



Firmware
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SecurteX MDVR User Manual

Mobile Digital Video Recorder
With Streaming Advertising Output

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SecurteX Contacts

Please promptly report corrections required in this document, comments, or requests for information to your SecurteX Digital dealer/reseller or contact SecurteX Digital directly at:

SecurteX International, Inc.
982 Senate Drive
Centerville, OH 45459
www.securtex.com

Telephone: 937.312.1414
FAX: 937-312-1418
Toll Free: 888-866-2580
support@securtex.com

Warranty and Repair Information

Contact your SecurteX reseller concerning warranty terms and conditions covering your SecurteX MDVR. This unit must have been installed by a qualified installer and used in conditions as specified in this manual to qualify for warranty repair. SecurteX reserves the right to repair or replace products returned prepaid for warranty service. Any product arriving must have a Return Material Authorization (RMA) that includes product number, serial number, nature of the problem, return shipment address and RMA number obtained in advance from SecurteX Customer Support. SecurteX takes no responsibility for any shipment arriving without an RMA form and number.

SecurteX Customer Support support@securtex.com

Telephone: 937.312.1414 Prompt #1

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Product Components and Features

System Recording Module and Mounting Assembly

- Ultra compact case, extremely low weight, high temperature resistance, and vibration resistant
- Low-Voltage, low-current architecture suitable for mobile mounting or fixed locations
- Quick-Release removable Recording Module with tamperproof lock and secure controls
- Flexible Mounting Assembly for permanent connection to vehicle or permanent installation
- Individual wire connections for audio, video, power, inputs/outputs, and accessory assemblies
- 12v, 1Amp regulated power for use with cameras, inputs/outputs, and accessory assemblies
- Full support for NTSC or PAL video inputs and outputs, audio channels, VGA display
- Communications supported through TCP/IP network interface and USB connection to PCs
- Hand-held, IR controller with On-Screen Display (OSD) for all operations of the MDVR
- 2.5-in. mobile anti-vibration and shock resistance HDD

Video and Audio DVR Features and Capabilities

- 4 channels for video input, full-motion (30FPS/camera) continuous or priority video recording and live display
- 4 channels for high-fidelity, digitally recorded, synchronized audio matched to 4 video channels
- Continuous recording while in the playback mode
- User friendly criteria to playback the events associated video only
- Automatic timer to resume the live display if the unit is idle for user defined timings
- **MPEG-4** video compression for high quality, low storage recording and playback
- User-selectable settings for quality and audio record enable/disable for each video channel
- 12v power supply for multiple devices such as cameras, sensors, relays and any other accessories
- Selectable frame rate with event-triggered burst recording speeds up to 30FPS/camera
- Multiple alarm inputs with selectable pre-alarm and post-alarm record timings
- TV output channel for live video and recorded video viewing

Streaming Video Output for Multimedia Contents

- DVD-quality steaming audio/video with NTSC or PAL composite or VGA output
- Flash card, USB media update
- Independent operation of DVR and streaming advertising simultaneously

Remote Connection Capabilities

- Handheld Infra-Red controller with OSD for quick access to recorded video and settings menus
- USB connection for file transfer, PC-based file transfer and settings management
- PC-Based Client software for live viewing, playback video, playback events associated video, and downloading capabilities

Accessory Modules for MDVR

- Video Interface Module including GPS location and speed
- Vehicle Motion Manager includes 3-axis inertia sensor to determine video-matched motion events
- Video event search allows intelligent searching of recorded video based on event logs

Installation Guidelines

Installation Environment Requirements

In order to ensure the reliable operation of your Mobile Digital Video Recorder (MDVR) within the terms of the product warranty, follow these instructions for installing your MDVR

- a) Follow all electrical codes, adhere to all requirements for your vehicle and for other connected equipment while installing and operating the MDVR.
- b) Use only a regulated 12-volt DC or 24-volt DC (1.5 ~ 2 Amps) certified power supply for installation in vehicles. The MDVR can handle power ranges from 7v ~ 28v DC. Follow the installation and operating instructions provided to ensure a steady and reliable source of installation. Handle all electric equipment and connections properly to avoid injuries.
- c) Even though the recording unit may not be turned on, live power exists in the mounting assembly and precautions should be taken to avoid shock. Disconnect the power supply from its source before connecting or disconnecting the MDVR mounting assembly from the power supply.
- d) Do not attach any device specified or approved by the manufacturer.
- e) Do not attach powered input leads that exceed 12-volt DC at 1.5 Amps OR 5-volt DC at 1.5 Amps supply on any one connection.
- f) Attach the MDVR ground cable to the vehicle correctly to complete the power circuit.
- g) Install the MDVR in a dry location shielded from direct contact with excessive humidity and moisture, rain or other sources of liquid spills. Do not install on a recessed surface where liquids may accumulate or under surfaces where liquids may drip.
- h) Do not handle the MDVR with wet hands, while standing in water, or while in contact with other sources of water or moisture that could create a shock hazard.
- i) Install the MDVR out of direct sunlight and away from direct sources of heat.
- j) Do not mount the unit to a surface subject to excessive vibration.

Mounting / Enclosing the MDVR

- a) MDVR may be operated in a totally sealed enclosure with no cooling airflow, ensure that the operating temperature of the MDVR does not exceed 140°F (60°C) or that the standing temperature does not exceed 175°F (80°C). The minimum operating temperature for the MDVR is -20°F (-28°C). If the minimum temperature is expected to exceed connect an auxiliary heat source.
- b) MDVR assembly may be mounted on a flat surface, provide at least 6 inches (15cm) clearance for cooling airflow around the remaining sides to provide adequate heat dissipation.
- c) To clean any surface of the MDVR, use only cleaners approved for electronic equipment or components. Avoid chemical or household cleaners.
- d) Disconnect MDVR mounting assembly from the power supply when not in use for extended period of time.

Installation Parts and Materials Required

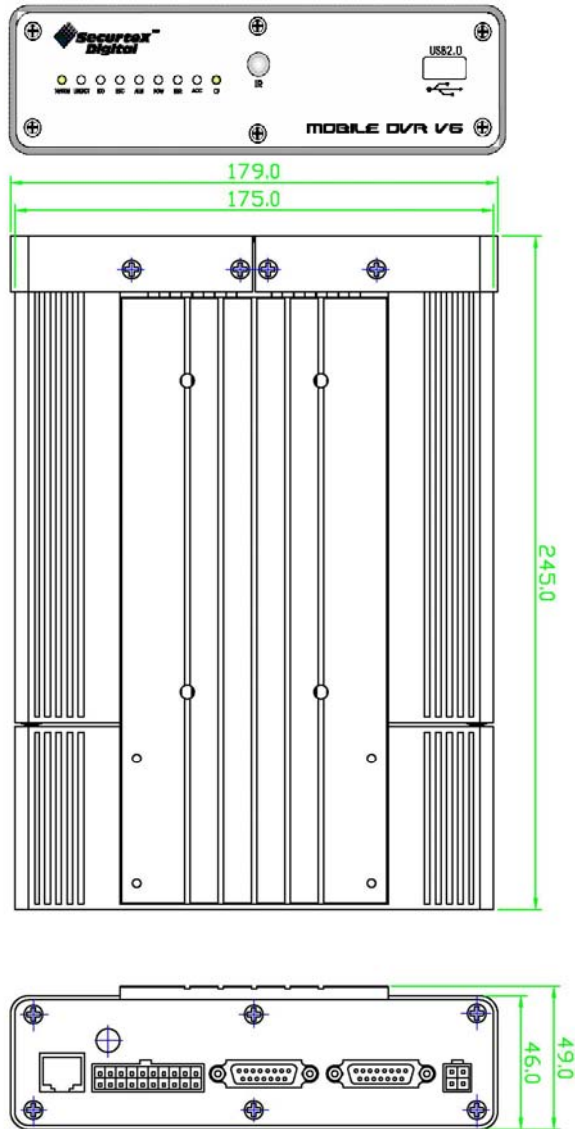
The following common tools and parts are required to install your MDVR

- Drill and bits for mounting in vehicle
- Screws/bolts and vibration dampening washers as appropriate for mounting
- Wire cutters and wire connectors
- Voltmeter

MDVR Product Views

<p>Front View</p>	<p>Rear View (without connections)</p>
	<p>Assembled Chassis Details</p> <p>Height 4.9 cm (1.93 inch) Width 17.9 cm (7.04 inch) Depth 24.5 cm (9.64 inch) Weight 3.25 lb</p> <p>Recording Module (Removable Component)</p> <p>Height 4.6 cm (1.81 inch) Width 17.9 cm (7.04 inch) Depth 17.6 cm (6.92 inch)</p> <p>Module Removal Clearance 16.5 cm (6.49 inch) Installation Clearance (except base) 10 cm (6 in)</p>
<p>Mounting Assembly / Recording Module Removed</p>	

MDVR Dimensions



SecurteX

MDVR Package Contents

The following materials are shipped with the MDVR. Ensure that you unpack all contents of your shipment and confirm receipt of the following items for each unit:

- MDVR Recording Module and Mounting Assembly
- Power cable
- DB 37 - AV input brida
- DB 25 – AV output, Sensor input, VGA out, and RS232 connections
- Hand held IR (batteries included)
- USB Cable
- GPS Antenna (with GPS equipped models only)

MDVR Installation Location Guidelines

Following are the general guidelines for the installation purposes. Choose a location in the vehicle that meets the following items:

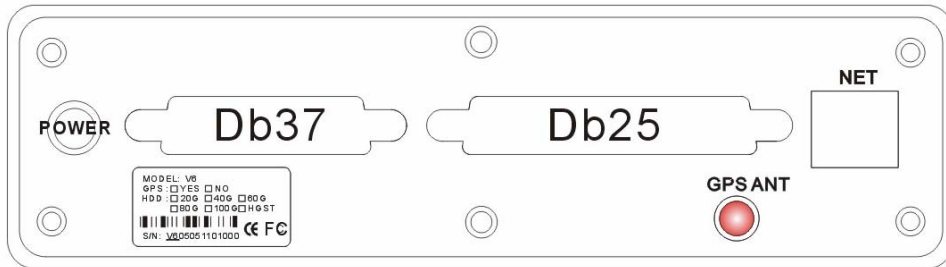
- Power:** It is recommended that the MDVR be connected to the vehicle ignition. Battery power is used only when the vehicle is running. MDVR could drain any vehicle battery over time if the ignition is not turned off.
- Connection:** Connect only to appropriate power supply and ensure proper grounding of the circuit.
- Moisture:** Protect unit and connections from environmental sources of moisture and liquid spills.
- Temp:** Do not install where unit temperature will exceed F140°F (60°C), fall below -20°F (-28°C) or store the unit where temperatures rise above 175°F (80°C). Avoid direct exposure to sunlight.
- Ventilation:** Provide sufficient ventilation with a minimum of 6 inches cooling clearance to ensure proper operating temperature for the unit.
- Vibration:** If necessary, provide additional shock mounting to prevent damage and wear by excessive vibration.
- Clearance:** Front clearance of 16.5 cm or 6.49 inch is required to slide the recording module from the mounting assembly.
- Wiring:** Install where mounting assembly wires have sufficient clearance and will not be crimped or subject to wire insulation damages due to vibration.
- Access:** Secure the MDVR so that passengers or drivers cannot tamper or damage the unit, cameras, wires or other accessories. Do not mount where access to any other vehicle component will be restricted.
- Injury:** Install the unit, cameras, accessories and wires so that no injuries can be caused through impact with equipment during vehicle operation. Ensure that all transportation regulations are followed to avoid passenger injury should they come in contact with the installed equipment.

