Matrox RT.X2 vs. Adobe Premiere Pro CS3 software-only

Matrox RT.X2 provides the realtime editing power and additional productivity tools you need to get the most from Adobe CS3 Production Premium. Whether you work in DV, HDV, P2 MXF, or a combination, you'll find that RT.X2 goes far beyond the capabilities of software-only in all aspects of video production – capture, editing, content creation, and delivery. Matrox RT.X2 will save you time on every project, letting you concentrate on creating your best work and building your business.

To help you gauge the significance of RT.X2's time-saving benefits, we have compared RT.X2 to Adobe Premiere Pro CS3 software-only by providing a feature summary as well as performance measurements for some of the key tasks you do daily.

In all the comparison tests the same system was used:
- HP 4400 computer
- CPU – Intel Core2 Duo Quad 2.66GHz QX6700
- GPU – ATI X1950 Pro
- 2GB RAM
- System drive – 250GB
- Storage – Raid 0, 2 x 250GB = 500GB total
- Windows XP Pro SP2
- Adobe Premiere Pro CS3
- Matrox RT.X2 3.0 build 4115

Capture

Matrox RT.X2 lets you capture SD and HD video from analog as well as 1394 devices and fully monitor audio and video while you capture.

Feature	Adobe Premiere Pro CS3 software-only	Matrox RT.X2
Capture from analog in SD and HD	No	Yes
Live window while capturing DV	Yes	Yes
Live window while capturing HDV	No	Yes
Realtime scene detect in DV	Yes	Yes
Realtime scene detect in HDV	No	Yes
Audio input level monitoring	No	Yes

Editing and content creation

The more realtime performance your editing system provides, the more time you can spend creating, not rendering. Using Adobe Premiere Pro CS3 alone, anything more than one layer of video gives a red bar on the timeline so it's hard to tell what (if anything) is realtime and what is preview quality. Matrox RT.X2 always plays back at full quality, full frame rate and provides optional drop frame reporting so you always know what's happening. It provides intelligent reporting of realtime capabilities with a threshold slider from aggressive to safe. The red bar does not show up unless, in fact, rendering is needed. You always know if your timeline will playback in realtime at full quality.

Matrox RT.X2 provides many additional productivity features, not available with Adobe Premiere Pro CS3 alone, which can save you time and money.

Feature	Adobe Premiere Pro CS3 software-only	Matrox RT.X2
Accurate indication of realtime playback	No	Yes
Realtime mixing of SD clips in an HD timeline and HD clips in an SD timeline	No	Yes
Realtime mixed-format multi-cam	No	Yes
Realtime playback of 32-bit AVI with alpha	No	Yes
Realtime HD to SD downscaling	No	Yes
Realtime editing of HDV 720p at 50 and 59.94 fps (JVC ProHD)	No	Yes
Realtime primary color correction (color match)	No	Yes
Realtime secondary color correction (color pass, color replace)	No	Yes
Realtime speed changes	No	Yes
Realtime chroma and luma keying	No	Yes
Realtime 2D/3D DVE	No	Yes
Realtime move & scale	No	Yes
Realtime 4-corner pin	No	Yes
Realtime Adobe Garbage Masks	No	Yes
Realtime Adobe Motion Effect	No	Yes
Realtime blur/glow/soft focus	No	Yes
Realtime crystallize	No	Yes
Realtime impressionist	No	Yes
Realtime lens flare	No	Yes
Realtime mask	No	Yes
Realtime mask blur	No	Yes
Realtime mask mosaic	No	Yes
Realtime old movie	No	Yes
Realtime page curl	No	Yes
Realtime pan & scan	No	Yes
Realtime ripple	No	Yes
Realtime shadow	No	Yes
Realtime sphere	No	Yes
Realtime surface finish	No	Yes
Realtime timecode	No	Yes
Realtime track matte	No	Yes
Realtime twirl	No	Yes
Realtime Matrox wipes and transitions	No	Yes
Realtime native Adobe Premiere Pro transitions	No	Yes
Realtime native Adobe Premiere Pro effects – Opacity, Crop, Dip to black, Black and White	No	Yes
WYSIWYG video output support for Adobe After Effects, Photoshop and Bridge, Autodesk Combustion and 3ds Max, eyeon Fusion, NewTek LightWave 3D, and Windows Media Player	No	Yes

DV playback tests

Adobe Premiere Pro CS3 always uses its best effort to play back your timeline, but software-only systems usually must degrade to preview quality and a reduced frame rate even in DV. Sometimes this may be good enough to make edit decisions but to see your project at full quality, you must render. Often you will render many times before you are happy with the final edit. To give you an idea of just how much time you can save with Matrox RT.X2, we compared performance on two DV timelines. A full description of the DV timelines is provided on page 4 and 5.

