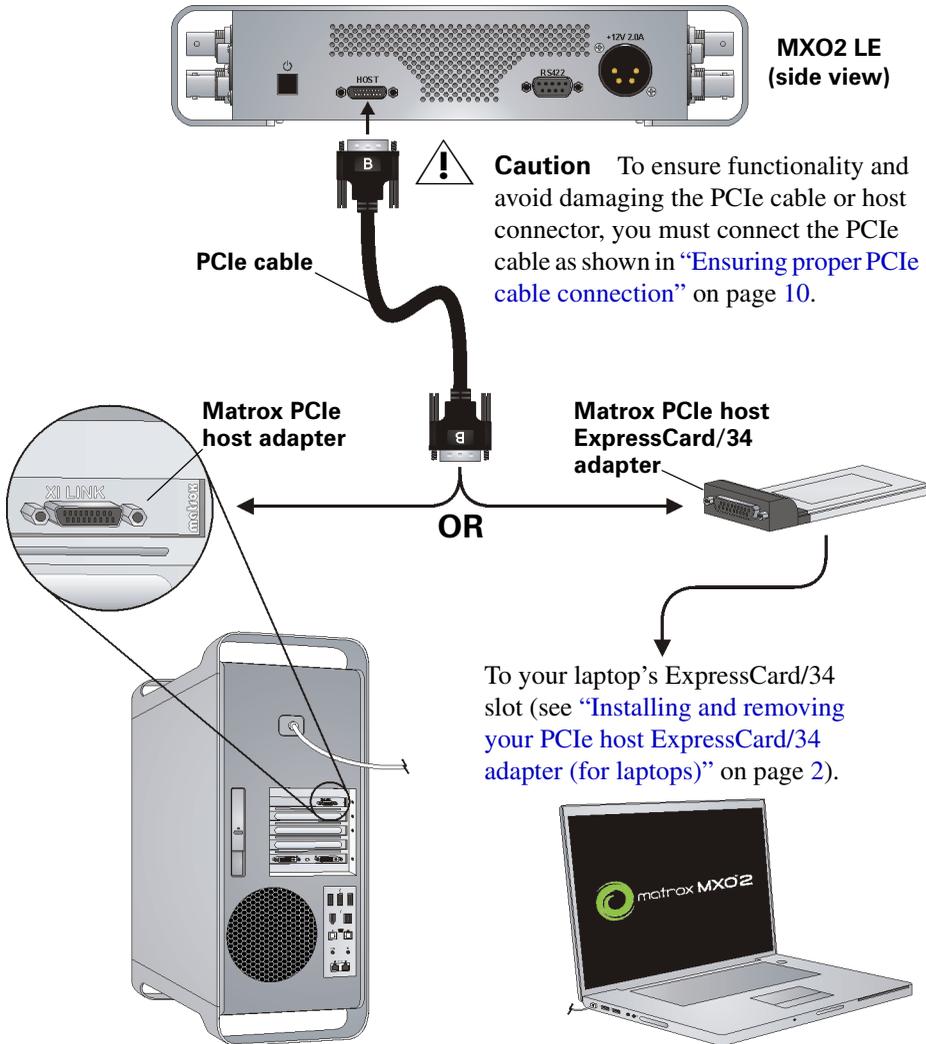
Connecting MXO2 Rack to your computer

Connect MXO2 Rack to your computer using the Matrox PCIe cable and the appropriate Matrox host adapter or MXO2 Dock.

Using Matrox MXO2 Dock (Mac OS only)

Use Matrox MXO2 Dock to connect MXO2 Rack to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 Rack to be detected by your system and its applications.