MDVR Installation Instructions

Follow these guidelines when installing the MDVR:

- Remove all components provided in the package.
- Disconnect any power supply or device.
- Slide the recording module from the mounting assembly.
- Locate a proper spot to install the mounting assembly and provide any additional shock absorption if necessary.
- Locate a reliable electrical ground point in the vehicle.
- Make all connections to the rear of the mounting assembly.
- Place the mounting assembly and permanently attach to the supporting structure using screws.
- Slide the recording module on to the mounting assembly to ensure proper clearance.
- Connect the provided bridals to your MDVR.
- Connect power source and turn the vehicle ignition to test the unit.
- Observe completion of the unit power-up procedures as described in section labeled as “System Startup and Shutdown”.
- Apply any information labeling required by local statute for video surveillance.

Power



On the back side of the MDVR docking station there are three **INPUT** wires, **Green** should be connected to the **ignition switch**, **Yellow** should be connected to the 12 volt 3 amp from the **positive** battery terminal, (Yellow input is a fused connection) **Black** should be connected to the (**ground**) to **negative** battery terminal.

POWER INPUT

Signal	Ignition	Green
Input	12V 3A+	Yellow
Input Ground	Ground -	Black

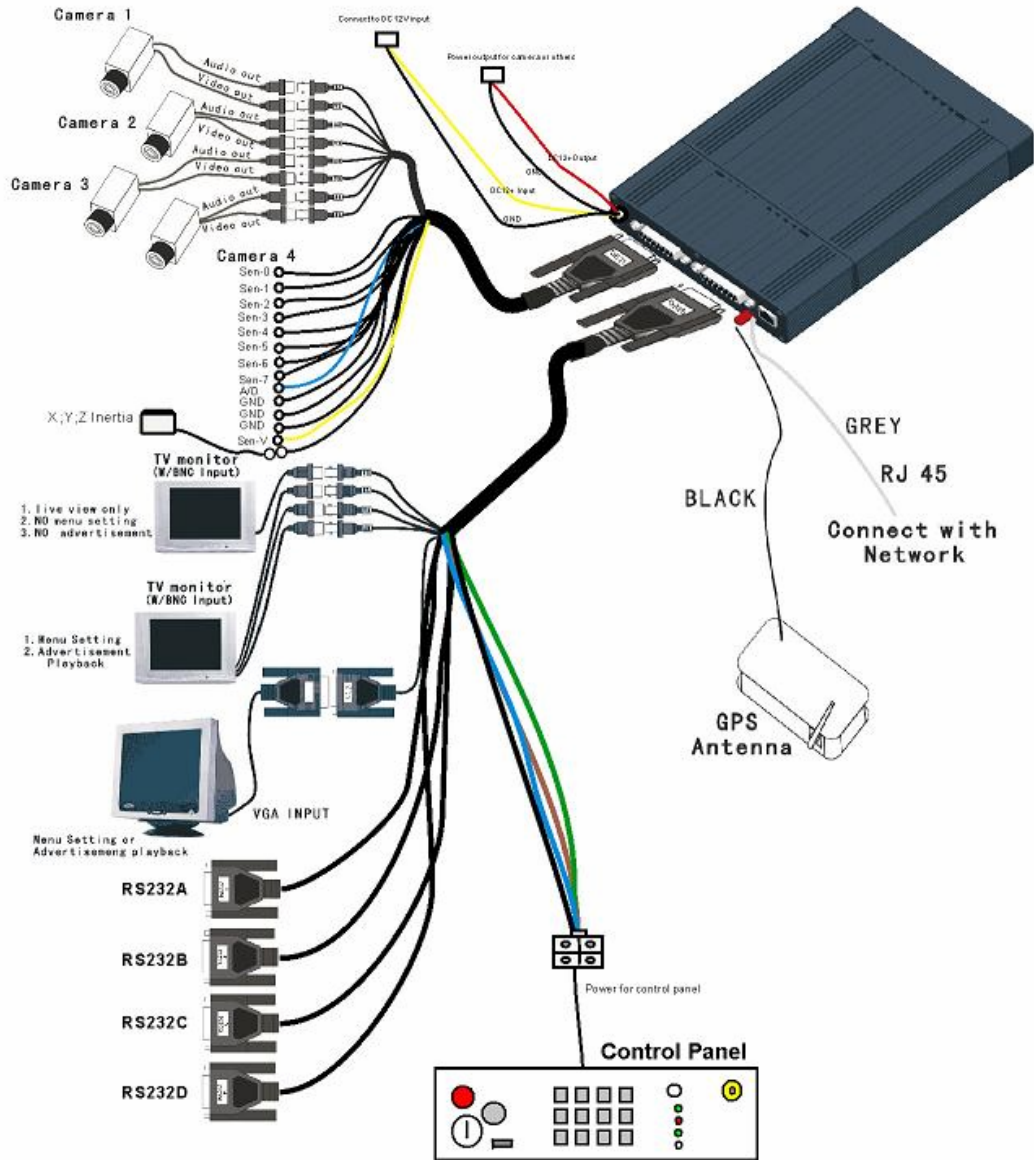
POWER OUTPUT

Output	12V 500ma+	Yellow
Output ground	Ground -	Black

There are two **OUTPUT** wires that can supply a number of dependant devices such as, A monitor or cameras, this power output provides a **12volt 500ma** power source that can have a delayed shutdown that is controlled by the **MDVR**. This will allow cameras to stay on after vehicle is turned off, until the **MDVR** shutdown timer turns off the power feed.

Yellow 12volt 500ma power source for dependant devices (Yellow input is a fused connection)
Black ground for dependant devices

MDVR Installation Figure



Input Bridal (Video/Audio IN)

The bridal description for the Input bridal supplied with your MDVR is as follows:

Label	Description
V 1	Video input for camera number 1
V 2	Video input for camera number 2
V 3	Video input for camera number 3
V 4	Video input for camera number 4
A 1	Audio input for camera number 1
A 2	Audio input for camera number 2
A 3	Audio input for camera number 3
A 4	Audio input for camera number 4

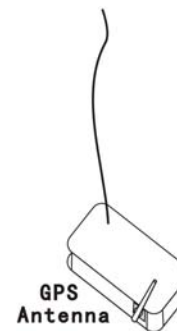
Label	Description
V 1	Composite output for controlling the MDVR. IR handheld is fully functional when connected to V 2 output
V 2	Composite output for live camera view only. IR handheld is not operational when connected to V 1 output
VGA	VGA output for controlling the MDVR. IR handheld is fully functional when connected to VGA output
A L	Audio output for left channel
A R	Audio output for right channel

Note: The sensors on the bridal are not reserved for any specific sensor. User can connect any sensor type to any sensor number. The sensor label (Setup -> Event Setup -> Sensor label) embeds on the video to differentiate among the external devices. The maximum voltage capacity of sensors is 12 V DC. Connect positive 12V DC to desired sensor number and ground to any ground connection provided on the I/O bridal. If multiple sensors are to be connected, positive end of 12V DC connects to the individual sensor cable labeled as sen 1, sen 2 etc on the I/O bridal and multiple ground cables can be connected to individual ground on the I/O bridal.

GPS Antenna

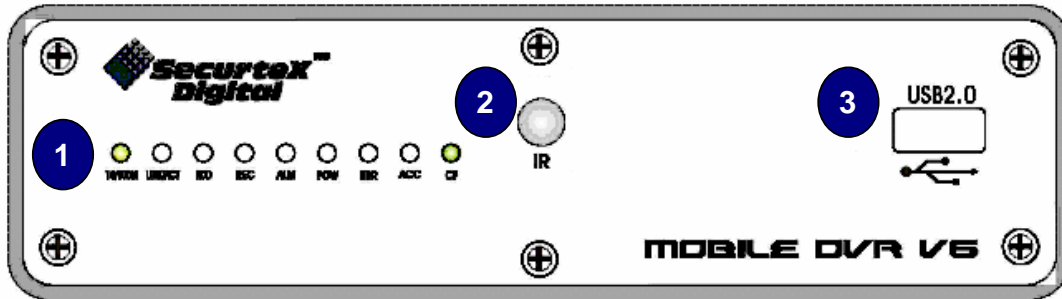
MDVR is capable of embedding GPS coordinates and speed on the video. MDVR uses a passive GPS technology which does not require any service subscription from local service provider. Passive GPS receives the signal from satellite as latitude, longitude and speed after negotiating with the satellite. It takes approximately 3-5 minutes after boot up to start the negotiation process with the satellite to receive the signals. When the negotiation is completed a graphical icon at the live display shows the availability of GPS. If the negotiation fails an X is marked on the graphical icon showing the failure of satellite communication.

Connect the GPS antenna provided with your set (if ordered GPS equipped DVR) and hang it such that the front of the antenna is upwards facing the sky.



MDVR Visual Orientation

Front Panel Layout (Recording Module)



1. LED Indicator and Status Display

[10M/100M] Network connection speed: LED ON for 100M bps, LED off for 10M bps.

[LINK/ACT] Network connection activity light: LED blinking indicates data transfer.

[HDD] Hard disk drive activity: LED ON indicates system is reading/writing to hard disk.

[REC] Video recording status: LED ON indicates recording is on for at least one channel.

[ALM] Alarm status: LED ON indicates unit is currently responding to an alarm condition. Alarm can be caused by an external sensor trigger, hard disk failure and video loss

[POWER] Input power status: LED ON confirms that unit is powered.

[ERR] Error status with USB connection: LED blinks while USB connection problem occur.

[ACC] USB connection status: LED blinking indicates data transfer using USB port.

[CF] USB Drive status: LED ON indicates that USB Drive is inserted and the data is accessible.

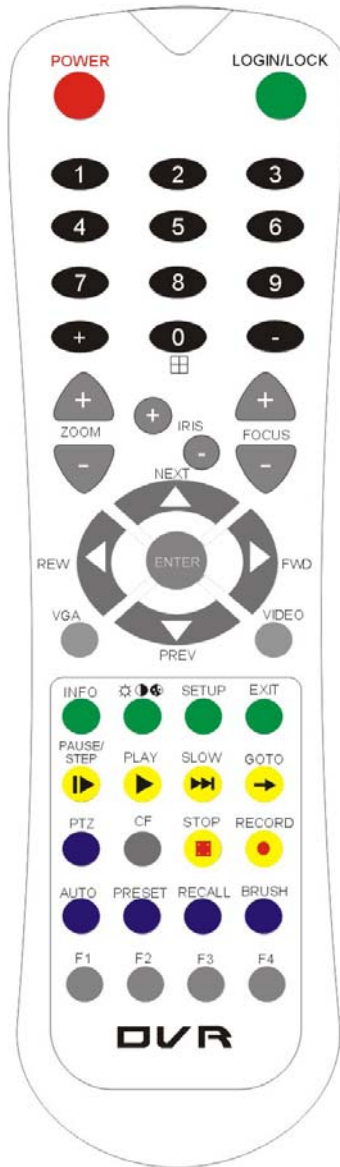
2. IR Receiver Lens

Please ensure that the MDVR is installed where the handheld IR controller can be pointed directly to the IR receiver lens. Point your handheld controller at the spot on the recording module allowing the unit in responding to commands from the controller.

3. USB Port

The USB 2.0 transfer port can allow you to transfer data files to and from MDVR using a PC or thumb drive

Handheld Remote Control Functions



Numeric Input Keys

Use the numbers to input values in the system setup screen or switch through the channels in live and playback. Plus and Minus is used to increase setup values one by one.



