Mobile Digital Video Recorder with Advertisement/ Multimedia Playback
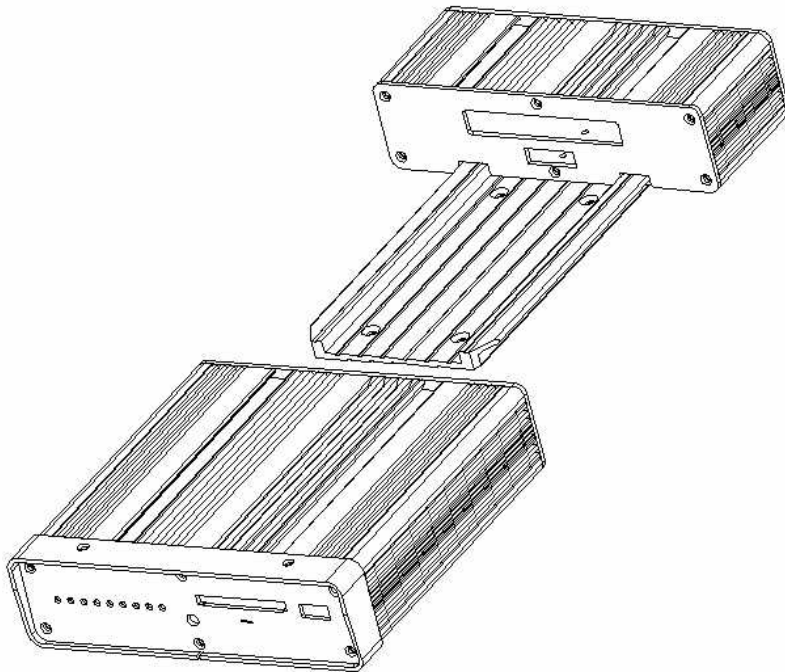
Instruction Manual

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I. 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, 3Amp 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 MDR
- 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
- Support CMS (Central Management System), Auto download program, Analysis program;

Accessory Modules for MDR

- 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

II. Installation Guidelines

II-1 Installation Environment Requirements

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

a) Follow all electrical codes, adhere to all requirements for your vehicle and for other connected equipment while installing and operating the MDR.

b) Use only a regulated 12-volt DC or 24-volt DC (2 ~ 3 Amps) certified power supply for installation in vehicles. The MDR 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 MDR mounting assembly from the power supply.

d) Do not attach any device specified or approved by Vendor.

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 MDR ground cable to the vehicle correctly to complete the power circuit.

g) Install the MDR 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 MDR 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 MDR out of direct sunlight and away from direct sources of heat.

j) Do not mount the unit to a surface subject to excessive vibration.

II-2 Mounting / Enclosing the MDR
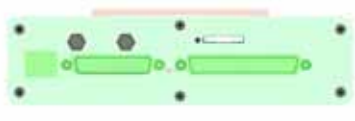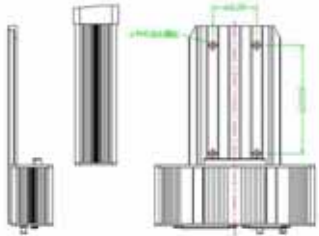
a) MDR may be operated in a totally sealed enclosure with no cooling airflow, ensure that the operating temperature of the MDR does not exceed 140°F (60°C) or that the standing temperature does not exceed 175°F (80°C). The minimum operating temperature for the MDR is -20°F (-28°C). If the minimum temperature is expected to exceed connect an auxiliary heat source.

b) MDR 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 MDR, use only cleaners approved for electronic equipment or components. Avoid chemical or household cleaners.

d) Disconnect MDR mounting assembly from the power supply when not in use for extended period of time.

II-3 Installation Parts and Materials Required

The following common tools and parts are required to install MDR

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

II-4 MDR Product Views

Front View	Rear View (without connections)
	Assembled Chassis Details 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 **Recording Module (Removable Component)** Height 4.6 cm (1.81 inch) Width 17.9 cm (7.04 inch) Depth 17.6 cm (6.92 inch) Module Removal Clearance 16.5 cm (6.49 inch) Installation Clearance (except base) 10 cm (6 in)
Mounting Assembly / Recording Module Removed	

II-5 MDR Dimension

179.0

175.0

17.9 cm
17.5 cm

245.0

24.5 cm

46.0

49.0

4.9 cm
4.6 cm
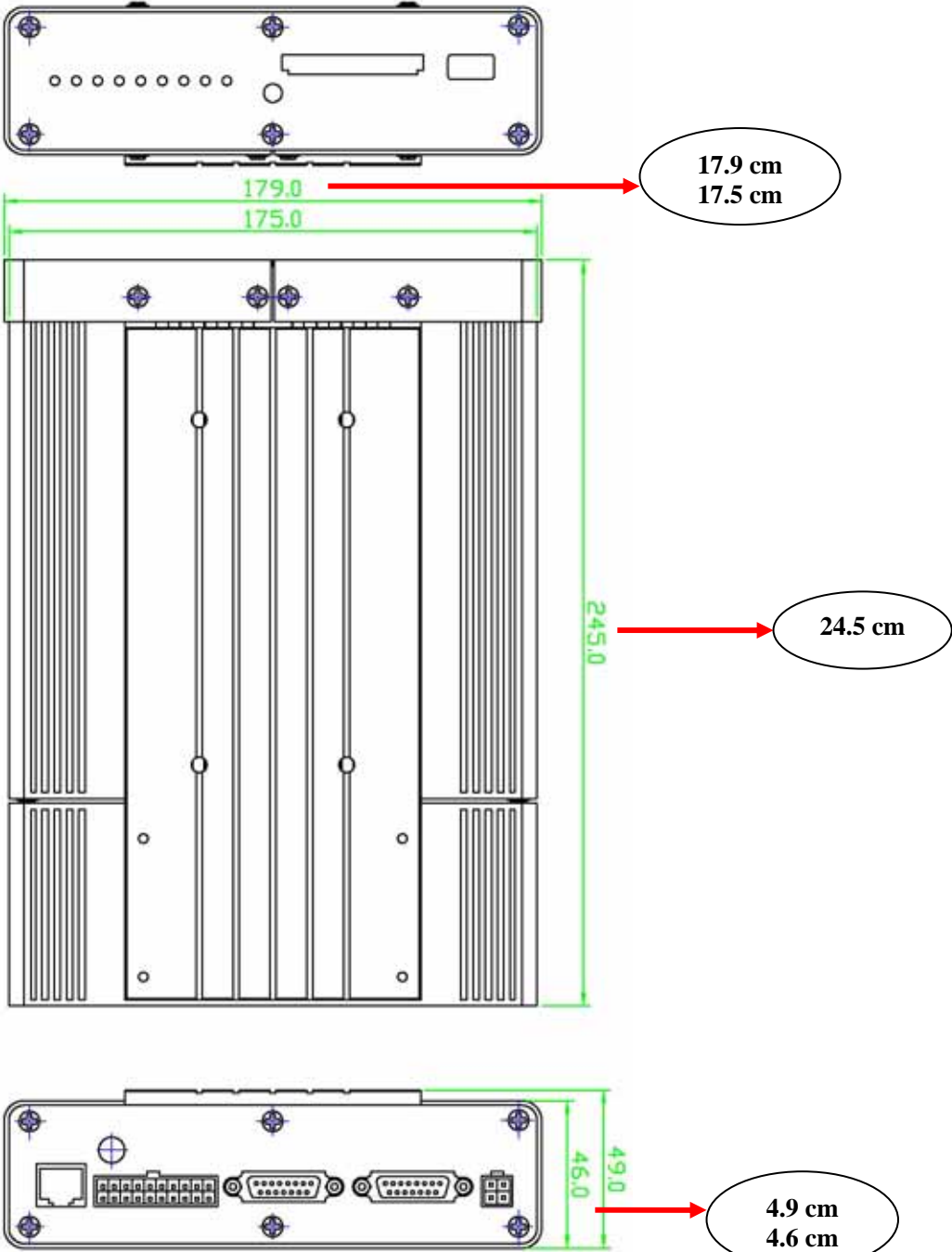
II-6 MDR Package Contents

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

    a)   MDR Recording Module and Mounting Assembly
    b)   DB37 bridal (AV input/ Sensor connectors/ Inertia sensor connector)
    c)   DB25 bridal (AV output / VGA connector/ RS232/ RS485/ Control panel connector)
    d)   USB Cable
    e)   20 PCs screws
    f)   GPS Antenna (with GPS equipped models only)
    g)   Warranty card
    h)   User Manual CD
    i)   Hand held IR remote controller (batteries not included)

II-7 MDR 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 MDR be connected to the vehicle ignition. Battery power is used only when the vehicle is running. MDR 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 MDR 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.

II-8 MDR Installation Instructions

Follow these guidelines when installing the MDR:

- **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 MDR.**
- **Connect power source and turn the vehicle ignition (make sure this connect with "Signal") 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.**

