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THE APPLE II MAGAZINE

inCider

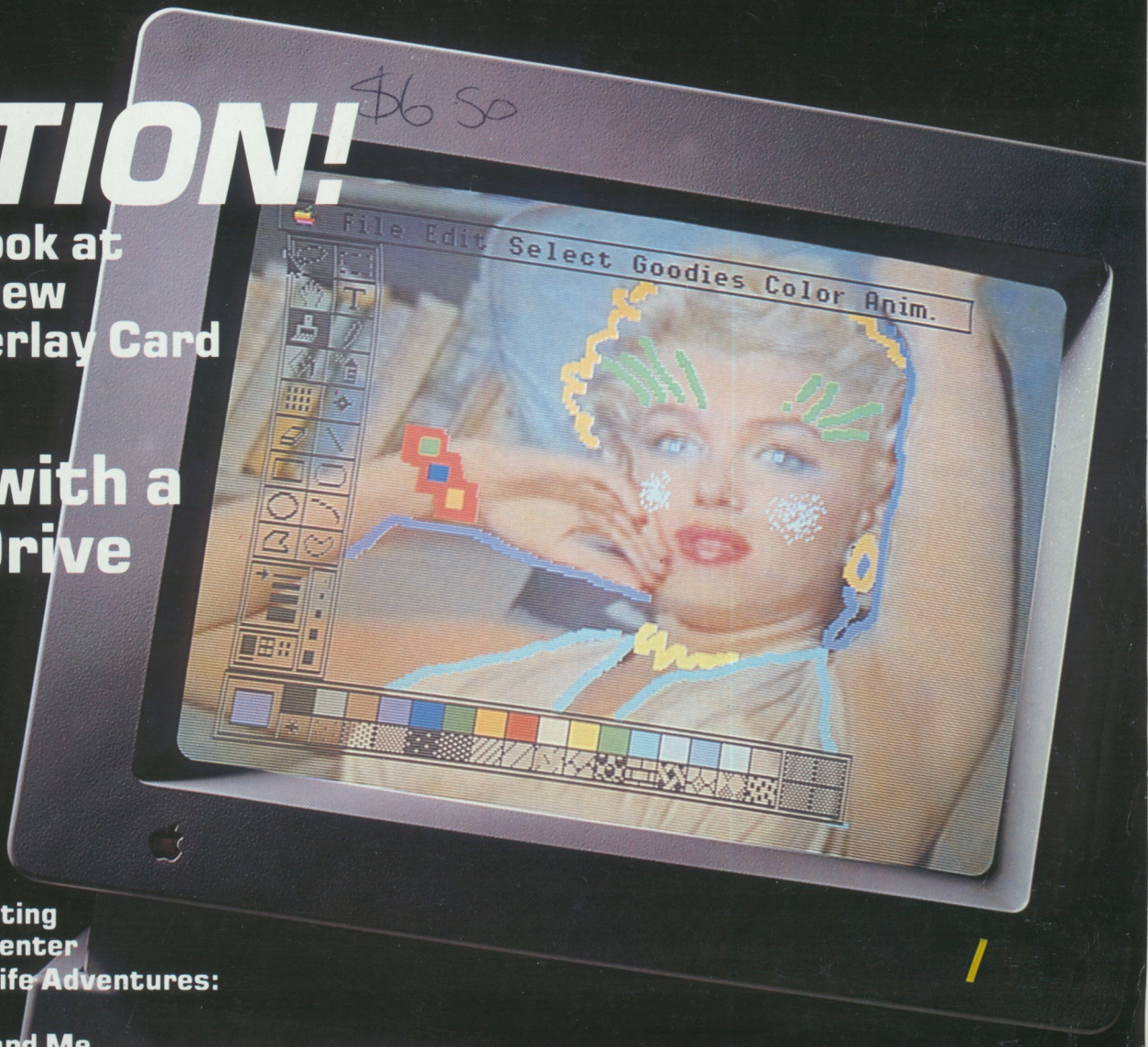
May 1989
USA $2.95
Canada $3.95
U.K. £2.20

AN IDG COMMUNICATIONS PUBLICATION

ACTION!

