Matrox MXO2 Family for Mac Product Guide

matrox MXO2™ Family

matrox
Digital Video Solutions

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Key Features

Why buy an I/O card and a breakout box when you can get all the features of both in one of the Matrox MXO2 products?

These award-winning devices can easily be moved among the Mac Pros in your facility, installed in an OB van, or taken on the road with a MacBook Pro. You get highly-reliable, broadcast-quality video and audio input/output and HDMI video monitoring with the unique Matrox calibration controls including blue-only. You also benefit from a wide variety of HD and SD workflows with Final Cut Studio and Adobe Creative Suite 5 thanks to a 10-bit hardware scaling engine and support for a wealth of file-based formats and industry-standard codecs. As an added advantage, all four of the Matrox MXO2 products are also available with Matrox MAX technology for faster than realtime high definition H.264 file creation for Blu-ray, the web, and mobile devices.

Matrox MXO2 Mini provides a cost-effective HD monitoring solution for Avid editing systems.

The Matrox MXO2 family can also be used with PC laptops and desktops.

Enjoy maximum I/O flexibility – edit anything, anywhere!

Matrox MXO2 Mini – Affordable HDMI/analog video and audio I/O

Matrox MXO2 LE – Professional HD/SD video and audio I/O

Matrox MXO2 – Complete HD/SD video and audio I/O

Matrox MXO2 Rack – Most comprehensive HD/SD video and audio I/O

Key features of the Matrox MXO2 family for Mac

- Convenient form factors for use in studio, on set, in the field, and in OB vans
- Works with Intel-based MacBook Pros, Mac Pros, and Apple Xserve systems
- Broadcast-quality HD/SD video and audio input/output
- Flexible support for leading codecs, file formats, cameras, and workflows
- Extensive application support including Final Cut Pro, Apple Color, Adobe After Effects and Premiere Pro, and many more
- Support for popular 3D workflows
- Cost-effective HD monitoring for Avid Media Composer 5 with Matrox MXO2 Mini
- 10-bit HDMI input, output, and monitoring with calibration controls including blue-only
- 10-bit realtime hardware up/down/cross conversion on capture and output
- Hardware acceleration of Final Cut Pro Dynamic RT segments, HDV, and DVCPRO HD
- Matrox Vetura Capture – stand-alone application for quick and easy capture to a variety of QuickTime codecs
- Matrox Vetura Playback – stand-alone application for convenient playback of your H.264 and .mov files
- Also available with Matrox MAX for faster than realtime H.264 encoding
- Three-year hardware warranty and complimentary telephone support

Matrox MXO2 Mini

Matrox MXO2 LE
Patent pending

Matrox MXO2
Patent pending

Matrox MXO2 Rack
Patent pending

Convenient form factors

The Matrox MXO2 products connect to your MacBook Pro via Apple's ExpressCard/34 slot or to your Mac Pro or Apple Xserve system via a PCI Express adapter card. (Refer to Kit Contents for more information.)

Portable
MXO2 Mini, MXO2 LE and MXO2 are lightweight, portable devices that easily fit into your laptop bag.

Can run off standard field batteries
MXO2 and MXO2 LE 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.

Rackmountable
MXO2 Rack occupies 2RU in a standard 19" inch rack. It comes with two adjustable mounting "ears" so that the unit can be mounted in the rack with the connectors facing the front or back of the rack. The design of the ears allows you to adjust the depth of the unit in the rack.

Dimensions and weight

	Dimensions	Weight
Matrox MXO2 Mini	*6 1/2" x 4 5/16" x 1 1/2" (166mm x 110mm x 40mm)*	*0.6 lbs (280g)*
Matrox MXO2 LE	*9 1/4" x 9 1/2" x 2" (235mm x 241mm x 51mm)*	*2 3/4 lbs (1245g)*
Matrox MXO2	*13" x 9½" x 2" (330mm x 241mm x 51mm)*	*3 1/2 lbs (1600g)*
Matrox MXO2 Rack	*21" x 18" x 8.25" (533mm x 457mm x 210mm)*	*15 lbs (7000g)*

Broadcast-quality HD/SD video and audio input/output

Video I/O

The Matrox MXO2 products provide a full range of professional video inputs and outputs.

MXO2 LE, MXO2 and MXO2 Rack provide RS-422 machine control for frame-accurate capture and print-to tape with Final Cut Pro.

Matrox MXO2 LE, MXO2 and MXO2 Rack provide SD analog black burst (bi-level) or HD tri-level sync genlock. They can genlock to any type of video input or to house sync. Timing offset controls can be used to align your video output relative to your external genlock source to compensate for cable delays within your facility. On MXO2 Rack, loop through is supported.

Matrox MXO2 LE, MXO2 and MXO2 Rack support up to five user-selectable simultaneous video outputs – HD and/or SD on HDMI, SDI, and analog.

Matrox MXO2 Mini lets you view and record your projects in HD and SD at the same time. You can select to simultaneously play back HD or SD on the HDMI output and HD or SD on the analog output.

	MXO2 Mini	MXO2 LE	MXO2	MXO2 Rack
Video Inputs				
Component HD/SD	*Yes*	*Yes*	*Yes*	*Yes*
SDI HD/SD	*No*	*Yes*	*Yes*	*Yes*
Y/C	*Yes*	*Yes*	*Yes*	*Yes*
Composite	*Yes*	*Yes*	*Yes*	*Yes*
HDMI	*Yes*	*Yes*	*Yes*	*Yes*
Video Outputs				
Component HD/SD	*Yes*	*Yes*	*Yes*	*Yes*
SDI HD/SD	*No*	*Yes*	*Yes*	*Yes*
Y/C	*Yes*	*Yes*	*Yes*	*Yes*
Composite	*Yes*	*Yes*	*Yes*	*Yes*
HDMI	*Yes*	*Yes*	*Yes*	*Yes*

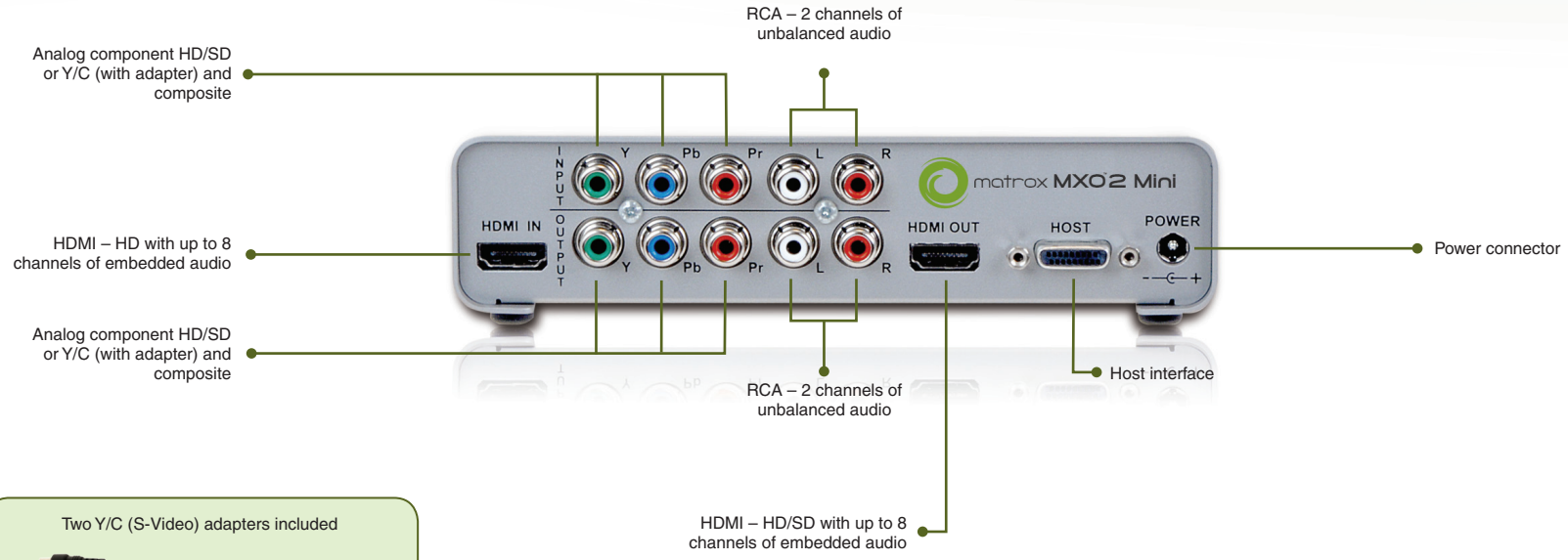
Audio I/O

The Matrox MXO2 products provide a full range of audio inputs and outputs with the flexibility to map any audio track in Final Cut Pro to any audio output.