## II-9 MDR Installation Layout
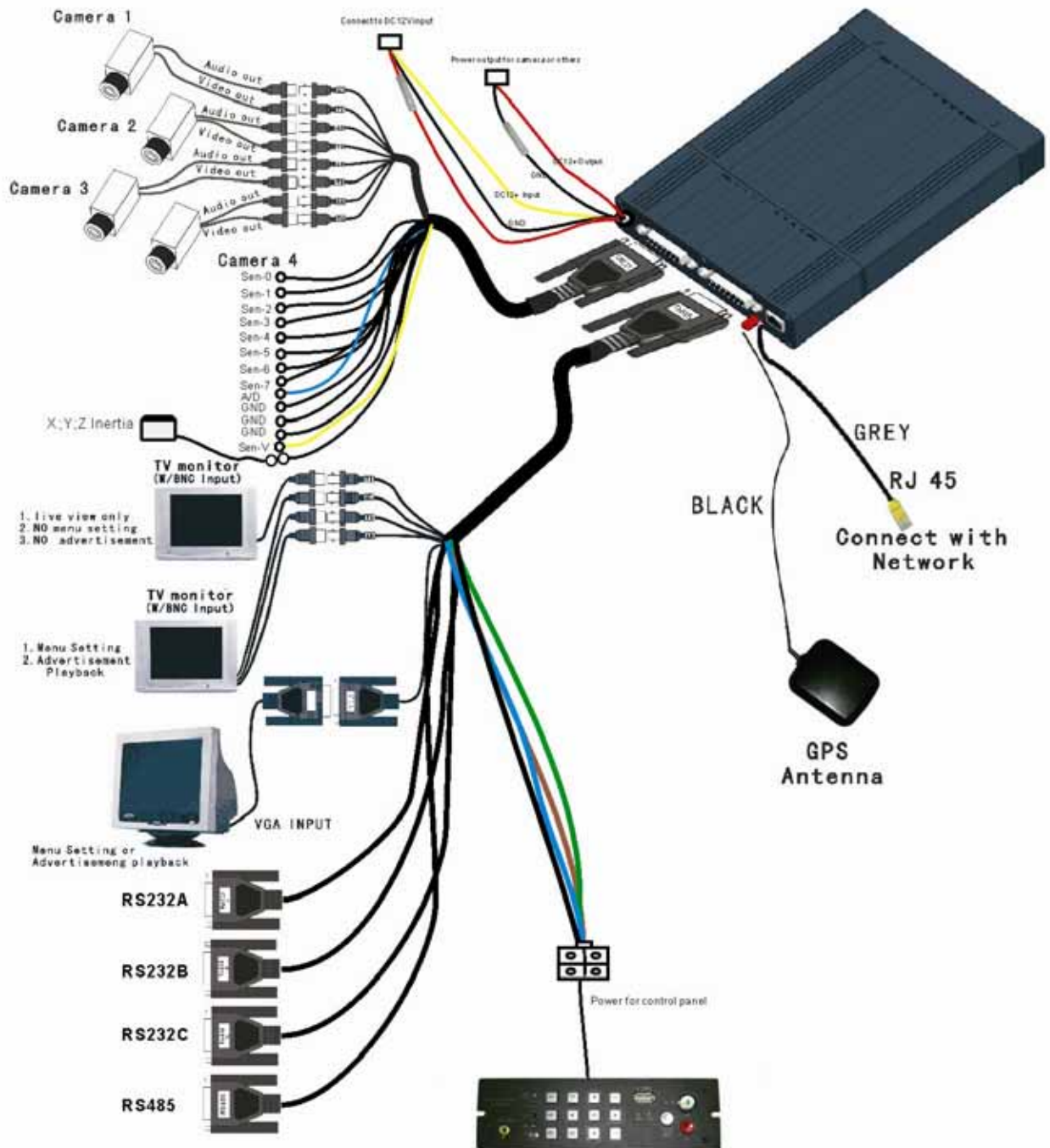
Note: This is a sample I/O Schematic. Sensors are not reserved for any device. Sensors can be connected to any external device in any order. The label in the setup differentiates the sensors connected to the I/O.

II-10 MDR Bridal Connection Guideline

DC IN:

The bridal description for the power cable supplied with MDR is as follows:

Power IN

Color coded wire	Description
INPUT (Red)	Positive wire. Should be connected to the positive terminal of the battery
INPUT GROUND (Black)	Negative (ground) wire. Should be connected to the negative terminal of the battery
SIGNAL (Yellow)	Connect with car ignition to let the system start up (need provide +ve DC power as signal ON/OFF)
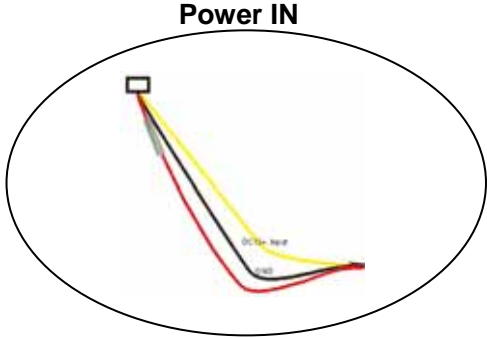
DC OUT:

The bridal description for the power cable supplied with MDR is as follows:

Power OUT

Color coded wire	Description
OUTPUT (Red)	Positive Power wire, provide the power to camera or other device. (the voltage directly draw from "POWER INPUT" bypass the MDR)
OUTPUT GROUND (Black)	Negative (ground) wire, provide the power to external device or equipment
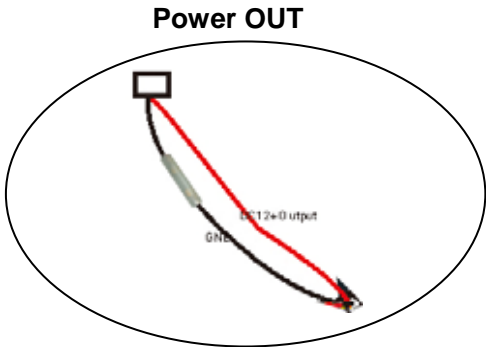
Input Bridal DB37 (Video/Audio IN/ Sensor Input/ Inertia connection):

The bridal description for the Input bridal supplied with your MDR is as follows:
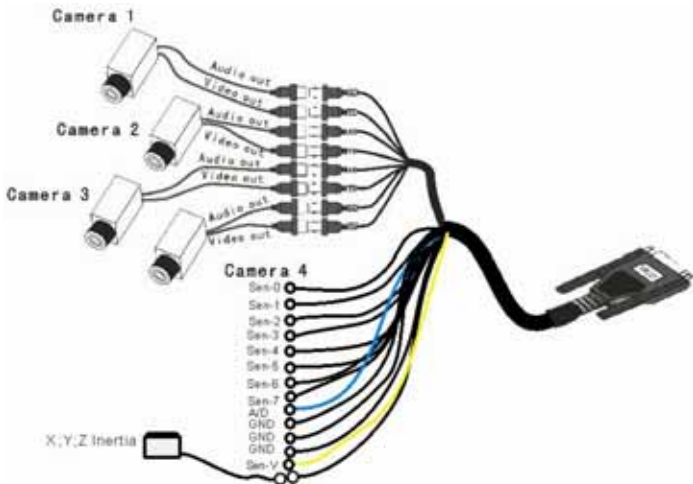
Label	Description
V 1	Video input for camera number 1
V 2	Video input for camera number 2
V 3	Video input for camera number 3
V 4	Video input for camera number 4
A 1	Audio input for camera number 1
A 2	Audio input for camera number 2
A 3	Audio input for camera number 3
A 4	Audio input for camera number 4
Color coded wire	**Description**
Sen 0 (Red)	Sensor 1 (0~12V)
Sen 1 (Red)	Sensor 2 (0~12V)
Sen 2 (Red)	Sensor 3 (0~12V)
Sen 3 (Red)	Sensor 4 (0~12V)
Sen 4 (Red)	Sensor 5 (0~12V)
Sen 5 (Red)	Sensor 6 (0~12V)
Sen 6 (Red)	Sensor 7 (0~12V)
Sen 7 (Red)	Sensor 8 (0~12V)
Sen V (Yellow)	Speed capture
A/D (Blue)	Enable the Analog to Digital input for Sensor 1 to Sensor 2
TO SENSOR	Connect with Inertia Sensor

Output Bridal DB25 (Video/Audio Out/ RS232/ RS485/ Control Panel):

The bridal description for the Output bridal supplied with your MDR is as follows:

Label	Description
V1	Composite output for controlling MDR. IR handheld is fully functional when connected to V1 output
V2	Composite output for live camera view only. IR handheld is not operational when connected to V2 output
AL	Left Audio output
AR	Right Audio output
VGA	VGA output for controlling MDR. IR handheld is fully functional when connected to VGA output
RS232A	RS232 allow connect external device (GPS/Meter/Lasar Gun) Connecting with MDR
RS232B	
RS232D	Serial Port for system diagnostic
RS232C	RS485 A/ B (for PTZ connecting with MDR)
TO DB15	Connect with Control Panel external device
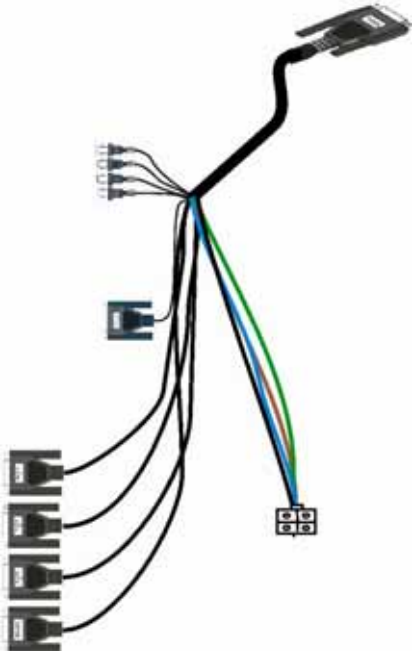
ⓘ **Remark: PIN Definition (DB37 and DB25) shown in Appendix A**

GPS Antenna (Optional):

- MDR is capable of embedding GPS coordinates and speed on the video.
- MDR 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.
- This GPS option can provided the time synch features for MDR device;
- 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.
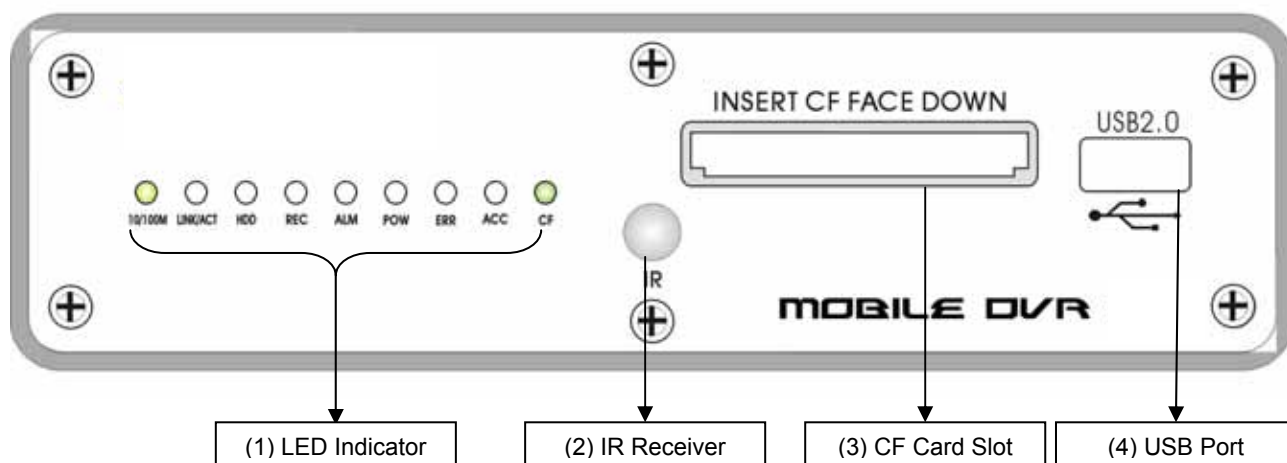
Network Connection (RJ45):

- Using the network cable to link with MDR to network system, allow browse into the system using client software or remote access to MDR;

II-11 MDR Visual Orientation

Front Panel Layout (Recording Module):

| (1) LED Indicator | (2) IR Receiver | (3) CF Card Slot | (4) USB Port |

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] CF card status: LED ON indicates that CF card is inserted and the data is accessible.

①Notice: when the [ALM] on, caused by video loss or trigger "High Speed Limit" sensor, require login as administrator to disable the alarm LED and buzzer from control panel;

2. **IR Receiver Lens:**

   Please ensure that the MDR 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. **CF Card Slot:**

   To upgrade the MDR software and transfer files without the use of a PC, use an industry standard Compact Flash card and the handheld controller. For uploading instructions refer to section labeled as "System Upgrade Firmware Procedure"

4. **USB Port:**

   The USB 2.0 transfer port allow to transfer data file from mobile unit to PC, also MDR can act as host device to copy advertising clips from USB thumb drive.

