MPEG ENCODERS • COMpressing FOR THE WEB • THE SCOOP ON XML

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NEW MEDIA
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DESKTOP VIDEO
Production ◆ Editing ◆ Output

Nonlinear Editing Shootout
• D-Vision • Media 100
• Avid • Scitex • Fast

Ultimate Guide to DV Camcorders

Managing Digital Media
Get Your Assets in Order
At NAB98 this April, the broadcast industry will be making the transition to a high-definition widescreen television future. Will HDTV make obsolete your current multimedia studio and nonlinear editing tools? Is there even a remote chance of your shop becoming a player in a "high-def" world of multimillion-dollar investments? To future-proof your work to the maximum on a minimal budget, there are two moves to make as soon as possible: switch to DV and widescreen video. The DV format will make your pictures look better and last longer. Widescreen will make your video assets marketable in new applications such as DVD titles, theatrical films, and even HDTV.

DV format video, digitized and compressed in camcorders like those in our Buyers Guide (page 57), simply looks much better than analog video digitized and compressed in a computer at the same data rate. Experience proves that DV images at 5:1 compression are comparable to Betacam-original M-JPEG images at 3:1 compression or lower.

But why should you consider widescreen video with a 16:9 aspect ratio? Filmmakers have for some time been shooting widescreen images with a careful eye toward a 4:3-aspect-ratio part of the picture that will be panned and scanned for television release. Now multimedia producers can do the same thing with widescreen camcorders. Most consumer and prosumer DV camcorders come with a widescreen option. At NAB, Sony will introduce a widescreen version of its DVCAM DSR-130 (best of our 1997 DV camcorder review), widescreen Betacam SP and Beta cam SX models, and a widescreen Digital Betacam.

Every other manufacturer will soon have a full widescreen lineup of 525-line, standard-definition SDTV cameras. What do these camcorders have to do with HDTV and with you? The answer is huge cost savings that will ease the industry transition to full HDTV.

Every TV station in America has been given an additional free channel on the condition that they broadcast HDTV in the next couple of years. But transmitting HDTV is one thing; HDTV production and post-production is a very expensive other thing. Major network studios have spent millions to convert to HDTV cameras and switchers. But technological smoke and mirrors from companies like Faroudja and Snell & Wilcox are going to let most small stations continue to use their 525-line studios and editing rooms, yet broadcast widescreen HDTV programming. And you can get in on their secret. They simply shoot and edit "525-wide" with the new widescreen camcorders (a modest new investment); then when their program is complete, they pass it through a relatively low-cost SDTV-to-HDTV upconverter.

Will home viewers feel cheated by this cheap trick? Probably not, because most will buy lower-cost 525-wide TV sets anyway. In a normal living room, you need a 40-inch screen or larger to be able to resolve the details of a true HDTV picture, and those will be very pricey.

Besides widescreen production for television, you can produce DV format video, digitized and compressed in camcorders like those in our Buyers Guide (page 57), simply looks much better than analog video digitized and compressed in a computer at the same data rate. Experience proves that DV images at 5:1 compression are comparable to Betacam-original M-JPEG images at 3:1 compression or lower.

So sell your analog equipment, and start shooting digital video today. And especially when events or scenes are irreplaceable, shoot them in widescreen.

Bob Doyle is NewMedia’s Digital Video Editor.
Getting In Sync
With excellent M-JPEG and DV editing systems available for under $500, why invest $10,000 to $50,000 in a major nonlinear editing system? The answer in short: real-time effects. Today’s projects often call for composited graphics, captions, or subtitles on nearly every scene, video overlays with a traveling matte alpha-channel, and stylish DVE (Digital Video Effects) with rotating video in perspective, all of which take enormous amounts of time to render in software-only effects systems.

Because we understand that time is money for many of our readers, here we look at six nonlinear editing systems with dual-stream M-JPEG engines and a wide range of real-time titles, graphics, transitions, and DVEs: Avid Xpress for Mac and MCXpress for NT, Discreet Logic’s D-Vision 3.5, Fast’s Video Machine Plus with Digital Player/Recorder, Media 100’s Media 100 xr, and Scitex’s StrataSphere. Three are Mac-based, and three run on Windows. All will greatly speed complex effects work and easily pay for themselves in a production environment. But there are key differences in their capabilities.

