

Matrox MXO2 Family for Mac FAQ

Here are the answers to the most frequently asked questions about the Matrox MXO2 family for Mac.

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1. How do the Matrox MXO2 devices connect to my Mac?

The Matrox MXO2 devices connect to a MacBook Pro via the ExpressCard/34 slot. You may have been told that this precludes you from using the best storage solution but FireWire storage is actually more than adequate for editing multiple layers of SD or compressed HD footage. With Final Cut Pro, FireWire 800 storage lets you transfer up to 6 layers of DV, 8 layers of HDV 1080i, 2 layers of DVCPRO HD 1080i, 2 layers of ProRes 422 1080, or 2 layers of 10-bit uncompressed SD in real time.

The Matrox MXO2 devices connect to a MacPro via the internal PCIe slot. This allows you to use any storage solution. The benefit of using the PCIe connection is that you can work with uncompressed 10-bit HD video as well as any other format including ProRes 422 HQ. You have complete flexibility.

Please refer to Kit Contents for more information about the adapters included with each product.

2. Can I use my Matrox MXO2 device with multiple workstations and laptops?

Yes, you can share one Matrox MXO2 device across your editing stations. Because Matrox MXO2 is an external device you can easily move it from system to system as the need arises. The “brains” of unit is in the box and it attaches to the MacPro via a small interface card. Interface cards can be purchased for just \$99 each. For example, if you have a 4-system facility, you can equip all your editors with I/O for under \$2K vs. over \$5000 if you were considering purchasing even mid-range I/O cards for each system. ExpressCard/34 adapters can also be purchased for just \$99 each to use with MacBook Pros so you can take your Matrox MXO2 device on the road too.

Please refer to Kit Contents for more information about the adapters included with each product.

3. Do the Matrox MXO2 devices support ProRes 422?

Yes. The Matrox MXO2 products support ProRes 422 and ProRes 422 HQ. They also give you the freedom and flexibility to use a wide variety of other codecs and video formats.

4. Can the Matrox MXO2 devices capture to ProRes 422 and ProRes 422 HQ in real time?

Yes. On systems with a 2.4 GHz or faster Core2 Duo CPU you can capture to SD ProRes 422 and ProRes 422 HQ in real time. On systems with at least two Dual-Core or a Quad-Core 2.4 GHz or faster CPU you can also capture to HD ProRes 422 and ProRes 422 HQ 720P or 1080i in real time.

5. Can I capture 720p ProRes on a MacBook Pro?

Yes. Matrox MXO2 LE, Matrox MXO2 or Matrox MXO2 Rack let you capture 720p 23.98 from 59.94 sources directly into ProRes 720p 23.98 with a MacBook Pro with an Intel Core2Duo 2.4 or higher CPU.(This feature is not offered on Matrox MXO2 Mini.)

6. Can I capture ProRes 422 (LT) on a MacBook Pro?

Yes. The Matrox MXO2 devices let you capture ProRes 422 (LT) on a MacBook Pro with an Intel Core2Duo 2.4 or higher CPU. (Final Cut Studio 3 and Matrox MXO2 version 1.6 or higher are required.)

7. Do the Matrox MXO2 devices support XDCAM EX and P2 HD?

Yes. The Matrox MXO2 devices are ideal for tapeless workflows. They let you log and capture your XDCAM EX or P2 HD files, place them on the timeline, and simply hit play – no transcoding, no drop frames, and no need to convert your files to another codec format.

Please refer to File-based workflow support – XDCAM HD and P2 HD section of the MXO2 product guide for more information.

8. Can the Matrox MXO2 devices capture to DVCPRO HD in real time?

Yes. Using a 2.4 GHz or faster Core2 Duo CPU, the Matrox MXO2 devices let you capture to DVCPRO HD at 720p and 1080i in real time.

9. What other codecs do the Matrox MXO2 devices support?

There are many different codecs and video formats in use today. Unlike some other products, the Matrox MXO2 devices do not force you to use one specific codec. You are free to use the codec that is best for each job, including your camera's native codec.