Back Panel Layout (Docking Module):
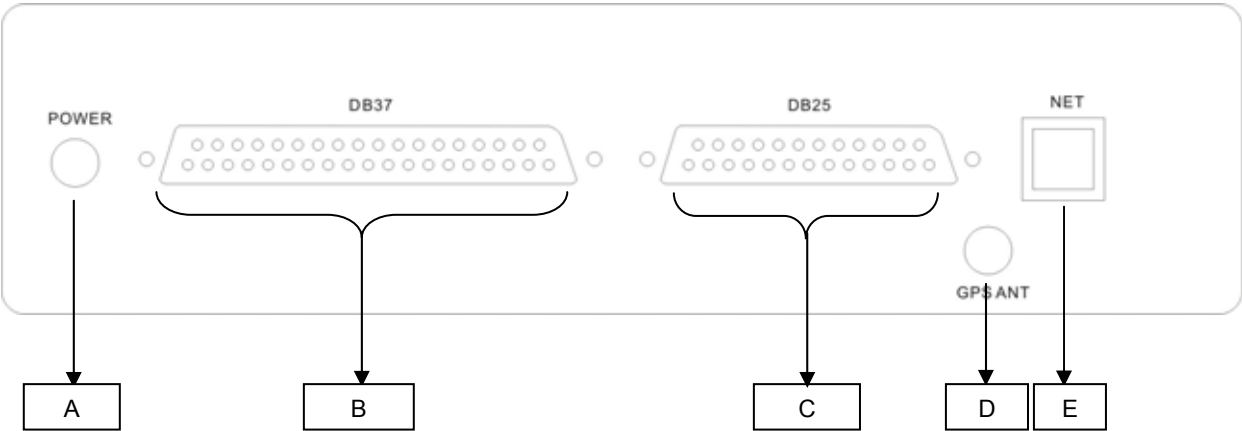
Rear Connections (Mounting Assembly):

All connections to the MDR are attached to the rear of the Mounting Assembly using pre-assembled bundles of wire specifically labeled for each purpose.

Terminal Block A: Power INPUT and OUTPUT Connections
Terminal Block B: DB37 (Audio/ Video Signal Inputs/ Sensors connections/ Inertia connection)
Terminal Block C: DB25 (Audio/ Video Signal outputs/ VGA/ RS232/ RS485/ Control Panel connection)
Terminal Block D: GPS Antenna Connection
Terminal Block E: Network connection port (RJ-45)

Disconnecting a bridal does not affect the operation of remainder of the MDR functions

II-12 Handheld IR Remote Controller Functions
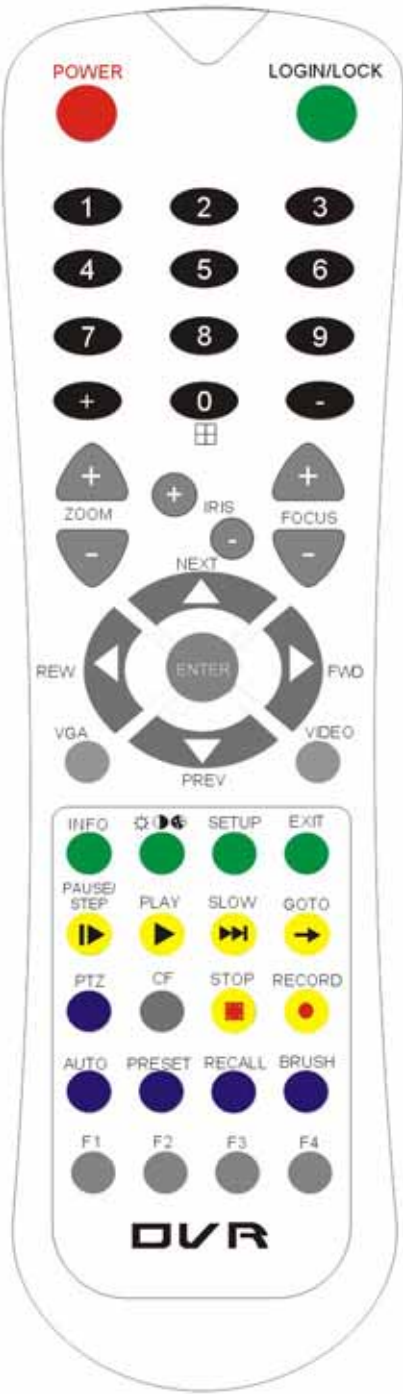
Numeric Input Keys

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.

Navagation 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 serach screens.

Each MDR 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 (V1 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 (V1)
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 X 4 modes available
FWD ▶	Fast forward the video while playback. X2 and X4 modes available
CF	While CF card inserted, this button can activate the CF function
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:

While connect with PTZ camera and using the RS485a/b, following command can control with PTZ camera with following function:

[ZOOM IN +], [ZOOM OUT -]	ZOOM IN/OUT
[IRIS +], [IRIS-]	IRIS control
[FOCUS +], [FOCUS -]	FOCUS IN/OUT
PTZ	Start to active the PTZ function
AUTO	Auto run with the PTZ pattern
PRESET	Preset default position
RECALL	Recall the set program
BRUSH	Brush the glass screen

III. System Start-up/ Shut down

1. System Start Up

After connecting the MDR to a vehicle power supply turn on the vehicle ignition and the unit will automatically start recording. Power is normally supplied to the MDR 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 MDR 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 MDR when video is connected to V 1 or VGA

Note: MDR factory settings are programmed to display administrative view on VGA monitor. If MDR 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.

2. 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 MDR. 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.
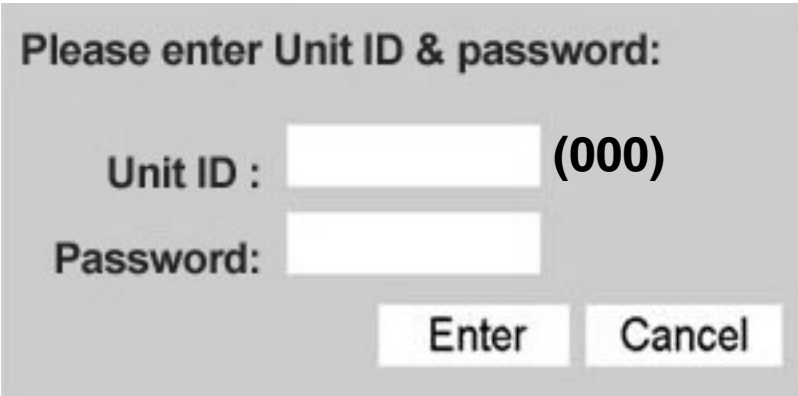
Two levels of password are available in the setup.

- 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 MDR. Default ADMIN password is 88888888.

2.   Control of System Operations

The MDR has two versions of the firmware.
- **Security only version**
- **Multimedia version**

Security only version: In the security only version MDR 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:

Fig 1.0 Security only version

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

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

Fig 2.0 Multimedia version

IV. MDR system layout

IV-1 Multimedia Management

Press [SETUP] on the IR controller, then login to the system (OR if the security is disabled) the on-screen menu will be displayed (not applicable if the output is connected to Video-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

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

The screen will show the menu as below:
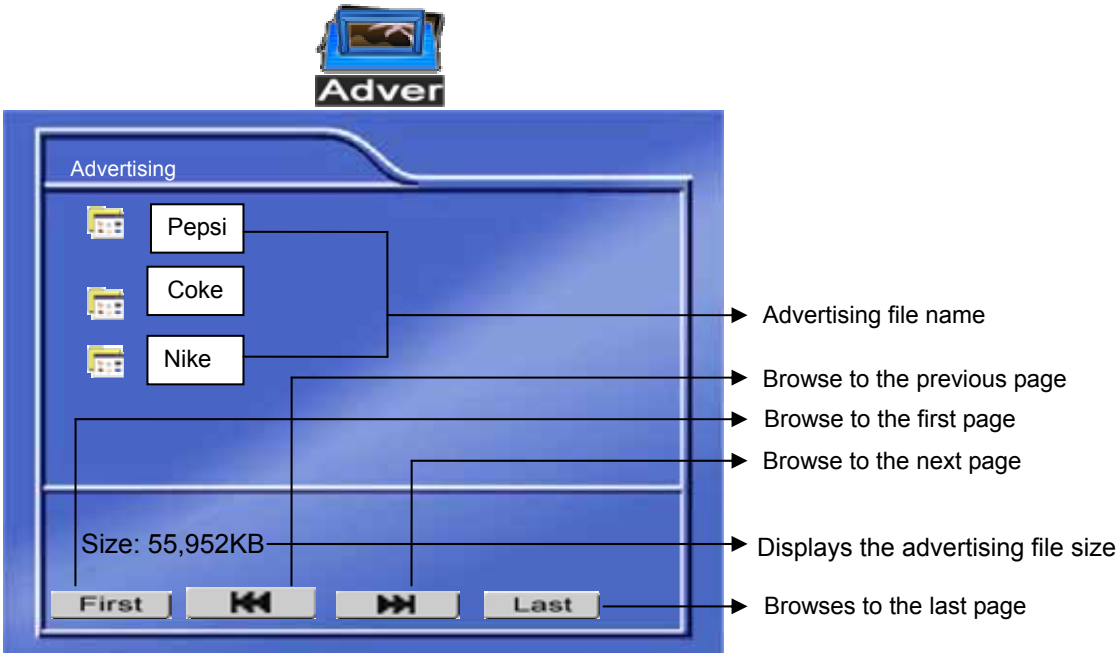
- ◆ **Play**: select the advertising file and press [Enter] to play. While the advertising is playing, the Handheld IR navigation keys (▲/ ▼) increases / decreases the volume. Press [❚ ►] will pause the advertising clips. Pressing the [❚ ►] key will resume the playback. Press [EXIT] return to the advertising 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.