(i) **Important**   Make sure that the Matrox PCIe cable is connected to MXO2 Dock and MXO2 Rack before connecting MXO2 Dock to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 Rack when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from MXO2 Dock, or MXO2 Rack, when your Mac system is running.
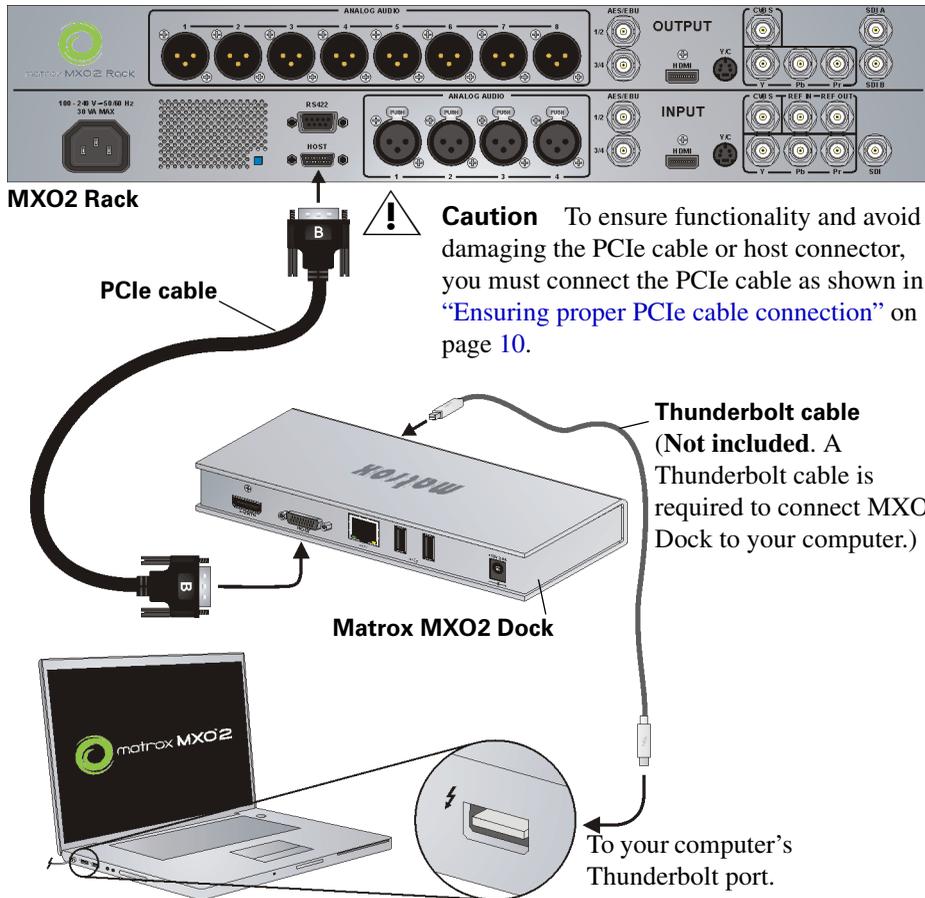
MXO2 Rack

PCIe cable

⚠ **Caution**   To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect MXO2 Dock to your computer.)

**Matrox MXO2 Dock**

To your computer's Thunderbolt port.

Connecting MXO2 Rack to your computer

## Using the Matrox MXO2 Thunderbolt adapter (Mac OS only)

Use the Matrox MXO2 Thunderbolt adapter to connect MXO2 Rack to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 Rack to be detected by your system and its applications.

(i) **Important**   Make sure that the Matrox PCIe cable is connected to the adapter and MXO2 Rack before connecting the adapter to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 Rack when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from the adapter, or MXO2 Rack, when your system is running.

MXO2 Rack

PCIe cable

⚠ **Caution**   To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

Matrox MXO2 Thunderbolt adapter

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect the Matrox MXO2 Thunderbolt adapter to your computer.)

To your computer's Thunderbolt port.

**Connecting MXO2 Rack to your computer**
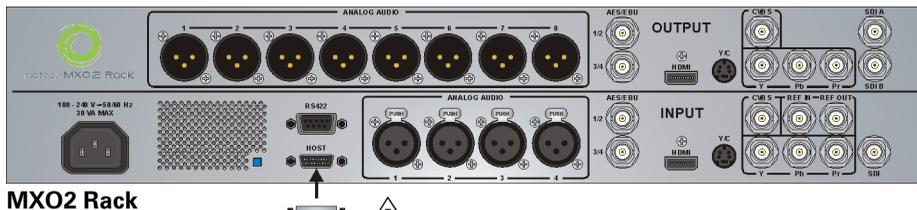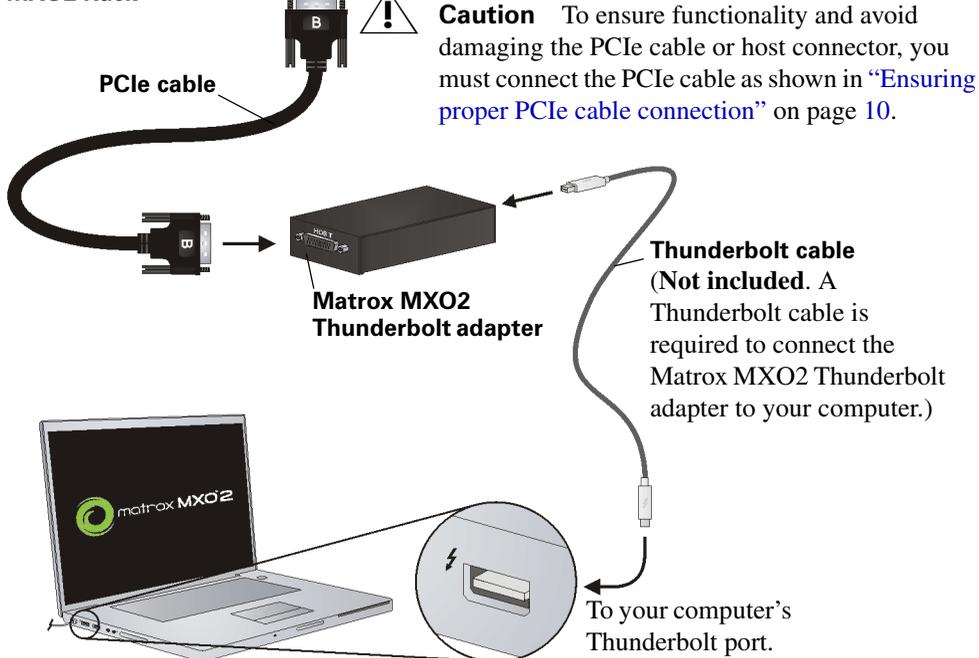
Using the Matrox PCIe host adapters