Navigation Arrows







Use the ARROW keys to move between selections, input fields and icons. Press ENTER to select and EXIT to return. Next and previous is also used to increase or decrease volume when at live or search screens.

Each MDVR includes a handheld Infra-Red (IR) controller that allows the user to transmit commands to recording module and display on screen control menu either on a composite monitor (V 1 output) or a regular monitor (VGA).





Handheld IR Controller Key Functions

1. Numeric Keypad








[0-9] keys: During setup, number keys are used to input values.
For viewing channels 1, 2, 3 and 4 use 1, 2, 3 and 4 on numeric keypad respectively.

[+], [-] keys: During setup, plus and minus are used to select next or previous values.
During real time view of individual camera, after you pressed    key use plus and minus to make the color adjustments. Pressing    will navigate through the color adjustment options. Please be advised that the unit needs to stop recording before any color adjustments are made.









2. Setup Menu Navigation

-  ,  : Up, Down directional keys: Moves selection up and down in setup menu.
-  ,  : Left, Right directional keys: Moves cursor left or right in setup menu.
- [ENTER] key:** During setup, select and save entry
During live view, displays time on screen
During Playback, displays the text or hide the text associated with video on the screen

3. Other Key Functions

LOGIN/ LOCK	If the security is enabled in the setup, use LOGIN / LOCK or SETUP key to enter the user setup
POWER	The Power button can reset the DVR in to sleep mode (unit will stop recording while in the sleep mode)
VGA	Switch the output mode to VGA
VIDEO	Switch back from VGA to composite output
RECORD / STOP	Used to start or stop the recording manually. The recording schedule has to be disabled for the manual recording to work
	Swapping between multi-channel and single channel monitor while in surveillance screen only. Press this button to change the number of display channels. By pressing the key, display channel change in the sequence of four→one→two→three→four
  	Brightness, contrast, color adjustment per channel. While in surveillance screen, go to full screen on individual camera by pressing the corresponding number on numeric keypad of IR. Press    to activate the function. Use [+] [-] button to change the values. User can adjust the values for each channel individually. Please be advised that the unit needs to stop recording before any color adjustments are made
SETUP	System setting screen (may require login)
EXIT	Returns to the previous menu. Pressing exit key takes one step back in the until the live monitor screen is displayed

3. Other Key Functions (Continue):

PAUSE/STEP 	Freezes playback to a single frame and can advance one frame at a time. To advance the frame press Pause / Step to move frame by frame. Press EXIT to return to normal playback speed
PLAY 	Starts/Resumes playback from any other mode (FF, RR, Frame by Frame etc)
SLOW 	Reduces playback speed to 1/2, 1/4, 1/8 modes. Press PLAY to return to normal playback speed
GOTO 	Quick search mode within the file playing back. Select the desired file and start to play. Press GOTO button and input the desired time. Select START to jump to the specific time
NEXT 	Increase volume while playback (if audio is recorded) or multimedia playback
PREV 	Decrease volume while playback (if audio is recorded) or multimedia playback
REW 	Rewinds the video while playback. X2 and X4 modes available
FWD 	Fast forward the video while playback. X2 and X4 modes available
F 3	Move between one clip to another while playing back recordings
[F1], [F2], [F4]	Reserved for future use

4. Pan/Tilt/Zoom Function Controls

[ZOOM IN +], [ZOOM OUT -]	Reserved for future use.
[IRIS +], [IRIS -]	
[FOCUS +], [FOCUS -]	
PTZ	
AUTO	
PRESET	
RECALL	
BRUSH	

System Start-up/ Shut down

System Start Up

After connecting the MDVR to a vehicle power supply turn on the vehicle ignition and the unit will automatically start recording. Power is normally supplied to the MDVR as long as the vehicle ignition is ON. Start-up process takes approximately 10 seconds and completes as follows:

- A short series of start-up diagnostic test to ensure system stability
- Recording from connected cameras begins immediately (factory default)
- “Display only view” of the cameras is immediately available to be viewed through Video Output 2 in quad view. **No handheld IR controls are accepted by MDVR when video output is connected to V 2**
- “Administrative view” of the system is available to be viewed through Video Output 1. **All the handheld IR controls are accepted by MDVR when video is connected to V 1 or VGA**

Note: The MDVR factory settings are programmed to display administrative view on VGA monitor. If the MDVR is connected on the Video output 1, press the VIDEO button on the IR to switch to composite monitor output. Please see a list of factory default settings under “System Default Settings” explanation page.

System Login for Setup Functions

The unit have password authorization enabled in order to enter setup. The IR will not response to any commands until SETUP or LOGIN key is pressed for validating the user authority of the MDVR. To enter a password:

- Press the LOGIN/LOCK or SETUP key on the handheld controller
- When a menu appears on the display, enter the Unit ID and stored password (**Default unit is 000 and password is 88888888**)
- Press ENTER on the handheld controller. If the password is accepted, the setup menu will appear.



Two levels of password are available in the setup.

- USER PASSWORD CORRECT indicates permission is limited to playback, advertisement, movie and music. Default USER password is 22222222.
- ADMIN PASSWORD CORRECT indicates full access to MDVR. Default ADMIN password is 88888888.

**** The unit has a built in SUPER Password, in case the ADMINISTRATIVE password does not work. It is a back door entry to the unit which cannot be changed. The password is 19810512. IT IS HIGHLY RECOMMENDED TO STORE THIS PASSWORD IN A SAFE PLACE.**

Control of System Operations

The MDVR has two versions of the firmware.

- Security only version
- Multimedia version

Security only version: In the security only version MDVR has the capability of performing the Digital Video Recording only. The User Interface is different from Fig 2.0. With the security only version the User Interface will be as follows:



MDVR comes with the Security only version by factory default. To update the DVR with the Multimedia version, please consult with your sales associate. There is no hardware update required for the multimedia features.

Multimedia version: In the multimedia version, MDVR has the capability of performing Digital Video Recording along with the advertisement, movies and music without interrupting the basic purpose of the surveillance system. With the multimedia version the User Interface will be same as Fig 2.0

MDVR system layout

Press [SETUP] on the IR controller, if the security is disabled the on-screen menu will be displayed (not applicable if the output is connected to V 2)

- Navigate through the options using the ARROW keys
- Select the desired option using the ENTER key
- To return to the previous menu from any screen use the EXIT key



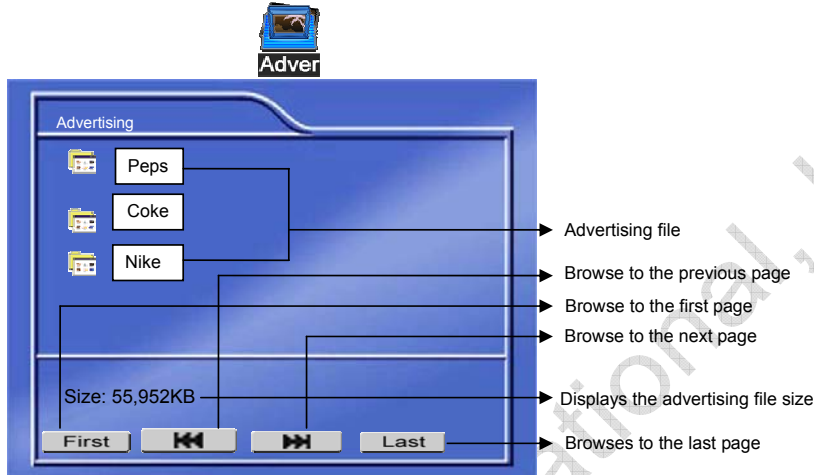
Fig 2.0

Administer Advertising Files

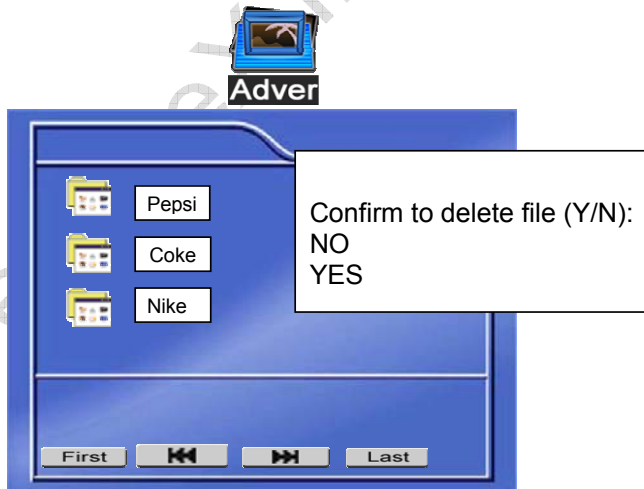


To administer Advertising files use ARROWS to select **Adver** and press ENTER

The screen will show the menu as below:



- ◆ **Play:** select the advertising file and press [Enter] to play. While the advertising is playing, the Handheld IR navigation keys increases / decreases the volume. Press [⏸] will pause the advertising clips. Pressing the [▶] key will resume the playback. Press [EXIT] return to the advertising menu.
- ◆ Delete the file: Select the file to delete and press the right direction key [▶]. The screen will show a confirmation dialogue as below:

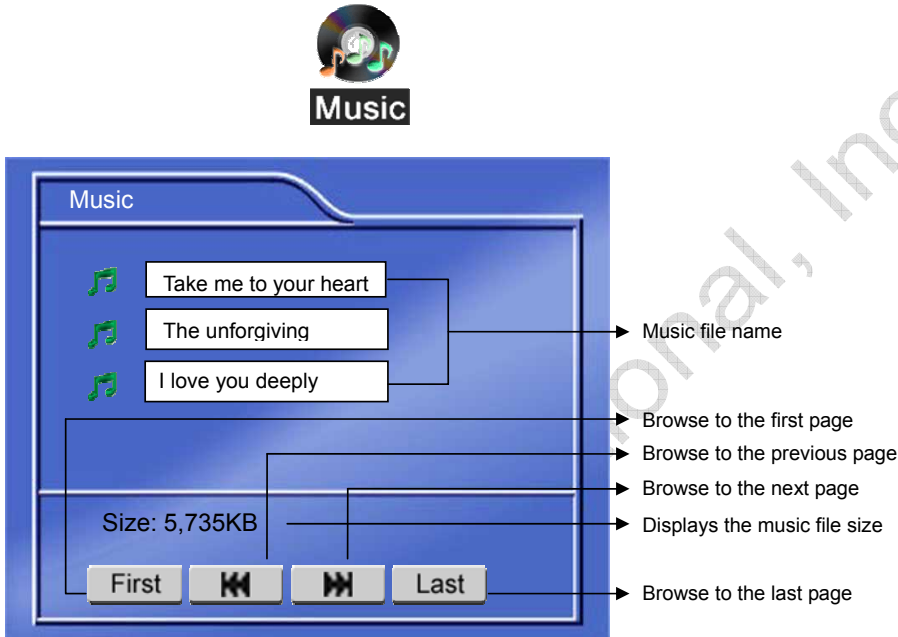


- ◆ Select "NO" and press "ENTER" to cancel the delete operation.
- ◆ Select "YES" and press "ENTER" to delete the file you have selected. **Note that once the file is deleted it cannot be recovered.**
- ◆ Press [EXIT] to return to the main menu.

