

# CasinoVision, Inc.

## SURVEILLANCE SOLUTIONS

### VISION CONTROLS CAM MP-R4, 8, 16 DVR System Technical and Functional Description

#### DVR Technical Description

- Intel Systems Board
- Intel Pentium 4-3.0Ghz processor
- 1MB Cache/800Mhz, 512 MB DDR Memory
- 256 MB Nvidia video card
- 3 Chassis styles:
  - Chassis with 4 Hot-swappable Drive Bays with a maximum effective storage of 1.5TB (2.0TB total) (using 500GB swappable drives)(4U) 19" wide x 23.5" deep x 7" high
  - Chassis with 8 Hot-swappable Drive Bays with a maximum effective storage of 3.0 TB (4.0TB total)(using 500GB swappable drives)(3U) 19" wide x 26" deep x 5.2" high
  - Chassis with 16 Hot-swappable Drive Bays with a maximum effective storage of 5.0TB (6.0 total)(using 500GB swappable drives)(4U) 19" wide x 26" deep x 7" high
  - 200, 300, 400 and 500GB swappable Hard Drives are used depending on storage requirements.
- AGP Video card w/128 MB, Composite TV and VGA out
- 16xDVD-RW Drive
- OS Drives. Two optional OS drive configurations
  - Integrated Intel 10/100/1000 Server NIC Dual 40Gb, 5400 RPM Notebook OS drives, swappable in data-port
  - Integrated Intel 10/100/1000 Server NIC 40Gb, 7200 RPM OS drive,
- Windows XP Professional
- 5 year warranty on Hot-Swap Hard Drives, 3 Year warranty on other components
- 4, 8, 12, 16 Channels composite video in, BNC
- Rack-mount Rails
- 600 W Power supplies (Optional swappable redundant Power supplies available)

#### Review Workstation Technical Description

- Intel Systems Board
- Intel Pentium 4-3.0Ghz processor
- 1MB Cache/800Mhz, 512 MB DDR Memory
- 256 MB Nvidia video card
- Tower Chassis with 400GB IDE Drive
- AGP Video card w/ 128 MB, Composite TV and VGA out
- 16xDVD-RW Drive
- Windows XP Professional
- 3 Year warranty on parts
- 380W Power supply
- 17" LCD flat screen Monitor

#### DVR Operating System

The digital recording system runs the Windows XP Professional Operating System. All system alerts and alarm logs are written to the operating system event log and enable IP monitoring. The DVR provides an upgrade path for the next Microsoft Windows release.

### DVR Compression Technology

The digital recording system utilizes a dynamic compression technology that minimizes network bandwidth and hard disk storage requirements. The compression technology allows for continuous recording using a minimum of 30 frames per second per channel, maintaining a resolution of 640x480 pixels.

The bandwidth per video channel is dynamic and is dependent upon scene activity. The bandwidth automatically decreases upon elimination of scene movement. The DVR demonstrates the capability of viewing 16 live cameras at 30 frames per second on each camera.

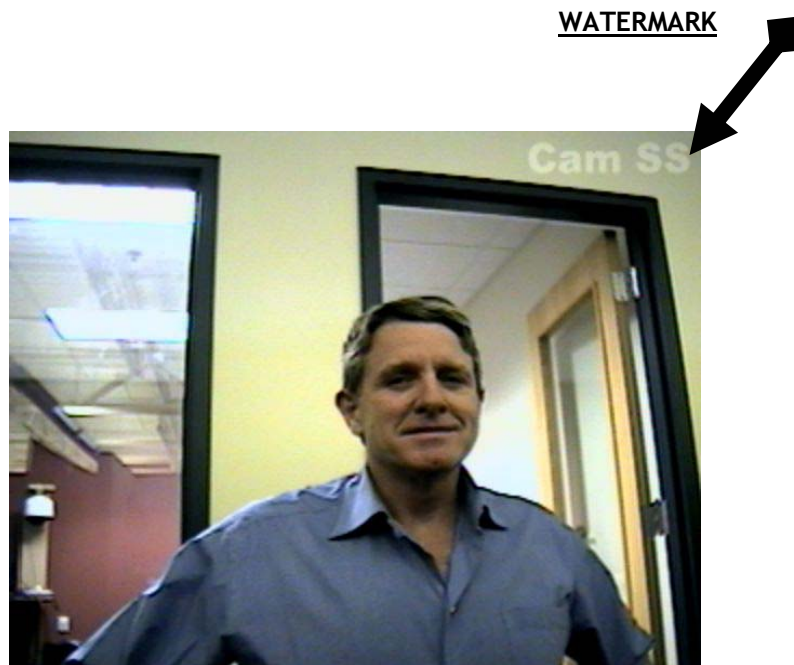
The DVR compression technology allows for 16 channels of audio recording per DVR.

The DVR utilizes DSP hardware compression and CPU based software compression on each frame of video. The bandwidth per video frame is dynamic from the previous frame. Demonstrable frame sizes vary from 30 to 3,000 Bytes. The Video Capture Card containing DSP hardware compression resides in a PCI backplane and is upgradeable to new releases.

### DVR Security

Video Security is provided in two ways:

- Encryption. The DVR utilizes an authentication code of a minimum of 8 bits coupled with analysis and compression of the video image. The authentication code is a complex function with a secret 56 bit authentication key.
- Watermark. The DVR has a watermark feature. The watermark feature is applied to each video frame upon recording (upper right corner of each frame). The watermark is permanent.



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## System Functional Description

The DVR starts recording upon connection of the recorder to AC power without any human intervention.