While all have dual-stream performance, not all can overlay titles on top of transitions in real time. Some have to “steal” one of the video channels for titles. Some can fly a single-page title along a motion path, and some even scroll multipage credit rolls without rendering. All can perform many 2D transitions in real time but not necessarily DVEs such as picture-in-picture without rendering. Two-channel DVEs, where two videos are squeezed to look like the sides of a spinning cube, for example, or where one video pushes the other video off the screen, are even more difficult. StrataSphere can import a movie with an alpha channel and overlay it in real time. One system, D-Vision, can have two separate graphics simultaneously, ideal for a small station-ID overlay.

The top system here offers up to seven real-time composited layers, depending on how you count them, though also important is the ability to add even more layers. Some interfaces can have up to 99 overlay tracks, ideally configurable in the timeline so you can group them as needed. Most can even show you a (rendered) preview of a single frame from all those tracks. Also critical for today’s rich multimedia content is the flexibility to open, or at least export, files from applications like After Effects and Photoshop.

Three of these systems, D-Vision and both Avids, use a similar real-time effects architecture: Truevision’s Targa 2000 RTX. In addition, Scitex’s SphereOUS software will run on the Targa 2000 RTX board, as well as its own hardware. You’ll save money in this configuration but lose some of Scitex’s real-time capabilities. An in:sync Speed Razor-Targa bundle was also in beta at the time of our testing. While other companies have been marking time waiting for Microsoft to deliver open-architecture digital-media extensions, Truevision deserves the credit for making NT-based NLEs work.

Media 100 continues to drive its Vincent hardware, though for full two-field real-time transitions you’ll need to buy a second High Data Rate card with a second LSI M-JPEG chipset. Scitex also uses LSI’s M-JPEG chips and has made its StrataSphere files compatible with the Targa-based MicroSphere files. All the systems are PCI-based, with the exception of Fast Electronics’ Video Machine and Digital Player/Recorder merging of ISA cards, which gave it real-time nonlinear transitions before any of the others.

All these systems provide excellent tape-deck control of professional BetacamSP machines, though they often require third-party software plug-ins to control S-video and DV devices. Avid Xpress for Mac has no S-video inputs, so you’ll need a transcoder if you’re working with S-video or DV sources. All support time-code capture for batch redigitizing, and most offer professional
adjustments of video input signals, including waveform monitor and vectorscope, and VU meters with dB levels for audio. All but the D-Vision and Avid for NT support full signal processing: contrast, brightness, black and setup level, hue, and chroma saturation.

You'll still need to be careful on most systems that your file sizes stay below the old 2GB file limit, meaning you may need to break up long clips if you plan to redigitize at higher data rates. With that premium on file management, you'll want both a picon view and a list or text view of your clips. You'll also want multiple bins and an editable field database for all bins so you can search and sort your footage easily. Also pay close attention to how the system names files on the hard drive, so you can find, manage, and delete media easily.

**Editing Interfaces**

The early Avid Media Composer set the two-window editing interface standard (now a part of Avid Xpress and D-Vision but surprisingly not of Xpresses MCExpress for NT), with equal-size video monitor windows for source clips and the program sequence. Xpress and MCExpress each feature a single sub-sampled program window on the desktop, while neither Fast nor Scitex shows any video on the computer interface. The latter two systems process video off the computer's main system bus and require that you use an NTSC monitor. All the systems can continuously play out to NTSC for a full-screen view.

The Avid timeline uses a single main video track. Transitions are shown as diagonal lines at the edit points indicating the length of the transition. A second video track is used for cutaway material or compositing. The alternative, established by Adobe Premiere and used here by Media 100 and Fast, bounces video back and forth between A and B tracks with an FX or transition track in between. Avid, Fast, and D-Vision all include picons in the timeline to help you visualize your program as it comes together. Your choice of timeline interface will depend on the type of work you do, how you approach rough cutting, and how visually oriented you are.