Administer Music Files

To administer Music files use ARROWS to select  and press ENTER

The screen will show the menu as below:

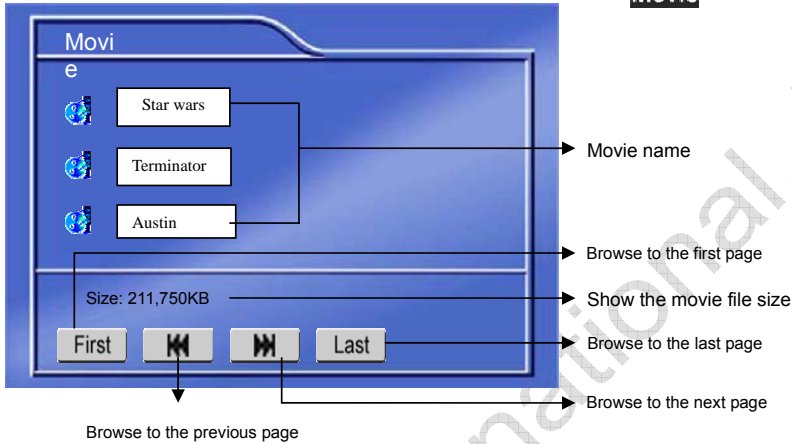


- ◆ Select the music file and press [Enter] to start playing the file.
- ◆ While the music is playing, the Handheld IR navigation keys ((/)) increases / decreases the volume. Pressing [] will pause the music. Pressing the [] key will resume the playback. Press [EXIT] return to the music menu.
- ◆ **Delete the file:** Select the file to delete and press the right direction key [▶].
- ◆ Select "NO" and press "ENTER" to cancel delete operation.
- ◆ Select "YES" and press "ENTER" to delete the file you have selected. **Note that once the file is deleted it cannot be recovered.**
- ◆ Press [EXIT] to return to the main menu.

Administer Movie Files



To administer Movie files use ARROWS to select **Movie** and press ENTER
The screen will show the menu as below:



- ◆ Select the movie file and press [Enter] to start playing the file.
- ◆ While the movie is playing, the Handheld IR navigation keys (▲ / ▼) increases / decreases the volume. Pressing [⏸] will pause the movie. Pressing the [▶] key will resume the playback. Press [EXIT] return to the music menu.
- ◆ **Delete the file:** Select the file to delete and press the right direction key [▶].
- ◆ Select "NO" and press "ENTER" to cancel delete operation.
- ◆ Select "YES" and press "ENTER" to delete the file you have selected. **Note that once the file is deleted it cannot be recovered.**
- ◆ Press [EXIT] to return to the main menu.

Deleted: <sp>||

NOTE: The movies and advertisement contents require the DivX™ codec formatted files. Please confirm that the uploaded media files are in DivX™ codec for the correct operation. Details of supported formats are listed below:

Folder Name	Contents/ Description	Remark
Ads	List the contents of the advertisement files	Supported format: MPEG4, MPEG2, MPEG1 File extension: VOB, MPG, AVI, DAT
Movie	List the contents of the movie files	Supported format: MPEG4, MPEG2, MPEG1 File extension: VOB, MPG, AVI, DAT
Music	List the contents of the music files	Supported format: WAV MP3 WMA

Search the Recordings



To search the recordings use ARROWS to select **Search** and press ENTER

Enter the required information on the screen. The MDVR selects the current date by default.

Check The Record Information:

Date: ____ (Y) ____ (M) ____ (D)

Time: ____ (H) ____ (M)

The oldest record time : mm/dd/yyyy

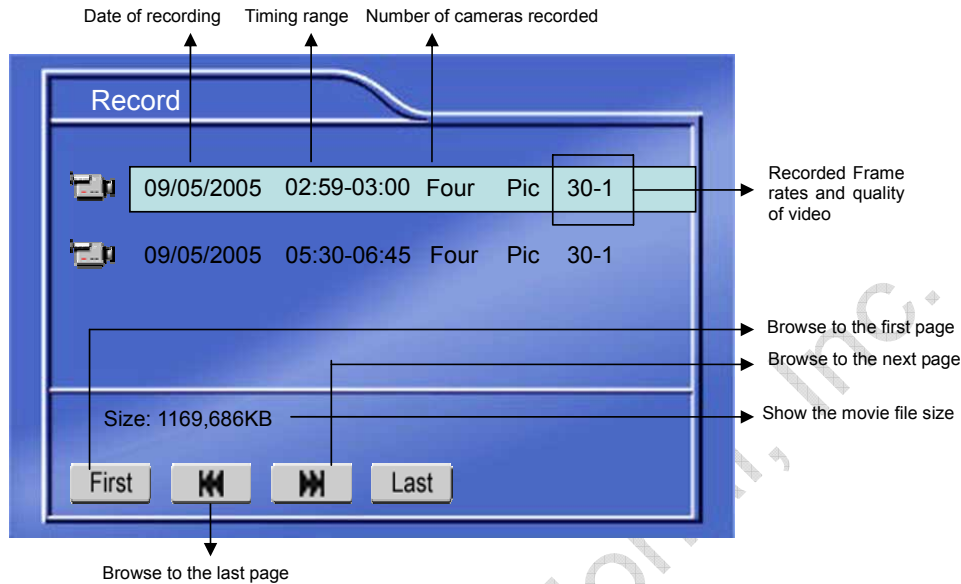
The main screen allows the user to enter the specific dates for the playback. "The oldest record time" is a quick reference for the oldest recording available to the MDVR. Using the numeric keypad of the handheld IR controller or [+] [-] keys to increase the values, fill the appropriate data:

- "Year": Range is 2000 to 2099. Only the last 2 digits of the year are changeable (Ex: "03" for year 2003)
- "Month": Range is 01-12 for the corresponding month number
- "Day": Range 01-31 for the corresponding day of the recording
- "Hour": Range 00-23 for the appropriate hour to begin the search
- "Minutes": Range 00-59 to narrow the search

Press Setup on the hand held IR remote to get the calendar. The yellow color indicates the days of recording. The blue color indicates no recording.

1	2	3	4	5	6	7	8	9	10	
11	12	13	14	15	16	17	18	19	20	
21	22	23	24	25	26	27	28	29	30	31

After entering the start time move to the "START" and press "ENTER" on the handheld IR controller. The recorded video history beginning at the time chosen will be listed on the screen. Use the arrow keys to advance to the starting time. Select the entry and press "ENTER" to playback the video file.



While the selected video file is playing back, user can select the video to jump to the specific time in the clip.

- Press “Goto” on the handheld and a selection bar would appear at the top left of the screen with a reference point about the length of the clip.
- Input the desired time and select “Start” to go to the required minute.

While the video is playing back, pressing “Enter” on the IR will show the associated text on the channel and pressing “Enter” again will hide the text giving a clear picture to view. The text on the video shows the following fields:

- Driver ID
- Vehicle ID
- Camera label
- GPS coordinates (if available)
- Date
- Time
- Sensor label (if sensor was activated in the setup and sensor activity happens, the user definable sensor labels get embedded on the video for 10 seconds)

User can also switch channels of video by pressing the desired number of channel on the handheld IR numeric Keypad. User can start to download the video on a USB Drive while viewing the playback. Follow the here under procedure to perform the operation:

- Stop the recording of the DVR by going in the setup -> Schedule.
- Insert the FAT 32 formatted USB Drive (for the CF formatting instructions please review the Compact Flash Card Management page in the manual).
- Select the clip want to playback.
- While viewing the file, press the [CF] key on the IR to start downloading the file on the USB Drive.
- A status indicator is shown on the top right corner of the screen.
- Press [CF] key again to stop the download

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Search for Events



To search for events use ARROWS to select **Event** and press ENTER

The screen below will display sensor triggered events. Scroll down the list with the ARROW keys to find the event you wish to play. After the entry is highlighted press ENTER to play the video.

← January →

Number	Date	Time	Sensor Type
001	2005-01-15	14:15:19	FDOOR
002	2005-01-16	14:30:49	METER
003	2005-01-17	14:50:00	SPEED
004	2005-01-18	15:30:46	REAR
003	2005-01-19	15:52:48	PANIC
002	2005-01-19	18:12:05	DDOOR

Page Down Page Up

Fig 2.1

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While the video is playing back, pressing “Enter” on the IR will show the associated text on the channel and pressing “Enter” again will hide the text giving a clear picture to view. The text on the video shows the following fields:

- Driver ID
- Vehicle ID
- Camera label
- GPS coordinates (if available)
- Date
- Time
- Sensor label (if sensor was activated in the setup and sensor activity happens, the user definable sensor labels get embedded on the video for 10 seconds)

Once the video associated with the event is finished playing back, the system displays the Fig 2.1 to select other event.

SETUP Menu



To access the SETUP menu, use ARROWS to select **Setup** and press ENTER
 The SETUP menu consists of five tabs. Each tab is designed to facilitate the performance adjustments preferred by the user.

1. SYSTEM:

Press ENTER to change system setup information.

- Use ARROW keys on the handheld IR controller to scroll through the list of items on the left column.
- Press ENTER to select the option. The setting area will appear on the right column.
- Press the RIGHT ARROW [▶] key to switch to the data entry area.
- Press the UP [▲] or DOWN [▼] ARROW key to scroll through the entry fields.
- Press the ENTER key to change the value or use the numeric keypad on the handheld controller for data entry areas where the numeric values are used
- To save the changes, scroll to APPLY at the bottom screen and press ENTER.
- Press EXIT to quit without saving changes

a) Date / Time

Press ENTER to access input settings. Use ARROW keys to scroll through the options.

Date:	DD/MM/YYYY	Enter with number keys
Time:	HH/MM/SS	Enter with number keys
Date Mode:	(US or Int'l)	Press ENTER to switch between the date patterns
Weekend Start:	(Day Name)	Press ENTER to advance days
Weekend End:	(Day Name)	Press ENTER to advance days
Record File Size:		Press ENTER to scroll through the settings. The record file size is used to break down the recording clips in to smaller timings. The available selections are 15 minutes, 30 minutes, 45 minutes and 60 minutes. Scroll to APPLY and press ENTER to save the new settings.
Idle Time:		Idle time is used to revert back to the live cameras view if there is no activity from the Handheld IR. The available options are 10, 20, 30 and 40 seconds. Press ENTER to browse through the options.

b) Unit ID

Use the **NUMERIC** keypad to enter the unit ID between 000 to 999. This ID is used when logging in to the unit (if security is enabled). Scroll to APPLY and press ENTER to save the new settings.

c) Video Type

Select the appropriate camera signal type. Select between "NTSC" (US) or "PAL" (International) standards of video recording. Scroll to APPLY and press ENTER to save the new settings.



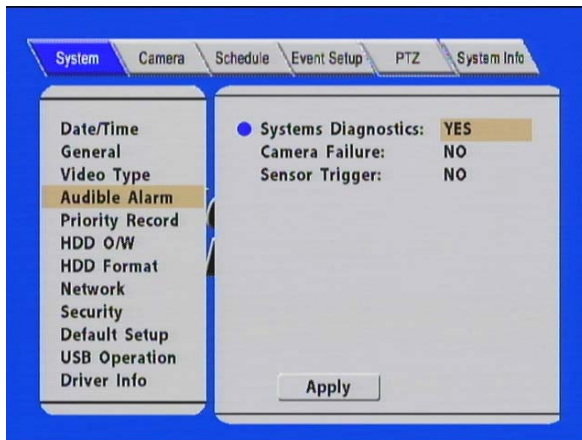
d) **Audible Alarm**

Press ENTER to enable or disable alarm buzzer (**control panel accessory only**). The buzzer will beep when the following conditions are met:

- External sensor trigger
- Hard disk failure
- Video loss

Note: The audible alarm feature applies to control panel accessory only.