A First Look at Apple's New Video Overlay Card

Living with a Hard Drive



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By PAUL STATT * SENIOR EDITOR

ROLL VIDEO

Sneak preview!
It's a breakthrough in Apple II graphics: Apple's new Video Overlay Card uses genlock technology to combine video images with computer-generated text and pictures for true special effects. Take 1 . . . cut . . . and print!

DEMILLE MEETS DISNEY IN APPLE'S film sensation of 1989—and now's your chance to get in on the act. If you've ever wished you could combine your most artistic computer graphics with your favorite video tapes, Apple's latest product lets you merge the two media the way the professionals do. The Apple II Video Overlay Card lets you display computer-generated graphics with video images—not just add text frames between video frames, but actually superimpose computer graphics over your video.

The Overlay Card connects your computer and graphics to your VCR, video camera, laser-disc player, or cable, broadcast, or satellite TV signal. The Apple card uses a technique called *genlock* to synchronize the two video sources. Genlock lets you display computer graphics—pictures as well as text—over the video screen; that is, you can overlay annotations and illustrations on the video. You can even combine computer animation with video, *à la* the movie *Who Framed Roger Rabbit?*

WHAT DOES IT LOOK LIKE?

If you've ever watched a televised football game with an "electronic chalkboard," a weather report with animated maps showing the movement of storm patterns, or any other show with neat special graphics, you know what genlock-created effects look like. You probably didn't know you could create similar special effects with your Apple II.

In theory, you can do it all with your Apple IIe or GS and the Video Overlay Card. Apple stresses the educational and home uses of its new product, but admits that some small businesses might also find it useful for creating commercials and promotional videos. Media professionals, take note: The quality of video output from the Apple II Video Overlay Card is limited only by the quality of the input used. If you use broadcast-quality video as input, your output will be broadcast-quality video. The Apple II Video Overlay Card can produce National Television Standards Committee (NTSC) legal video; that's the color-television

Photography * Mark Johann

format used in North America and Japan. (A PAL version for the European format is possible.)

While an Apple II Video Overlay Card may find a home in some television studios or production companies, schools should be a prime market. Schools have Apple IIs and VCRs, and are the largest market for laser-disc players. (Because of the high quality of the video produced by laser discs, they're well-suited for use as a video source.) The Overlay Card works with any Apple II program—painting and animation programs are particularly appropriate—so the only investment a school has to make is the $500–$800 for the Apple II Video Overlay Card. (The exact price was undetermined at press time.)

Teachers can use the card and a painting or drawing program to annotate and highlight prerecorded instructional videos. To annotate or edit a video, however, requires a second VCR. You can create an overlay with one video source, but you'll need a VCR to record the events. (See the accompanying **Figures** and discussion of the technology below.)

Imaginative kids and teachers will design new kinds of lessons by combining videos and ►

computer graphics. At the Apple II Video Overlay Card press briefing in February, Apple showed a time-motion study created by a group of students at the Talcott Mountain Science Center in Avon, Connecticut. These young scientists overlaid graphics on a video tape of a classmate running. They added points to represent the boy's major joints and bones, then connected those points with lines. The result, which was achieved using an animation program, was a stumbling stick figure that showed how a person's various joints work when he or she runs.

At home, you can add graphics to your family videos. Remember, Apple II VCR software (such as Video Title Shop, Home Video Producer, and VCR Companion, reviewed in January 1989, p. 28) can't overlay text and pictures. You have to make do with a laborious series: text screen, video screen, text screen, video screen, and so on. The Apple II Video Overlay Card changes all that; it opens up a new world of possibilities.