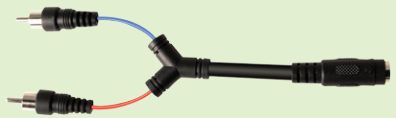
The entire MXO2 product line supports Apple's Core Audio. The audio inputs and outputs of your MXO2 device can be used as a sound card, even as the default sound card on your Mac system. For example, you can hear your iTunes library through your MXO2 device or capture audio in SoundTrack Pro.

Audio Inputs	MXO2 Mini	MXO2 LE	MXO2	MXO2 Rack
RCA Audio (unbalanced)	*2 channels*	*2 channels*	*2 channels*	*No*
XLR Audio (balanced)	*No*	*2 channels*	*2 channels*	*4 channels*
AES/EBU (unbalanced)	*No*	*No*	*2 channels*	*4 channels*
SDI embedded audio (16 channels)	*No*	*Yes*	*Yes*	*Yes*
HDMI embedded audio (8 channels)	*Yes*	*Yes*	*Yes*	*Yes*
Audio Outputs				
RCA Audio (unbalanced)	*2 channels*	*2 channels*	*6 channels*	*No*
XLR Audio (balanced)	*No*	*2 channels*	*4 channels*	*8 channels*
AES/EBU (unbalanced)	*No*	*No*	*2 channels*	*4 channels*
SDI embedded audio (16 channels)	*No*	*Yes*	*Yes*	*Yes*
HDMI embedded audio (8 channels)	*Yes*	*Yes*	*Yes*	*Yes*
Direct surround sound monitoring	*No*	*No*	*5.1*	*5.1 and 7.1*