For MXO2 Rack to be detected on a desktop computer, power must be supplied to MXO2 Rack, and it must be connected to your system before starting up your computer.

(i) **Important** Do not disconnect the Matrox PCIe cable from the adapter, or MXO2 Rack, when your computer is running. To safely remove the Matrox PCIe host Expresscard/34 adapter, see "Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)" on page 2.

MXO2 Rack

△ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

PCIe cable

Matrox PCIe host adapter

Matrox PCIe host ExpressCard/34 adapter

OR

To your laptop's ExpressCard/34 slot (see "Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)" on page 2).
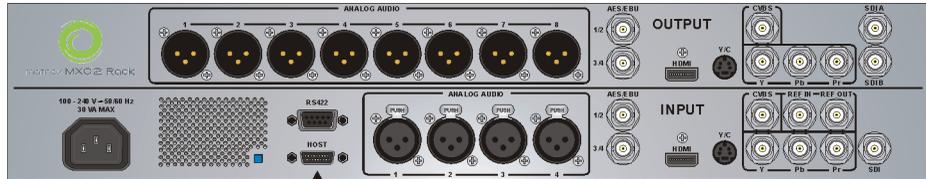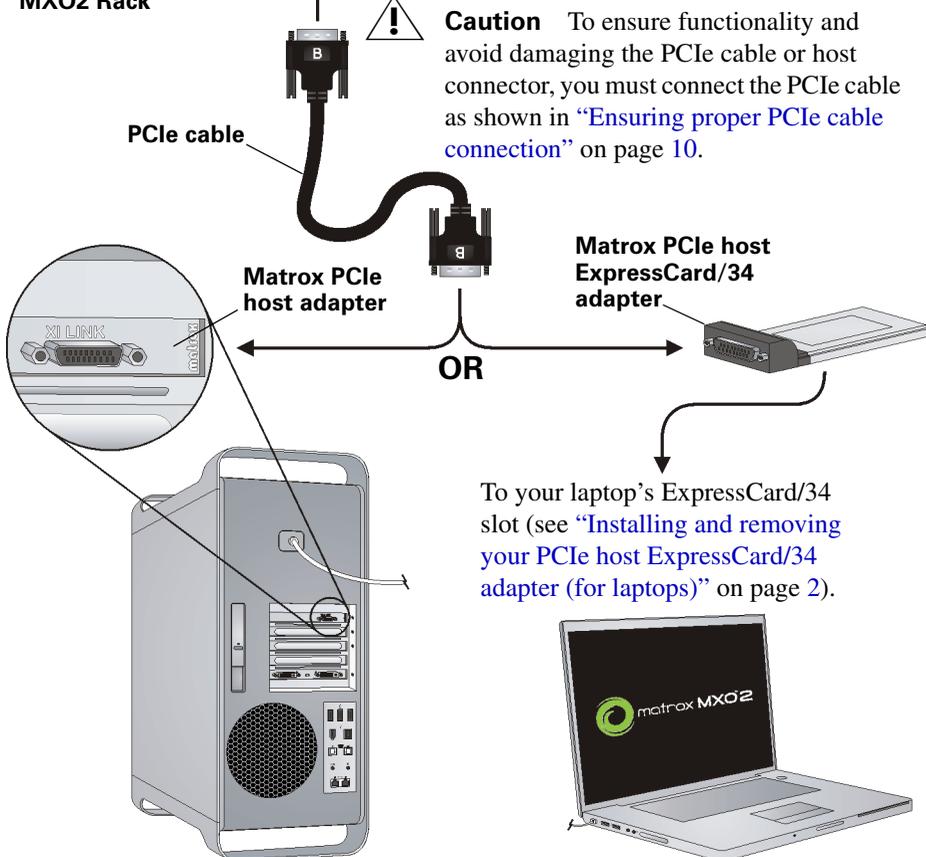
**Connecting MXO2 Rack to your computer**