DV playback	Adobe Premiere Pro CS3 software-only	Matrox RT.X2
Single DV layer	Realtime	Realtime
Single DV layer with color correction (0:30 duration)	0:08 to render	Realtime
Multi-layer DV test 1 (0:30 duration)	1:00 to render	Realtime
Multi-layer DV test 2 (7:00 duration)	11:35 to render	Realtime

HDV playback tests

HDV playback is more demanding than DV playback so in software-only systems the HDV playback frame rate is usually too slow to give adequate feedback for edit decision-making. The system will exhibit sluggish scrubbing as well. Editing in HDV typically requires lots of intermediate rendering. To give you an idea of just how much time you can save with Matrox RT.X2, we compared performance on two HDV timelines. A full description of the HDV timelines is provided on page 5.

HDV playback	Adobe Premiere Pro CS3 software-only	Matrox RT.X2
Single HDV layer	Realtime	Realtime
Single HDV layer with color correction (0:30 duration)	0:50 to render	Realtime
Multi-layer HDV test 3 (0:30 duration)	1:22 to render	Realtime
Multi-layer HDV test 4 (5:00 duration)	10:55 to render	Realtime

Delivery

Matrox RT.X2 significantly accelerates exports to all formats included in Adobe Premiere Pro CS3. To give you an idea of just how much time you can save with Matrox RT.X2, we compared export performance to DVD, Adobe Clip Notes, and a DV file on disk for the DV timelines described on page 4 and for the HDV timelines described on page 5.

DV export tests

Export to DVD (NTSC DV High Quality 7Mb CBR 1 pass)	Rendering time Adobe Premiere Pro CS3 software-only	Rendering time Matrox RT.X2
DV test 1 (0:30 duration)	0:56	0:26
DV test2 (7:00 duration)	13:40	4:48

Export to Adobe Clip Notes (Medium Quality WMV)	Rendering time Adobe Premiere Pro CS3 software-only	Rendering time Matrox RT.X2
DV test 1 (0:30 duration)	1:20	0:32
DV test 2 (7:00 duration)	15:32	5:48

Export to DV file on disk	Rendering time Adobe Premiere Pro CS3 software-only	Rendering time Matrox RT.X2
DV test 1 (0:30 duration)	0:49	0:25
DV test 2 (7:00 duration)	10:02	4:49

HDV export tests

Export to DVD (NTSC DV High Quality 7Mb CBR 1 pass)	Rendering time Adobe Premiere Pro CS3 software-only	Rendering time Matrox RT.X2
HDV test 3 (0:30 duration)	1:07	0:35
HDV test 4 (5:00 duration)	7:35	5:16

Export to Adobe Clip Notes (Medium Quality WMV)	Rendering time Adobe Premiere Pro CS3 software-only	Rendering time Matrox RT.X2
HDV test 3 (0:30 duration)	1:09	0:39
HDV test 4 (5:00 duration)	8:45	5:52

Export to DV file on disk	Rendering time Adobe Premiere Pro CS3 software-only	Rendering time Matrox RT.X2
HDV test 3 (0:30 duration)	1:03	0:33
HDV test 4 (5:00 duration)	6:25	3:45

Timelines used in the performance tests

In software-only mode, Matrox effects were replaced with the Adobe equivalent. Matrox 3D DVEs were replaced with the Adobe Motion effect.

Multi-layer DV test 1 – 30 second timeline

Video 8: Single .psd file with alpha and Adobe motion scale
Video 7: Single .psd file with alpha and Adobe motion scale
Video 6: Single .tga file
Video 5: Multiple DV clips with Matrox 3D DVE and Matrox color correction applied to each clip
Video 4: MPEG-2 clip (scaled to frame size) with Matrox chroma key, Adobe black & white filter, and slow motion
Video 3: Single .tga file
Video 2: Single .tga file with alpha
Video 1: Automate to timeline from bin used with multiple DV clips. All clips have Matrox color correction and all cuts use Adobe cross dissolves (~5 to 10 second cuts)
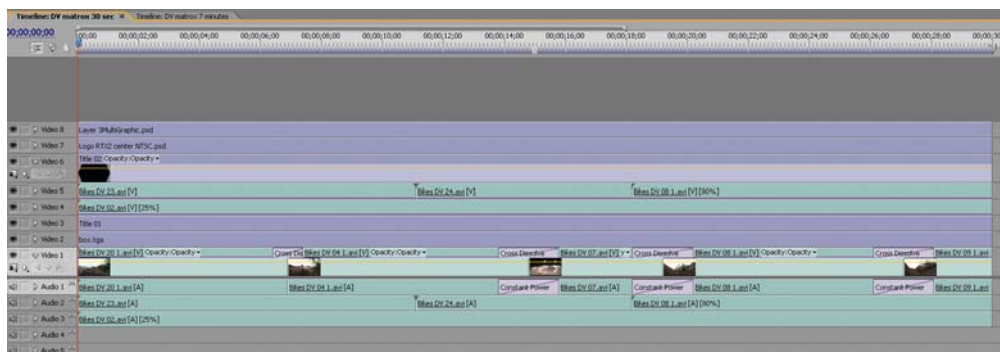
Multi-layer DV test 2 – 7 minute timeline