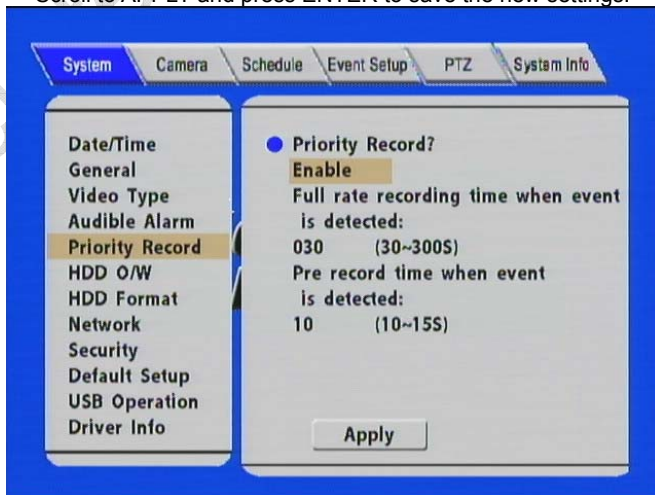
Scroll to APPLY and press ENTER to save the new settings.



e) **Priority Record**

Press ENTER to enable or disable Priority Record. Priority Recording records one frame every two seconds when no external sensor is sensed by the unit. When a sensor triggers through a sensor input, the unit automatically starts to record up to the user selected frames/second on all cameras. User can select between the timings before and after the event for high frame rate recording. Use the Numeric key pad or ARROW down to the second settings to define the time duration of full-rate recording after and before the trigger is over.

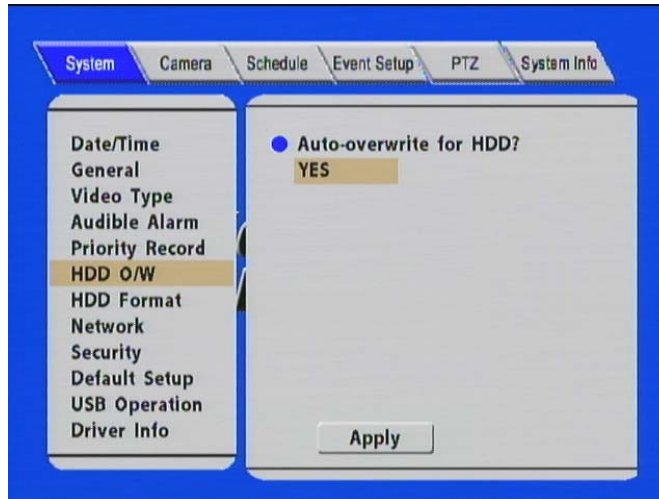
Scroll to APPLY and press ENTER to save the new settings.



f) **HDD O/W**

Press ENTER to switch between “ON” and “OFF”. When the overwrite feature is “ON” the MDVR will continue the recording. If the HDD is full the oldest data is removed for the new recording. When the overwrite feature is “OFF” recording will stop when the HDD is full. You must erase all the recordings using the Setting “HDD Format” to resume recording.

Scroll to APPLY and press ENTER to save the new settings.

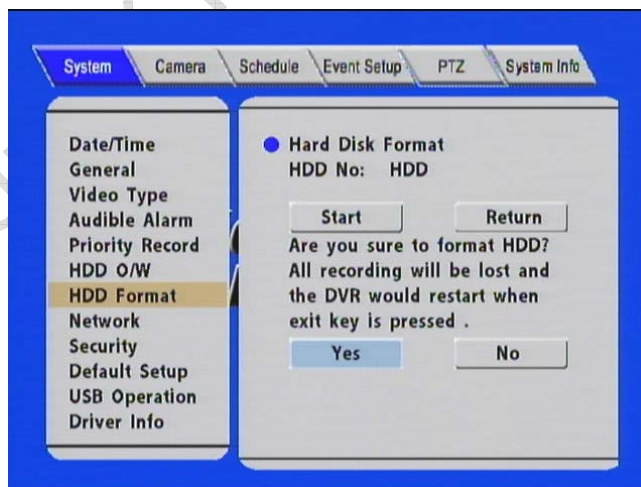


g) **HDD Format**

There are two options to chose from:

Format HDD: Formats the unit Hard Disk Drive

Format USB Drive: Formats the USB thumb drive



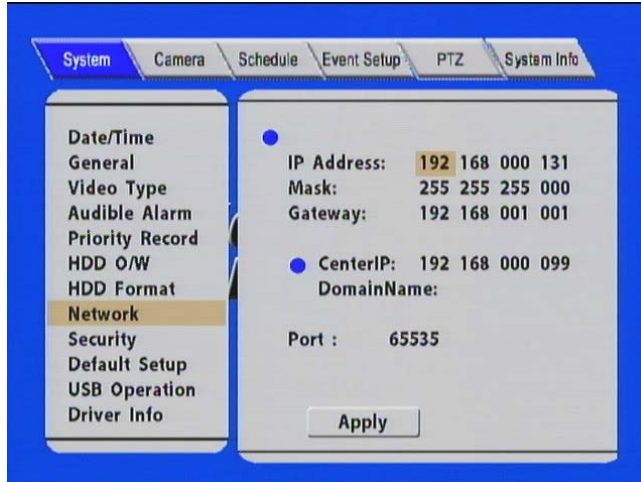
WARNING! Selecting **START** on this setting will erase all recorded video on the unit or the data on USB drive, Press **ARROW** keys to either choose **START** reformatting the disk or choose **RETURN** without formatting. Press **ENTER** to format or return. Press **EXIT** to return to the settings.

h) Network

You must enter a static IP address to use Network capabilities. Please talk to your local Internet Service Provider for the information. Use NUMERIC keypad to enter the TCP/IP address information:

- Setup "IP address":** Enter the static IP address
- Setup "Mask":** Enter the subnet mask
- Setup "Gateway":** Enter the gateway

Scroll to APPLY and press ENTER to save the new settings.

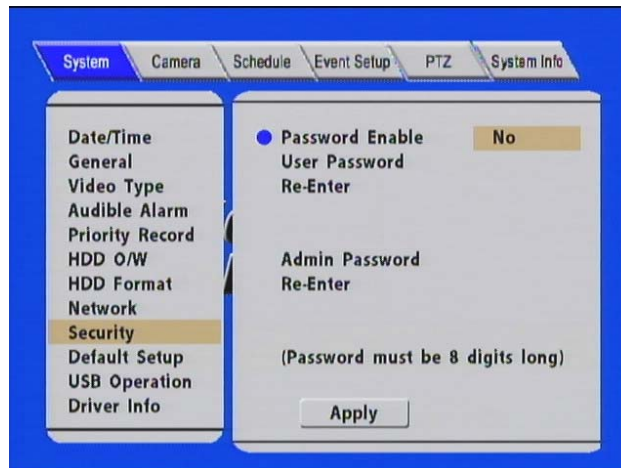


i) Security

Selecting "YES" will require a password in order to access the setup menu. Selecting "NO" will not require a password in order to access the setup menu.

- a. An Administrator with full rights and a User with only playback rights can be created.
- b. Press ENTER to switch between "YES" and "NO".
- c. Press the down ARROW key to highlight the User password entry line. Enter the desired password and confirm. The password must be EIGHT NUMBERS long. Use the NUMERIC keypad on the handheld to input the values.
- d. Press the down ARROW key to highlight the administrator password entry line. Enter the desired password and confirm. The password must be EIGHT NUMBERS long. Use the NUMERIC keypad on the handheld to input the values.

**** The unit has a built in SUPER Password, in case the ADMINISTRATIVE password does not work. It is a back door entry to the unit which cannot be changed. The password is 19810512. IT IS HIGHLY RECOMMENDED THAT THIS PASSWORD IS RECORDED AND STORED IN A SAFE PLACE.**



- j) **Default Setup**
 User ARROW keys to switch between “YES” and “NO”. Selecting YES will restore the default factory settings.

System Default settings

Options	Default Setting		
System			
Date / Time	Current date and time		
Weekday Start	Monday		
Weekday End	Friday		
Record File Size	60		
Idle Time	40		
Unit ID	000		
Video Type	NTSC		
Audible Alarm	YES		
Priority Record	Disable		
HDD O/W	YES		
Network			
IP Address	192.168.0.100		
Subnet Mask	255.255.255.0		
Gateway	192.168.0.1		
Security	Yes		
Driver Info			
Company Name	XYZ		
Vehicle Number	123		
Driver Name	ABC		
Camera			
Camera 1	Label = No Label	Quality = 1	Audio = No
Camera 2	Label = No Label	Quality = 1	Audio = No
Camera 3	Label = No Label	Quality = 1	Audio = No
Camera 4	Label = No Label	Quality = 1	Audio = No
Camera Num	04		
Rate (FPS)	30		
Resolution	CIF		
Time Insert	ON		
Output Mode	Adver Autoplay		
Schedule	Every: 00:00 – 23:59		
Event Setup			
Sensor 1	Off		
Sensor 2	Off		
Sensor 3	Off		
Sensor 4	Off		
Sensor 5	Off		
Sensor 6	Off		
Sensor 7	Off		
Sensor 8	Off		
Sensor 9	Off		

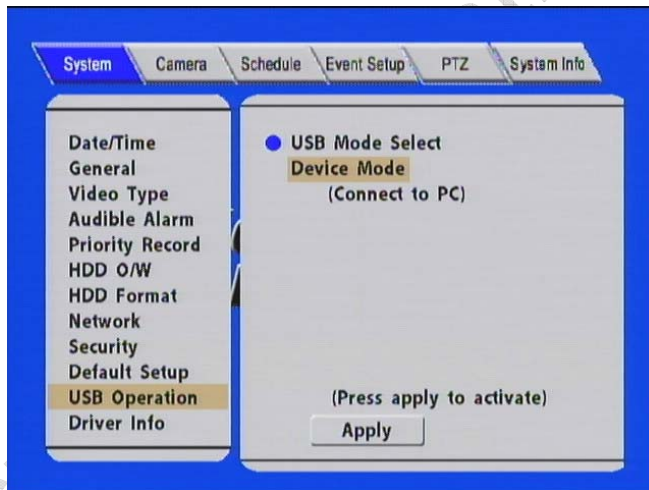
k) USB Operation

There are two options available with the USB operation.

DEVICE MODE: Using the “ENTER” Key on the handheld IR select the “DEVICE MODE”. The “DEVICE MODE” allows a computer (or a laptop) to connect to the MDVR via supplied USB cable. Once connected the drive appears as a regular hard drive in the computer. Normal Window operations could be performed (example: Download the recorded data from the unit to the computer hard drive, Upload the advertisement clips from the computer to the unit etc). For a complete file description of the MDVR hard drive layout please look at the chapter labeled as ”Hard Disk File Structure” towards the end of the manual.

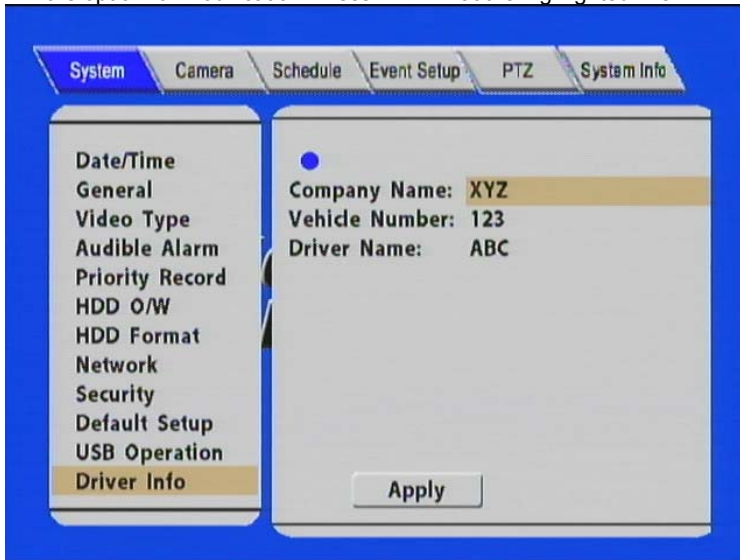
HOST MODE: Using the “ENTER” Key on the handheld IR, select the “HOST MODE”. The “HOST MODE” allows an external USB jump drive to be connected. Once the connection is established, all the contents of the jump drive is automatically uploaded to the MDVR “ads” folder. For a complete file description of the MDVR hard drive layout please look at the chapter labeled as ”Hard Disk File Structure” at the end of the manual.