B. **To administer Music files use ARROWS to select** **and press ENTER**

The screen will show the menu as below:
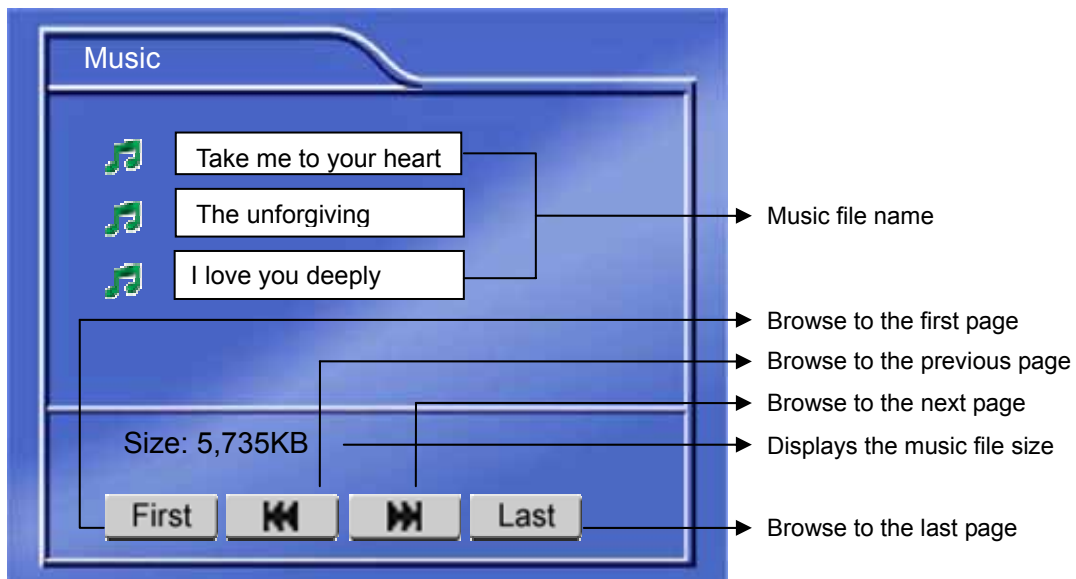
- ◆ Select the music file and press [Enter] to start playing the file.
- ◆ While the music is playing, the Handheld IR navigation keys (▲/ ▼) increases / decreases the volume. Pressing [▋ ►] will pause the music. Pressing the [▋ ►] key will resume the playback. Press [EXIT] return to the music menu.
- ◆ **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.

C. To administer Movie files use ARROWS to select **and press ENTER**

The screen will show the menu as below:

Movie

Star wars		──── Movie name
Terminator 2		
Austin Power		──── Browse to the first page
Size: 211,750KB		──── Show the movie file size
First ◄◄ ►► Last		──── Browse to the last page
		──── Browse to the next page

Browse to the previous page
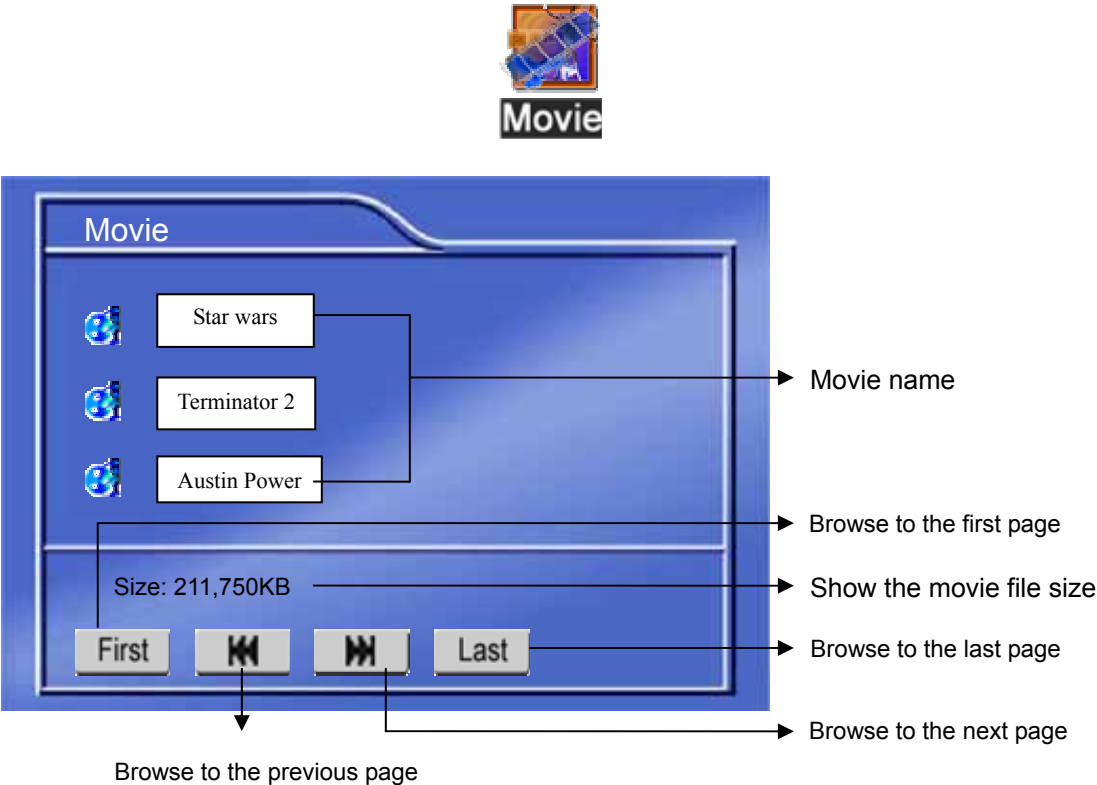
- ◆ Select the movie file and press [Enter] to start playing the file.
- ◆ While the movie is playing, the Handheld IR navigation keys (▲/ ▼) increases / decreases the volume. Pressing [❚ ►] will pause the movie. Pressing the [❚ ►] key will resume the playback. Press [EXIT] return to the music menu.
- ◆ **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.

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 file 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

IV-2 Playback Management

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

Enter the required information on the screen. MDR selects the current date by default.
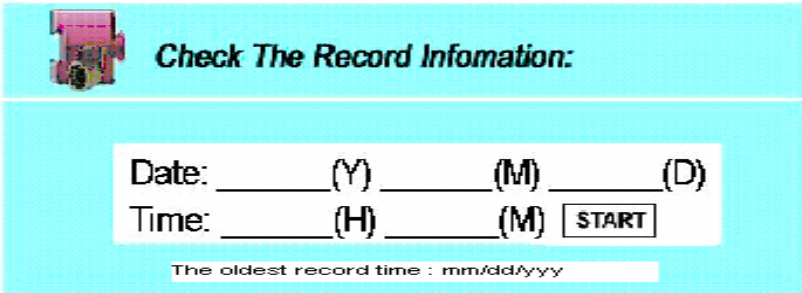
The main screen allows the user to enter the specific dates for the playback. "The oldest record time" is a quick reference for the oldest recording available to MDR. Using the numeric keypad of the handheld IR controller or [+] [-] keys to increase the values, fill the appropriate data:

"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.

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.

Date of recording   Timing range   Number of cameras recorded

Record

📹	09/05/2005	02:59-03:00	Four	Pic	30-1
📹	09/05/2005	05:30-06:45	Four	Pic	30-1

Recorded Frame rates and quality of video

Browse to the first page

Browse to the next page

Show the movie file size

Size: 1169,686KB

First   ⏮   ⏭   Last

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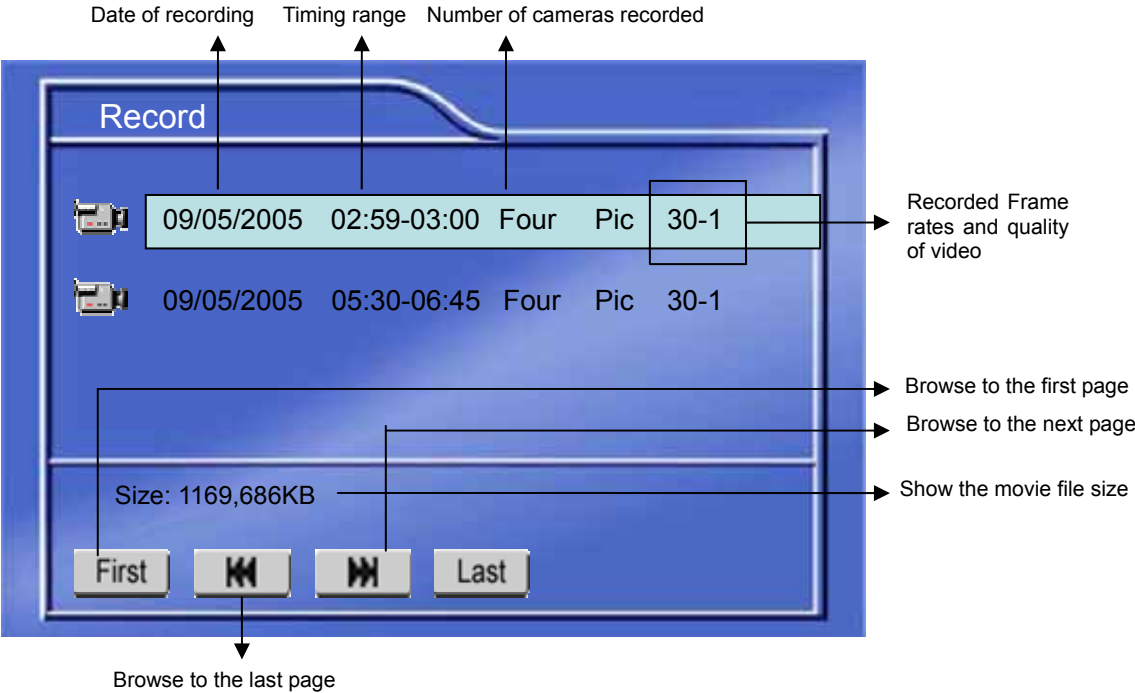
While the selected video file is playing back, user can select the video to jump to the specific time in the clip.

- 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 CF card 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 CF card (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 CF card.
- A status indicator is shown on the top right corner of the screen.
- Press [CF] key again to stop the download

B. 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

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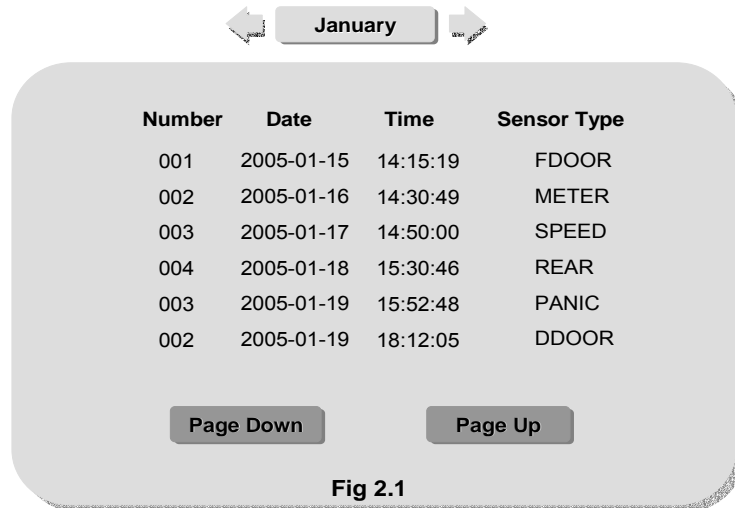
Once the video associated with the event is finished playing back, the system displays the Fig 2.1 to select other event.