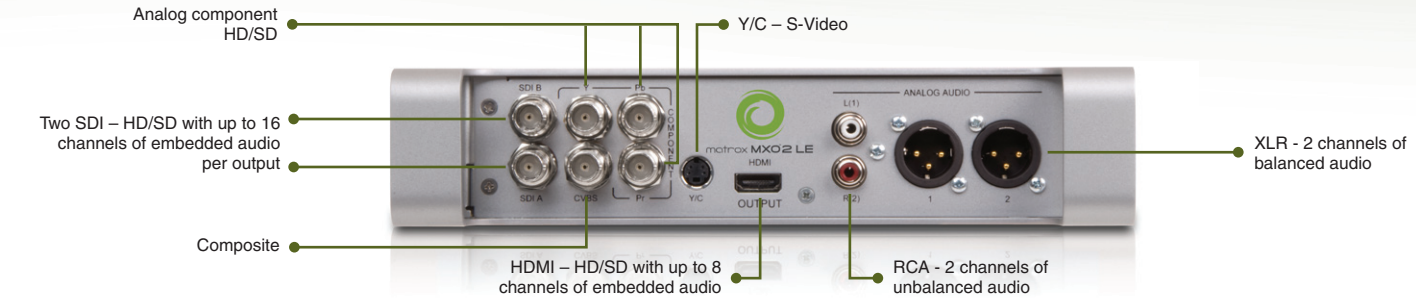
Matrox MXO2 Mini Connections



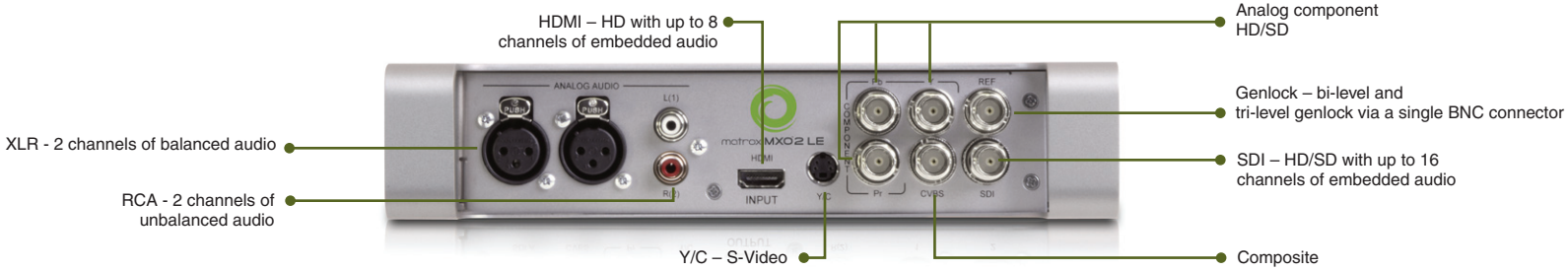
Two Y/C (S-Video) adapters included



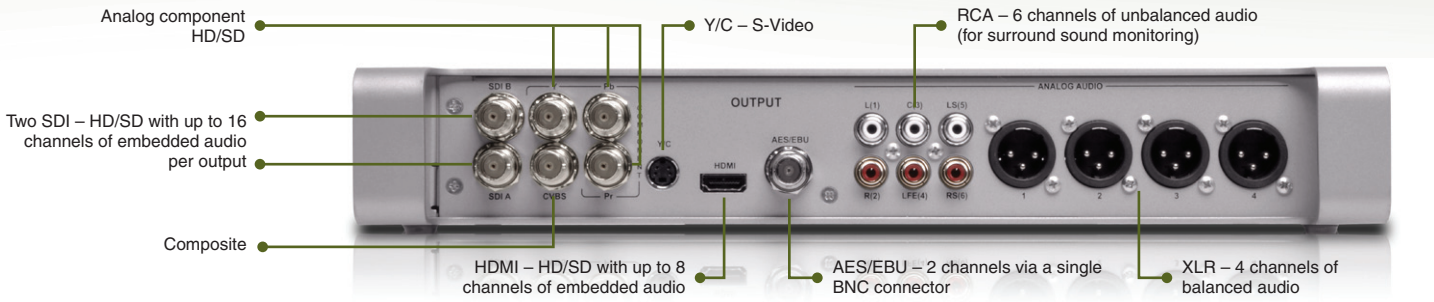
Matrox MXO2 LE Connections - Outputs



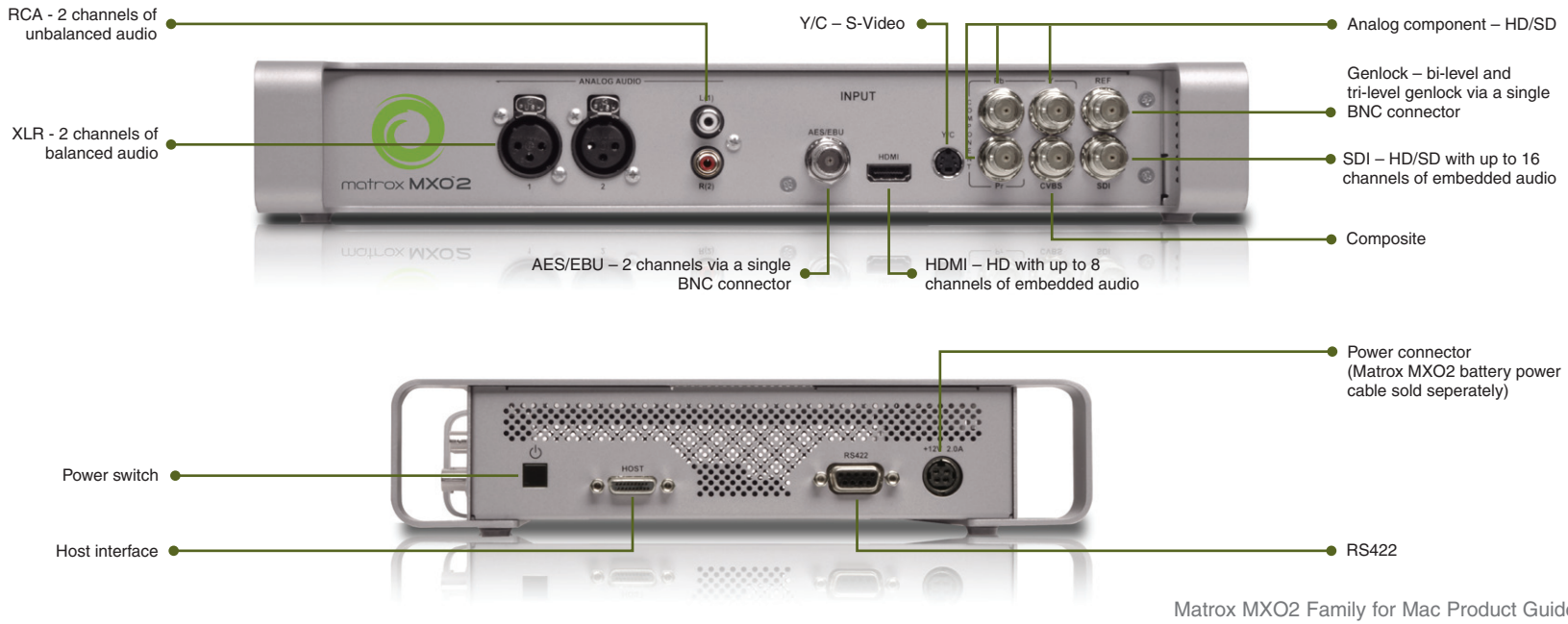
Matrox MXO2 LE Connections - Inputs



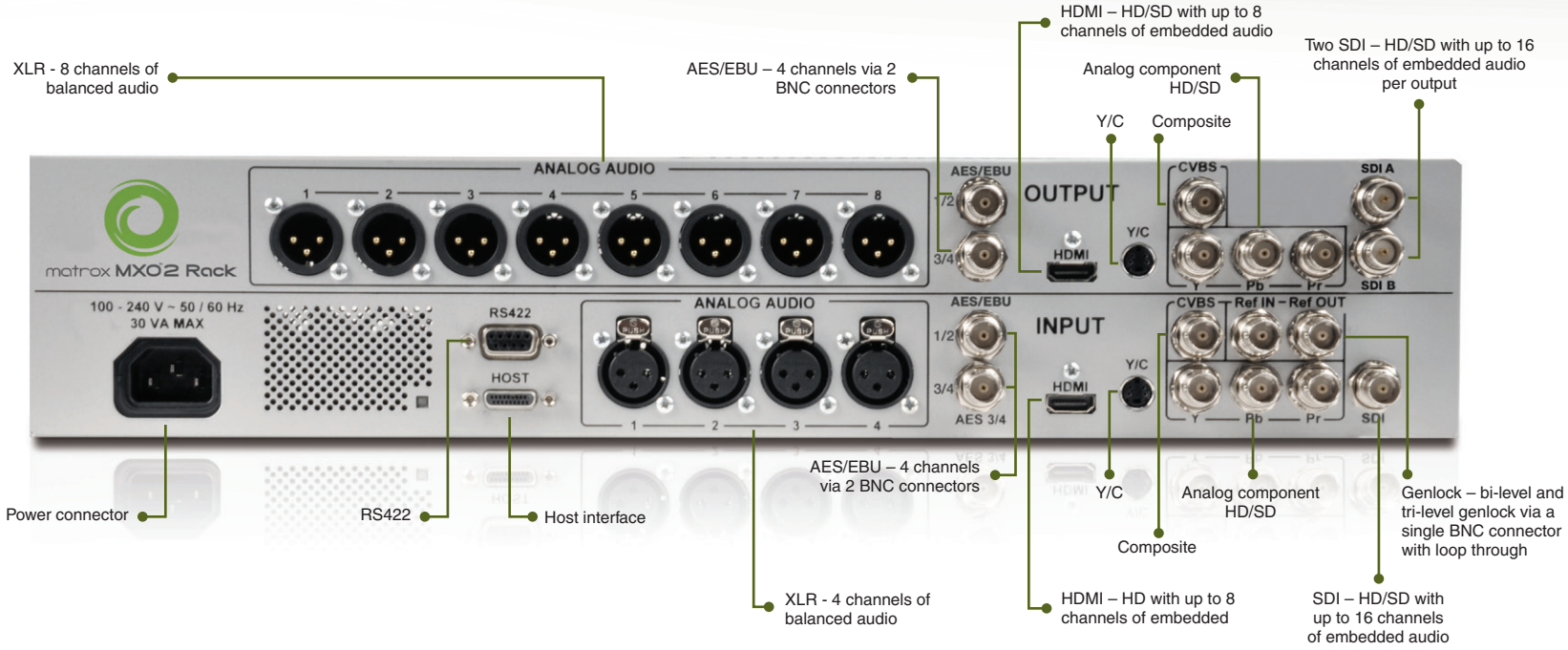
Matrox MXO2 Connections - Outputs



Matrox MXO2 Connections - Inputs



Matrox MXO2 Rack Connections



Flexible support for leading codecs, file formats, cameras, and workflows

The MXO2 product family lets you work with virtually any codec, file format, camera, and workflow out there.

Capture to a variety of codecs
The Matrox MXO2 products let you capture to HD and SD codecs supported by your editing application.

With Final Cut Pro on a Quad-Core Mac Pro, you can capture HD to ProRes 422 HQ, DVCPRO HD, DV, DVCPRO, and DVCPRO50. On a MacBook Pro Core2 Duo 2.4 GHz or faster, you can capture HD to ProRes 422 HQ (720p at 24, 25, and 30 fps), ProRes 422 (LT), ProRes 422 (Proxy), and DVCPRO HD. On systems equipped with proper storage you can capture uncompressed 8- and 10-bit HD.

Users of Adobe Premiere Pro CS5 can capture to the Matrox MPEG2 I-frame full raster (1920 x 1080) HD codec or to other popular Adobe-supported codecs using the Matrox Vetura Capture application.

Users of Avid Media Composer and Matrox MXO2 Mini can capture directly to Avid DNxHD .mov files or other popular Avid-supported codecs using the Matrox Vetura Capture application. There is no need to transcode your files for use with Avid Media Composer and AMA (Avid Media Access).

RED workflow support (does not apply to Matrox MXO2 Mini)
RED users can benefit from Matrox MXO2 LE, MXO2, or MXO2 Rack on set and in the post suite.