Connecting MXO2 Mini to your computer

Connect MXO2 Mini to your computer using the Matrox PCIe cable and the appropriate Matrox host adapter or MXO2 Dock.

Using Matrox MXO2 Dock (Mac OS only)

Use Matrox MXO2 Dock to connect MXO2 Mini to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 Mini to be detected by your system and its applications.

(i) **Important** Make sure that the Matrox PCIe cable is connected to MXO2 Dock and MXO2 Mini before connecting MXO2 Dock to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 Mini when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from MXO2 Dock, or MXO2 Mini, when your Mac system is running.
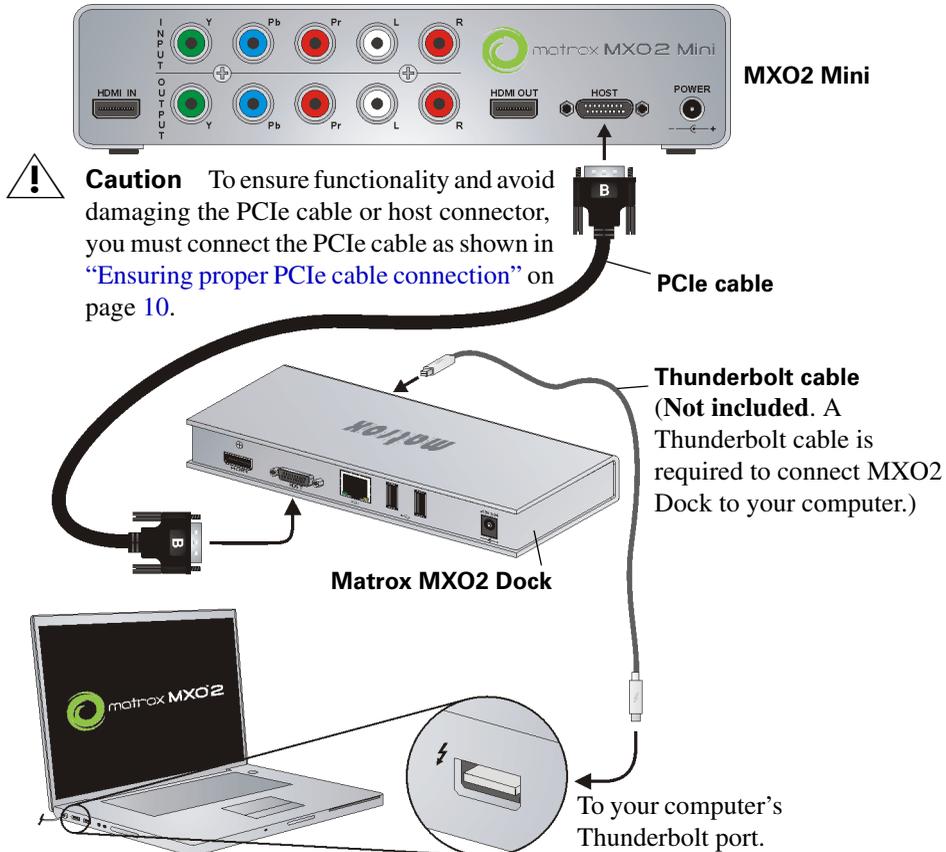
MXO2 Mini

⚠ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

PCIe cable

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect MXO2 Dock to your computer.)

Matrox MXO2 Dock

To your computer's Thunderbolt port.

Connecting MXO2 Mini to your computer

Using the Matrox MXO2 Thunderbolt adapter (Mac OS only)

Use the Matrox MXO2 Thunderbolt adapter to connect MXO2 Mini to your computer's Thunderbolt port. When doing this, it may take up to ten seconds for your MXO2 Mini to be detected by your system and its applications.

