



## Monitor • Output • Convert

Matrox MXO is a versatile, all-in-one monitoring, output, and scan conversion device for the Mac that you'll use in many different ways. Because it's small and portable, it makes your laptop a mobile editor. And because it's hot swappable, you can easily move it to any workstation in your facility.

### Matrox MXO is ideal for:

- Inexpensive HD monitoring
- Frame accurate, broadcast-quality HD/SD output
- Genlockable HD/SD scan conversion for flicker-free video output of your computer desktop

### Key features

- Inexpensive HD and SD monitoring – now you can trust your Apple Cinema Display or other DVI monitor, even for color grading
- Frame accurate, broadcast-quality audio/video output in HD and SD with guaranteed a/v sync
- Genlockable HD/SD SDI, HD/SD analog component, Y/C, and composite outputs with up to 8 channels SDI embedded audio output and stereo audio monitoring
- Realtime downscaling of HD projects to SD resolution with proper color space and aspect ratio conversion for monitoring and output
- WYSIWYG video output from QuickTime-based applications
- Genlockable HD/SD scan conversion for flicker-free video output of your computer desktop with any application
- Portable, hot-swappable versatility

## Inexpensive HD monitoring

Matrox MXO turns your Apple Cinema Display or other DVI monitor into an artifact-free, true-color video display you can trust, even for color grading. It's packed with features that make it the ideal monitoring solution for Final Cut Pro, Apple Color, Adobe Premiere Pro CS3, and other QuickTime-based applications. You won't need to buy expensive HD monitoring equipment or the SDI-to-DVI converter required for preview with some I/O cards. In addition, MXO's realtime downscaling feature lets you view your HD projects on an SD monitor.

**Interlacing artifact elimination** – When scaling your video to full-screen to match the resolution of your display, MXO uses a special interpolation technique rather than simple line doubling to provide the best possible viewing experience without “jaggy” aliasing artifacts. If you preview interlaced video on your computer display, you’ve no doubt noticed tearing due to interlacing artifacts in the displayed image. The progressive display inherent in computer monitors is ideal for graphics, but when it comes to displaying interlaced video you see those annoying artifacts. Matrox MXO solves this problem, letting you enjoy artifact-free previews.

**DVI monitor calibration** – Matrox MXO lets you adjust and control your DVI 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 completely accurate color representation so that you can use your ACD or DVI monitor even for color grading.

**Super black and super white monitoring on the DVI display** – Matrox MXO provides super black and super white monitoring, expanding your viewable color range.

**Pixel-to-pixel mapping on the DVI display** – Matrox MXO provides user-selectable 1:1 pixel mapping, providing accurate monitoring on your DVI display in the following resolutions:

720x486 (NTSC) | 720x576 (PAL) | 1920x1080 | 1280x720

**“Virtual bezel” on the DVI display** – Matrox MXO lets you select a pre-defined resolution to mimic the monitor bezel found on all TVs. For example, this feature can be used to simulate a safe title area so you can check title placement on your DVI monitor. You can create your own bezel or select from the following resolutions:

720x486 (NTSC) | 720x576 (PAL) | 1920x1080 | 1280x720

**Monitor HD projects on your SD monitor** – Matrox MXO provides realtime HD to SD downscaling so that you can use your SD monitor to preview and/or record an SD master of your HD project in real time. MXO provides proper conversion of the HD color space to the SD color space and proper aspect ratio conversion to anamorphic, letterbox, and center cut. The scaling is done in hardware, placing no burden on the CPU and GPU, so you have more processing power available for your application.

## Frame-accurate, broadcast-quality HD/SD output

**Frame accurate output** – Matrox MXO provides frame accurate output for all QuickTime-based applications that support the V-out component including Final Cut Pro, Color, Soundtrack Pro, Motion, Adobe Premiere Pro CS3, and After Effects. It features genlockable HD/SD SDI with up to 8 channels of embedded audio, HD/SD analog component, Y/C, and composite outputs, and stereo audio monitoring. Genlock 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. Simultaneous SDI and analog outputs in HD or SD let you view your project on a broadcast video monitor and record to tape at the same time. A third-party RS-422 adapter is required for deck control.

