## 1. Introduction

***VideoWatch-Mobile*** is an advanced yet easy-to-use digital video recording system that allows you to record, play back and debrief lapse and events information optimized to be used in vehicles like busses, trains etc.

***VideoWatch-Mobile*** consists in a ruggedized ***Recorder*** unit installed inside the vehicle, and a PC based stationary or mobile ***Debriefer*** unit. Optionally it can be supplied with cameras and needed cables.

***VideoWatch-Mobile Recorder*** unit manages all video switching, acquisition and compression as well as alarm trigger inputs and dry contact outputs. ***Recorder*** functions entirely automatically upon engine startup and is designed for automatic recovery from problems such as electricity outages or video loses.

***VideoWatch-Mobile Debriefer*** unit accepts the removable disk from any ***Recorder*** unit and enables to analyze, compare, save and print video information. The ***Debriefer*** uses a graphical, easy to use environment based on Windows 98.

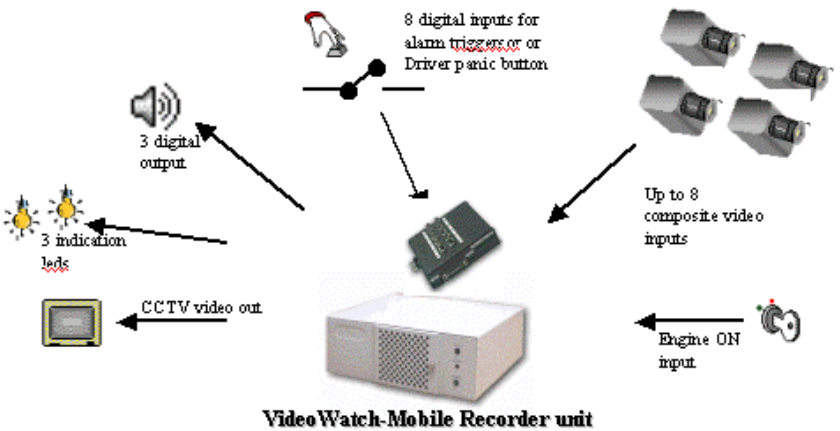
***VideoWatch-Mobile*** records up to 8 cameras into encrypt and compressed cyclic video files according to a pre-defined recording plan. The recorded data is stored on 2.5" removable disk. Recording plan can be automatically changed in response to external inputs.

***VideoWatch-Mobile*** can use any combination of BW and COLOR cameras. Genlock cameras are not required.

***VideoWatch-Mobile*** provides excellent video quality with optimal use of disk space. Under typical conditions, information spanning weeks is retained.

## 2. Features Highlight

- Digital high quality recording.
- High quality compression on a frame basis.
- Optimized for operation in mobile environment.
- Complete unattended and automatic operation.
- Endless loop recording.
- Maintenance-free mobile recording system.
- Operation status indicators. (on/off, recording, errors)
- Completely independent frame rate and disk usage on a camera-wise basis.
- Simple recording setup with automatic hard disk quota and switching resources management.
- Intelligent switching between cameras for smooth recording from multiple cameras.
- Multiplexing up to eight video cameras.
- Supports driver panic button.
- Continues to record pre-defined time after engine is shut off.
- Stationary or Portable ***Debriefer***. (Playback, editing and printing)
- Identification data stamps on video data, including date, system no, disk number, camera name.
- Encrypted video data format.





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# 3. VideoWatch-Mobile Recorder Specifications

The ***VideoWatch-Mobile Recorder*** unit is a PC based system, packaged to operate in harsh environment of vehicles such as busses, trains etc. There are two ***Recorder*** unit models, which differ in size and growth capabilities. Both offer fast capturing, compressing and switching of up to 8 cameras, while retaining high switching rate between **non-genlock** cameras.

***VideoWatch-Mobile Recorder*** unit can be powered from the vehicle main power source (either 12v or 24v source) and is protected from electricity fluctuations. The ***Recorder*** unit provides power to the cameras and infrared illuminators.

## *Video recording*

| | |
|---|---|
| ***Compression Method*** | Motion JPEG |
| ***Image size*** | NTSC: 320x240<br>PAL: 384x288 |
| ***Frame Rate*** | NTSC: up to 15 FPS (optional 25)<br>PAL: up to 12 FPS (optional 30)<br>*Note: Figures for multiple Nongenlock cameras including video switching time.* |
| ***Compression Ratio*** | Up to 50:1 |
| ***Digital Video Format*** | JPEG Y:U:V 4:2:2 |
| ***Display Colors*** | Up to 16,777,216 colors |
| ***Recording Method*** | "Unlimited time" using *endless buffers*. |
| ***Recording Time*** | Up to 960 hours. |

## *Video inputs*

| | |
|---|---|
| ***Inputs*** | Composite Video |
| ***Number of inputs*** | Up to 8 |
| ***Connector*** | B.N.C |
| ***Impedance*** | 75Ω |
| ***Video Format*** | NTSC / PAL / RS-170 / CCIR<br>*Note: Color and B/W CCTV cameras* |

## *Power*

| | |
|---|---|
| ***DC Consumption*** | 18-36 VDC, less than 50 Watts<br>9-18 VDC, less than 50 Watts |