All the NLE systems have a trim window to show you the outgoing tail frame and incoming head frame as you trim an edit point. But not all let you easily see the amount of trim material you have and which tracks are being trimmed. Each editor features a trim mode that lets you move trim points quickly with the mouse or key-

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**Executive Summary**

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**Scorecard**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Avid Xpress 2.0 for Mac</th>
<th>Avid MCExpress 1.5.2 for NT</th>
<th>Discreet Logic D-Vision 3.5</th>
<th>Fast Video Machine with DP/R</th>
<th>Media 100 xr</th>
<th>Scitex StrataSphere 1.5.4</th>
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1 Elite bundle includes Pinhole Genie 3D effects hardware, 3D/RMK/Fx, and many real-time software features. Xpress pricing starts at $9,995.

★★★★★ = Awesome  ★★★★ = Thumbs Up  ★★★ = Does the Job  ★★ = Needs Work  ★ = Donky
board, though not all let you preview the edit without leaving the trim mode. Good trim modes, like Avid’s, let you adjust the edit point, repeat a loop of frames, apply transitions, adjust size, and navigate to the next transition easily from within the trim mode.

### Compositing Layers

Nonlinear editors have historically worked mostly in the temporal dimension, telling a story along a timeline. But many things can also happen at one instant, such as multiple sound tracks, titles, double-exposed images, and dissolves. The clear trend in these systems is therefore to include more compositing layers and more frame-editing features. While they still leave room for specialized compositing products like After Effects, they can accelerate many common functions in hardware.

Probably the most common compositing function is viewing a background video layer through a "keyhole" in a second video layer. In film, that keyhole is usually made with black-and-white film mattes, while in video, a key is a value of luminance or chroma in one video signal, so that the background video appears wherever the luminance or chroma is a certain value (or range of values). An alpha channel uses the matte or key data (usually 8 bits) included along with (24-bit) RGB color data in a graphic.

Nondestructive compositing, as with Avid’s "nesting," maintains independent layer information and creates a render layer for previews. Some compositors discard the layering information when they render; others let you expand the single rendered layer to recover the original layers, which is much more valuable. Real-time compositing means you can preview or play multiple layers without rendering. However, you should generally render a final program before laying off to tape to reduce the stress on the hardware, which may be forced to compromise quality in a video layer to maintain its real-time preview ability.

Many kinds of effects, such as picture-in-picture and motion effects, use keyframes to control movement or intensity. Values like position, size, rotation, and transparency can be set at the keyframes, and the software interpolates the in-between values. The best keyframe editors give you separate timelines for each important parameter. The easiest to use let you manipulate the image directly with the mouse or alter the parameter values numerically for fine tuning.

**MCXpress 1.0 (since renamed Xpress)** received our Awesome award last year, and the product continues to improve. It’s great by itself or as a low-cost entry into the world of professional editing.

The Media Composer interface is prized by professional video editors for the ease and speed of basic tasks like getting a clip digitized into a bin. Waveform monitor and vectorscope aid input settings, while a drag-and-drop timeline for rough cuts and a trim window speed editing. Xpress can insert clips in splice film style, which ripples (shifts down the timeline) all later clips, or in overwrite video style, preserving sync with other tracks for cutaways. If the splice breaks sync, Xpress indicates the error as well as an easy way to fix it. And you can lock selected tracks against sync breaks. Precise and professional three-point editing can be done from the keyboard or by drag-and-drop.

Xpress uses the main Composer window of the Media Composer interface, though it has only one record program monitor. The main video timeline has three overlay tracks. This model lets you step into a layer to edit a segment and then collapse the nested layers for nondestructive rendering. Only one program timeline can be open at a time, which is limiting, though it’s easy to drop one sequence into another timeline. Changes in the original (sub) sequence don’t show up in the master, and the master doesn’t show the (sub) sequence as an integral unit, maintaining flexibility. Avid’s two dozen real-time effects and all its rendered effects are keyframable; most have only four keyframes, but picture-in-picture allows 255.