(i) **Important**   Make sure that the Matrox PCIe cable is connected to the adapter and MXO2 Mini before connecting the adapter to your computer via the Thunderbolt cable. If you want to disconnect or connect MXO2 Mini when your system is running, you must do it by disconnecting/connecting the Thunderbolt cable. Do not disconnect the Matrox PCIe cable from the adapter, or MXO2 Mini, when your system is running.

MXO2 Mini

⚠ **Caution**   To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

PCIe cable

Matrox MXO2 Thunderbolt adapter

Thunderbolt cable (**Not included**. A Thunderbolt cable is required to connect the Matrox MXO2 Thunderbolt adapter to your computer.)

To your computer's Thunderbolt port.
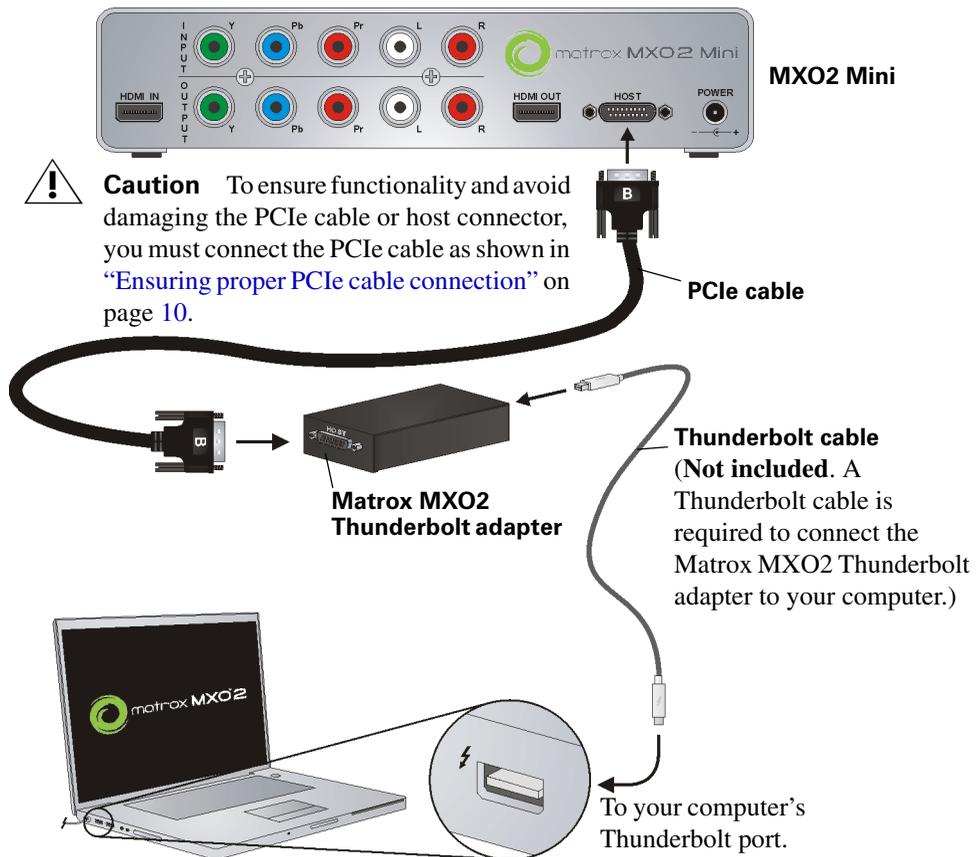
Using the Matrox PCIe host adapters

For MXO2 Mini to be detected on a desktop computer, power must be supplied to MXO2 Mini, and it must be connected to your system before starting up your computer.

(i) **Important** Do not disconnect the Matrox PCIe cable from the adapter, or MXO2 Mini, when your computer is running. To safely remove the Matrox PCIe host Expresscard/34 adapter, see "Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)" on page 2.

MXO2 Mini

⚠ **Caution** To ensure functionality and avoid damaging the PCIe cable or host connector, you must connect the PCIe cable as shown in "Ensuring proper PCIe cable connection" on page 10.