For example, if you're inspired by the CBS sports commentator John Madden, you could add chalkboard diagrams to videos of your son's football games. If you've just bought an acre of land and want to see whether a contemporary house looks better than a Cape on that property, you could sketch out both styles of homes with a drawing program such as Draw Plus or Top Draw, then lay the graphics image over a video image of the land you own.

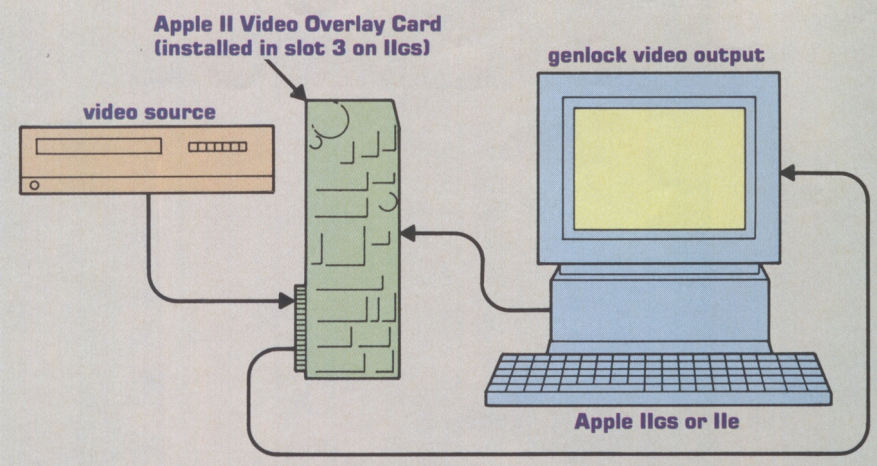


Figure 1. Basic connections: Apple II with Video Overlay Card, interfaced to video source. VCR here cannot record special effects produced with this configuration.

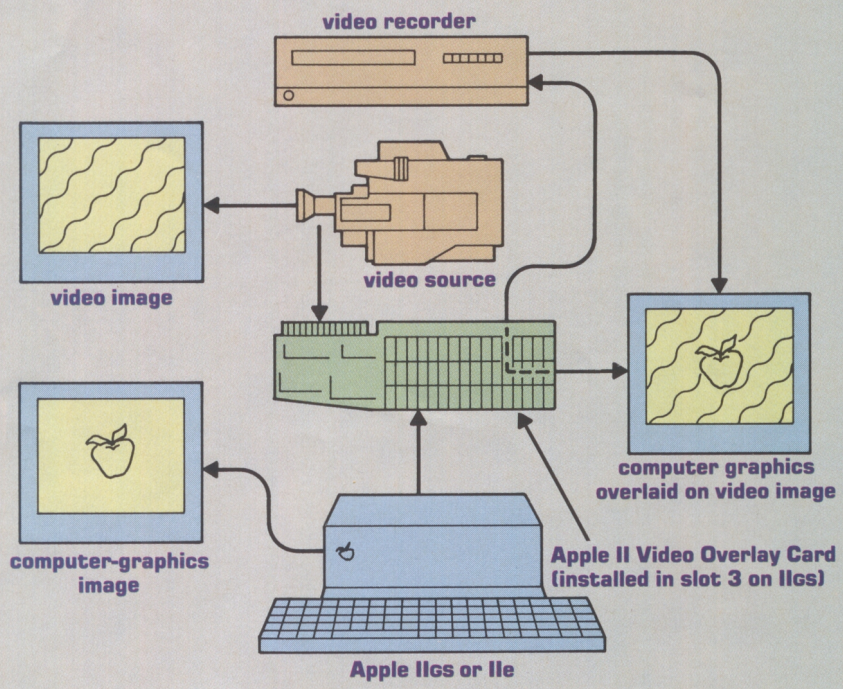


Figure 2. Permanent capture and editing system requires video-cassette recorder not used as video source. The video source in this configuration is a video camera; however, a second VCR, a laser-disc player, or a cable, broadcast, or satellite TV signal can also be used.