NOTE for USB Operation: To maintain the live connection between Windows PC and MDVR via USB cable, the Device Mode menu screen needs to stay active. Exiting the option will interrupt the connection.

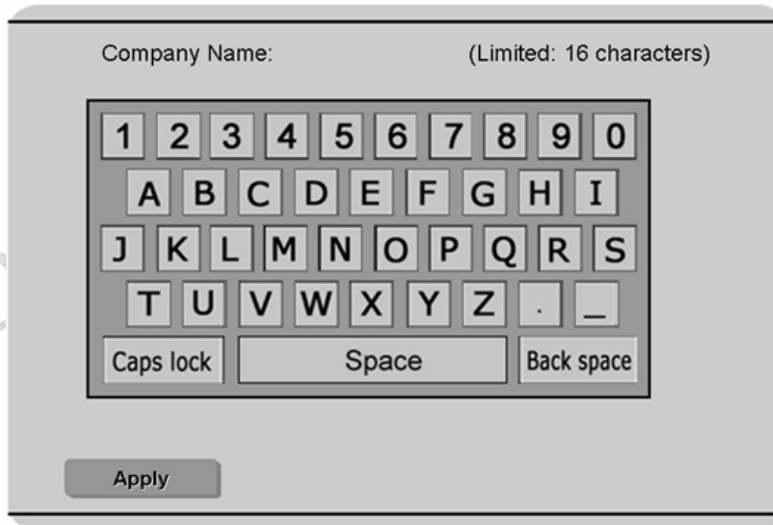


I) Driver Info

The "DRIVER INFO" is used to store the following text information into the unit: **Company Name, Vehicle Number, and Driver Name.** Use ARROW keys to select the option for modification. Press ENTER at the highlighted line.



The screen will pop up a text entry keyboard. Use Arrows to choose characters, press ENTER to type. Press APPLY and EXIT to return to the previous menu.

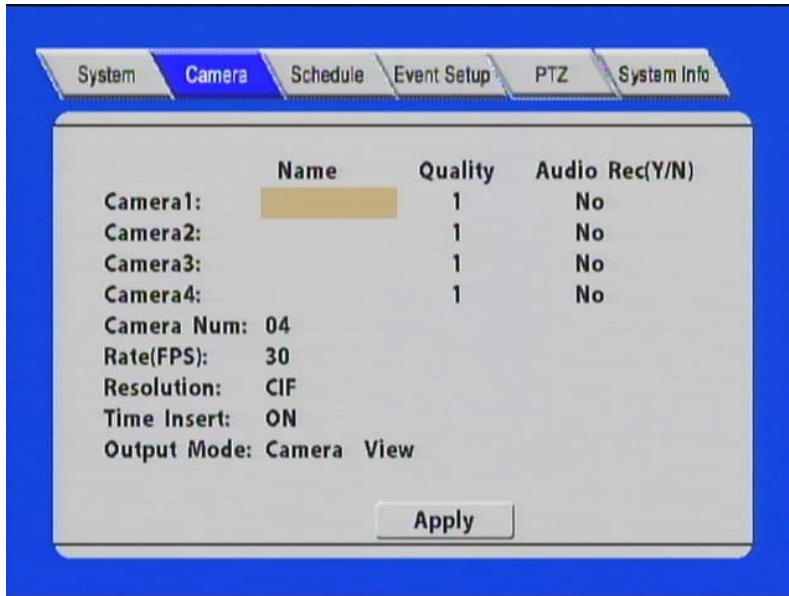


Press EXIT to return to the SETUP list.

Press the RIGHT ARROW key to change control to the CAMERA tab. Press ENTER to open the Camera configuration screen.

Camera Menu

Press ARROW keys to move to each highlighted field and press ENTER to type into each field highlighted.



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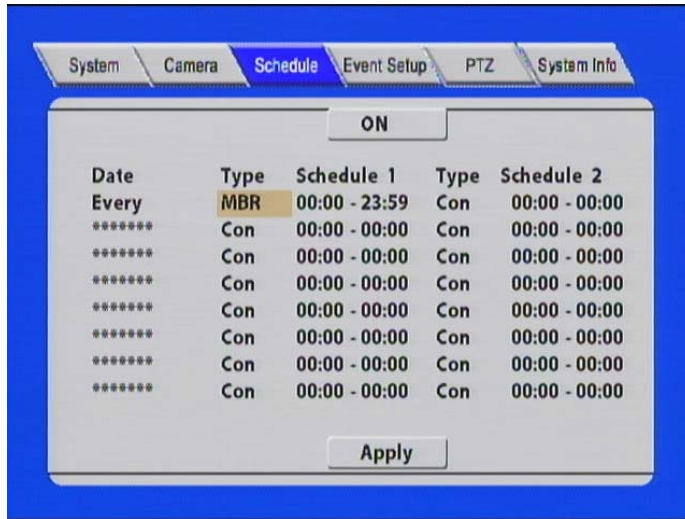
- Camera Name:** Type in the title for each camera to appear on the video display. The camera label is embedded on the video (8 letters max)
- Image Quality:** Press ENTER to enter the recording quality (1 is the highest quality)
- Audio Rec:** Enable / Disable for the audio record for each camera channel
- Camera Num:** Press ENTER to choose the number of cameras connected. If 01 is selected channel 1 would be enabled. If 02 is selected channels 1 and 2 will be enabled. If 03 is selected channels 1, 2 and 3 will be enabled. If 04 is selected channels 1, 2, 3 and 4 will be enabled.
- Recording Rate:** Press ENTER to choose between:
 - ◆ 2, 4, 8, 15, or 30 frames/second (for NTSC)
 - ◆ 1, 3, 6, 12, or 25 frames/second (for PAL)
- Resolution:** Select between CIF and HD1
- Time Insert:** Press ENTER to switch between "ON" and "OFF" to embed time/date in the video
- Output Mode:** The MDVR is capable of displaying multimedia advertising when the unit is powered on. User can select the option of displaying live cameras (Camera View) on the monitor or automatically start streaming the advertising clips (Adver Autoplay). Press ENTER to select between "Camera View" or "Adver Autoplay" mode.

Scroll to APPLY and press ENTER to save the new settings.

Press the RIGHT ARROW key to move to the Schedule tab and press ENTER.

Recording Schedule

Press ENTER to activate (ON) recording schedule.
 Press the ARROW keys to change between any fields in the menu.



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- Date:** Press ENTER to change the period of time to control the recording schedule
- Single Day:** Choose the name of a day to create a recording schedule
- Every:** Choose "Every" to apply a schedule to every day of the week
- Weekday:** Schedule will only apply Weekdays (weekday start and weekday end can be defined in the SYSTEM tab)
- *****:** Choosing the asterisks will suspend the highlighted schedule
- Schedule #:** Press the RIGHT ARROW key to enter values using the NUMERIC keypad into any time field. Schedule 1 is the first of two possible ON/OFF cycles that apply to any day in the period chosen under Date. Schedule 2 is the second cycle for any day in the period. There is no need to overlap times of Schedule 1 and Schedule 2. Ending at 23:59 of one day and beginning with 00:00 of the next day will provide continuous recording without interruption (factory default setting)

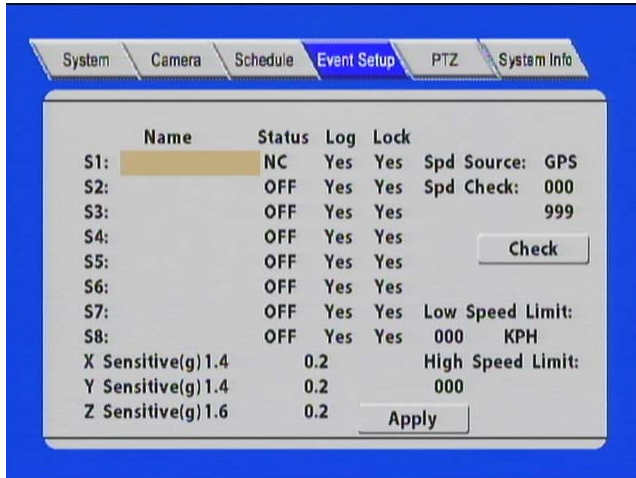
Scroll to APPLY and press ENTER to save the new settings.

Press EXIT at any time to discard your entries and return to the previous menu.

- Types:**
 - CON** = constant recording
 - MBR** = motion based recording
 - SEN** = sensor triggered recording
 - S/M** = sensor triggered recording / motion based recording together

Sensor Menu

Choose the EVENT tab and press enter to access the following menu. The Event menu identifies sensor inputs by name and selects them for use.




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Name: Press ENTER on the Name field to display the virtual keyboard. Enter the text name to identify the source of each Sensor connected to the unit. The sensor label embeds with the video when the sensor is triggered. The label also identifies the type of event

when doing a quick search using  Event option.

NC/NO/OFF: Press ENTER to turn Normal Close (NC), Normal Open (NO) or turn OFF an input sensor.

P.Record: P. Record is the priority recording mode. User can select which external sensor input will trigger high frame recording. Press ENTER to select between "YES or NO". If NO is selected, the MDVR will continue to record at 1 frame per 2 seconds

even when the sensor triggers. The sensor entry will be made in the  Event option without jumping to the high frame recording.

Low Speed Limit: If the vehicle exceeds the low speed limit, MDVR will start an audible alarm until the vehicle slows down the limit.

High Speed Limit: If the vehicle exceeds the high speed limit, MDVR will trigger the alarm signal (ALM LED turn on) until the Admin password is entered to acknowledge the alarm.

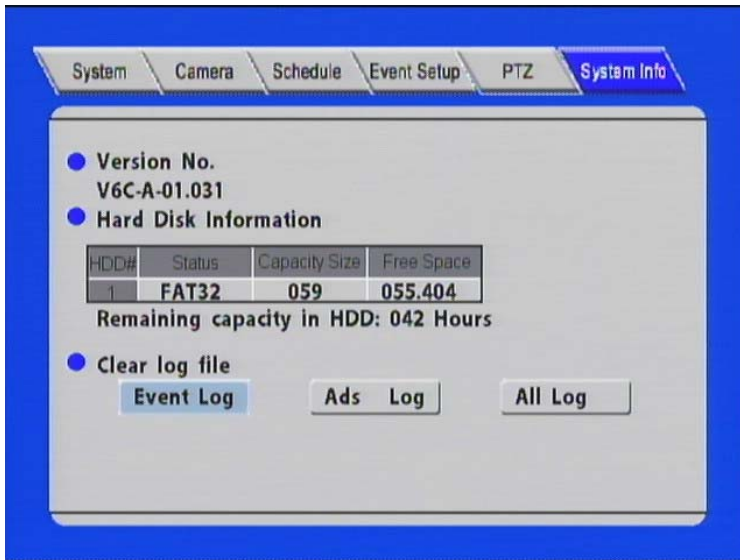
SPD Source: MDVR is capable of capturing vehicle speed via GPS antenna or speedometer. Browse between the settings of GPS or speedometer from the list. Please note that the GPS antenna should be connected to the MDVR to receive satellite signals for speed. For more information on capturing speed from speedometer please contact manufacturer.