PCIe cable

Matrox PCIe host adapter

Matrox PCIe host ExpressCard/34 adapter

OR

To your laptop's ExpressCard/34 slot (see "Installing and removing your PCIe host ExpressCard/34 adapter (for laptops)" on page 2).
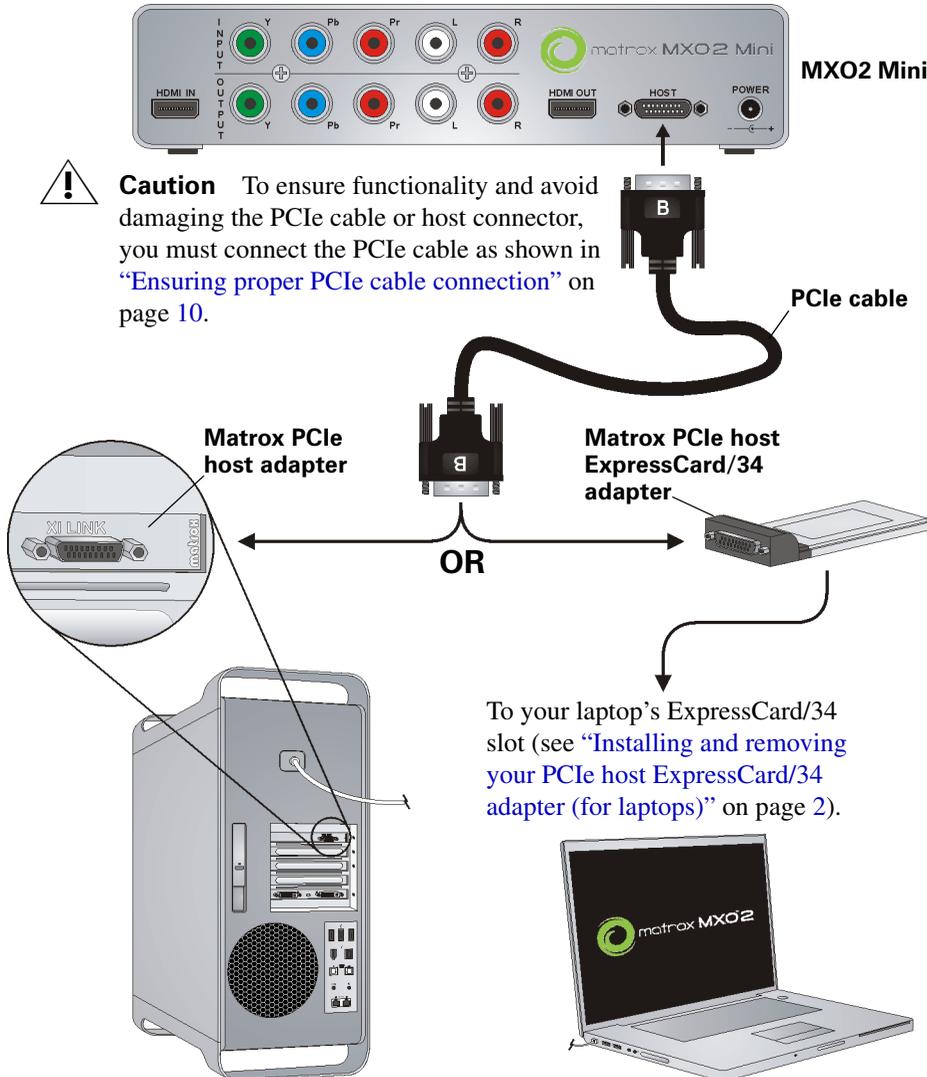
Connecting MXO2 Mini to your computer

Typical MXO2 digital video connections

In the following illustration, we've connected a video monitor to view the signal that will be recorded, and separate source and record decks. You may, however, use the same deck as both your source and record device by making the input and output connections to a single deck. We're using SDI connectors for video and audio, and monitoring the audio on a surround sound speaker system through RCA connectors. The video is genlocked using a tri-level sync generator.