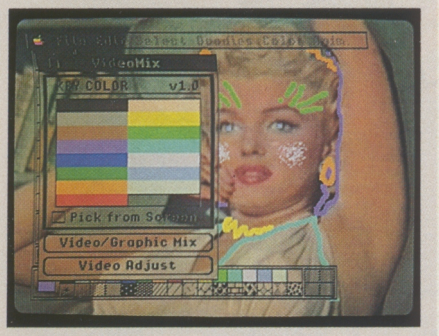
TIMING IS EVERYTHING

Why does it cost $500–$800 to connect two machines when every Apple has an RCA-type "video out" port and every VCR an analogous "video in" jack? *Timing* is what makes a simple cable incapable of doing the job. Try recording something from your Apple on your VCR and you'll see: You can do it, but you can't do it well. The colors look off, because the color information from the computer isn't synchronized with the VCR. For the same reason, it's not a good idea to use your monitor as a TV.

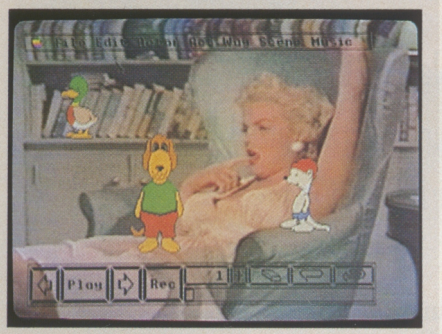
All video signals, whether from a computer, a VCR, a videodisc player, a video camera, or the TV, create an image the same way: An electron gun "paints" the scene on a picture tube, like a kid painting a wall with water pistols full of paint, but precisely and rapidly.

Combining speed and accuracy, then, is the problem. If you try to paint a picture with a video signal from two different sources, you have to make sure the signals are *synchronized*—that they arrive carrying the same types of color information at the same time. That's where genlock hardware comes in; it makes sure the timing's in sync. It's sophisticated technology; Doug Camplejohn, an Apple multimedia-product specialist, calls the board "the most complex piece of hardware Apple ever produced." (Genlock hardware is also available for Commodore Amigas and other personal computers, but most television stations and video producers still use expensive computers that are dedicated strictly to overlaying titles and graphics.)

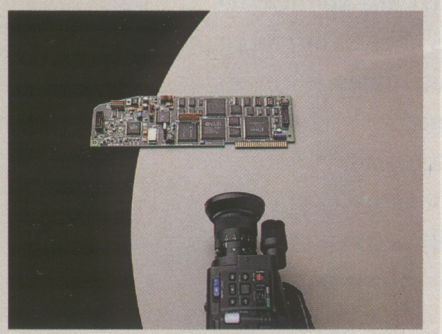
Note that although you'll see sharp computer graphics recorded on video tape and truer video images on your monitor, genlock



The VideoMix program, which accompanies the Apple genlock card, lets you produce a variety of effects by choosing key colors and nonkey colors.



Maybe Marilyn doesn't look thrilled, but Apple II users will find entertaining uses for the Overlay Card. In this photo, characters from Electronics Arts' Cartooners invade *The Seven-Year Itch*.



The Apple II Video Overlay Card is chock full of chips. In fact, Apple calls it "the most complex piece of hardware (we've) ever produced."

technology doesn't *digitize* video input; that is, it doesn't translate the image into the discrete on-and-off signals (bits) your computer can use, only into a form it can display. For instance, you can't save a video image to disk or print it on an ImageWriter. To do that you'll need a video digitizer—ComputerEyes from Digital Visions or ImageWorks from Redshift, for example. Apple may add an extension to the card so that digitizers will be able to work with it directly.