In HD for example, the MXO2 products support ProRes, ProRes422 HQ, HDV, DVCPRO HD, XDCAM HD, XDCAM HD422, and XDCAM EX. Since the Matrox MXO2 products take full advantage of the high bandwidth of the PCI Express bus (They are not FireWire 800 devices.), they also support 8- and 10-bit uncompressed workflows.

10. Does Matrox MXO2 offer any benefits for RED users?

Yes. Matrox MXO2 LE, Matrox MXO2 or Matrox MXO2 Rack can benefit RED users on location and in the post suite. (RED support is not offered on Matrox MXO2 Mini.)

Capture, monitor, and playback on set

The Matrox MXO2 devices provide an inexpensive way to manage your RED shoots. It can easily be taken on set and connected to the HD 720p SDI output of the RED camera. You can then capture while shooting; you can monitor on an HD SDI or HDMI monitor while shooting; and you can instantly playback the shot. This saves time and production costs by allowing your DP to instantly approve shots and scenes. At the end of the day, you can quickly create SD and HD dailies or rushes taking advantage of the realtime 10-bit hardware scaling feature.

Edit, monitor, and output in post

Back in the post suite, you can use your Matrox MXO2 device to work with 1K and 2K RED timelines in either 16:9 or 2:1 aspect ratio, and output to SD, 720, or 1080 via the realtime 10-bit hardware scaling feature. This lets you use HD or SD monitoring equipment you may already own, or you can get great results using inexpensive HDMI monitors. The unique Matrox HDMI Calibration Utility gives you accurate color representation so that you can use your HDMI monitor with Apple Color to begin the first phase of color correction. The Matrox MXO2 devices also makes it easy for you to output EDLs, dailies, and rushes in record time.

11. What can the upscaling and downscaling feature do for me?

The Matrox MXO2 products provide realtime 10-bit hardware scaling on the outputs. You can upscale from NTSC or PAL to either 720 or 1080. You can downscale 720 or 1080 HD footage to NTSC or PAL.

This realtime scaling feature is particularly useful when you need to master both HD and SD because it lets you output both simultaneously from the same timeline. It is also invaluable when you need to proof DVD content from an HD video source or make quick SD rushes from HD material.

12. Can the Matrox MXO2 devices scale on capture?

Yes. The Matrox MXO2 devices let you capture to a different format than your source video. You can benefit from high-quality 10-bit hardware scaling to conform all your various source footage to a single format up front, before you begin to edit. Currently when you mix formats you spend time rendering your timeline to conform your footage to a single format to share with other editors, send for final color grading, or deliver to your client. With your MXO2 device's ability to scale the input during capture, you save time bypassing the usual rendering step. This feature is also useful for converting SD archive footage for HD broadcast.

Your Matrox MXO2 device will upscale, downscale, or cross-convert your source video to the desired capture format. Through the Matrox Control Panel, you identify the input source then select the resolution in Final Cut Pro that you would like to capture. Your Matrox MXO2 device will scale prior to capturing to your codec of choice. The scaled video can be monitored on all your Matrox MXO2 device's outputs during capture. Options for 4:3 and 16:9 source input from SD sources are available.

The following conversions are supported on capture (frame rates must match).

- SD to 720 (not applicable to HDMI input)
- SD to 1080 (not applicable to HDMI input)
- 720 to 1080
- 720 to SD
- 1080 to 720
- 1080 to SD

13. Can the Matrox MXO2 products convert my 720p timeline to 1080i and vice versa in real time?

Yes. The Matrox MXO2 products provide realtime cross conversion in hardware, saving you hours of rendering when your source material does not match your client's delivery requirements.

14. I shot at 23.98 fps, but now my client demands 29.97 fps for broadcast, can my Matrox MXO2 device help?

Yes. Matrox MXO2 LE, Matrox MXO2, and Matrox MXO2 Rack provide realtime frame rate conversion in hardware. They can output a 23.98 timeline to tape at 29.97 fps in real time, saving hours of rendering. This feature is also beneficial if you work in 23.98 but your monitoring equipment does not support that frame rate. Your Matrox MXO2 device lets you view your 23.98 fps project at 29.97 fps to ensure correct title placement and accurate color temperature of your 23.98 fps project. (Matrox MXO2 Mini does not support this feature.) Conversion from 23.98 fps to 25 fps is handled by Final Cut Pro and the host.