V. System Setup Management

V-1 System Setup

V-1. **To access the SETUP menu, use ARROWS to select** Setup **and press ENTER**

The SETUP menu consists of six 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

System	Camera	Schedule	Event Setup	PTZ	System Info

Date / Time

General

Video Type

Audible Alarm

Priority Record

HDD O/W

HDD Format

Network

Security

Default Setup

USB Operation

Driver Info
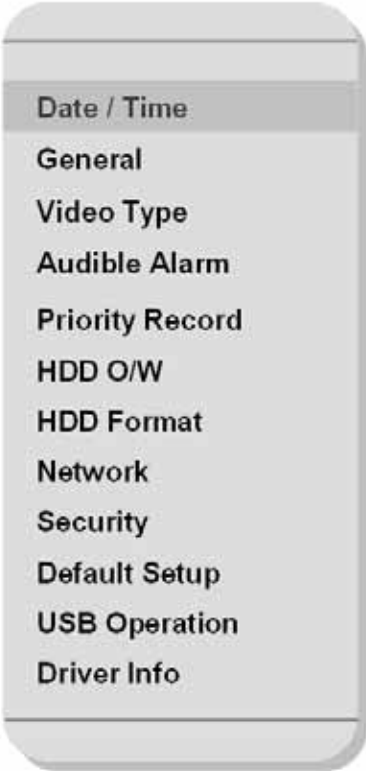
A) Date / Time.

Press ENTER to access input settings. Use ARROW keys to scroll through the options.
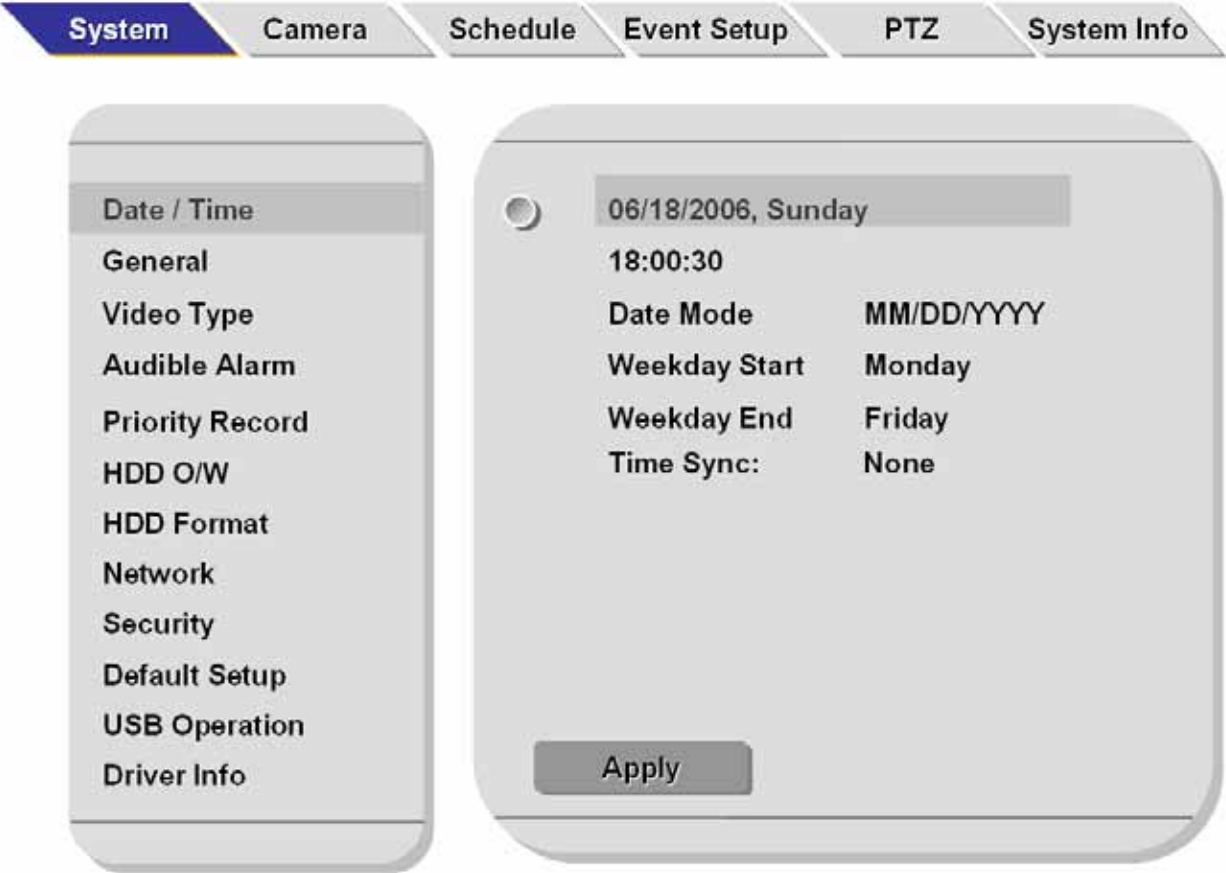
Date:	DD/MM/YYYY	Enter with number keys
Time:	HH/MM/SS	Enter with number keys
Date Mode: (US or Int'l)		Press ENTER to switch between the date patterns
Weekday Start: (Day Name)		Press ENTER to advance days
Weekday End: (Day Name)		Press ENTER to advance days

Time Sync: The system allow have the time synchronizing via by either "GPS" or "NTP".

◆ While selecting the "GPS", the device must have GPS connection and GPS signal must be have well reception signal. This process run at every 1 hour while system running;

◆ While selecting the "NTP" (Network Time Protocol), the device must have network access connection and assign the NTP IP location; This process run at 6:00am local time while the system have network connection;

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

B) General :

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

Unit ID (000~999):	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).
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.
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 10-100 seconds (in every 10 seconds). Press ENTER to browse through the options.
Time Switch:	Used for the MDR can switch ON/OFF at specific time;
Start Up Time:	When Time Switch "ON", the system can start up at specific time every day, its can be allow perform following functions: ● Starting the recording function (when the schedule had setup continuous recording at this period)

B) General : (con't)

● Motion based recording function; (required set to enable at this period)
● Auto content upload or download while network connected and corresponding software running at control center;
● If the system does have built-in heater, this will allow the system start the heating the Hard disk reach to operating temperature

ⓘ Remark : When the vehicle does not have ignition signal ON within 1 hour, then the system will turn off automatically, in order to avoid continuous drawing power from the vehicle battery;

Shutdown Delay: Allow the system continuous running when vehicle turn off (ignition signal OFF), it provide up to 24 hours delay shutdown. It allows the system perform:
● Continuous recording (per schedule setup)
● Motion based recording function; (required set to enable at this period)
● Auto content upload or download while network connected and corresponding software running at control center;

ⓘ Remark : when shutdown delay finished, this act as high priority to make system shutdown regardless any activities running at that moment (even content being uploading or downloading, the system will turn off eventually)

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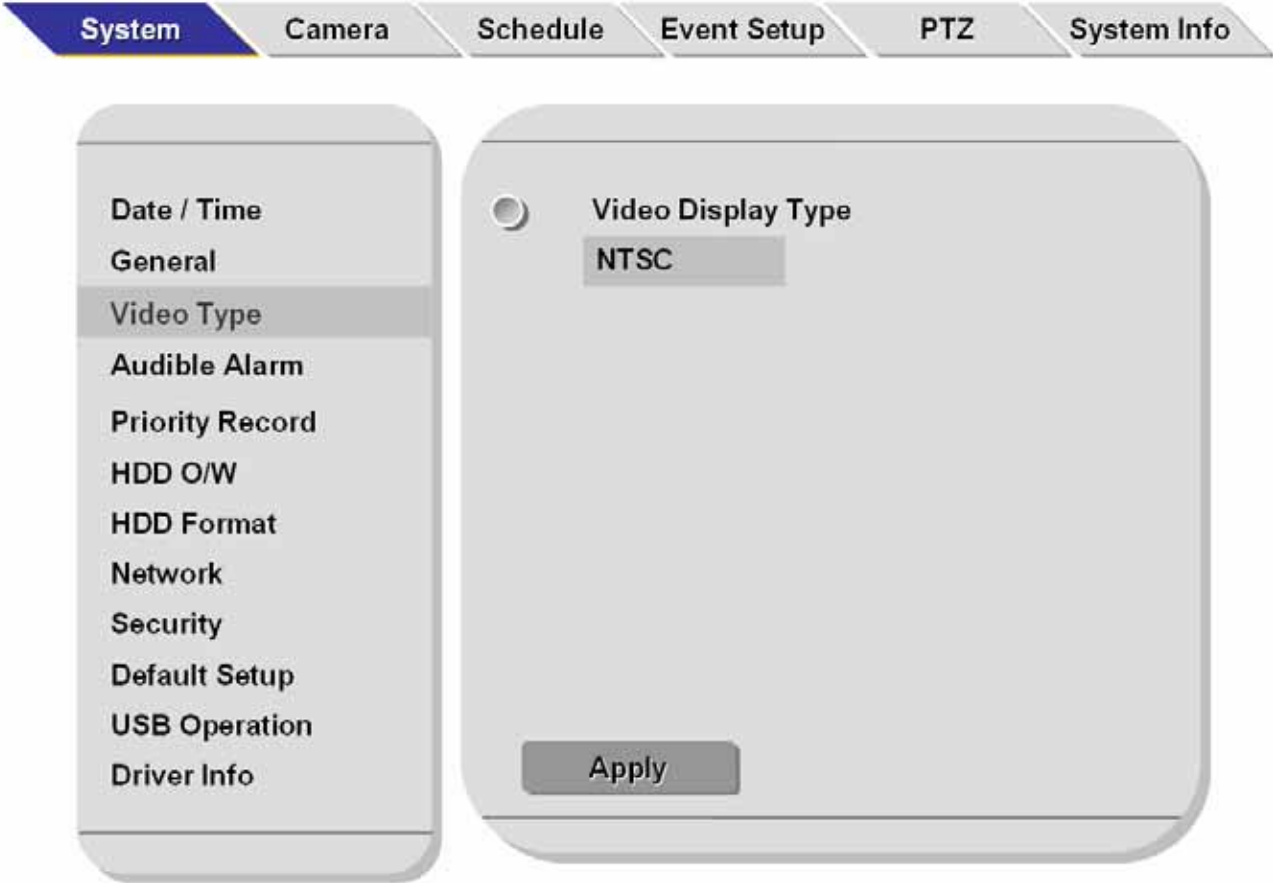
Scroll to **APPLY** and press **ENTER** to save the new settings.