On set, connected to a MacBook Pro (or Mac Pro), a Matrox MXO2 device gives you live ingest on site. You can connect the SDI output from your RED camera to the MXO2 device and ingest at 720p through your MacBook Pro and FW800 storage while storing the original R3D and proxy files directly to your RED storage. Back in the post suite, you can use one of the three Matrox MXO2 products to work with 1K and 2K RED timelines and output to SD, 720, or 1080 via the MXO2 family's realtime 10-bit hardware scaling feature.

Workflow enhancements include the ability to:

- set up multiple monitors for previews during filming
- playback your footage right after the take when needed
- accurately monitor colors on inexpensive HDMI monitors thanks to unique Matrox calibration controls including blue-only
- use your existing HD or SD monitoring equipment
- deliver dailies, rushes, or client approval copies in various tape formats in record time
- quickly deliver dailies, rushes, or client approval copies in H.264 formats using the Matrox MAX H.264 encoding option

Flexible Workflows

XDCAM HD and P2 HD

Smooth file-based workflows for XDCAM HD and P2 HD

Matrox MXO and MXO2 were the first portable I/O devices on the market that let you monitor and output your XDCAM HD and P2 HD timelines at full frame rate and full frame size from Final Cut Pro without first transcoding to an intermediate format such as ProRes or DVCPRO. You save time on every project and enjoy a more fluid workflow on your MacBook Pro or Mac Pro.

While you edit, the Matrox MXO2 devices let you see your XDCAM HD or P2 HD project on your broadcast monitor or an inexpensive HDMI display at the correct frame rate and size with no dropped frames. You just put your footage on the timeline and press play. Once you've finished your edit, the Matrox MXO2 devices let you play out your XDCAM HD or P2 HD timeline directly from Final Cut Pro to SDI and analog formats. The same workflow also applies to XDCAM, XDCAM HD, and XDCAM HD422 and P2.

Shoot ➔ Log/Transfer ➔ Edit ➔ Output

Cumbersome XDCAM HD and P2 HD workflows with other I/O devices

If you try to do this with some other I/O devices, you get clunky, stuttering playback on your monitor because they can't keep up with displaying XDCAM HD or P2 HD footage in real time. And, you'll still have to render your timeline before you can get it out to tape, wasting time and sacrificing quality.

Shoot ➔ Log/Transfer ➔ Edit (clunky preview mode) ➔ Transcode (to ProRes or DVCPRO HD) ➔ Output

Your other choice is to transcode your XDCAM HD or P2 HD footage to an intermediate format that they can handle in real time, but that adds an extra step and takes time that could be better spent getting right down to the editing. In the time it takes to transcode with another I/O device, you could already be finished with your edit with a Matrox MXO2 device.

Shoot ➔ Transcode (to ProRes or DVCPRO HD one hour of footage takes one hour to capture) ➔ Edit ➔ Output

The clear choice for portable XDCAM HD, XDCAM HD422, XDCAM EX, P2 and P2 HD workflows with Final Cut Pro is a Matrox I/O device.

P2HD

XDCAM HD
Professional Disc System

HD-SDI closed captioning support (does not apply to Matrox MXO2 Mini)

All four MXO2 products support NTSC closed captioning. Matrox MXO2 LE, MXO2, and MXO2 Rack also provide HD-SDI closed captioning support using the patent-pending Matrox 4VANC tool.

With Matrox MXO2 LE, MXO2, or MXO2 Rack, you will no longer need to spend time and money recreating HD captioning data that is typically lost when editing projects in Final Cut Pro. These Matrox MXO2 devices offer a unique workflow to capture, playback, and preserve closed captioning data while editing. Nothing is destroyed even when trimming or color correcting video clips. In addition, Matrox has worked with CPC, the closed captioning software leader, to develop an innovative solution that allows the MacCaption software to encode, decode, edit, and create HD and SD closed captioning for use with the Matrox MXO2 SDI-capable devices. They also provide a cost effective way to monitor HD timelines containing closed captioning data on SDI and component SD monitors, while also inserting closed captioning information into line 21 of active video for SD deliverables. You can deliver HD and SD masters containing closed captions simultaneously.

Active Format Description (AFD) support (does not apply to Matrox MXO2 Mini)

AFD is a standard set of codes in the SDI signal that broadcasters use to enable both 4:3 and 16:9 television sets to optimally present pictures transmitted in either format. Matrox MXO2 LE, MXO2, and MXO2 Rack support Active Format Description (AFD) in the SDI video signal using the patent-pending Matrox 4VANC tool.

The Matrox 4VANC tool will capture, maintain, and restore your AFD information while capturing, editing and outputting an SDI signal through your MXO2 device.

Support for popular 3D workflows

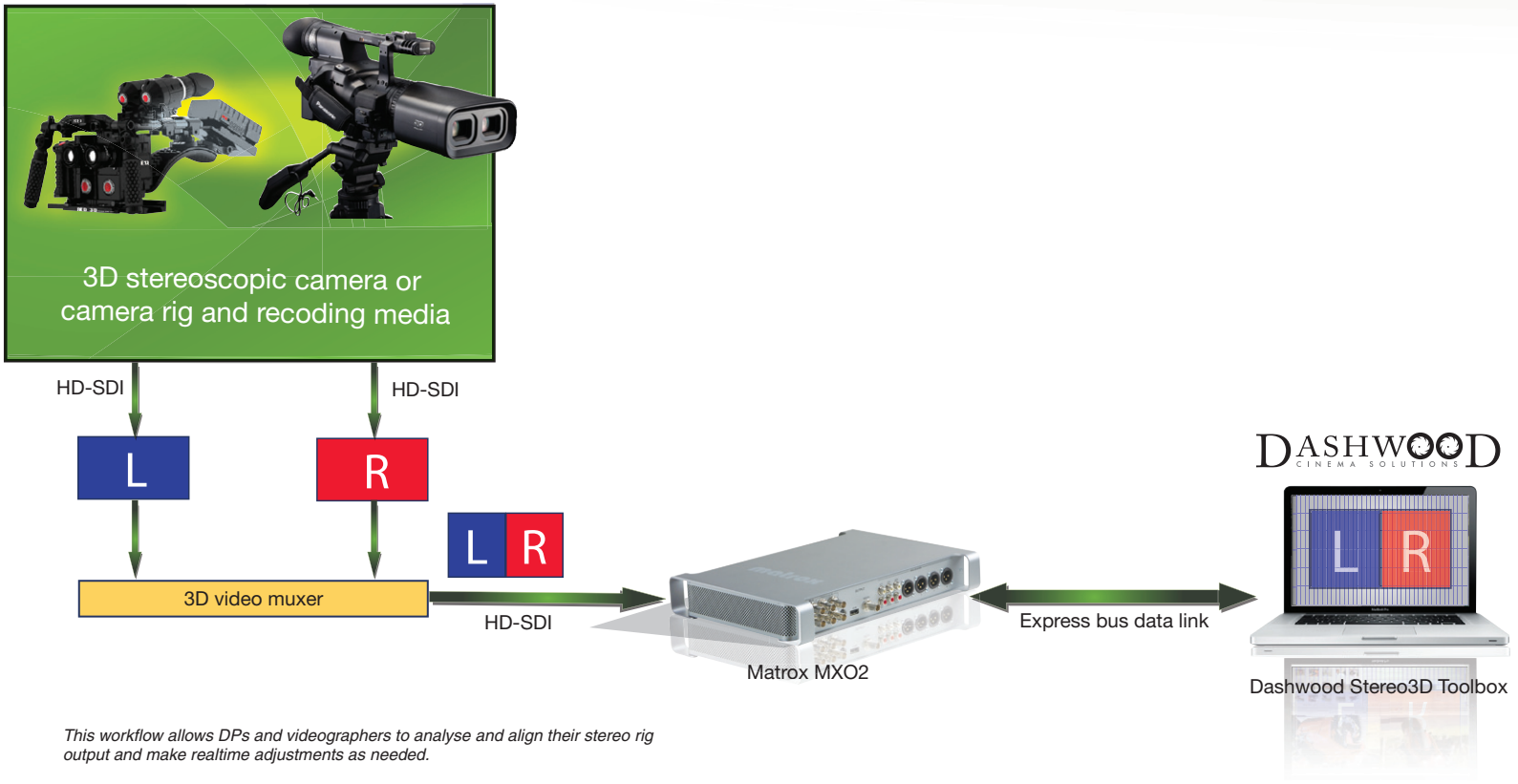
The Matrox MXO2 I/O devices can be used in a variety of scenarios to assist cost-conscious content creators in 3D stereo production and post.

