

The T-Video Difference

There are many Digital Video Recorders (DVR) on the market. Choosing the right one is like choosing the right car. Although many DVRs look alike and sound like they have the same functions, there are very different. The T-Video DVR from Thin Air Technology is the “Cadillac” of DVRs. We want to explain why!

T-Video Differences:

- **The PC**
- **Compression**
- **Frame Rate**
- **Hard Drive Space**
- **Remote Viewing across the Web**
- **Audio Recording and Bi-directional Communication**
- **Point of Sale Terminal Integration**
- **Exported Video**
- **Relay Outputs / Contact Inputs**
- **Narrowcasting Capabilities / Digital Signage**



The PC

The heart of the DVR is the computer that runs the software and video capture system. There are two types of computers that can be used, embedded or PC based.

Embedded units are scaled down versions of the operating system with only specific functions enabled. Often, the embedded units are less “network friendly” and have more stability problems. These units are similar to Windows CE, developed for handheld devices and very small computers.

The other method is a full PC based system. PC based means the unit uses multiple components of the operating system, in this case Microsoft Windows XP[®]. Windows XP[®] has proven itself among PC users worldwide, having the highest satisfaction rating of any previous Microsoft OS to date. It is stable, expandable and user friendly. Most of all Windows XP[®] is intuitive. It detects hardware and software conflicts and tells the user how to fix them. All of T-Video’s PC based DVRs exclusively use Microsoft Windows XP[®].

One of the biggest points of failure in the industry currently is heat. A video capture card generates a lot of heat, as does the processor and hard Disks based on the amount of data they are processing. When requirements go up, heat goes up and power goes down. All of our DVR’s use advanced cooling systems including at least two full case exhausting fans, a fan on each PCI-video capture card and the largest processor fans we can specify.

We also use minimum 400 Watt power supplies, so they operate cooler and last longer.

Compression

T-Video DVRs use MPEG4, the newest compression method allowing for ¼ of the data consumption per recorded image. This is a very industry standard protocol, although some competitors are actually not using it yet. Beyond that, we use a hardware compression system along with software; this is where we can create a smaller root image file size before MPEG4 compression allowing us the smallest file size possible resulting in higher storage capacity.

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Frame Rate

The industry standard on full motion video is 30 frames per second. Quality useable video can be as low as 18-20 frames per second, below that its gets "choppy". All DVR's have a capability of a certain number of frames per second, divided across the number of cameras. This means that you might have a front door camera that records at 30 fps, while a parking lot camera records at only 10 fps, and a stock room camera is at 20 fps etc. The user can allocate the quality of the video based on the need at each location. The problem is its common to have a 16 channel DVR with between 60 and 120 frames per second total. Divide those frames between 8, 10 or even 16 channels of video and see what you get for quality on each camera. T-Video DVRs offer 30 frames per second across every camera on the system. An 8 channel DVR has 240 frames per second, and the 16 channel units have 480 frames per second to divide amount all channels.

There is no option besides scaling it down. In some cases, a user will scale down video to save disk space. We start with larger than average disks for that very reason. We are not willing to compromise the video quality.

Hard Drive Space

A DVR is dependant on hard drive space to store the video. Since there is no way to accurately estimate the necessary hard drive space needed to store a certain period of time on a DVR, we make it easy to upgrade. For example, many users want to store 30 days of video before the system will begin to discard the oldest video. We can certainly estimate based on historical projects what size of hard drive we will need, but instead we make initial expansion easier. All of T-Video DVRs come with a minimum hard drive of 250GB. All are upgradeable in 250GB increments.

All of our DVR's have the capability of auto extracting or diverting video to a third party storage medium on a schedule as defined by the user in setup. If for example the user wants to send the DVR's stored video to an external RAID drive every 30 days, it is a simple check box, a schedule and a file path.

Remote Viewing across the Web

Most DVR's have some sort of remote viewing capability. Generally they require you to buy a software package with a remote viewing client computer and give one or two computers the ability to login to the DVR and remotely view the video. Some units do not mandate a third party software or PC, but still have speed and data density ratings / limitations. They also have severe limitations with video across the web as it requires excessive bandwidth to see streaming video across the web.

All networking and web serving features are absolutely included in all T-Video DVRs at no additional cost. T-Video DVRs will stream all channels of video across a 256 k connection. This is a low-mid grade DSL. We actually have tested as low as a 56K frame with 128K Burst speed. This is slow! And it worked, not great but much better than anyone else's product. You can do it across the internet or on an internal network not allowing outside access to the video. It's your choice. Since the OS is Windows XP, network configuration is a snap and does not require an IT based operator.

Audio Recording and Bi-directional Communication

Most all DVR's can record a channel or two of audio. T-Video DVRs can record audio from every camera. You can also listen in across the web or LAN to the microphones. Because the DVR uses Voice Over IP technology (VoIP), you can communicate in both directions. The audio output from the DVR can be routed to an amplifier and PA speaker system and you can make announcements or comments.

Point of Sale Terminal Integration

In any retail application there will be a cash register or Point of Sale terminal (POS). Most electronic cash registers have a data port on them that sends a data stream out when transactions are done. Our DVRs have multiple ports to connect this data to which will allow you to view a camera that is pointed at the cash register, and see the transaction data overlaid in the video screen. The text will be recorded with the video for your review or it can be used later to search for particular transaction. It will show the items purchased, the amount tendered, the change, no sale, void sales etc. This allows the store owner total control and review capabilities on their transaction even after a few days off!

Historically, this was done this with a third party "box" called a video text overlay box or inserter. We built it in and saved the cost. Because we are just processing ASCII code and indexing the video, we can pick up any code string from anything that has a serial output. T-Video DVRs have been tested in applications in access control, industrial automation and manufacturing, and ATM machines.

Exported Video

If you chose to save a video clip (or just a single image), it is as easy as defining the clip from the search query, and choosing a location to save it. All of T-Video DVRs have a CD writer on board for this purpose. We have an industry standard "watermarked" or encrypted video track. This can be used for legal purposes to ensure authenticity of the video for court.

Relay Outputs / Contact Inputs

On 4 and 8 channels DVR, we have 4 relay outputs and 8 inputs, on a 16 channel they double to 8 relay outputs and 16 contact inputs. These relay outputs are configurable to act upon motion or schedule or you can access them from the internet allowing for local control of doors, gates, sirens, pumps etc. Our relay outputs are programmable latching relays so the time is built in to the box. No need for outboard equipment. Contact inputs are used to trigger alarms for recording or trigger alarms at remote monitoring stations.

Narrowcasting Capabilities / Digital Signage

New for summer 2005, we have a narrowcasting module. Narrowcasting is the ability to play a stream of video, or a loop, like advertising or customer information in remote monitors outside of the DVR's function. The stream can be used for local or national advertising, schedules, events visitors' information or any other content. The media can be produced and converted on typical MS Windows software and played through additional monitor outputs installed in the DVR. The units may also be used with national companies selling streaming advertising content and because of our DVR's simple remote access capabilities, it can all be done remotely, no direct access to the unit is required besides an internet connection.

The TVideo DVR's are very simple to set up and maintain. End users will have less service and operation calls because of the ease of use, self diagnosis, and remote connectivity. All of our dealers, distributors and Rep Firms have full system, board level repair, and networking capabilities as part of our training and ongoing support insuring that the customer will never be left without support.