Typical MXO2 LE digital video connections

In the following illustration, we've connected a video monitor to view the signal that will be recorded, and separate source and record decks. You may, however, use the same deck as both your source and record device by making the input and output connections to a single deck. We're using SDI connectors for video and audio, an SDI connector for video monitoring, and we're monitoring the audio on a surround sound speaker system through an HDMI connector. The video is genlocked using a tri-level sync generator.
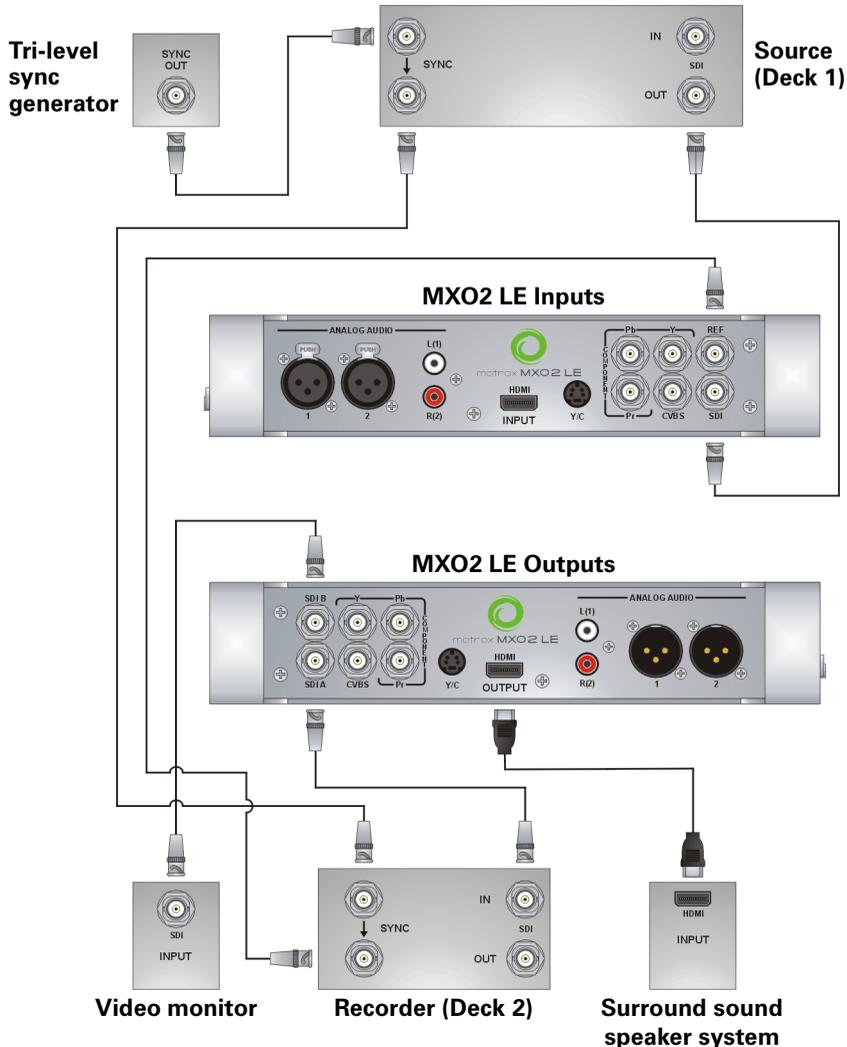
Typical MXO2 LE digital video connections

Typical MXO2 Rack digital video connections

In the following illustration, we've connected a video monitor to view the signal that will be recorded, and separate source and record decks. You may, however, use the same deck as both your source and record device by making the input and output connections to a single deck. We're using SDI connectors for video and audio, and monitoring the audio on a surround sound speaker system through XLR connectors. The video is genlocked using a tri-level sync generator.
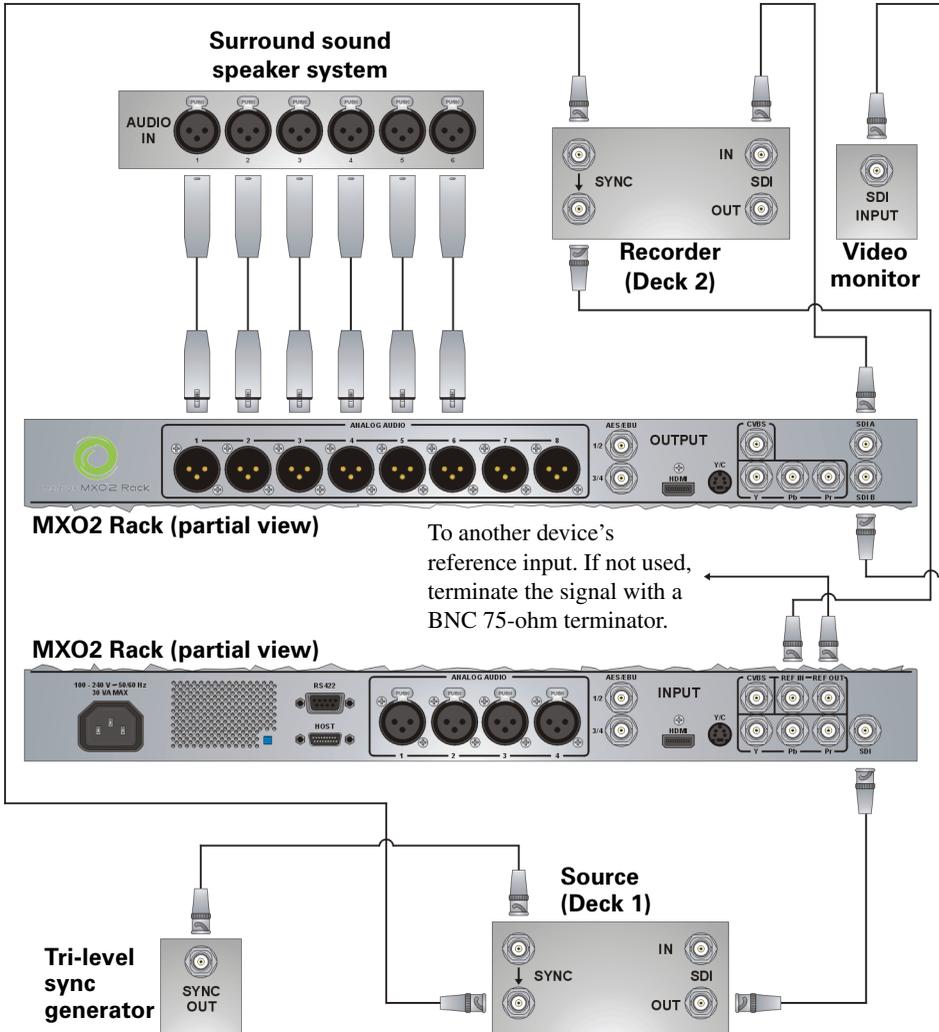