One convenient feature they provide is automatic 3D signaling on the HDMI output. You can select to embed the HDMI 1.4a 3D flag, signaling to the connected 3D HDMI TV/monitor that the incoming video signal is either a “side-by-side” or “over/under” (top/bottom) signal. Your HDMI TV will automatically be switched into the chosen mode and you will no longer need to reach for the 3D TV’s remote.

Three popular workflows supported by the MXO2 devices include:

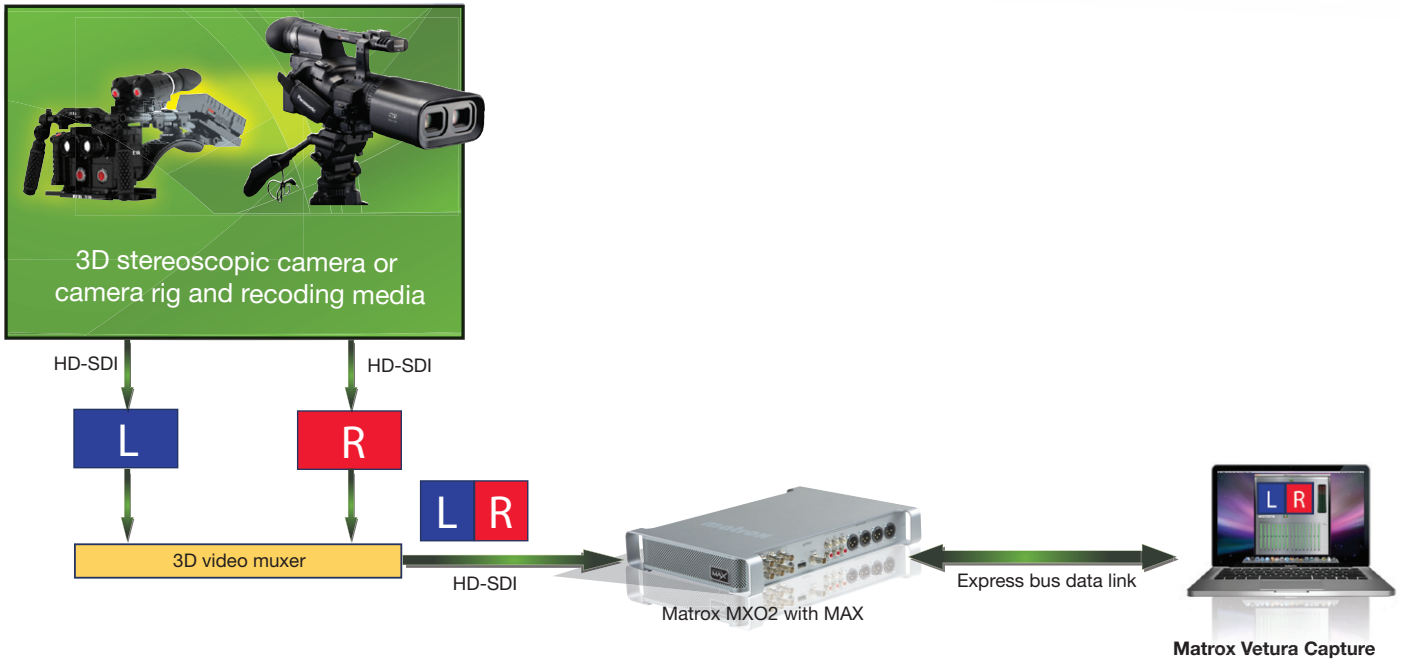
- Live 3D monitoring on set using Matrox MXO2 LE, MXO2, or MXO2 Rack
- Quick creation of 3D dailies using Matrox MXO2 LE, MXO2, or MXO2 Rack with Matrox MAX H.264 encoding technology
- Monitoring/editing 3D projects using Adobe Premiere Pro CS5 or Apple Final Cut Pro 7 and any Matrox MXO2 device

Live 3D monitoring on set using Matrox MXO2 LE, MXO2, or MXO2 Rack



This workflow allows DPs and videographers to analyse and align their stereo rig output and make realtime adjustments as needed.

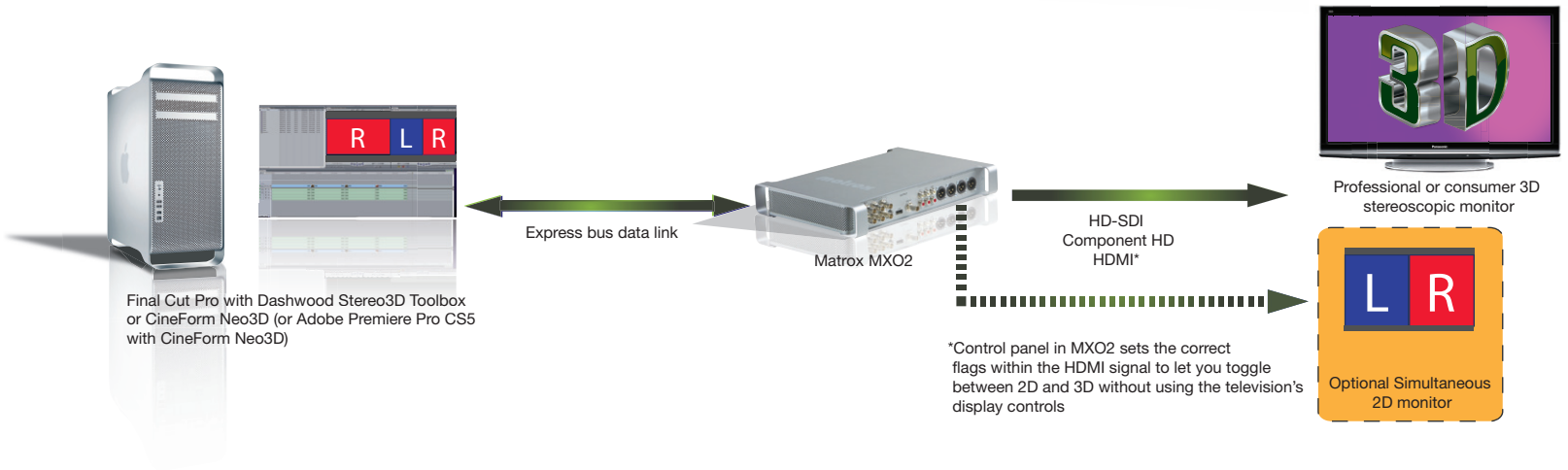
Quick creation of 3D dailies using Matrox MXO2 LE, MXO2, or MXO2 Rack with Matrox MAX H.264 encoding technology



This workflow gives DPs and videographers an easy way to capture files for use in proxy editing workflows or dailies creation and distribution.

Matrox Vetura Capture
Capture standard video files in side-by-side mode to QuickTime codec of choice (ie. ProRes). Then drop ProRes files into Final Cut Pro or Premiere Pro for proxy editing of high resolution originals or export using Matrox MAX H.264 encoding technology for quick, easy-to-manage dailies distribution.