Xpress has many of the tools that make Media Composer editors so productive, like great database media management with sorting, searching, and sifting with multiple criteria; 32 levels of Undo and Redo; and terrific media consolidation. This feature lets you create new media files, preferably on a clean hard disk or backup disk, with just the data used in your final program sequence plus adjustable trim handles on each clip. QuickTime integration eases access to applications like After Effects, ElectricImage, and Avid’s own Elastic Reality, though this still requires an export.

The Xpress trim window lets you trim either the outgoing or incoming clip (Avid calls these single-roller trims) or you can trim both at once for double-roller sync trims. It offers access to transitions, a singular dissolve button, loop preview, and navigation to next and previous transitions. You enter trim mode with a mouse-click, keystroke, or by lassoing the edit points in a number of tracks. Transitions are applied to all the enabled tracks in the timeline, which show transition roller icons at edit points. You can even trim L-cuts (split or overlap edits), with audio and video at different timecodes. Xpress 2.0 will “fly” a moving single-page graphic over a real-time effect or transition (credit rolls and crawls must still be rendered).

Our Xpress system was outfitted with Avid’s 3D Effects option running Pinnacle’s Genie card. However, don’t expect the dozens of dazzling programmable Genie effects available in the Pinnacle stand-alone product. Avid’s 3D Effects option includes only a dozen or so of the basic 3D moves like page peel with lightening.

While today’s high data rates make picture quality a virtual non-issue, Xpress is not quite as clean as Media 100 and requires higher data rates to achieve similar picture quality. We miss an S-video input and wish a Truevision-style breakout box was available here as on the NT version. S/PDIF digital-audio input (which no other system reviewed here has) is great, but you can’t import music and effects directly from CD. Digital audio scrubbing also sounded thin compared to the other systems, especially to the D-Vision, which was more intelligible over a wide range of speeds. Major audio improvements in Xpress 2.0 include support for Digidesign AudioSuite plug-ins, 48kHz DAT
sampling, and eight real-time audio tracks. A JL Cooper Fademaster MIDI-based mixer option will let you manually set audio levels.

With Avid Xpress 2.0 (and Media Composer 7.0), Avid introduces a plug-in architecture called Avid AVX (Avid Video Extension), which exposes the nesting layers. Leading developers like Artel, ICE, and Ultimatte can write apps like Boris FX and ICEfx directly to Avid specs.

Finally, while Xpress for Macintosh is no Film Composer, it has the powerful film matchback option of its expensive sibling. And OMF file interchange, including sequences, video, and audio, is now a reality, even to and from MCXpress NT. With the new OMF 2.0, this interchange will not require any file conversions.

In Avid MCXpress 2.0 for NT, a plug-in architecture called Avid AVX (Avid Video Extension) exposes the nesting layers. Leading developers like Artel, ICE, and Ultimatte can write apps like Boris FX and ICEfx, which exposes the nesting layers. Leading developers like Artel, ICE, and Ultimatte can write apps like Boris FX and ICEfx.

Among the Windows-style improvements is a file-folder directory added to the bin. Right-clicking brings up properties and contextual menus for many objects, as Windows users expect. We wish the clip info window would include the full path and actual name of the media files, in addition to the top level media directory.

Arbitrary differences from Avid's Composer interface include Splice's being renamed Insert, losing the film vs. video analogy. Splice and Overwrite buttons have also been taken out of the toolbar, forcing more drag and drop. Avid provides no keyboard map for MCXpress, though half the keyboard, including marking In and Out points, persists as a reality, even to and from MCXpress NT. With the new OMF 2.0, this interchange will not require any file conversions.

A powerful match-frame feature gets the source clip back in the Viewer for precise editing, though out-of-sync indication is poor, with just a single number for the length of each track. Out-of-sync clips lose their matching colors, instead of keeping the color and showing the amount of slipped sync for each clip. The tick marks in the timeline that show very clearly where a clip will drop; and reporting digital quality in KB/frame rather than AVR77, and so on.

