



Publishing to DVD ***How to use Matrox products*** ***to create DVD disks***

The Digital Versatile Disk (DVD) is rapidly replacing VHS tapes and CD-ROM as the distribution media of choice for movies, interactive kiosks, training, and even wedding videos!

It's not surprising when you consider that DVD delivers full-screen, full-motion video; crystal-clear digital sound; crisp color graphics, and a rich interactive experience for the viewer. In addition, a single DVD can contain multiple languages, which is ideal for worldwide distribution. Like the CD, its convenience, size, and low production and shipping costs can be very attractive considerations.

As the price of DVD duplication continues to drop, and as set-top players continue to establish themselves around the world, it's clear this media is bound to experience tremendous success.

Until now, however, DVD production has been an expensive, time-consuming process requiring specialized MPEG-2 video encoders and dedicated authoring systems. The Matrox realtime editing platforms change all that. The Matrox DigiSuite platforms and Matrox RT2000 greatly simplify the DVD creation process by integrating audio and video acquisition, realtime editing, graphics creation, MPEG-2 encoding, DVD authoring, and pre-mastering in a single, affordable system.

You follow a simple, three-step process:

1 Acquire

Once you've selected the clips you want to digitize, all Matrox's platforms will take control of your camera or VTR for frame-accurate batch capture.

There are two aspects on your editing system that will greatly influence the quality of your video: the type of inputs/outputs and the type of compression technology used. The Matrox platforms offer support for the full range of interconnections while providing support for all the latest compression technologies. You can choose to capture using analog inputs such as composite, Y/C, or component; or go all digital with 1394 and SDI. You also have a comprehensive choice of compression technologies: Motion-JPEG, DV, DV50, MPEG-2 or lossless for 100% uncompressed quality video.

Capture quality is extremely important regardless of the delivery format you choose. The original quality will directly influence the final quality of the product, especially when compressing at a low bit rate. The less noise you have in the original image, the more efficient the compression algorithm can be.

2 Edit

The Matrox editing platforms let you edit your projects in record time. You can quickly put together your production using the bundled Adobe Premiere software, or in the case of the DigiSuite platform, choose among editing software from Discreet, in-sync, IMC, or United Media. All these applications take advantage of the realtime dual-stream technology, making it possible to process a large number of effects in real time and save valuable production time by eliminating rendering.

The Matrox platforms have been acclaimed for their award-winning realtime digital video effects technology. Depending on the system you choose, transitions, title overlays, 2D and 3D DVEs, keying, and even color correction can all happen instantly. In many instances, you can produce entire projects without ever rendering.

3 Deliver

On the Matrox platforms, once satisfied with your last edit, you export your project directly from your editing timeline in either MPEG-1 or MPEG-2, avoiding the quality loss associated with an extra tape generation required in a conventional setup. The process remains totally digital to ensure the highest possible quality.

DigiSuite DTV and RT2000 provide MPEG-2 encoding. The MAX option for DigiSuite will provide realtime MPEG-2 encoding. Until MAX is available, DigiSuite and DigiSuite LE owners can use MPEG-2 encoding software. For MPEG-1 encoding, you can use the MegaPeg LE MPEG-1 encoder that's included on the Adobe Premiere release CD, or any other standard MPEG-1 encoder.

DVD-Video supports MPEG-2 Main Profile at Main Level (MP@ML) constant bit rate (CBR) or variable bit rate (VBR) compressed digital video. MPEG-1 CBR or VBR can also be used. A standard DVDset-top player can play a maximum of 10.08 Mb/sec including video, audio, and sub-pictures. The maximum bit rate allocated to the MPEG-2 video stream is 9.8 Mb/sec. For MPEG-1, the maximum constant or variable bit rate is 1.856 Mb/sec. Audio segments can also simultaneously be exported as standard 48-KHz .wav files.

Finally, you can easily create menus, buttons, and backgrounds using any graphic creation application, such as Adobe Photoshop.

Tip Although it's typically recommended to encode video using the VBR mode, there are instances where CBR encoding should be used; for example, when your program length doesn't exceed about 75 minutes. In these cases, you should encode CBR video at 7 Mb/sec. As the program increases in length, the overall average bit rate must be reduced to fit on the disk. Long programs will use VBR encoding to yield higher overall image quality at lower average bit rates. For example, a 125-minute program would have to be encoded in VBR at around 4 Mb/sec in order to fit on a 4.7 GB disc.

Authoring and previewing your DVD title

Matrox DigiSuite DTV and the upcoming MAX option for DigiSuite are bundled with Sonic Solutions DVDit SE! software. Matrox RT2000 comes bundled with Sonic Solutions DVDit LE!. DVDit! offers an easy way to publish high-impact DVDs with interactive content. When you're ready to explore some of the extensive features that DVD has to offer, you can choose more advanced applications from Sonic Solutions, as well as from Daikin, and Spruce Technologies.

You link your video, audio and graphics assets to create your DVD title. Using some of the more advanced authoring packages you can create sub-titles, chapter points, multi-languages, and even animated menus.

Creating the DVD title

Once you've finished your DVD project, and you're satisfied with the placement of the graphics, the links, and the overall look and feel of the title, it's time to create a DVD video that you can distribute.

DVD Volume

A DVD volume is a directory structure containing files for the video, audio and navigation information required by the DVD player. You can create a DVD volume on any media (for example, on your hard disk), and play the files on almost any PC, using a software DVD player.

This format will not play on a set-top DVD player. The DVD volume is useful for testing your project using a software DVD player, before you create the final DVD disc.

DVD Image

Some authoring software lets you create a DVD Image on your hard disk and can even record it directly to a DLT tape. DLT tape has been the traditional medium used by replication facilities and is still often required for mass duplications.

DVD Disc

The DVD disc is the final product. You need to output either to DVD-R or DLT to create a DVD disc. If you have a DVD disc burner, you can create the disc yourself. Otherwise, you can have a replication house create a DVD disc. Most replication houses will ask for a DLT tape, but some are starting to accept DVD-R. The advantage of the DVD-R disc is that it can be played on most set-top or PC-based DVD players. It's ideal for limited distribution of a project or as an intermediate format for the approval phase before sending your project to a replication facility.

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