SPD Check: Speak check is used to calibrate the offset speed when connected to the speedometer. For more information on capturing speed from the speedometer please contact the manufacturer.

System Information

Press ENTER to assess the System Information menu.

This menu displays DVR Information that may be required for technical support. In addition, information regarding the installed hard disk also displayed. In this menu, user can clear the log information of the DVR.



- ◆ **Clear [Event Log]/ [Ads Log]:** select this option and press [Enter], the DVR will prompt a confirmation message. Select [YES] and press [Enter]. This will clear the log file from the unit. Select [NO] to cancel to clear the log file.
- ◆ **[All Logs]:** select this option to clear both [Event Log] and [Advert Log] file simultaneously.

WARNING!! The log entries in the EVENT are also a part of the log file. Deleting the Event log file will also delete the entries in the EVENT.

System Firmware Upgrade Procedure

There are 2 methods to upgrade the firmware in the MDVR:

Hard Disk upgrade Instructions

- a) Connect and Enable the USB
- b) Copy the romfs.dvr file by pressing ctrl + c or going to Edit -> Copy
- c) Open the ADS folder on the MDVR HDD (if there is no folder by the name create a new folder by right clicking on the mouse and choosing new -> folder)
- d) Paste the file in the "ADS" folder by pressing ctrl + v or going to Edit -> Paste
- e) Close the connection by double clicking the "unplug or eject hardware" icon in the system tray. Select the USB Mass Storage Device and click Stop
- f) Restart the unit. The system will start to upgrade automatically
- g) During the upgrade [POW] and [ALM] LEDs will start to flash
- h) Once completed the upgrade file will be deleted from the ads folder automatically

USB Drive upgrade Instructions

USB Thumb Drive can also be used to update the firmware in the unit. Please follow the instructions to update the flash using the USB drive:

- a) Insert a USB drive into the USB slot of your Windows PC (Drive letter appears)
- b) Using Windows Explorer, format the USB drive as FAT32 format. All the data will be permanently erased from the USB drive.
- c) Copy the new firmware (romfs.dvr file) on the USB drive

Remove the USB Drive from the PC and insert it into the slot on your MDVR while the power is off.

- d) Upon turning the power on, the unit will automatically start to update the new firmware from the USB drive. During the upgrade [POW] and [ALM] LEDs will start to flash
- e) Remove the USB drive from the Mobile unit once unit is up and running.

WARNING: The upgrade procedure requires no power interruption. The USB drive slot on the unit is a necessary opening on the unit. Please ensure that no liquid is spilled in the slot. In addition, do not install the system where dust and dirt are likely to contaminate the opening.

Hard Disk File Structure

Hard Disk file structure: Using the USB to connect the DVR to PC the file structure of the unit looks like below:



Folder Name	Contents/ Description	Remark
Ads	Contains advertisement files	Supported format: MPEG4, MPEG2, MPEG1 File extension : VOB, MPG, AVI, DAT
Ads_log	Log file for tracking all the advertisement playback history by MDVR	Use log viewer application to open this file (provided by SecurteX)
Movie	Contains movie files	Supported format: MPEG4, MPEG2, MPEG1 File extension : VOB, MPG, AVI, DAT
Music	Contains music files	Supported format: WAV MP3 WMA
Record	Contains DVR recordings	Requires client software to playback video from PC. All the record file are watermarked for authenticity
Time.bin, Alarm.bin, Operation.bin	System files	DO NOT DELETE THE FILES. THESE ARE NECESSARY FILES NEEDED BY THE SYSTEM TO FUNCTION PROPERLY

GPS Operation (Optional)

This feature is only available with the system ordered with GPS

1. To enable the feature make sure to connect the GPS antenna to the GPS connection port located at the back of docking station.
2. Once connected properly and placed outside the vehicle facing towards the sky, you will find the GPS icon display on the surveillance screen as shown:



3. The GPS data will appear on the screen as:
 - N for longitude
 - W for latitude
 - Vehicle Speed
4. The values of GPS are embedded on the video and could be retrieved by using the video playback function and pressing Enter key on the hand held while the video is been played back.

Advertisement Sequence Generator (Optional)

This utility only applies to the multimedia version of MDVR

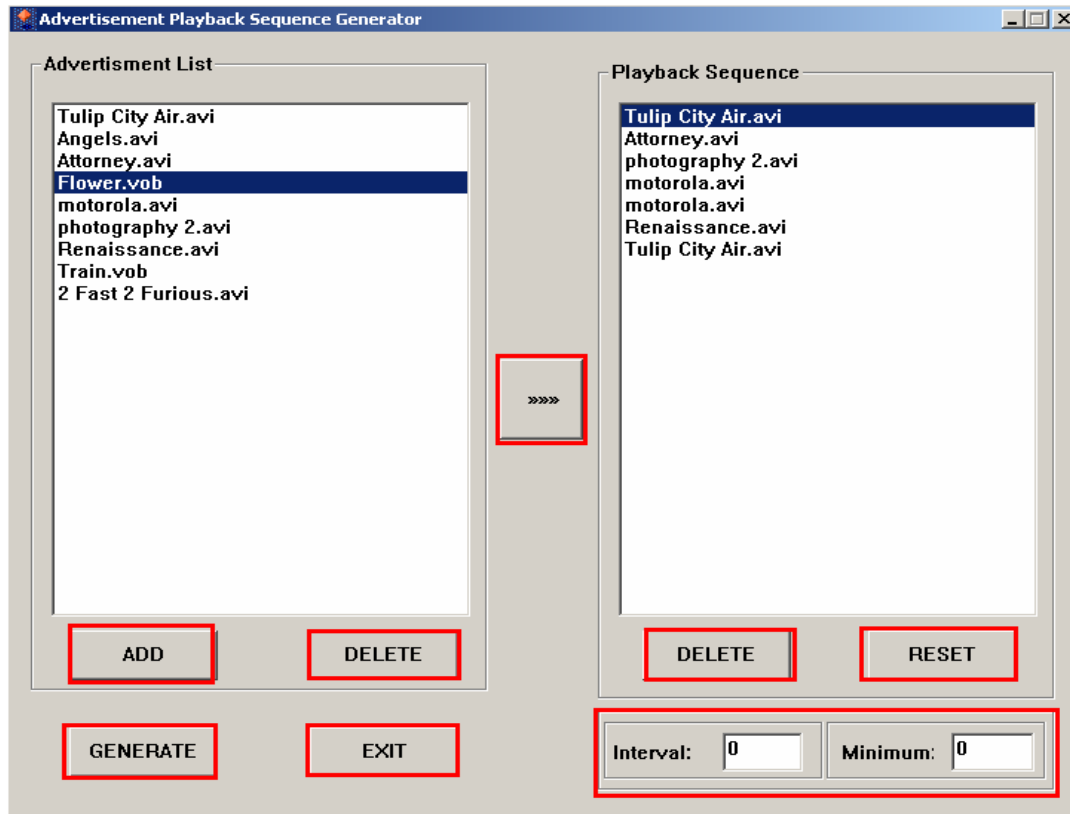


FIG 3.0

The Advertisement Playback Sequence Generator is a Windows based utility designed to generate sequence for the advertisement playback. The utility creates a sequence configuration file which maintains the pattern of advertisement playback. Follow the here under instructions for generating the advertising sequence.

- 1) Click "ADD" button to add the advertisement clips. Browse for the advertisement content location and select the desired file. To select multiple files hold down the "CTRL" key on your keyboard and select desired files. The application only accepts AVI, MPG, VOB, DAT file formats.
- 2) Once the files are added to the "Advertisement List", select the first file to be played back in the advertisement sequence and use (2) button to move the file in the "Playback Sequence." The advertisement clips will be played in the order that appear in the "Playback Sequence list". When the last advertising clip is played back, the sequence starts again.

Note: In the above example after photography 2.avi is played back the Motorola.avi will be played twice before the Renaissance.avi is played back. Use the repetition method to playback same clip more then once.

- 3) To remove any advertisement from the "Advertisement List", select the file and click "DELETE" button. Note that deleting the file from the "Advertisement List" does not delete the actual file from the hard disk.
- 4) To remove any advertisement from the "Playback Sequence", select the file and click "DELETE" button. Note that deleting the file from the "Playback Sequence" does not delete the actual file from the hard disk.
- 5) To delete the sequence and start from beginning click the "RESET" button.
- 6) When the sequence is completed click on "GENERATE" to generate the configuration file. A "Save as" window will appear at the screen to save the sequence file. For the MDVR to play back in the correct sequence the file name has to be "advertisement" and the format has to be ".cfg". DO NOT CHANGE THE NAME OR TYPE OF THE FILE ELSE THE SEQUENCE OF THE ADVERTISEMENT CLIPS WILL NOT WORK.
- 7) This feature is under development.
- 8) To exit the sequence generator application click on "EXIT".

There are two methods to upload the sequence configuration file on the MDVR.

- 1) When the advertisement.cfg file is created save it to the thumb drive along with the required advertisement contents. Establish a USB connection in Host Mode with your MDVR. Follow the instructions under SETUP -> USB OPERATION for more details on establishing the USB connection in Host Mode. The files would automatically be copied upon successful connection with thumb drive. Once the data is copied (indicated by the status bar) exit the USB MODE screen and the advertising media contents would automatically start to play back in the programmed sequence (if advertisement mode selected under CAMERA -> OUTPUT MODE) when the unit restarts.
- 2) Create a USB connection using the USB cable provided with your MDVR package. For detailed instructions on the USB connectivity refer to SETUP -> USB OPERATION in DEVICE MODE. Save the advertisement.cfg file in the "ADS" folder of MDVR Hard disk drive. Also copy the media clips in the ADS folder. Exit the USB MODE screen and the advertising media contents would automatically start to play back in the programmed sequence (if advertisement mode selected under CAMERA -> OUTPUT MODE) when the unit restarts.

Note that this application only generates the sequence and does not upload/download the media contents automatically. Users have to upload the advertising contents by either a USB Drive or a USB link (HOST or DEVICE mode).

Advertisement Log Viewer (Optional)

This utility only applies to the multimedia version of MDVR

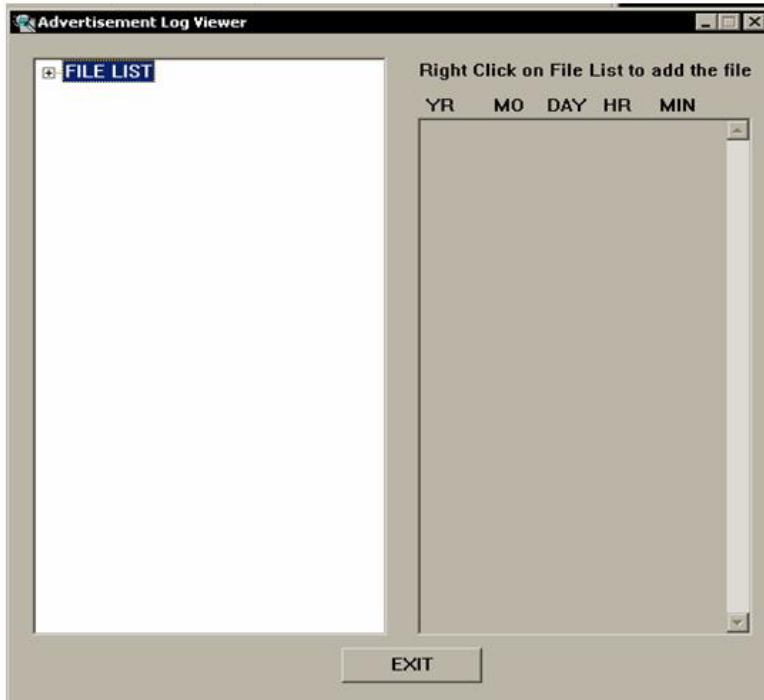


FIG 4.0

The Advertisement log viewer is a Windows based utility designed to read the log of the advertisement clips played back. The utility allows the user to see the frequency of the advertisement clips MDVR played back. Follow the here under instructions for reviewing the frequency of clips played back by MDVR.