D) Audible Alarm:

Press ENTER to enable or disable alarm buzzer for the external Control panel accessory. The buzzer will beep when the following conditions are met:

- **System Diagnostics**: when some system problem occurs, such as: Hard disk failure, no space for Hard disk etc;
- **Camera Failure**: due to video input signal loss;
- **Sensor Trigger**: External sensor trigger

Scroll to **APPLY** and press **ENTER** to save the new settings.
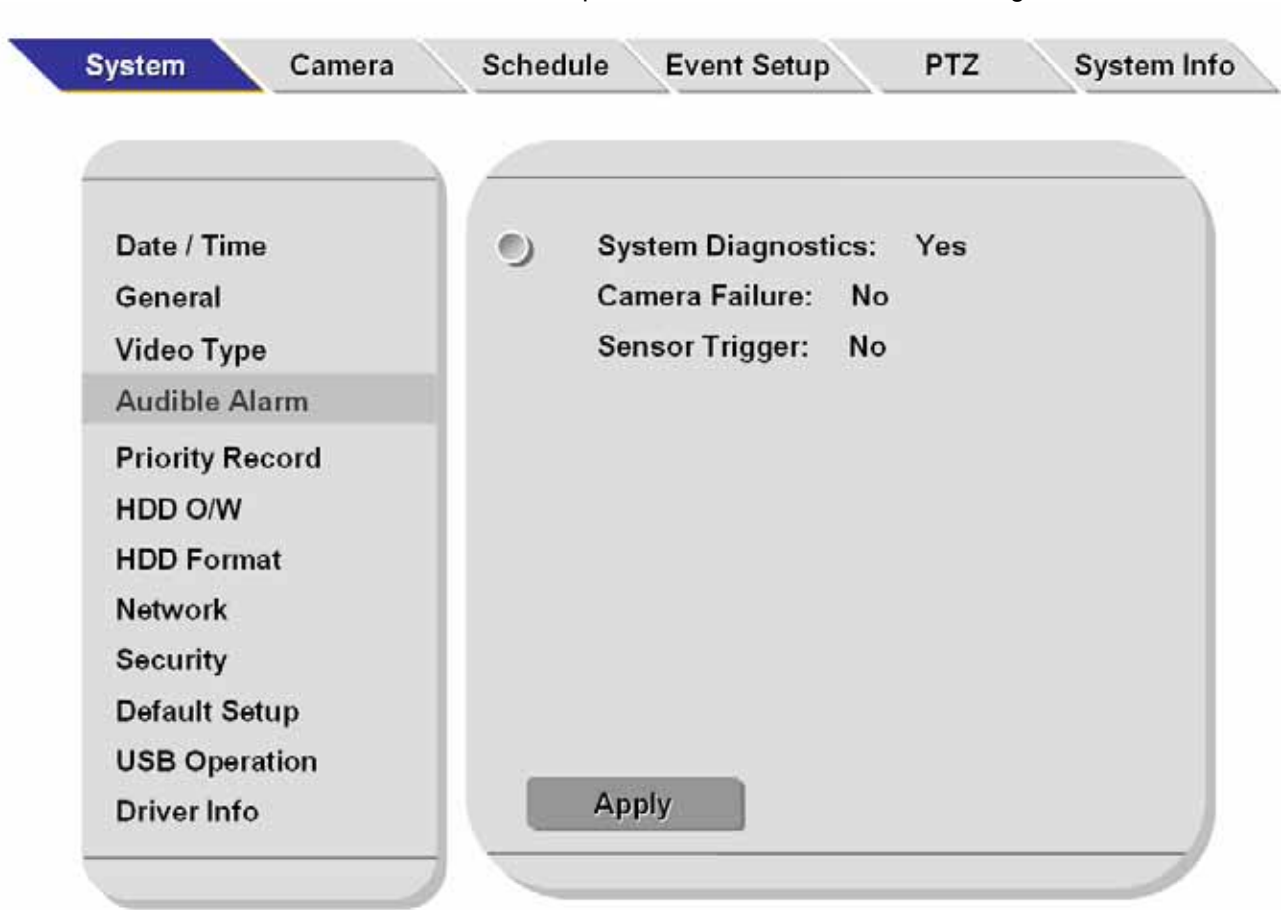
Notice: when the **Audible Alarm** on, require login as administrator to stop buzzer;

E) **Priority Record:**

Press ENTER to enable or disable Priority Record.
- Priority Recording records one frame per every second 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:

Hard disk auto overwrite function, press ENTER to switch between "ON" and "OFF".
- When the overwrite feature is "ON" MDR 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.

①Remark: The **HDD O/W** operation, will not remove those event recording when those sensor had enable to **"Lock"** feature, please refer to **"Event Setup"** section for setup detail;

System	Camera	Schedule	Event Setup	PTZ	System Info

Date / Time
General
Video Type
Audible Alarm
Priority Record
HDD O/W
HDD Format
Network
Security
Default Setup
USB Operation
Driver Info

Auto-Overwrite for HDD?

YES

Apply

G) HDD Format:

There are two options to chose from:
Format HDD: Formats the unit Hard Disk Drive
Format Compact Flash (CF) Card: Formats the CF Card

System	Camera	Schedule	Event Setup	PTZ	System Info

Date / Time
General
Video Type
Audible Alarm
Priority Record
HDD O/W
HDD Format
Network
Security
Default Setup
USB Operation
Driver Info

Hard Disk Format
HDD No: HDD

Start   Return
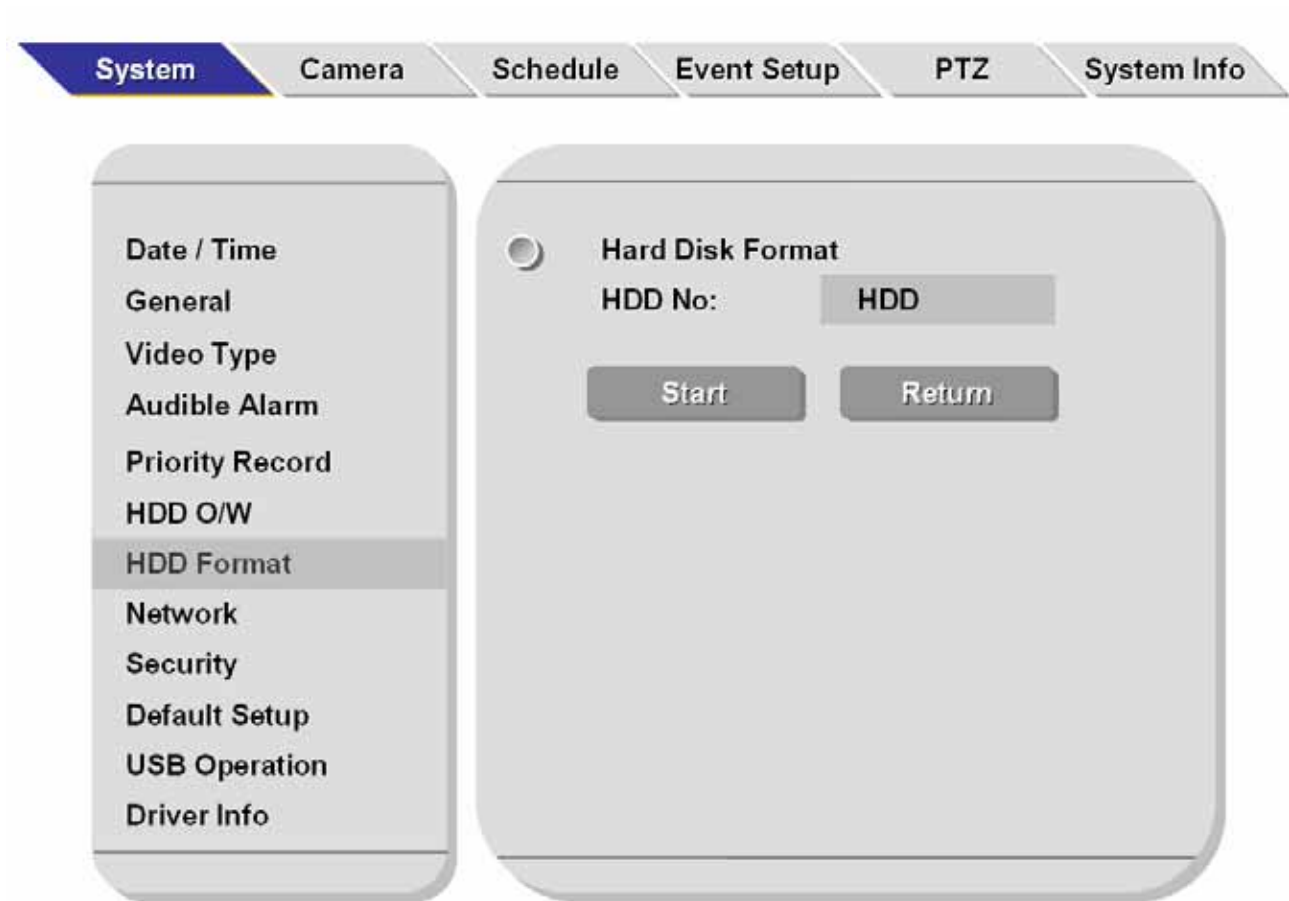
When START had been pressed, there are confirmation required from operator, select "YES" to proceed the hard disk formatting and "NO" to cancel the format operation;

G) HDD Format: (con't)

| System | Camera | Schedule | Event Setup | PTZ | System Info |

Date / Time
General
Video Type
Audible Alarm
Priority Record
HDD O/W
HDD Format
Network
Security
Default Setup
USB Operation
Driver Info

Hard Disk Format
HDD No: HDD

Start   Return

Are you sure to format the HDD? All
recording will be lost and the DVR
would restart when exit key is pressed.