Typical MXO2 Rack digital video connections

Typical MXO2 Mini HDMI video connections

In this illustration, we're using HDMI for video, RCA connectors for audio, and S-Video for video monitoring. The video is genlocked to the input source using MXO2 Mini's built-in genlock.

Note When using HDMI connections, the embedded uncompressed HDMI audio is also available.
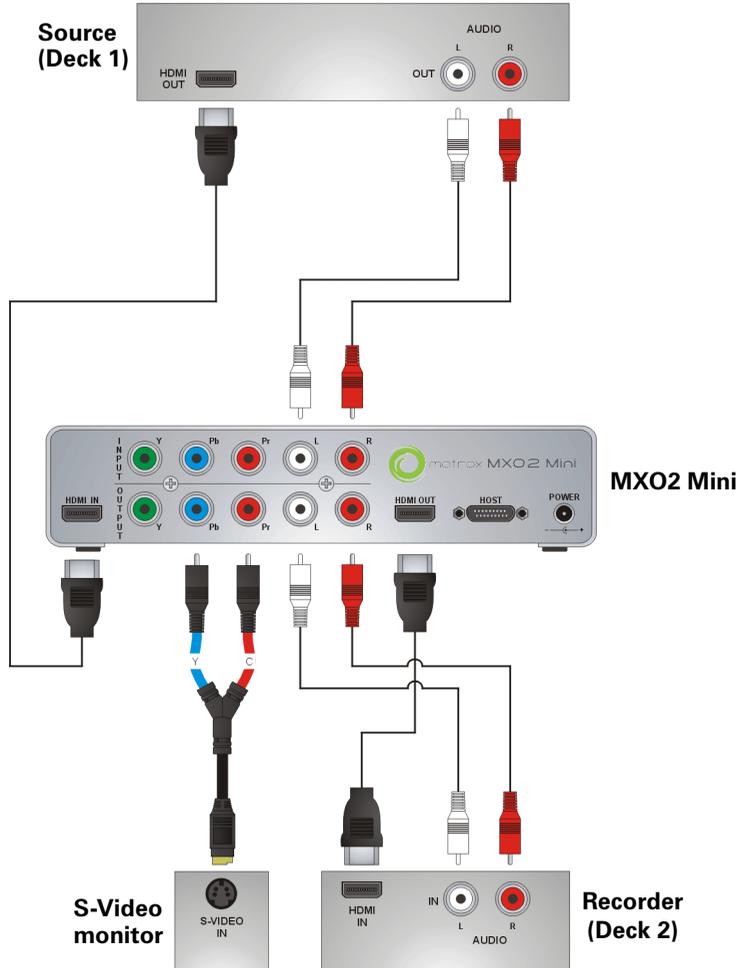
Typical MXO2 Mini HDMI video connections

Registration and customer support

You can register your Matrox MXO2 system in the Matrox MXO2 Support section of our website at www.matrox.com/video/support.

(i) **Important**   Only registered users are entitled to customer support, software updates, access to our user forums, and special promotional offers.

Contacting us

Matrox is proud to offer worldwide customer support. Please use the Matrox MXO2 contact information for your area as provided on our website at www.matrox.com/video/support.

Your notes

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