- 1) Create a USB connection using the USB cable provided with your MDVR package. For detailed instructions on the USB connectivity refer to SETUP -> USB OPERATION in DEVICE MODE.



FIG 4.1

- 2) The MDVR hard drive comes up as a new hard drive on the workstation connected via USB Cable. FIG 4.1 shows the contents of MDVR hard drive. Copy the ads_log folder by pressing ctrl + c or going to Edit -> Copy. Paste the folder to your workstation by pressing ctrl + v or going to Edit -> Paste. Once completed press "Exit" on the MDVR hand held IR. The MDVR will restart to resume normal operation.



FIG 4.2

- 3) Open the advertisement log viewer application by double clicking on ads_log_viewer.exe. Right click on "FILE LIST" and a drop down menu will be displayed as shown in FIG 4.2. Select "add file" option and browse for the "ads_log" folder. Select the desired advertisement clip to perform the analysis (the files would have the extension of .raw) . To select multiple files hold on the ctrl key and left click on the files. Once the files are selected click on "Open".

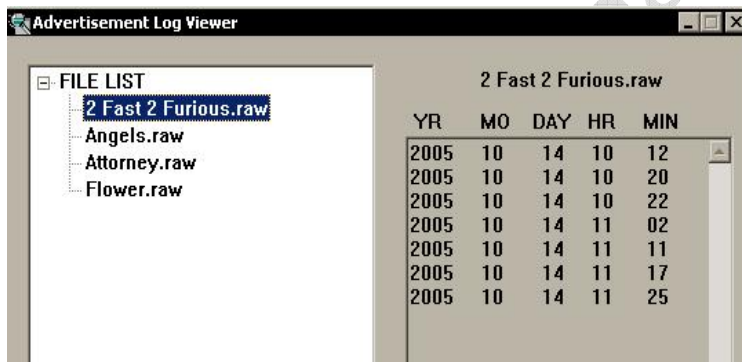


FIG 4.3

- 4) Click on the desired files to see their frequency of play back. The application displays year, month, day, hour and minutes when the advertisement clips were played back by MDVR. A sample report is shown in FIG 4.3. Once completed, click "EXIT" to quit the application.

Setup Manager (Optional)

This utility is designed to change the MDVR setup without using the IR Hand held via USB Drive.

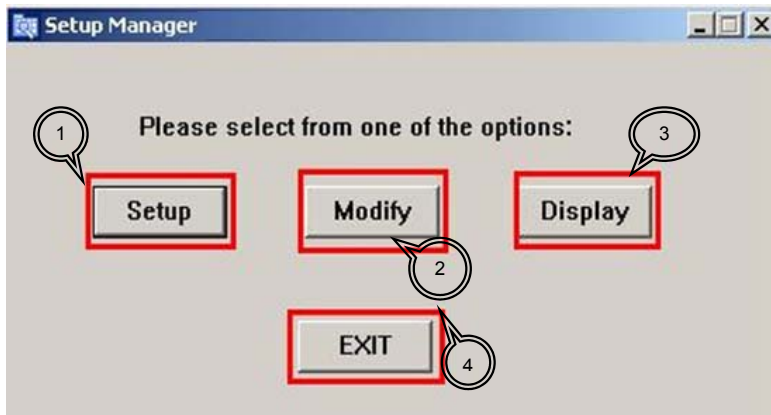


Fig 5.0

The Setup Manager is a Windows based utility designed to program the MDVR from the PC without using handheld IR via USB Drive. Follow the here under instructions for MDVR settings using a USB Drive.

- 1) Setup -> Allows user to go in the setup and create a new setup (binary) file to be uploaded to the MDVR via USB Drive
- 2) Modify -> Allows user to change an existence setup (binary) file
- 3) Display -> Allows user to view an existence setup (binary) file
- 4) Exit -> Exits the application

SETUP:

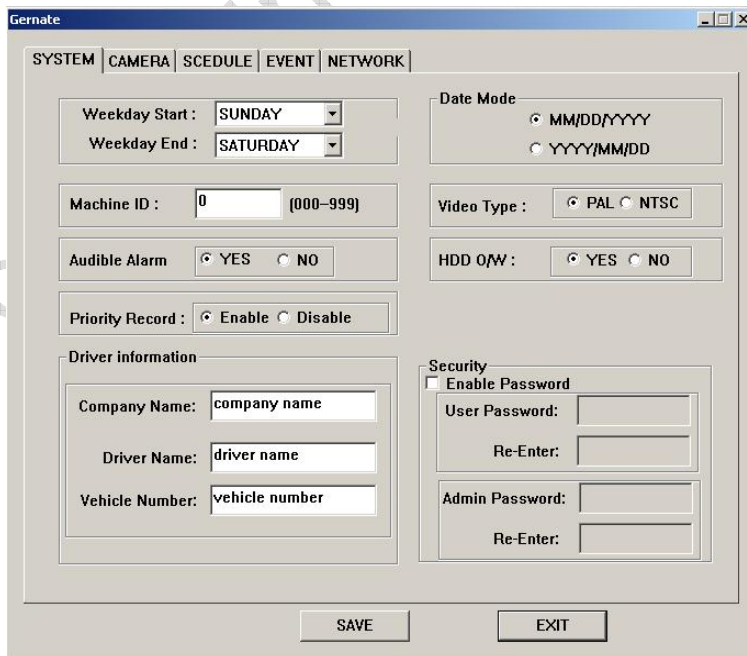


FIG 5.1

The Setup allows user to create a user preferable settings for MDVR. FIG 5.1 shows the user interface for creating the setup file to be applied on the MDVR via a USB Drive. System, Camera, Schedule, Event and Network tab allows making changes as per user desire. The explanation of each individual tab could be found under MDVR System Layout, section (f) of the manual.

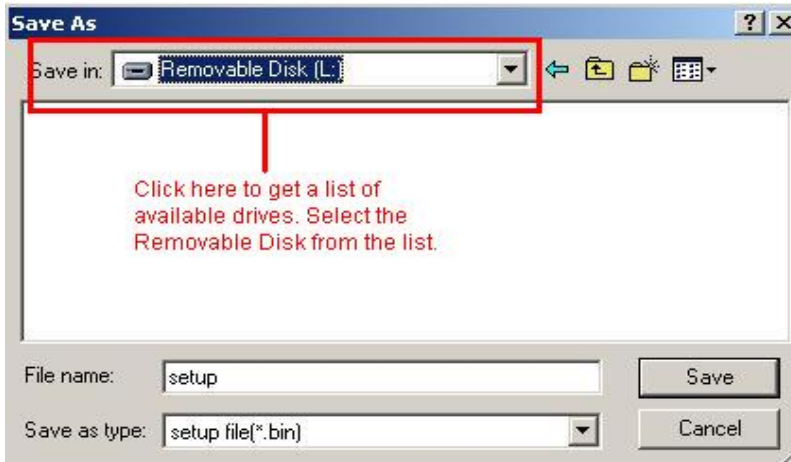


FIG 5.2

Once the changes has been completed click on the “SAVE” button on FIG 5.1. A save as window will come up on the screen (FIG 5.2). Connect the USB Drive to the workstation which is running the Setup Manager utility. The USB Drive appears as a removable disk in most of the system. Please check the manual provided with the USB Drive if your USB Drive does not appear as a removable disk. Format the USB Drive using FAT32 format. For detailed instructions on formatting the USB Drive please consult the “System Firmware Upgrade Procedure” in this manual. Select the removable disk from the list of available drives. Click on “SAVE” option on the screen. **DO NOT CHANGE THE NAME AND TYPE OF THE FILE. MDVR ONLY ACCEPTS setup.bin FOR THE NEW CHANGES.** Save the file as the default type and name.

MODIFY:

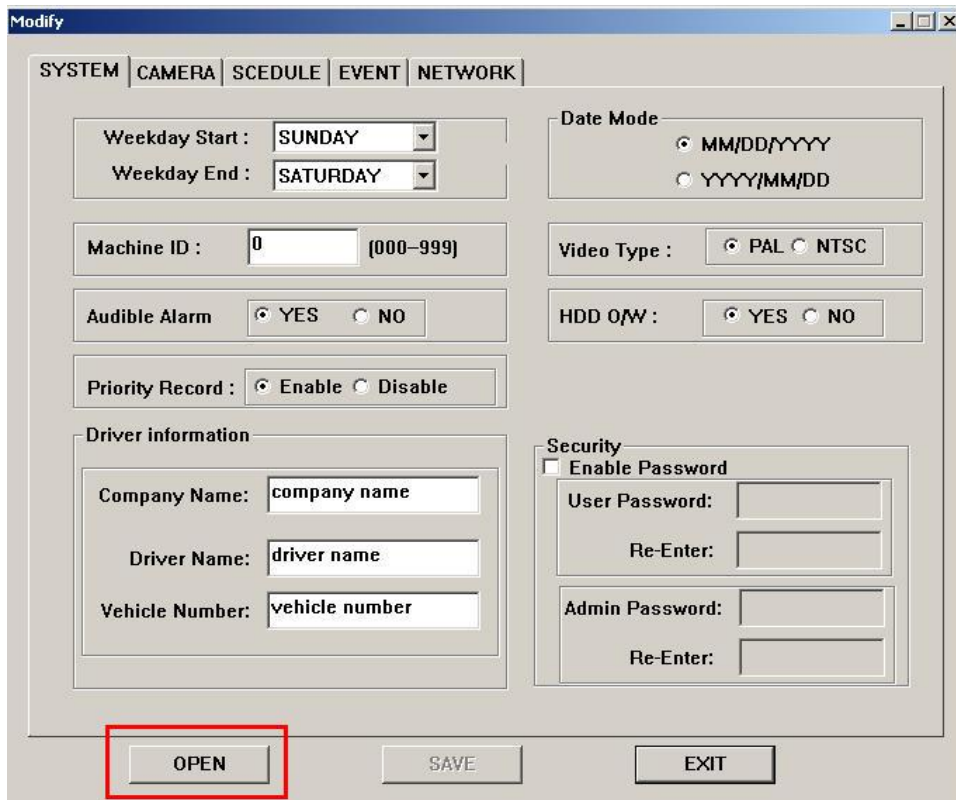


FIG 5.3

The modify option allows user to edit an existing setup.bin file. Click on MODIFY in FIG 5.0 to modify an existing setup. FIG 5.3 shows the user interface of the application. Click on OPEN to open the setup.bin file. Once opened, user can make any changes desired. When the changes are completed save the setup.bin file on the USB Drive and apply the new settings on the MDVR.

DISPLAY:

The display feature allows the user to see the contents of the setup.bin file. It does not allow the user to make changes or create a new setup.bin file.

EXIT:

The exit option allows the user to exit the application. A confirmation message will be displayed. Click Yes to exit the application or no to return back to the Setup Manager application.

SecurteX Digital
982 Senate Drive
Dayton, OH 45459
Phone: 937-312-1414
Fax: 937-312-1418
<http://www.securtex.com>

SecurteX International, Inc.