Video 7: Single .psd file with alpha and Adobe motion scale

Video 6: Single .tga with alpha (cut in two)

Video 5: One DV clip with Adobe motion scale and Adobe black & white. One DV clip with Matrox chroma key and Adobe motion scale – repeated

Video 4: One DV clip with Adobe motion scale and Adobe black & white. One DV clip with Matrox chroma key and opacity fade in and out. One DV clip with Matrox chroma key. One .tga. One DV clip with Matrox choma key, Matrox soft focus, opacity, and slow motion.

Video 3: One DV clip with Adobe motion scale. Remaining DV clips all have Matrox color correction and Adobe motion scale

Video 2: Two DV clips with Matrox color correction and Adobe motion scale

Video 1: Automate to timeline from bin used with multiple DV clips. All clips have Matrox color correction and all cuts use Adobe cross dissolves (~5 to 10 second cuts)
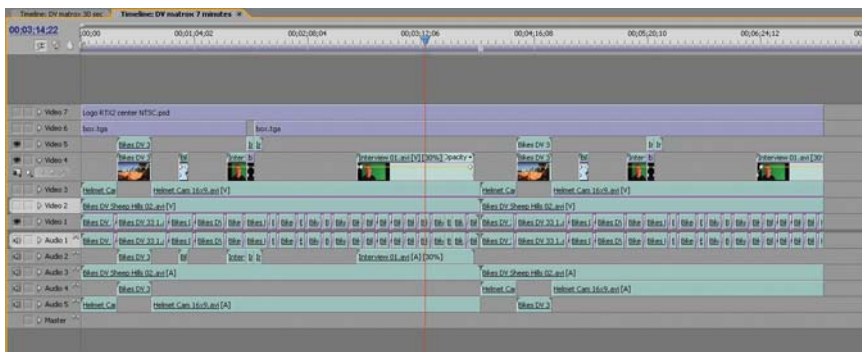
## Multi-layer HDV test 3 – 30 second timeline

Video 5: Single .tga file

Video 4: Single .tga file

Video 3: Three HDV clips with Matrox color correction and Adobe motion scale

Video 2: One 14-second MPEG-2 clip with Matrox chroma key, Adobe black & white and Adobe motion scale. One 3-second HDV clip with Matrox color correction and Adobe motion scale. One 2-second HDV clip with Matrox color correction and Adobe motion scale + Adobe cross dissolve into one 3-second HDV clip with Matrox color correction Adobe motion scale. One 2-second HDV clip with Matrox color correction and Adobe motion scale. One 6-second MPEG-2 clip with Matrox color correction and slow motion

Video 1: One 9-second HDV clip with Matrox color correction. One 5-second HDV clip with Matrox color correction. One 3-second HDV clip. One 2-second HDV clip
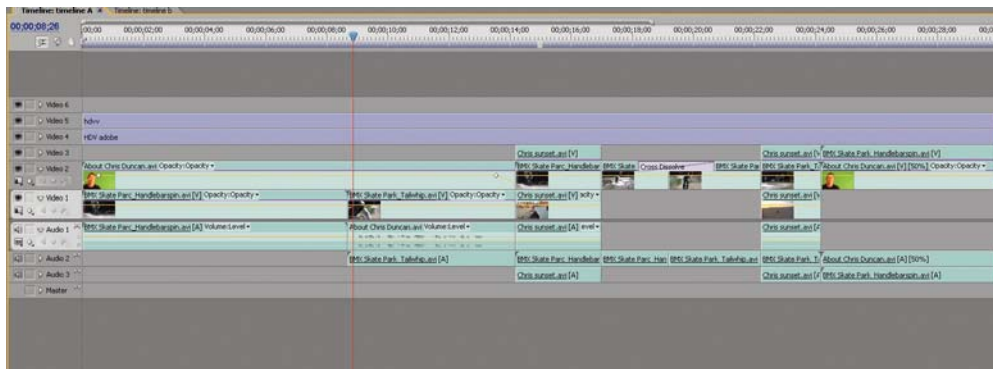
Multi-layer test 4 - 5 minute timeline

Video 5: Single .tga file

Video 4: Keyframed title with scale (zoom in and out)

Video 3: Single .tga file

Video 2: MPEG-2 clip with Matrox chroma key, HDV clip with 30% opacity – repeated over the sequence

Video 1: Automate to timeline from bin used with multiple HDV clips. All clips have Matrox color correction and all cuts use Adobe cross dissolves (~5 to 10 second cuts). Three clips have Matrox soft focus and three clips have Adobe black & white – repeated 3 times over the sequence