Avid also offers a Portable MCXpress version much like Fast's Portable Quad. This packs 18GB of hard drives into a 200MHz Pentium II Dolch-style luggable for nonlinear editing in the field.

Discreet Logic D-Vision 3.5 was one of the first nonlinear editors back in the mid-1980s. Today D-Vision is one of the most true multitasking, multiprocessing Windows NT application, running on two Pentium Pro processors in our review unit. It is the first NLE optimized for NT, though it still waits for Microsoft's DirectShow media architecture with a hardware abstraction layer. The current D-Vision OnLine software has drivers written directly to the Targa 2000 RTX hardware.

Like Avid, the D-Vision interface offers two dramatic viewers for source and record/program, with the easiest-to-read timecode displays of any NLE, and elegant animated jog/shuttle knobs for each viewer. The Avid-style timeline has a distinctive look, though it randomly colors successive clips with bright nonchangeable colors and separates them with an unnerving visible break at each edit or cut point. Transition icons are a fixed size, so you cannot see either transition length or trim material in the timeline.

A powerful match-frame feature gets the source clip back in the Viewer for precise editing, though out-of-sync indication is poor, with just a single number for the length of each track. Out-of-sync clips lose their matching colors, instead of keeping the color and showing the amount of slipped sync for each clip. The tick marks in the timeline are labeled with odd fractions instead of whole seconds or frames, making them hard to use. A toolbar with large clear icons accesses most functions. Filter effects are available with a Windows-style right-click to get clip properties, instead of the Effects icon, which offers transition FX and DVEs (all rendered), the best of which are Boris FX. The entire desktop can be customized with elegant toolbars and resizable viewers, jog/shuttles, and displays.

In spite of its many minor interface flaws, D-Vision's range of editing styles is the widest of any product in this review. In its simplest
Learn from our experience: While installing digital video on the Mac is no sweat (especially QuickTime-based systems), don’t try to assemble a high-end PC editing system yourself. Buy a turnkey system and once it’s working, only use it for video.

We made the mistake of trying to move the NewMedia Lab Fast Video Machine to a new 200MHz Pentium MMX Sony VAIO machine and upgrade it to the latest VM-Studio Plus software, rather than getting a complete new system for review. For PC-based digital video systems, we always advise readers to get a turnkey system from an established dealer. We should have taken our own advice.

What’s the problem? Installing digital video cards in a working PC is like getting a combination lock with wheels labelled IRO, I/O, and Memory, then spinning each one of the wheels. Your task is to find the one combination that works. It’s also a little like spinning the bullet chambers in Russian roulette.

To get an insight into the difficulties possible on the PC, consider our experience. We installed a Targa 2000 DTX board in a new 200MHz Pentium MMX Sony VAIO machine and upgraded it to the latest VM-Studio Plus software, rather than getting a complete new system for review. For PC-based digital video systems, we always advise readers to get a turnkey system from an established dealer. We should have taken our own advice.

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has four unique advantages over the other systems reviewed. First, its real-time performance comes from a dedicated digital mixing and blending engine that has been doing real-time effects, including two DVE channels, since 1993. It also has an over-the-top dedicated video bus between its cards, as well as its own SCSI bus controllers, so all video is kept off the computer bus. With two Fast SCSI hard drives, like Seagate Cheetahs, the DP/R can compress both streams at 2:1 (300KB/frame). Targa boards can do one stream at 300-, even 400KB/frame, but two streams simultaneously top out at 225KB/frame. Fast’s ISA hardware is a bit long in the tooth, still 640-by-480, for example.

Finally, Video Machine does A/B-roll linear tape editing, with almost any video tape recorder. It controls more tape decks than any other product on the market, including standard nine-pin serial RS422 decks and many RS232 decks such as semi-pro S-VHS; and it also does LANG (Control-L), so you can edit with Hi8, the new Sony DV and DV CAM decks, and even with DV camcorders. Since it’s an A/B-roll editor that works with DV sources, if you run FireWire from both players to the recorder, using ProMax FireNet 1394 extender boxes, you can edit cuts-only material at full DV digital quality, and then switch to S-video for transitions and other effects. For event videography, and for much long-form documentary work, the Fast Video Machine-DP/R may be your best investment.