The system connects to any AC power source between 100 and 240 VAC, 50/60HZ, and senses the appropriate input voltage, and starts up the recorder.

Each DVR can be housed in a 19" rack mount enclosure. Height is 3 or 4U.

The system features heavy-duty internally mounted fans for adequate cooling of all critical components.

The system is installed according to industry CCTV practices and works with either NTSC or PAL standard cameras. Third party components are installed and connected to the recorder in accordance with their respective manufacturer's technical installation guide.

Accessing the DVR either locally or remotely is maintained by password protection. 8 levels of user rights and permissions are provided allowing user accounts to be given custom access rights to DVR resources.

The recorder maintains a full audit trail. The audit trail tracks all access to the DVR. The DVR also provides a complete operator log.

The system continually records video onto its own hard drive(s) and is not interrupted during playback, remote access and remote download of recorded files.

All recorded video is authenticated for court purposes and export of the compressed video files may be done via phone connection, network connection, or locally onto a CD or DVD.

A software playback viewer enables any authorized person to playback any selected and exported video files. The playback software is a self-executing file that does not need to be installed onto the user's computer.

The DVR is able to store any picture in a BMP format.

## DVR Recorder Performance

### Camera Inputs

The DVR is capable of recording either 4,8,12 or 16 channels of video, PAL or NTSC standard. The DVR audio recording ratio is 1 channel of video to 1 channel of audio.

The DVR provides camera captions that may be displayed when the DVR is recording or in playback. A unique name is available for each camera. These names may be displayed as captions. Time and date is encrypted and may also be displayed (user control). The DVR accepts camera inputs in analog format.

### Frame Rate

The DVR provides a minimum recording of 30 frames per channel per second per channel (480 frames per second total).

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### Resolution

The Resolution at factory default is in a 640 x 480 capture size format.

### Continuous Recording

The system has, as its default setting, start recording immediately upon system power up.

The DVR produces a unique file for each camera. The file is based on time (recording minutes per file). The administrator may select a range from 10 minutes to 60 minutes per each file.

The DVR is capable of storing to a network drive.

### Alarm Recording

The system may be programmed to record only under an alarm condition via activation of an external alarm contact. The DVR has a minimum of 32 alarm inputs and 32 alarm outputs.

The system may be programmed to record only under an alarm as detected by the built-in video motion detector per camera if the system has been set up for this type of operation. The DVR provides an unlimited mask area for each camera.

The system may be programmed to record any of the above, by camera, by time and date schedule.

In case of an alarm event, the corresponding cameras' recording rate on that particular capture card may be increased to any frame rate, up to 30 fps.

Still single and multiple images corresponding to alarms may be captured and archived as a bmp file automatically by the system to a user specified directory.

The DVR provides a graphical user interface that will allow users to identify alarm conditions and camera locations which may be displayed on a facility map.

### PTZ Control

The DVR provides Control capability for PTZ cameras. Control features include up, down, left, right, zoom in/out, focus, IRIS and preset functions. Control is compatible with Pelco and Phillips protocols (others are provided on request).

### Video Data Retrieval

Video is retrieved by time, date, recorder/site, and corresponding camera.

When utilizing a mapped drive on the network, video will stream to the storage/remote playback machine minimizing network bandwidth.

The DVR provides play video back at 1/10, 1/8, 1/6, 1/4, 1/2, 1, 2x, 4x, 6x, 8x, normal playback speed. The DVR provide a slider bar to quickly navigate the video. The DVR simultaneously starts up to 4 video files for synchronization. Up to 32 video files may be played simultaneously while recording.

### Remote Alarm Notification

Remote alarm notification may be provided by making either a single PSTN connection or multiple LAN/WAN TCP/IP connections to any number of remote operator review stations via either dry contact or video motion detection alarm signal initiation

Remote alarms may come across in various formats:

- Live video being sent to a remote operator review station(s)
- Audible alarm to a telephone or cellular connection
- Voice message (user programmed and set up in the recorder to a telephone, audible paging device, or cellular connection)
- Alarm video clips and alarm data to e-mail.

### Network Operation

Each DVR recorder may operate as a stand-alone device simply by connecting the appropriate number of cameras to the recorder and by plugging in the supplied keyboard and user supplied and suggested 1024 X 768 resolution VGA monitor to the system.

Each stand-alone recorder may be connected to a 10/100/1000BaseT LAN through the use of the built-in internal Ethernet card.

Every stand-alone recorder may access and operate as a remote reviewing/client workstation.

The DVR utilizes server software that provides authentication and management of multiple DVR's on the network.

The DVR has remote diagnostics software that allows an operator to take control of the system from any Windows based computer. Through the remote software the operator can shut down the system, check memory, hard drive utilization, and control every function of the DVR.

The DVR has the ability to create customized camera views. Up to 16 cameras can be placed in each view. Any camera from any DVR on the network is able to be included in each view. Each customized view allows the user to monitor multiple cameras from multiple DVRs.

The DVR has remote real time video streaming capability across a network.

### Network Storage

The DVR provides the ability to store the video to any storage device and/or server present on the network allowing for a single repository of all video files.

The DVR provides the ability to store and archive videos or the same video to two independent locations

The DVR has an optional network based storage solution. The storage solution utilizes RAID 5 storage and provides a minimum of 1 hot spare hard drive.

The DVR has an optional web based management system that will automatically archive and manage video files from multiple DVRs. The interface to the management system utilizes an Internet browser. Users may query the data through custom data fields that are provided in the management system.