**Realtime HD to SD downscaling** – Matrox MXO provides realtime HD to SD downscaling so that you can record an SD master of your HD project in real time. MXO provides proper conversion of the HD color space to the SD color space and proper aspect ratio conversion to anamorphic, letterbox, and center cut. The scaling is done in hardware, placing no burden on the CPU and GPU, so you have more processing power available for your application.

## Genlockable HD/SD scan conversion for flicker-free video output of your computer desktop

Matrox MXO is a high-quality scan converter that is genlockable, with timing offset controls. In “Presentation Mode”, it mirrors the contents of your secondary desktop and displays it as high quality SDI and analog video simultaneously. This mode can be used, for example, to record, display, or broadcast Keynote and PowerPoint presentations or web browser sessions such as Google Earth. It can also be used to create software application training. A flicker reduction filter ensures solid, stable video output. The system's audio playback will be routed to the analog audio outputs and to all stereo pairs in the embedded SDI signal. One-to-one pixel mapping is provided in HD for optimal desktop recording. In SD, MXO lets you map from 640x480 to 720x486 (NTSC) and 800x600 to 720x576 (PAL).

**Region of interest** – MXO also lets you select a region of interest of any size within a larger resolution and have that window output for broadcast or recording. Presets for NTSC, PAL, 720p, and 1080i/PsF are provided.

## Specifications

### General

#### Universal compatibility

Intel- and PowerPC-based computers and laptops

#### Video standards

NTSC, PAL, NTSC-EIAJ, 1080i, 1080p, 720p

#### Regulatory compliance

FCC Class A, CE Mark Class A, C-Tick Mark, VCCI  
RoHS Directive 2002/95/EC

#### Dimensions

134mm (L) × 161mm (W) × 45mm (H)

#### External AC/DC adapter

100-240 VAC 50-60 Hz  
Input: IEC320-C8 inlet  
Output: +5V DC, 3A max., 2.5mm barrel type  
Dimensions: 95mm (L) × 54mm (W) × 32mm (H)

#### Total power consumption

10 watts

#### Connections

##### DVI input and output

DVI-I (single-link) 29-pin female connector

##### Genlock reference input

SD analog black burst (bi-level) or HD tri-level sync  
BNC connector (75 Ω), terminated  
Timing offset controls provided

##### SDTV SDI output

SD-SDI with 8 channels of embedded SDI audio  
24-bit, 48 kHz  
BNC connector (75 Ω)  
Compliant with SMPTE 259M-C, SMPTE 272M

##### SDTV S-Video & composite video output

PAL, NTSC, NTSC-EIAJ  
Frequency response: +/- 0.25 dB max to 5 MHz  
2T pulse response: 0.5% max  
Diff. Gain and Diff. Phase: < 2%  
BNC connectors (75 Ω)

##### SDTV analog component video output

Betacam, Betacam SP (NTSC & NTSC-EIAJ)  
SMPTE/EBU N10 (PAL)  
Frequency response Y:  
+/- 0.25 dB max to 5 MHz  
Frequency response Pb, Pr:  
+/- 0.2 dB max to 2 MHz  
Component channel delay: +/- 3 ns  
Component S/N (Y, Pb, Pr): > 57 dB,  
unified weighted  
BNC connectors (75 Ω)

##### HDTV SDI output

HD-SDI with 8 channels of embedded SDI audio  
24-bit, 48 kHz  
Compliant with SMPTE 292M, SMPTE 299M  
BNC connector (75 Ω)

##### HDTV analog component video output

Supported video formats:  
1080i 50, 1080i 59.94, 720p 59.94  
Compliant to EIA-770.3  
Frequency response Y:  
+/- 0.3 dB max to 28 MHz  
Frequency response Pb, Pr:  
+/- 0.4 dB max to 14 MHz  
Component channel delay: +/- 0.5 ns  
Component S/N (Y, Pb, Pr): > 57 dB,  
unified weighted  
BNC connectors (75 Ω)

##### Accessories

MXO cable – DVI and system audio  
loop-through, 1 meter  
External AC-DC adapter  
Power cord  
Y/C video adapter



[www.matrox.com/video](http://www.matrox.com/video)

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