If the difference between a video digitizer and a video overlay card is unclear, remember that even though the Apple II Video Overlay Card goes inside your computer, the genlock's video processing is done outside your Apple "on the fly." It can't change the video images it processes. Synchronization is a way of placing computer-generated text, graphics, and animation over some "real" image—something like drawing a mustache on the glass covering a portrait of your cantankerous old uncle. Outside the genlock card, your Apple II is aware of only the mustache, not your uncle. The digitizer is what translates your uncle into a format your Apple understands.

APPLE GOES TO THE MOVIES

To use the Apple II Video Overlay Card all you'll need is an Apple IIe (128K, enhanced main-logic-board revision B or higher) or GS (512K, ROM version 01 or higher) plus a video source, such as a VCR. The card works in any slot in the IIe, but in the GS you'll have to use slot 3.

Operating the Overlay Card is as simple as choosing a "key color" from Apple's VideoMix software. The key color would normally be the "background color" in your computer graphic, and you would normally make it "transparent," meaning that the image from the video source would show through the background. But it's also possible, for special effects, to make any other color in your palette the key color, and to make it opaque or translucent, rather than transparent.

Apple supplies the VideoMix program with the card. On the GS, the program is a new desk accessory (NDA), so you can access it from any GS program. On the Apple IIe, however, it's a stand-alone application; you must run the VideoMix software before starting your production. At press time, no software written especially for the Video Overlay Card was available, but the good news is that you really don't need any new software to take advantage of the card. By the time you read this, some specialized programs should be on the market, but with the high quality of the painting/drawing and animation packages available, you may not want special software.

You'll probably want a color monitor; the Video Overlay Card uses either composite or RGB (red-green-blue) monitors. (For IIe owners, it doubles as an RGB card.) If you want to record your masterpiece, you'll need a VCR in addition to the video camera, television, other VCR, or laser-disc player you use as the video source.

The Overlay Card can't handle audio at all, so you'll want to make sure your video machine can. Don't worry—you won't erase the sound track on your videos when you overlay graphics. If your VCR includes a television tuner, you'll be able to use your Apple II's color monitor to watch TV. We had only a brief glimpse of the system at a press briefing, but the RGB quality was excellent.

Figure 1 shows the simplest connection made among your Apple II, the Overlay Card, and video source (in this case a VCR). Note that in this example there is no video-recording device; recording and editing your video in this example wouldn't be possible. To record, you'd need a VCR in addition to your video source, which could be another VCR, a videodisc player, a video camera, cable television, and so on. The video output from the Apple (the connection is made automatically when you install the Apple II Video Overlay Card) and the second video source are each plugged into the genlock, not into a monitor or TV as you might normally connect them.

Figure 2 shows a fully configured genlock video-editing system for producing and recording your "computer-enhanced" productions. The video outputs from the Apple and another source—a video camera in the diagram—are connected to the Apple II Video Overlay Card as in **Figure 1**. Additional, optional monitors are added to both the Apple and the source video so that you can keep track of their individual contributions to the genlock image. The card's genlock video output is viewed and recorded via connection to a VCR. A third monitor is connected to the VCR so that you can view the final image.

IT'S A WRAP

Look for a full review of the Apple II Video Overlay Card in an upcoming issue of *inCider*. Based on first impressions, the card seems a little expensive, but a board that combines two videos signals is probably worth the price. If you already own a VCR or video camera, you won't need anything else to use Apple's card. Even combined with a low-end dual-deck VCR and editing system (which range in price from $500 to $2500), the Overlay Card makes your Apple II an inexpensive "video shop." And that may be reason enough for some VCR buyers—and aspiring directors—to invest in an Apple II.□

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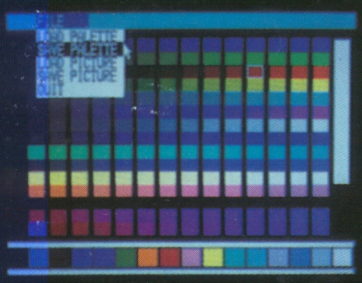

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