



DVR: As Good As It Gets

Part 1

By Allan B. Colombo

Security dealers in the closed circuit television (CCTV) market know very well how much of a nuisance videotapes can be. Not only must videotapes be inventoried and constantly rotated and replaced, the mechanical components within this type of recording device must be considered high maintenance. The permanent cure for these problems is a DVR (digital video recorder).

For example, after a break in, an established customer of one security firm made the comment to a responding police officer that "our video surveillance system will tell us who it was." Upon close examination of the videotape in his time-lapse tape recorder, however, the perpetrator's identity was anything but discernible.

Of course, the angry client quickly called the security firm to check out the CCTV system and provide him with a meaningful answer about why. When the dealer was through with his investigation it was perfectly clear that the customer had failed to rotate and replace videotapes on a routine basis. In addition, the dealer's periodic postcard reminders concerning routine maintenance went unheeded and the machine had not been serviced since it was installed, nearly five years prior. Not only was the videotape in the machine one of the originals sold to the customer, but the machine was so gummed up from fallen tape oxide that it required factory service. Needless to say, the bad guy got away.

The solution to this all-too-common problem is digital video recording. With a DVR system there are literally no mechanical parts to wear out and no videotapes to constantly replace. Where video images are stored on magnetic videotape and recorded and played back by an entirely mechanical time-lapse tape recorder, a DVR does the same job effortlessly by storing images on either a magnetic hard drive or other digital media.

The advantages associated with DVR are numerous:

- Images are stored and viewed on long-lasting, low-maintenance magnetic or optical media, as opposed to conventional short-lived magnetic videotapes.
- DVR images are of the highest quality and are always retrievable, as compared to conventional videotapes that degrade after just three recordings.
- Specific images are easier to find using DVR because the client does not have to search through entire video sequences to find them, as is the case using conventional videotape.
- There are no videotapes to rotate and constantly inventory with a DVR system.
- There are almost no moving parts to wear out with DVR, unlike conventional time-lapse tape recorders.

In a nutshell, DVR is as good as it gets!

About The Author

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GE Interlogix

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Part 2, The DVR Difference

By Allan B. Colombo

There are two basic ways in which to record and store video images. They are *analog* and *digital*. The digital method is the more robust and feature-packed of the two for security purposes. For example, digital provides better image resolution and clarity by virtue of the technology's ability to overcome noise. Another nice feature associated with digital images is the fact that they can be copied over and over without any degradation in quality. Also, they can be watermarked to assure their integrity in a court of law.

The analog method consists of a mechanical *time-lapse tape recorder*. Using time-lapse technology, images are stored on thin, plastic mylar tape coated with a thin layer of magnetic powder. Typically, video images and sound are recorded as well as read using a revolving magnetic tape head inside the machine. This head moves at a speed of approximately 1600 rpm, which, over a period of time, can cause excessive wear and tear on both the videotape and the mechanical parts within the machine.

Images stored using the *digital* method rely on a device called a *Digital Video Recorder (DVR)*. The benefit of DVRs is that there are essentially no moving parts to wear out. Also, instead of bulky cassette tapes, the most common way that images are stored using digital technology is through the use of the optical *compact disk (CD)* and the magnetic hard drive. These are essentially the same data storage technologies employed in state-of-the-art laptop and desktop computers. GE Interlogix has a full line of DVRs that incorporate both storage technologies.



Digital gives you the whole picture: with a digital recorder such as the Kalatel Calibur DSR 2000e (left), images are distortion-free, unlike those seen with a regular VCR (right).

You Get What You Pay For

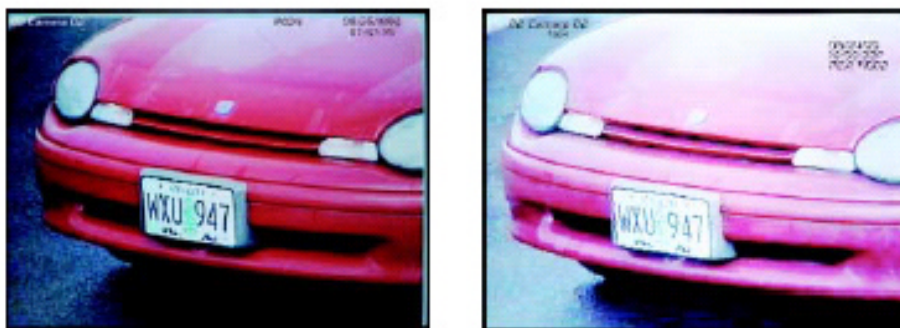
It is true that the up-front cost associated with the purchase of the average time-lapse tape recorder is relatively low, compared to that of a quality DVR. However, DVRs generally provide a higher quality and resolute image than most time-lapse machines are capable of producing.

One of the many reasons why an increasing number of end-users are asking security dealers for DVRs in place of time-lapse is the fact that the latter requires the tape head to be cleaned every 100 hours of use. Failure to do this can result in poor performance and eventual failure. Eventually, if allowed to continue, downtime and a greatly reduced life expectancy will result.

Videocassette machines must also undergo extensive servicing about every 2,400 hours of use. This usually requires that the user take their machine out of service while a reputable repair shop thoroughly cleans the tape heads and transport mechanism. In addition, the technician will replace all the rubber belts and bands within it. The usual life expectancy of a time-lapse tape recorder is only about four to five years, as compared to DVRs, which should have a lifetime many times that.

DVRs Offer Faster, Targeted Searches

Another reason why dealers and end-users both like digital is it provides the ability to conduct a more detailed image search. For example, a typical time-lapse tape recorder allows the user to search according to event, such as alarm and index. Searches are rather slow and cumbersome because the user must advance and reverse the tape until they locate the range of images sought.



When details matter, digital video is the best choice:

Digital recorders offer image clarity you just can't get from a VCR. The same image is shown as recorded on a Calibur digital recorder (left) and a VCR (right)

Because a DVR employs computer processing using random access, along with CD or hard drive storage technology, searches are fast and extremely targeted. For example, when searching for an image, search criteria can consist of a variety of things, such as time of day, day of week, alarm event, and others. This usually enables the user to go right to the images that they want.

Once the sought-after images are located, all the user must do is save them to disk, unlike time-lapse recording technology that requires the user to hand over the entire videotape to authorities for review. Archiving images and long-term storage is also much easier and efficient using digital.

Although the videocassette recording method will continue to provide a portion of the industry with a low-cost image storage alternative, it goes without saying that the security market is moving toward digital storage. Right now, dealers are working hard to introduce DVRs to their clients. In time, however, it will be the end-user who demands the best by way of the DVR.

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