## *Video outputs*

| | |
|---|---|
| ***Output*** | 2 x BNC |
| ***Video Format*** | NTSC / PAL / RS-170 / CCIR |

## *Modes of operation*

| | |
|---|---|
| ***Elapsed*** | Long, *endless* history recording |

## *Recording parameters*

| | |
|---|---|
| ***Quality*** | 3 levels (high, medium, low) |
| ***# of recording programs*** | 1 default and 2 optional in response to external inputs. |
| ***Delayed shutdown*** | Up to 59 minutes after engine shutoff |

## *Triggers and I/O*

| | |
|---|---|
| ***Input sensors*** | 8 x Contact closure |
| ***Engine-ON input*** | Automatically sense engine ON. |
| ***Digital output*** | 3 different led indicators red, yellow and green. (recording, error cam #1, other cam error)<br>*Note: can be used for other purposes.* |
| ***Watch Dog*** | PC watch-dog for automatic crash recovery circuit. Performs system reset if hanged. |



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# 4. VideoWatch-Mobile Debriefer (Monitoring Station) Specifications


The Monitoring station is used for debriefing recorded video information from any ***VideoWatch-Mobile Recorder*** unit vehicle (Operating station). The Monitoring station computer is equipped with the same drawer as in the ***Recorder*** unit, allowing easy insert of removable disks from the ***Recorder*** unit into the ***Debriefer*** station and debriefing can start immediately.
***Monitoring station wizard*** enables the ***Debriefer*** operator to define separate database per each ***Recorder*** unit (Operating station). Important or suspicious video events can be then saved under that database for later retrieval or archiving.
***VideoWatch-Common Debriefer*** internal ***Player*** uses the Windows environment for rich interface including features like different playing speed and direction, single frame step forward or backward, auto rewind etc. Player also enables to extract snapshots from selected camera into separate windows for comparing with other cameras or saved information. Snapshots can be sent to **image enhance** application. They can then be printed, sent by email or by fax. Snapshots and video information can be extract using different formats like GIF, BMS, JPEG AVI and many others.

## *Modes of operation*

| | |
|---|---|
| **Event and Lapse Debrief** | Analyzes and compares events and lapse video information, by date, time, vehicle, and location. Instant playback with variable speed, and intelligent time and trigger seek services. |

## *Debriefer*

| | |
|---|---|
| **Vehicle Manager** | Central management of all controlled Recording units (different vehicle) with separate databases. |
| **Common Debriefer** | Portable Debriefer capable of displaying all video information related to cameras, by date, time and location. Events can be retrieved for instant playback. |

## *Video Player*

| | |
|---|---|
| **Video Player** | Instantly plays video event with variable speed, image extraction, triggers display, time display, and intelligent seek operations. |
| **Player display** | Windows desktop area and/or optional Analog Video output for external monitor or video printer. |

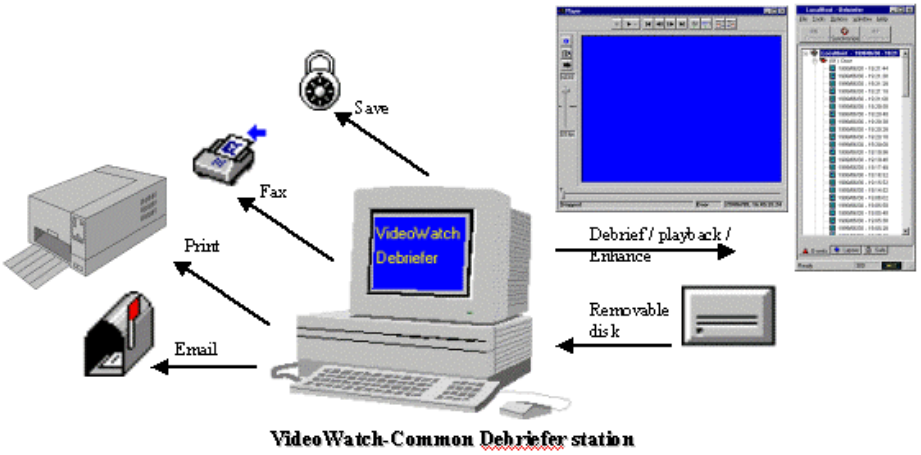
## *Snapshots*

| | |
|---|---|
| **Number** | Unlimited snapshots from any video movie. |
| **Image size** | QCIF, CIF or FULL resolution |
| **Hard copy** | Can be print to any Windows compatible printer. |
| **Image enhancement** | Snapshots can be sent from debriefer to any Window image enhance application. |

## *Debriefing Monitoring PC*

Minimum system requirements are as follows:

| | |
|---|---|
| **CPU** | Pentium 200Mhz or higher. |
| **RAM** | 32 Mega bytes (64 MB recommended) |
| **Graphic Adapter** | High color VGA accelerator |
| **Display resolution** | 800x600, 64,000 colors minimum. |
| **Operating system** | Windows 95 with IE4.01 or Windows 98 |
| **Networking** | As required (Modem, ISDN or Network adapter) |




VideoWatch-Common Debriefer station