Monitoring/editing 3D projects using Adobe Premiere Pro CS5 or Apple Final Cut Pro 7 and any Matrox MXO2 device



This workflow lets editors preview their 3D projects in high resolution on professional or consumer 3D monitors and optionally monitor simultaneously in 2D and 3D.

Extensive application support

The Matrox MXO2 products amplify your productivity with a wide variety of editing, content creation, H.264 encoding/authoring, live production, and broadcast applications on the Mac.

Editing applications
Final Cut Pro
Avid Media Composer
Adobe Premiere Pro
Media 100

Content creation applications
Apple Color
SoundTrack Pro
Motion
Adobe After Effects
Adobe Photoshop

H.264 encoding/authoring applications that take advantage of Matrox MAX technology
Apple Compressor
Telestream Episode
Adobe Encore
Roxio Toast

Live production software
Boinx Software

Broadcast software solutions
NINSIGHT
Softron Media Services
ToolsOnAir

Final Cut Pro
The Matrox MXO2 products let you get the most from Final Cut Pro. You benefit from:

- Convenient form factors for use in studio, on set, in the field, and in OB vans with MacBook Pros, Mac Pros, and Apple Xserve systems
- Broadcast-quality HD/SD video and audio input/output
- Flexible support for leading codecs, file formats, cameras, and workflows
- Inexpensive HDMI monitoring with Matrox's unique color calibration utility
- 10-bit realtime hardware up/down/cross conversion on capture and output
- Hardware acceleration of Final Cut Pro Dynamic RT segments, HDV, and DVCPRO
- Matrox MAX technology (optional) for faster than realtime H.264 encoding

Extensive Application Support

Editing

Avid Media Composer

Matrox MXO2 Mini is your new choice for HD monitoring with Avid Media Composer 5.

- Turns your HDMI screen into a professional-grade video monitor with color calibration tools including blue-only
- Small, lightweight, external box for use in studio, on set, in the field, and in OB vans
- Cross-platform support – Mac and PC; laptops, desktops, and workstations
- HDMI, analog component, S-Video, and composite output
- Stereo RCA and up to 8 channels of HDMI audio output
- 5.1 and 7.1 surround sound monitoring on the HDMI output
- Compatible with Avid Media Composer 5

Adobe Premiere Pro

The Matrox MXO2 products let you get the most from Adobe Premiere Pro on the Mac. You benefit from:

- Convenient form factors for use in studio, on set, in the field, and in OB vans with MacBook Pros, Mac Pros, and Apple Xserve systems
- Broadcast-quality HD/SD video and audio input/output
- Inexpensive HDMI monitoring with Matrox's unique color calibration utility
- 10-bit realtime hardware up/down/cross conversion on capture and output
- Matrox Vetura Capture application for easy capture to Adobe CS5 system codecs or Matrox MPEG-2 I-frame full-raster (1920x1080) HD codec

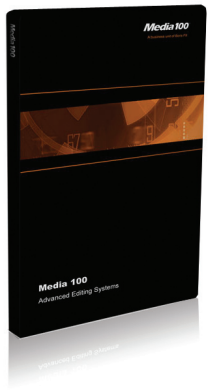
Extensive Application Support

Content Creation

Media 100

The Matrox MXO2 products are the perfect addition to your Media 100 Suite to meet all your input, output, and monitoring needs. You benefit from:

- Convenient form factors for use in studio, on set, in the field, and in OB vans with MacBook Pros, Mac Pros, and Apple Xserve systems
- Broadcast-quality HD/SD video and audio input/output
- Flexible support for leading codecs, file formats, cameras, and workflows
- Inexpensive HDMI monitoring with Matrox's unique color calibration utility
- 10-bit realtime hardware up/down/cross conversion on capture and output
- Matrox MAX technology (optional) for faster than realtime H.264 encoding



Apple Color

The Matrox MXO2 products give Color users maximum flexibility. You can view your work simultaneously in both HD and SD from a single timeline on broadcast monitors or take advantage of Matrox's unique HDMI calibration tools that turn an inexpensive HDMI display into a monitor you can trust while color grading.

SoundTrack Pro

Every project requires some sort of audio sweetening to enhance the final production. With the Matrox MXO2 devices and SoundTrack Pro, workflows from simple voice-overs to full surround sound mixes can be monitored directly. You can not only hear your audio mix as you work, but also use the MXO2 devices' video output capabilities to view your video at the same time.

The Matrox MXO2 devices let you map any audio track to any output which is ideal for checking multi-language DVD productions or re-arranging embedded SDI audio tracks.

Extensive Application Support

Content Creation

Motion

While you are creating eye-catching 2D or 3D graphics or special effects sequences in Motion, you can rely on the Matrox MXO2 devices to view your work in all its glory, exactly as it will look to your audience, in HD or SD.

Adobe After Effects

The Matrox MXO2 products let you experience your 2D and 3D motion graphics as you create them in After Effects, at full quality, full frame size, and full frame rate, with RAM preview, on a wide range of monitors. You see your work as your client will, with accurate color representation and 1:1 pixel mapping. You can judge your work in a brand new way.

Adobe Photoshop

When working on those special graphics for your video productions, you can use the WYSIWYG feature of your Matrox MXO2 product to preview your images on an external monitor. You can see how your graphics will be seen by your client.

Extensive Application Support

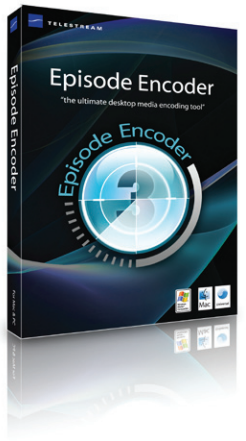
H.264 Encoding/Authoring

Apple Compressor

Matrox MXO2 devices equipped with Matrox MAX technology tap into Apple Compressor to let you quickly and easily create H.264 files from a variety of video sources including SD, HD, and RED proxy files up to 2K.

Telestream Episode

Matrox MAX technology works with Telestream Episode to create H.264 files faster than the software alone.



Extensive Application Support

H.264 Encoding/Authoring

Adobe Encore

Matrox MXO2 devices equipped with the MAX option work with Adobe Encore to deliver your HD productions to Blu-ray in record time. You can use H.264 files created with Apple Compressor and Matrox MAX in Adobe Encore without re-encoding. The time you save can be spent polishing your Blu-ray interactive menus and features. As an additional benefit, the WYSIWYG feature of your Matrox MXO2 product lets you see your menus, chapters, and other authoring features on an external monitor, just as your customers will see them.

Roxio Toast

Matrox MXO2 devices equipped with the MAX option work with Roxio Toast to encode H.264 Blu-ray files and burn Blu-ray discs without waiting for long encoding times. Matrox and Roxio worked together to ensure compatibility of Matrox MAX files in Toast so you can author in record time.

Extensive Application Support

Live Production and Broadcast Software

Boinx Software

Matrox MXO2 I/O devices and BoinxTV live production software turn your Mac into a TV studio. Your can easily create live-to-disk, live-to-internet and live-to-stage video. Record studio shows, podcasts, sports events, concerts, sermons, lectures and more using your Mac and multiple cameras.

(This application has not been approved for use with Matrox MXO2 Mini.)

NINSIGHT

NINSIGHT's BB-TV is a media playout application for Mac that works with the Matrox MXO2 I/O devices to let you browse, manage, and broadcast your media assets. It uses a built-in playlist capable of handling the majority of QuickTime formats and MXF. An integrated graphics generator enables insertion of realtime 3D logos, text, and RSS feeds.

