The RT.X100 does some effects through software and some through hardware. This combination is called Matrox X technology. For the hardware based effects it uses chip developed by Matrox called Flex 3D. The range of effects keeps expanding but includes:

**HARDWARE BASED EFFECTS**

- **3D motion paths** with user definable boards, cropping, 3D shadow, and, of course, size, rotation and position. The effects are thoroughly keyframmable which excellent interpolation through the keyframes. This gives it a smooth, realistic movement through each keyframe speeding up and slowing down as it does so, rather than giving a jerky linear movement. All the Matrox effects have the same degree of control and lovely keyframing.
- **3D Page Turns** - with the page turn effect you can also crop and fly the clip around in 3D at the same time.
- **3D bump maps** - apply weird bump patterns to the video
- **3D cubes** - A cube with 2 pieces of video on the cube which you can fly wherever you want on screen - even inside if you prefer.
- **3D Warps** - Take the video and warp it as you fly it in 3D
- **3D Ripples** - the classic ripple transitions - where the video ripples from one clip to another plus basically any other ripple you want which you can also move around in 3D as it ripples.
- **3D Particles** - break the images into particles that fly off screen.
- **3D blurs** - a lovely high quality blur effect that you can fade in and out as well as, of course, flying around the screen in real 3D
- **Lens flares** - keyframe the movement and watch the reflections move around the screen.
- **Real time colourisation** - a basic colour correction filter which just changes the overall level of red green and blue in an image - although not a patch on the Matrox colour correction filter.

You can use any of these effects once on screen without rendering. If you put an effect on two different clips you will have to render the section where they overlap. A new feature introduced in May 2003 called Xtreme preview allows you to see the results of your multiple layers through the analogue connections while editing.

These effects are all high quality. There is one other hardware based effect:

"Basic" 3D motion paths - Actually this is not that basic as all the movement and cropping can be keyframmed to your hearts' content. Essentially this effect is slightly lower quality than the advanced 3D motion effect. Because of this it can be applied to two clips at the same time. To give you and idea of the quality difference I could tell the difference between the advanced and basic 3D DVE when applied to some DV footage but could not tell the difference when applied to some Hi8 footage.
SOFTWARE BASED EFFECTS

The software effects can be applied to 2 clips simultaneously. You can add a hardware effect to a clip with a software effect already applied and it will still play in real time, or you can add a hardware effect to a clip which is overlayed on two clips with software effects and it will still play in real time.

- **Colour Correction** - for me the best of the new effects the colour correction is a great way to improve the quality of your shots.
- **Chroma key** - real time Chromakey has advanced filters like spill suppression - which help to key in hair or shadows accurately.
- **Lumakey** - take the black or white areas of the image and replace it with another image - good for explosion for example.

MPEG ENCODING

The RT.X100 has two ways to make MPEG files for CD or DVD - it's own **real time encoding** and **Ligos Go Motion**. The real time encoding offers quality at high speed (in real time, in fact, as the name implies!) and Ligos offers more flexibility, plus the option or MPEG1, VCD and SVCD format, but is still accelerated by the Matrox software. Matrox also have accelerated ways of making **Real Video** and **Windows Media**.

MATROX CAPTURING

Matrox dedicated capture program gives you tape cataloguing facilities as well as the ability to capture video and split it into scenes as you capture.

WYSIWYG Plug Ins

There are 4 plug ins for **Adobe After Effects**, **Adobe Photoshop**, **NewTek LightWave** and **3D Studio Max**. These give you feedback on a TV whilst editing or rendering footage.

The Xtreme software for RT.X100

With **XtremePreview** enabled you no longer have any realtime output to FireWire. This does mean that you lose one advantage of the RT.X100 and will have to render effects to come out to FireWire but you gain a great deal!

XtremePreview means that you can put several video clips on the timeline, applying motion path or any of the realtime effects to them and see the results immediately on the computer screen and the TV connected to the RT.X100 breakout box. How many layers can be played back properly does depend on your computer hardware but if the RTX cannot playback the combination then it will drop frames to playback the effect at the right speed, complete with audio.
In this example I have 7 layers of video combined and when my standard 2.4Ghz Pentium has all 7 on screen it can only manage to play back 1 or 2 frames per second. However, the most important thing is that while setting the effect up I have been able to see all the video sources on screen at the same time - enabling much better positioning of the clips – and that whilst editing I always see a picture.

Another addition in the effects window is the ability to view all the layers at once in the preview window or just the layer on which you are working.

The RTX100 Xtreme drivers have video for windows capture built-in - so that you can use your RT.X100 to capture from many standard programs - as well as output for any properly compliant Directshow programs - so it will output video direct from Media Player for example. This is great for testing MPEG clips made in Premiere or for playing DVDs out to TV in decent quality using your chosen DVD player. Not all software will work and we will be testing it with various software to see exactly what does and does not work.
Chroma and Lumakeys

The RT.X100 has comprehensive chroma and luma keying facilities. The jury is still out on which is the best, although the Canopus chromakey tends to produce better edges in our initial tests.

The initial setup screen - one big bonus over the Canopus cards you can see both the foreground and background while setting up the effect.

A useful little display - you can choose to see just the matte. Very helpful when trying to eliminate bad spots. The black areas will be the back ground, the white the foreground. The grey will be a mix of the two so grey areas are to be avoided except where you want to fuzz the edges.
The results - notice the slight green edge around our main man? As yet we have not been able to eliminate this.