YES   NO
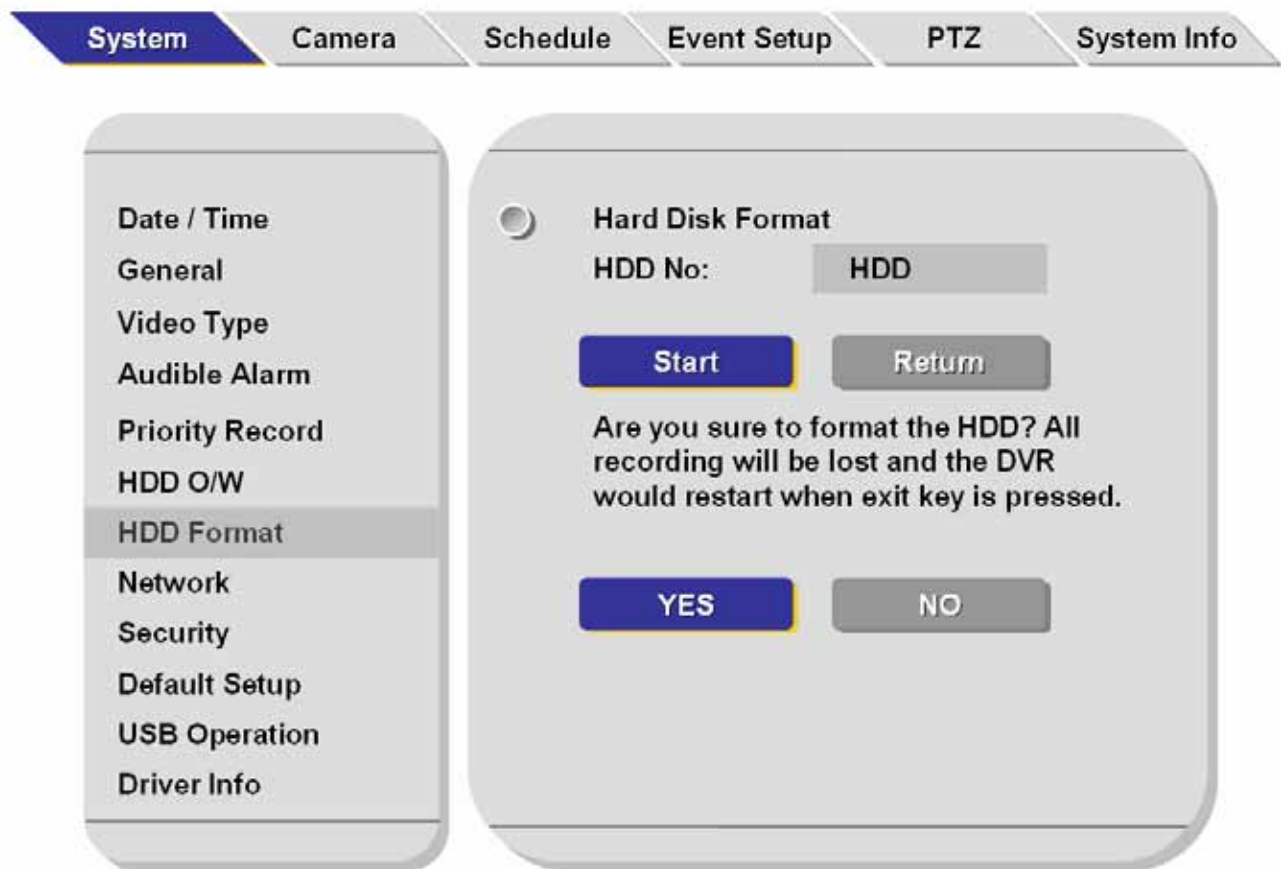
!! WARNING!!   Selecting START on this setting will erase all recorded video on the unit or the data on CF card Press ARROW keys to either choose START reformatting the disk or choose RETURN without formatting.   Press ENTER to format. Press EXIT to return to the settings.

H) **Network:**

Must enter a static IP address to use Network capabilities. Please consult with 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

Center IP:
While using the CMS (Central Management System) software, require assigned the IP address to allow MDR can sending the video and data to this destination;

Domain Name:
While using the CMS (Central Management System) software, require assigned the domain address to allow MDR can point to this destination;

Port:
While using the Client software or CMS (Central Management System) software, require assigned the port for data transferring, recommend using port number 8000, 9000, 9100 (while the system already using those 7800 and 7801 for video and audio respectively);

NTP Server IP:
Input the IP server does support NTP protocol, in order to allow the system can have time synchronization through the network. [Example: "192.43.244.18", "129.6.15.28" "131.107.1.10", "132.163.4.101", "128.138.140.44", "69.25.96.13", "208.184.49.9"]

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

System	Camera	Schedule	Event Setup	PTZ	System Info

Date / Time	○ IP Address 192.168.001.138
General	Mask 255.255.255.000
Video Type	Gateway 192.168.001.001
Audible Alarm	
Priority Record	
HDD O/W	○ Center IP: 061. 134.118.158
HDD Format	Domain Name:
Network	Port: 09000
Security	
Default Setup	NTP Server IP: 208.184.49.9
USB Operation	
Driver Info	Apply

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.

System	Camera	Schedule	Event Setup	PTZ	System Info

Date / Time	○ Password Enable YES
General	User Password ******
Video Type	Re-Enter ******
Audible Alarm	
Priority Record	Admin Password ******
HDD O/W	Re-Enter ******
HDD Format	
Network	
Security	
Default Setup	Password must be 8 digits long.
USB Operation	
Driver Info	Apply

I) Security (con't) :

e. **Re-enter:** must be same input as first password, otherwise the system would not accept the password setting when password does not match between first line and re-enter line.

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

ⓘ Notice: The password would be corresponding to remote access software, which including CMS, Client software, auto download program.. etc. Must using same password to let the program access / operating deivce remotely;
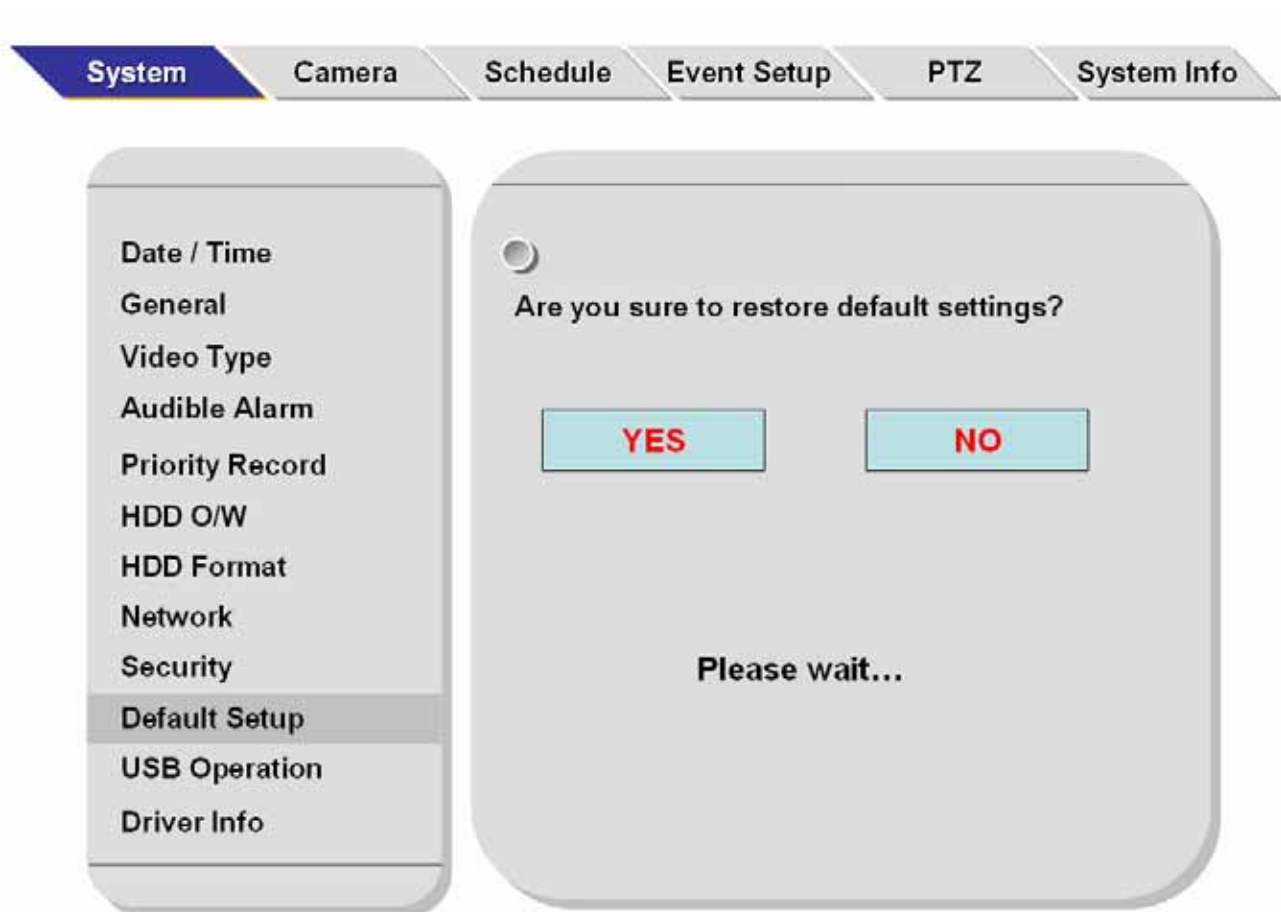
❓❓Remark❓❓: In case forgot the password, please contact with your local distributor for further help;

J) Default Setup:
User ARROW keys to switch between "YES" and "NO". Selecting YES will restore the default factory settings.

!! Warning !!: Once the default setup had been loading, all the user setting had been delete and can not recoverd.

System Default settings:

Options	Default Setting		
System			
Date / Time	**Current date and time**		
Date Mode	**MM/DD/YY**		
Weekday Start	**Monday**		
Weekday End	**Friday**		
Time Sync	**NO**		
Daylight Time	**NO**		
General			
Unit ID	**000**		
Record File Size	**60**		
Idle Time	**100**		
Time Switch	**OFF**		
Video Type	**NTSC**		
Audible Alarm	**NO (for all)**		
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 (only for Multimedia version)	**Adver Autoplay**		
Schedule	**ON, Everyday: 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**		
X Sensitive (g)	**0.2**		
Y Sensitive (g)	**0.2**		
Z Sensitive (g)	**0.2**		
Spd Source	**GPS**		

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 MDR 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 MDR 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 MDR "ads" folder. For a complete file description of the MDR hard drive layout please look at the chapter labeled as "Hard Disk File Structure" at the end of the manual.

After USB operation: please press "Exit" then the MDR will re-start and back to the normal system operation;

① NOTICE : For USB Operation: To maintain the live connection between Windows PC and MDR via USB cable, the Device Mode menu screen needs to stay active. Exiting the option will interrupt the connection.

L) **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. Scroll to **APPLY** and press **ENTER** to save the new settings.
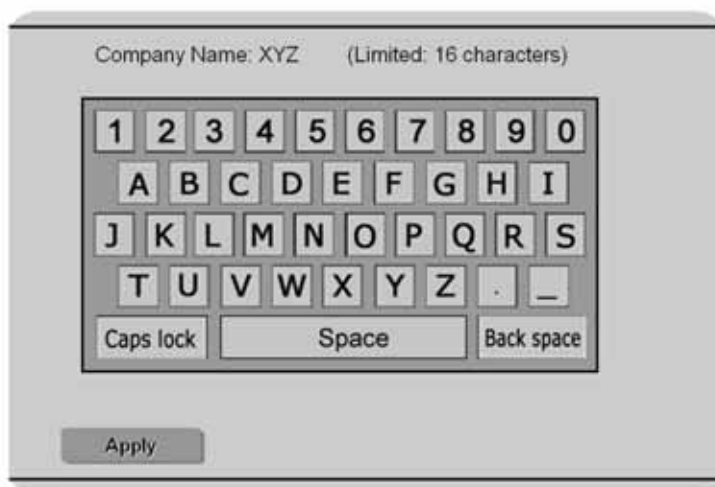
Press **EXIT** to return to the SETUP list.