(This application has not been approved for use with Matrox MXO2 Mini.)

Softron Media Services

Softron Media Services provides a variety of powerful broadcast software solutions for ingest and playout that are compatible with Matrox MXO2 I/O devices. The Softron applications, including OnTheAir Video, OnTheAir Video Express, MovieRecorder, and MovieRecorder Express, offer unparalleled ease-of-use.

(These applications have not been approved for use with Matrox MXO2 Mini.)

ToolsOnAir

Matrox MXO2 I/O devices and the just:in and just:play applications from ToolsOnAir create a powerful ingest/playout solution for facilities using Macs. Just:in features include batch digitizing, VTR control, crash recording and scheduled recording. Just:play is a timeline-based application that makes it easy to combine video playout with realtime graphics overlay.

(These applications have not been approved for use with Matrox MXO2 Mini.)

HD and SD video monitoring

The Matrox MXO2 products turn your HDMI monitor into a true-color video display you can trust, even for color grading. They are packed with features that make them the ideal monitoring solution for Final Cut Pro, Apple Color, Adobe After Effects, and other QuickTime-based applications. You won't need to buy expensive HD monitoring equipment. In addition, the MXO2 family's realtime downscaling feature lets you view your HD projects on an SD monitor.

Matrox MXO2 Mini provides a cost-effective HD monitoring solution for Avid editing systems.

HDMI monitoring with 10-bit 4:2:2 color precision

The Matrox MXO2 products let you adjust and control your HDMI monitor exactly like you would a broadcast HD/SD monitor. Controls for hue, chroma, contrast, brightness, and blue-only are provided. This unique control gives you accurate color representation so that you can use your HDMI monitor even for color grading.

HIGH-DEFINITION MULTIMEDIA INTERFACE

Pixel-to-pixel mapping on the HDMI display

The Matrox MXO2 products provide 1:1 pixel mapping on HDMI monitors that support this feature. You get accurate monitoring on your HDMI display in the following resolutions:

- 720 x 486 (NTSC)
- 720 x 576 (PAL)
- 1920 x 1080
- 1280 x 720

Hardware Scaling and Acceleration

Realtime hardware up/down/cross conversion on capture and output

The Matrox MXO2 products let you deliver in any format your clients demand. The 10-bit hardware scaling provides high-quality mastering.

HD to SD downscaling – The Matrox MXO2 products provide realtime HD to SD downscaling with proper conversion of the HD color space to the SD color space and proper aspect ratio conversion to anamorphic, letterbox, and center cut. You can monitor or record an SD master of your HD project in real time.

SD to HD upscaling – The Matrox MXO2 products provide realtime SD to HD upscaling with proper conversion of the SD color space to the HD color space. MXO2 will “pillarbox” 4:3 footage and scale 16:9 SD footage to full screen.

Cross conversion – The Matrox MXO2 products offer realtime cross conversions from 720 to 1080 and 1080 to 720. Realtime frame rate conversion is also supported with 2:3:2:3 and 2:3:3:2 cadences. This feature is useful if, for example, your source material is recorded at a different frame rate or resolution than the delivery format your client requires. It also facilitates monitoring when, for example, you need to work with 23.98 fps footage but your monitor does not support that frame rate. You can use the MXO2 family’s realtime frame rate conversion to view your project at 29.97 fps. Conversion from 23.98 fps to 25 fps is handled by Final Cut Pro and the host.

Hardware acceleration of Final Cut Pro Dynamic RT segments, HDV, and DVCPRO HD

When you are working with Final Cut Pro Dynamic RT segments or the HDV and DVCPRO HD formats, the Matrox MXO2 family’s 10-bit hardware scaler takes some of the burden off your CPU, saving processing power for other Final Cut Pro operations, so you get better realtime performance.

In Dynamic RT editing mode, Final Cut Pro automatically reduces frame size to let you preview non-realtime segments of your project at a better frame rate. With the Matrox MXO2 family’s hardware scaler, these segments are accelerated to their original frame size.

The Matrox MXO2 products accelerate HDV and DVCPRO HD to full resolution during playback.

Matrox MAX H.264 Encoding Option

Matrox MAX option for faster than realtime H.264 encoding

The Matrox MXO2 devices are available in versions that include Matrox MAX H.264 encoding acceleration hardware.

Matrox MAX technology speeds up the creation of H.264 files for Blu-ray, the web, and mobile devices. Encoding jobs are finished with amazing speed and system resources are liberated for other tasks. Quality and flexibility are ensured through direct integration with Apple Compressor and support for other applications on the Mac such as Telestream Episode, Final Cut Pro and QuickTime Pro through the QuickTime codec component.

Matrox Vetura Capture Application

Matrox Vetura Capture – stand-alone application for quick and easy capture to a variety of QuickTime codecs

The Matrox Vetura Capture application works with your CPU to let you quickly and easily capture to many of the QuickTime codecs that are installed on your system, without opening a complete NLE.

Avid Media Composer users can use Matrox Vetura Capture and Matrox MXO2 Mini to capture to Avid DNxHD or other popular Avid-supported codecs.

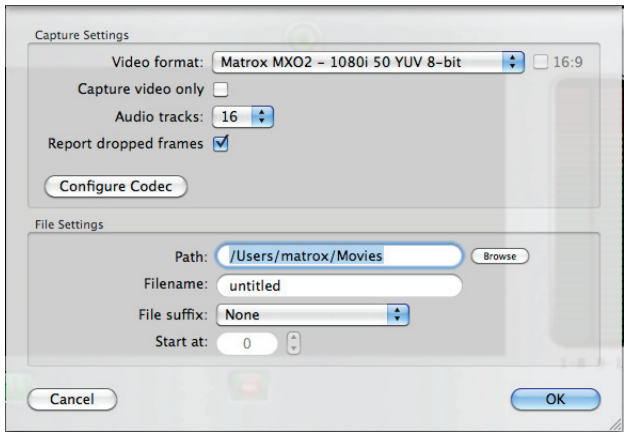
Adobe Premiere Pro CS5 users can use Matrox Vetura Capture and any Matrox MXO2 device to capture to the Matrox MPEG2 I-frame full raster HD codec or to other popular Adobe-supported codecs.

Apple Final Cut Pro users can use Matrox Vetura Capture and any Matrox MXO2 device to capture to Apple ProRes 422 HQ and other popular codecs such as XDCAM HD and many others.

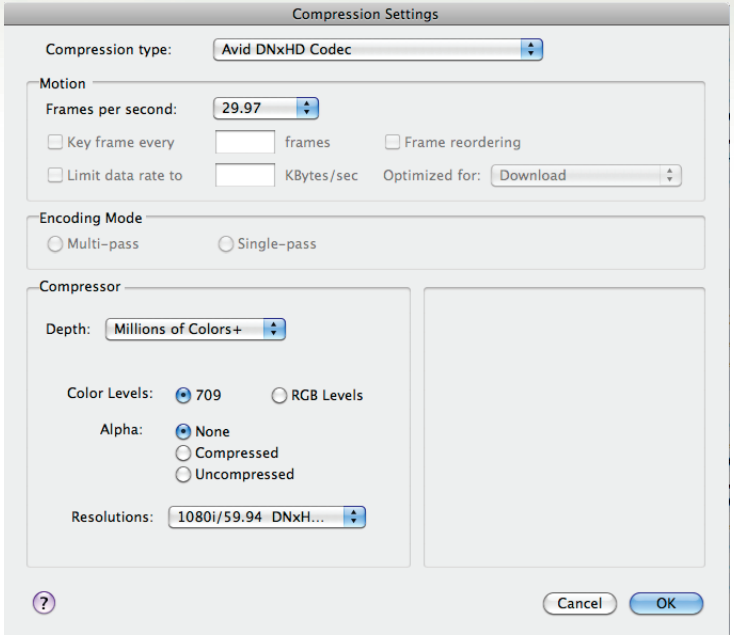
Matrox Vetura Capture user interface

Matrox Vetura Capture – supported frame sizes and frame rates

- NTSC 4:3/16:9
- PAL 4:3/16:9
- 960×720p at 23.98, 25, 29.97, 50, and 59.94 fps
- 1280×720p at 23.98, 25, 29.97, 50, and 59.94 fps
- 1280×1080p at 23.98, 25, and 29.97 fps
- 1280×1080i at 25 and 29.97 fps
- 1440×1080p at 23.98, 25, and 29.97 fps
- 1440×1080i at 25 and 29.97 fps
- 1920×1080p at 23.98, 25, and 29.97 fps
- 1920×1080i at 25 and 29.97 fps



User definable options include the ability to capture video only or to capture 2, 4, 8, or 16 channels of audio.