The seamless integration of linear and nonlinear functions into one product is extraordinary. One clip of the timeline can play from hard disk, the next from tape, with real-time transitions between the two.
The Fast A-FX-B-style timeline adds diagonal lines to show trim material.

Ultimately, VM-Studio Plus becomes awkward if you’re working with multiple layers, and Fast needs to redo its interface so you can see compositing layers in the timeline, preview them all together, then render them all at once, as others do. Another performance shortfall is that rendering not only duplicates the two-layer (transition) material but also makes a digital copy of the single-track material in between, requiring double the drive space. VM-Studio Plus should render only the transitions and reference the material in between with pointers to the original media files.
The strength of its picture quality, which has been the jest in the market since 1993’s NAB. The clean architecture of the massmedia Vincent card achieves better quality at low data rates than the other systems. But pushing that quality to 2:1 compression (300KB/frame) in two streams of video is too much data-crunching even for Vincent, so Media 100 developed a companion board with a separate set of codec chips for the second video stream, HDRfXs, which is the workhorse of the top-of-the-line Media 100 xr ($19,995).

With the xr, Media 100 gives up the ability to run in three-slot Macs along with a SCSI adapter and high-end video display card. But with fast enough hard drives, Media 100 xr can do two streams of the best-looking digital video on the market today. (Note that the single-board Media 100 xs provides identical picture quality, but in real-time it can do only single-field previews, which are more than adequate for most multimedia creators. Media 100 xs will save you a slot and about $4,000.)

A long-promised Theo brotherboard for Vincent remains unreleased. Theo was to offer two streams of true 601 video, new I/O capabilities like SDI (and possibly DV), and a Movie-2 bus connector. Media 100 is expected to announce future Theo and Gaudi (a 3D effects card) developments at NAB.

Media 100’s software continues to be a basic nonlinear editor, with no support for compositing extra layers of video and minimal real-time effects. Media 100 users must go to Adobe After Effects for compositing and Avid Boris FX for television-style DVEs.

Media 100 uses a Premiere-style timeline, collapsible to Avid-style, and Premiere-style source and program monitors. Although Avid claims you can drop a clip and transition into the timeline faster with Premiere-style source and program monitors. We reviewed a top-of-the-line StrataSphere with the DVEousFX option. It has the best single-channel, keyframable DVEs of any product in this review, with dozens of real-time effects like page peels, quad splits, and spheres. The handsome tower-style Sphere Processor/Media Server and StorageDock units are controlled remotely by a Macintosh 7300/200 running the SphereOUS software with the editing interface. Regrettably, you use the keyboard for just a few things like copy and paste, though the space bar does start and stop playback.

Picture quality has improved, rivalling Media 100’s strong vibrant colors, though the minimum 3:1 compression is not as low as other systems. And QuickTime integration has paid off: StrataSphere is the only NLE that can play an overlay QuickTime movie with a (moving) alpha channel in real time. Others can play only PICTs or PICT sequences. It has real-time alpha-channel support in both title and overlay channels, and it has real-time credit rolls and crawls; none of the others does. It also has alpha capability in the background channel, so if you build or mix down, the result can be
used in a key track. StrataSphere adds 50 new overlay FX tracks. Any one of these can be real-time, so you can move the real-time power layer by layer as you review its motions. Sphere renders a single frame, showing the relative positioning of compositing layers, and slowly steps through successive frames. The keyframe editor is well done, adjusting parameters at any number of frames and allowing you to save sets of keyframes for application on other layers. Although Sphere builds a log list for digitizing, we could not figure out how to convert a TrackSheet to a log list for batch redigitizing at higher quality.

Scitex emphasizes that its network-centric design enables workgroups equipped with Spheres or the DigiSphere digitizing station to work together. However, we found that the type of collaboration possible is mostly limited to the same kind of work done by networked Avids or Media 100s: file sharing. That network is also a bottleneck for third-party applications like After Effects and plug-ins like Boris FX, since StrataSphere does not send video images to the Macintosh (just clip pitons). This also makes the titler weak, since you can’t position graphics over live video, and they don’t show up on the NTSC monitor.