**Colourisation, Lens flares, and Image Effects**
Lens flares
Real time flares! Lots of options and they can be flown across the screen as well.

Colourisation
RGB slider colour correction. This filter simply adjusts the overall level of red, green and blue in a clip. It is useful on some occasions but the Matrox colour correction filter is better.

Blurs - an excellent real time blur effect.

Premiere effects
- over 60 Premiere transitions plus the transparency setting on 4 different tracks all in real time.
The Old Movie filter

This has loads of options to make your videos look like they were filmed many years ago including all the obvious dust, scratches, jitter and so on. A de-interlace option would have been nice...

Fancy 3D Effects

Matrox FLEX 3D chip has several fancy effects built-in. With all these effects you can keyframe position in 3D space and crop. Each filter also has a set of custom presets you can apply to the video, and you can save your own. This page is mainly full of images and may take some time to download. As an alternative, why not download our entire Matrox 3D section to read as a PDF at your own leisure? Click here.

Ripple Effect

Take the image and ripple it in 3D whilst also rotating and cropping it.
Mesh Warp

Warp the frame - make it go down the plug hole or fold into a type or aeroplane.
Particles

Break the image into particles which spin off screen in 3D.

Page Curl

The standard page curl effect - nice when added to a title. this can still be twirled around in proper 3D.
Twirls
Twirl the image around a central point.

Distortions
Bump map effects - make the image look like you are watching it through a pane of glass.
3D Tiles

Tile the image and twirl them in 3D.

Cubes

A 6 sided cube which can have two different video images - you decided what image goes on which side. You can even fly inside the cube and see the image reflected on the cubes insides!
Live MPEG Export

The RT.X100 will export into DVD-style MPEG2 live of the timeline. With all other encoding systems if there are effects on the timeline then the program will have to process these as well as encode into MPEG2. The Storm encoder, for example, in Premiere will encode in almost real time but add a filter and this will slow down the process.

The RT.X100 essentially plays the footage as if it was recording it to tape and encodes it at the same time. If you can play it you can encode it live. So you can put on the maximum amount of RTX effects and still encode it in real time. If you have any effects that need rendering you will have to render them first. If not you will actually end up with Matrox 'Not Yet rendered' screen on your MPEG output! If the computer cannot play the footage back in real time then you will get dropped frames in your encoded output - you can set the encoder to stop encoding on dropped frames so that you don't accidentally use footage that is not good enough.

No other cards work in this way. This is a lot more like recording the footage to DV tape and then
capturing it in IBP MPEG2, just without the tape bit! There is an obvious speed benefit here - the Matrox method is the fastest way we have currently to create good quality MPEG2 - but there are also problems in that if your system cannot keep up with all the reading and writing video going on it will not work.

This is why Matrox recommend have a hard drive just dedicated to MPEG2, another drive for your video and a 3rd drive for your programs. If you system is not capable of doing this live encoding then you will have to use Ligos Go Motion instead. Details on Ligos are in the Matrox batch encoder section. in someways Ligos is better because it is more configurable and you can more accurately set the size of your final video file, but it is slower.

The RT.X100 uses its c-cube chip for encoding into MPEG2. This gives you high quality but less options than software encoding.

This screen shows the MPEG encoding options - familiar to all RT2500 users. The important factor - the data rate- which governs how much space your video will take up on your DVD - can be set to anything between 2 and 8 Mb/sec. The c-cube does not support MPEG audio - you can see on the above screen an audio tab with a drop down button - this only lets you choose uncompressed or none, not MPEG. Being able to make MPEG audio is important because it will let you compress the sound part of you DVD and let you fit more on the disk. Using uncompressed sound you can fit about 6-70 minutes on a DVD at full quality, but using MPEG sound you can fit 1½-2 hours on your DVD.

With the RT.X100 you do have the option of MPEG audio when using LIGOS go Motion or Adobe Premiere Pro which are also included with the bundle.

The whole advantage of the Live encoding is high quality at speed. Ligos is slower- although about the same speed as other software MPEG encoders like the Canopus one. If you are not going to use the Live MPEG encoding then you will not have to have the thrid dedicated drive.

The RT2500 always encoded video files into MPEG2 AVID files - where as normal MPEG encoders make MPEG files. The RT.X100 now makes standard M2V MPEG files, which saves some hassle.
Like the RT2500 the RT.X100 can capture through the inputs live into MPEG2. It can even control the deck through FireWire as it does this so you can get very accurately captured MPEG2 files. It is fine if you do not need to edit the video, you just want to put it into a DVD writing program and make a DVD.

The encoding has the same options as the live encoding and even lets you capture through FireWire into MPEG2 (the RT2500 did not) for maximum quality. The Storm hardware module lets you do the same thing and is more customisable although not controllable through firewire.
Matrox Batch Encoder

Matrox batch encoder speeds up the process of encoding video into different formats. You can also create several settings and batch encoder will encode the files one after another.

You can see here the 3 options - Windows Media, real Media and Ligo GO Motion. The 2 web formats give you the usual string of options. Ligos is an excellent MPEG encoder which makes good quality MPEG and is very customisable.
The main Ligos screens - first you can choose a template and then open up the options dialogue to configure your MPEG stream. Ligos obviously produces widescreen and non-widescreen formats as shown.
There are many options on the bit rate front. The simplest is to specify an average bit rate, with maximum as shown. The average will determine the size of your final file whereas the maximum will let it use more data if need be.

Order the RT.X100 collection from the webshop now and get a free tutorial DVD!