15. What inputs and outputs do the Matrox MXO2 products have?

The Matrox MXO2 products provide a full range of professional video inputs and outputs. Please refer to the Broadcast-quality HD/SD video and audio input/output section of the MXO2 family product guide for a complete description and comparison.

16. Do the Matrox MXO2 devices provide deck control?

Yes. Matrox MXO2 LE, Matrox MXO2, and Matrox MXO2 Rack come with an RS-422 port to communicate with devices that support this protocol. Frame-accurate capture and print-to-tape with guaranteed audio video sync are provided. (Matrox MXO2 Mini does not support this feature.)

17. Can any of the Matrox MXO2 devices run off standard camera batteries?

Yes. Matrox MXO2 LE and Matrox MXO2 can run off standard field batteries or their included AC power adapter. MXO2 LE attaches directly to a battery via a standard 4-pin XLR connector. MXO2 connects to a battery via an optional cable that can be purchased separately from your Matrox dealer. We have validated the Anton Bauer Dionic90 and Dionic160 field batteries for use with MXO2 and MXO2 LE.

18. Can the Matrox MXO2 devices do anything to preserve HD closed captioning data while I edit?

Yes. When using Matrox MXO2 LE, Matrox MXO2 or Matrox MXO2 Rack you'll no longer need to spend time and money recreating HD captioning data that is typically lost when you edit projects in Final Cut Pro. (Because it does not provide SDI I/O, Matrox MXO2 Mini does not support this feature.) The Matrox MXO2 devices with SDI support offer a unique patent

pending workflow to capture, playback, and preserve closed captioning data while editing projects in Final Cut Pro. Nothing is destroyed.

The workflow is as follows:

Capture - If you have an HD-SDI video source that contains digital closed captioning data in the VANC (vertical ancillary data space), the Matrox MXO2 devices let you capture the closed captioning data along with the video using the HD-SDI input.

Edit – your Matrox MXO2 device will preserve your closed captioning data throughout the editing process. You can use Final Cut Pro to trim, add effects such as color correction, and add titles or credits while maintaining your closed captioning data. With a Matrox MXO2 device, your original closed captioning data is not destroyed.

Output - When using the HD SDI output for playback, you can choose to maintain and output the digital closed captioning data that was captured using your MXO2 device. The closed captioning data is inserted into your video's VANC.

Even if you need to scale on capture or output, you can count on your Matrox MXO2 device to preserve your closed captioning data throughout your production.

In addition, Matrox has worked with CPC, the closed captioning software leader, to develop an innovative solution that allows the MacCaption HD software to encode and decode HD captions to and from HD decks using a Matrox MXO2 device. You can save time and money by encoding HD captions directly on your video editing system, without any additional hardware and with zero generation loss. It is no longer necessary to send HD master tapes to a separate deck-to-deck hardware caption encoding system. Now, instead of hiring a closed captioning service, you can bill your customers for the extra value you give them in producing their final project with closed captioning included. For more information, visit www.cpcweb.com.

19. What are the system requirements for the Matrox MXO2 devices?

The Matrox MXO2 products require a Mac system with the following configuration:

- Intel-based Mac Pro or MacBook Pro
- Mac OS X v10.5 or later
- One free PCIe slot on the Mac Pro to install the Matrox PCIe host adapter
- One free ExpressCard/34 slot on the MacBook Pro to install the Matrox PCIe host ExpressCard/34 adapter
- If using MXO2 with Final Cut Studio 2 or Final Cut Studio 3 – 2 GB physical memory (RAM) when working with compressed HD and uncompressed SD sources, or 4 GB physical memory (RAM) when working with uncompressed HD sources
- HDMI monitor that supports 1920×1080 and “dot-by-dot” mode is recommended for 1:1 pixel mapping

20. Which Matrox I/O device is right for me?

Please refer to the Product Selection Table – Matrox I/O Devices to compare models.