A manual Control Panel interface, with great jog/shuttle and audio faders, gives editors a great hands-on feel and limits the need for keyboard and mouse functionality. It also really flies in trim editing. You can do sync and nonsync trims and slip material in a clip, something previously only available on Avid Media Composers. It would benefit from additional buttons like next/previous transition and insert/overwrite. The wonderful manual faders can alter levels in audio tracks, but the software doesn’t allow fine-tuning rubberband envelope values. And it’s a bit clumsy setting the points (in the TrackSheet with the mouse) for a loop preview, instead of just setting a number of frames around the edit point.

SphereOUS really gets awkward moving clips from the ClipSheets (bins) to the TrackSheet (an Avid-style timeline). You must copy selected clips into the clipboard and then paste them into the Tracksheet, where they appear in a Workspace under the timeline. From there you drag them into the timeline, or you can paste special to the current time, beginning or end. Pro editors expect to trim the source in and out, then drop it into the timeline with a single keystroke or click. And SphereOUS does not support three-point editing or backtiming an edit. However, excellent timecode readouts and clip names in the TrackSheet let you edit all trim values to accomplish the same functions.

On the downside, given Scitex’s Dveous experience we expected that at least the canned transition DVEs would be two-channel. However, even Scitex’s Push, usually a two-channel DVE with one video pushing another off the screen, is a one-channel slide. And StrataSphere’s background track is limited to dissolves and analog-style wipes. We were also disappointed at the lack of video/audio input adjustments, or waveform monitor and
A single FireWire cable can replace the multiple analog component and composite BNC, S-video, RCA, and XLR audio cables on this breakout box, as well as the separate nine-pin serial time-code/deck-control cable. Multiply that by nearly a dozen edit stations, and you begin to get the picture.

All these cables, as many as 17 separate connections, are replaced by a single, thin FireWire between the camera or deck and the computer. Furthermore, there is no need for a breakout box.

But the more important point to make is that FireWire does not compromise quality; DV video signals are still component, although also digital (as in Digital Betacam). And the audio is better than just balanced (noise resistant)—it's digital (noise immune).

DV means perfect backup archives of your work at minimal cost ($1/GB) and unlimited copy generations without an expensive compression board. You just transfer the data into your computer with a low-cost interface card like the Radius MotoDV for Mac ($599; $999 with EditDV software). While real-time DV editing requires dual-DV codec hardware—just like real-time M-JPEG editing—and can be similarly expensive, cuts-only editing is a snap with EditDV.

Wait, you say! The editing software couldn't possibly compare with high-end systems like the Avid Media Composer (typically $100,000). Imagine our surprise when we compared all the major interface features of Media Composer with EditDV and found few deficiencies. Furthermore, your DV footage won't look or sound any better when it's converted to analog and redigitized in Avid's M-JPEG format, even at data rates three times DV's 130KB/frame.

The EditDV timeline has an Avid-style main video track, which can be expanded to a Premiere-style view. The time-code display is big and easy to read. Source and program windows are Avid-style, with edit buttons and track patches. It supports drag-and-drop professional three-point editing, and the Trim window is even better than Avid's. Unlimited video overlay tracks each have their own FX tracks, with a great keyframe editor. Version 1.1 adds 16:9 widescreen editing. Learning EditDV is easy, and you become a professional film-video editor in the process.

You don't need to tell your clients that you spent less than $1,000 for EditDV. Their video will be as-good-as-it-gets online quality. Invest your substantial savings in 18GB Seagate Cheetah hard drives and a DV editing deck (for analog footage in and out). In a pro studio setting, you'll probably want two big computer displays, one just for EditDV's source-program monitor window, and a third NTSC video monitor, just like expensive Media Composer online suites.

If you were planning to spend $100,000 for a system, you could save enough on EditDV to buy yourself a sports car, but you'll probably have more fun driving EditDV. It handles some corners better than Media Composer.