Captures to a variety of QuickTime codecs, including Avid DNxHD, Apple ProRes, Matrox MPEG-2 I-frame, and many more.

Matrox Vetura Playback Application

Matrox Vetura Playback – stand-alone application for convenient playback of your H.264 and .mov audio/video assets

The Matrox Vetura Playback application was designed to give users of Matrox MAX H.264 encoding technology a convenient way to view their H.264 .mov files on external monitors and to play them out to air, because Final Cut Pro cannot play back H.264 files in real time and QuickTime Player cannot output through I/O devices.

In fact, Matrox Vetura Playback lets you play out any 1080, 720, PAL, NTSC or smaller .mov file, including those captured with an iPhone, through your MXO2 device as long as you have the applicable codec installed on your system.

This application is ideal for checking your encodes before sending them off for client approval or to their final destination. It also enables a state-of-the art HD workflow for quick news delivery.

Field journalists equipped with a Matrox MXO2 device that includes the Matrox MAX H.264 encoding accelerator can shoot and edit their stories, then quickly encode to a very high quality H.264 file faster than realtime. Via any internet connection, the small H.264 file can be efficiently uploaded to headquarters then ingested to a video server or played directly to air using another MXO2 device and the Matrox Vetura Playback application.

Matrox Vetura Playback user interface

HD video clips that contain closed captioning information created using the Matrox 4VANC method can be played out of your MXO2 device via SDI using Matrox Vetura Playback. Your Matrox MXO2 device will also let you downscale your HD video clips so you can see your closed captions on an SD monitor which is ideal when HD equipment is unavailable.

Matrox Vetura Playback can be controlled through the GUI (graphical user interface) or keyboard short-cuts. Using the Mark In and Mark Out controls, you can specify a certain portion of the loaded video to be played out of your MXO2 device.

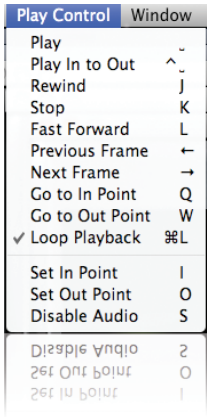
The Frame Grab feature provides a very quick way of creating still images for your productions. You simply open a video file, seek to a specific frame, grab that frame, and save it as a TIFF, BMP, GIF, JPEG, PNG, or JPEG 2000 graphics file.

Matrox Vetura Playback Application

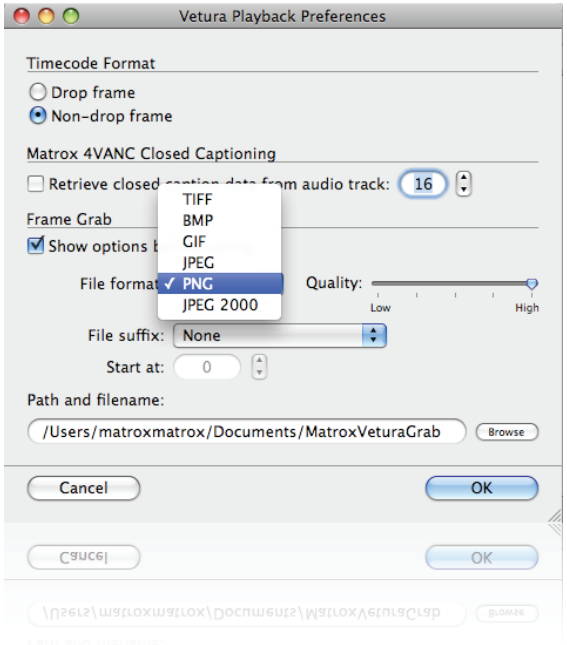
Matrox Vetura Playback – supported formats, frame sizes, and frame rates

- All formats smaller than SD
- NTSC 4:3/16:9
- PAL 4:3/16:9
- 960×720p at 23.98, 25, 29.97, 50, and 59.94 fps
- 1280×720p at 23.98, 25, 29.97, 50, and 59.94 fps
- 1280×1080p at 23.98, 25, and 29.97 fps
- 1280×1080i at 25 and 29.97 fps
- 1440×1080p at 23.98, 25, and 29.97 fps
- 1440×1080i at 25 and 29.97 fps
- 1920×1080p at 23.98, 25, and 29.97 fps
- 1920×1080i at 25 and 29.97 fps

Matrox Vetura Playback controls – Play, Stop, Frame Forward (Step), Frame Rewind (Step) Fast Forward, Fast Rewind, Go to in-point, Go to out-point, Mark In, Mark Out, Scrub, Frame Grab, Loop, Mute, Audio Level Control with audio VU meters for up to 16 channels, Jog Control



Matrox Vetura Playback keyboard shortcuts



Quickly create still images from your videos using the Frame Grab function of Matrox Vetura Playback

Kit contents

The Matrox MXO2 products are packaged with the most popular accessories. Optional components including additional Matrox MXO2 host adapters can be purchased separately.

Matrox MXO2 Mini
Matrox MXO2 Mini input/output device
Matrox MXO2 PCIe cable (1 meter)
Matrox MXO2 Mini external power supply
Two S-Video adapters
One of the following:
- Matrox MXO2 PCIe x 1 host adapter (for use with Mac Pro)
- Matrox MXO2 PCIe host ExpressCard/34 adapter (for use with MacBook Pro)

Matrox MXO2 LE
Matrox MXO2 LE input/output device
Matrox MXO2 PCIe cable (1 meter)
Matrox MXO2 LE external power supply and IEC-C13 power cord
One of the following:
- Matrox MXO2 PCIe host adapter (for use with Mac Pro)
- Matrox MXO2 PCIe ExpressCard/34 adapter (for use with MacBook Pro)

(A third-party RS422 cable is required for machine control.)

Matrox MXO2
Matrox MXO2 input/output device
Matrox MXO2 PCIe cable (1 meter)
Matrox MXO2 external power supply and IEC-C13 power cord
Matrox MXO2 PCIe host adapter (for use with Mac Pro)
Matrox MXO2 PCIe host ExpressCard/34 adapter
(for use with MacBook Pro)
(The Matrox MXO2 battery power cable may be purchased separately.
A third-party RS422 cable is required for machine control.)

Matrox MXO2 Rack
Matrox MXO2 Rack input/output device with two mounting “ears”
Matrox MXO2 PCIe cable (3 meter)
IEC-C13 power cord
BNC 75-ohm terminator (for REF OUT connector)
Matrox MXO2 PCIe host adapter (for use with Mac Pro)
(A third-party RS422 cable is required for machine control.)

Matrox MXO2 Mini

Matrox MXO2 LE

Matrox MXO2

Matrox MXO2 Rack