V-2 Camera Setup

Camera Menu:

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

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

| System | Camera | Schedule | Event Setup | PTZ | System Info |

	Name	Quality	Audio Rec (Y/N)
Camera 1:		1	YES
Camera 2:		1	NO
Camera 3:		1	NO
Camera 4:		1	NO
Camera Num:	04 (01 - 04)		
Rate (FPS):	30		
Resolution:	CIF		
Time Insert:	OFF		

Output Model: **Camera View**

Apply

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, when there are no audio input and should make this option disable, in order to save the hard disk space;
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
    ◆   CIF: Resolution at 360x240 (NTSC), 352x288 (PAL)
    ◆   HD1:Resolution at 720x240 (NTSC), 704x288 (PAL)

Time Insert: Press ENTER to switch between "ON" and "OFF" to embed time/date in the video

Output Mode: MDR 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.

V-3 Recording Schedule:

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

| System | Camera | **Schedule** | Event Setup | PTZ | System Info |

ON

Date	Type	Schedule 1	Type	Schedule2
Every Day	Con	00:00-23:50	Con	00:00-23:59
*************	Con	00:00-00:00	Con	00:00-00:00
*************	Con	00:00-00:00	Con	00:00-00:00
*************	Con	00:00-00:00	Con	00:00-00:00
*************	Con	00:00-00:00	Con	00:00-00:00
*************	Con	00:00-00:00	Con	00:00-00:00
*************	Con	00:00-00:00	Con	00:00-00:00
*************	Con	00:00-00:00	Con	00:00-00:00

Apply

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

Type: Press ENTER to change the type of the recording mode:
- ◆ **Con:** Continuous recording
- ◆ **MBR:** Motion Based Recording
- ◆ **SEN:** Sensor Trigger Based Recording
- ◆ **M|S:** MBR and SEN Recording

Schedule 1 / 2:
◆ 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)
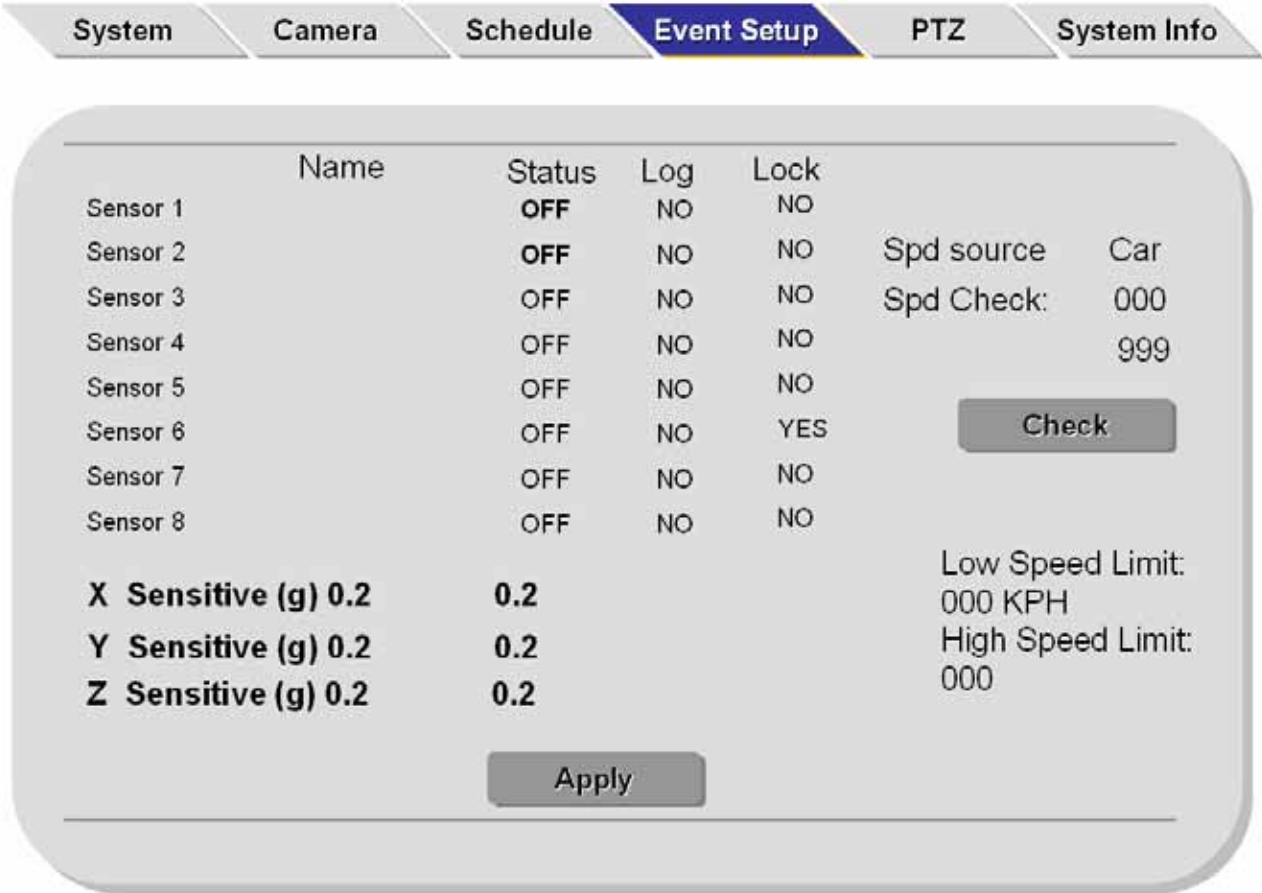
Scroll to **APPLY** and press **ENTER** to save the new settings.

V-4 Event Setup

Choose the EVENT tab and press enter to access the following menu. There are 2 option under this item: Sensor and Motion Detect:

V-4-1 Sensor Menu:

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.

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

LOG: Press ENTER to turn ON and OFF to enable or disable the input sensor to put as event log file;

LOCK: To enable the event does not erase during the over-write process of hard disk;

X / Y/ Z Sensitive (g):
This value only used when the MDR connected with inertia sensor, which can detect the vehicle acceleration force or G force. Example application as when the vehicle being driving too fast when cross the road bump, then the "Z" value would over limit, and to make the sensor trigger.
Range: 0.2, 0.4, 0,8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0

SPD Source: MDR 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 MDR to receive satellite signals for speed.
● For more information on capturing speed from speedometer please contact local distributor for more technical support;

SPD Check: Speed check is used to calibrate the offset speed when connected to the speedometer.
● Input the first line with the vehicle speed, for example at 80 (in KM/H)
● Start the vehicle and the second line will show the data from speedometer (in HZ)
● When the vehicle reach to 80 KM/H (shown in vehicle meter or dash board), and keep this speed at 30 seconds, then press the "Check" to make the system calibrate the second line (HZ) set as first line data (80);

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

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

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

V-4-2 Motion Detect Menu:

| System | Camera | Schedule | **Event Setup** | PTZ | System Info |

Sensor
Motion Detect

○ **ALL CAMERA:** **OFF**

○ **Configuration (Enter for Selection) :**

	MD	Set ALL	Area Set		MD	Set ALL	Area Set
CAM 1	OFF	●	○	CAM 3	OFF	●	○
CAM 2	OFF	●	○	CAM 4	OFF	●	○

Lock Motion: OFF
Log Motion: OFF

Apply
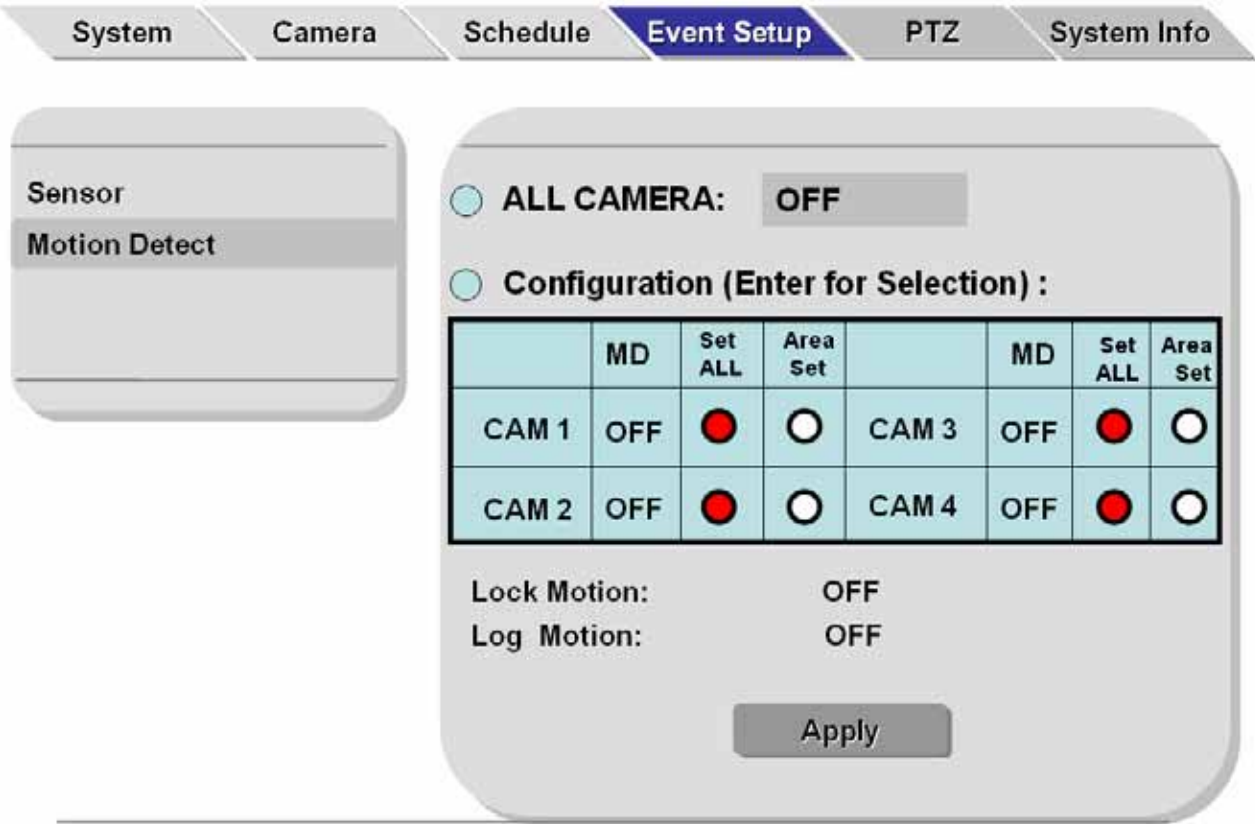
ALL CAMERA: Enable all camera with motion detection (full area) by set as ON;
Enable the individual motion detection setting for each camera by set as OFF;

Configuration: For each camera, enable / disable by ON/OFF in "MD" section;

Set ALL: Full Screen as motion detection selection;

Area Set: Select the area the allow to have motion detection block:
● Totally with 192 blocks on screen;
● Press ENTER to make the block in Green color as active block and select the block with direction keys;
● Re-press "ENTER" to trigger off to make as transparent;
● Press "Setup" to make full screen selection;
● Re-press "Setup" to trigger off the full screen selection;
● When the motion detected in the block, it will shown as red color block;
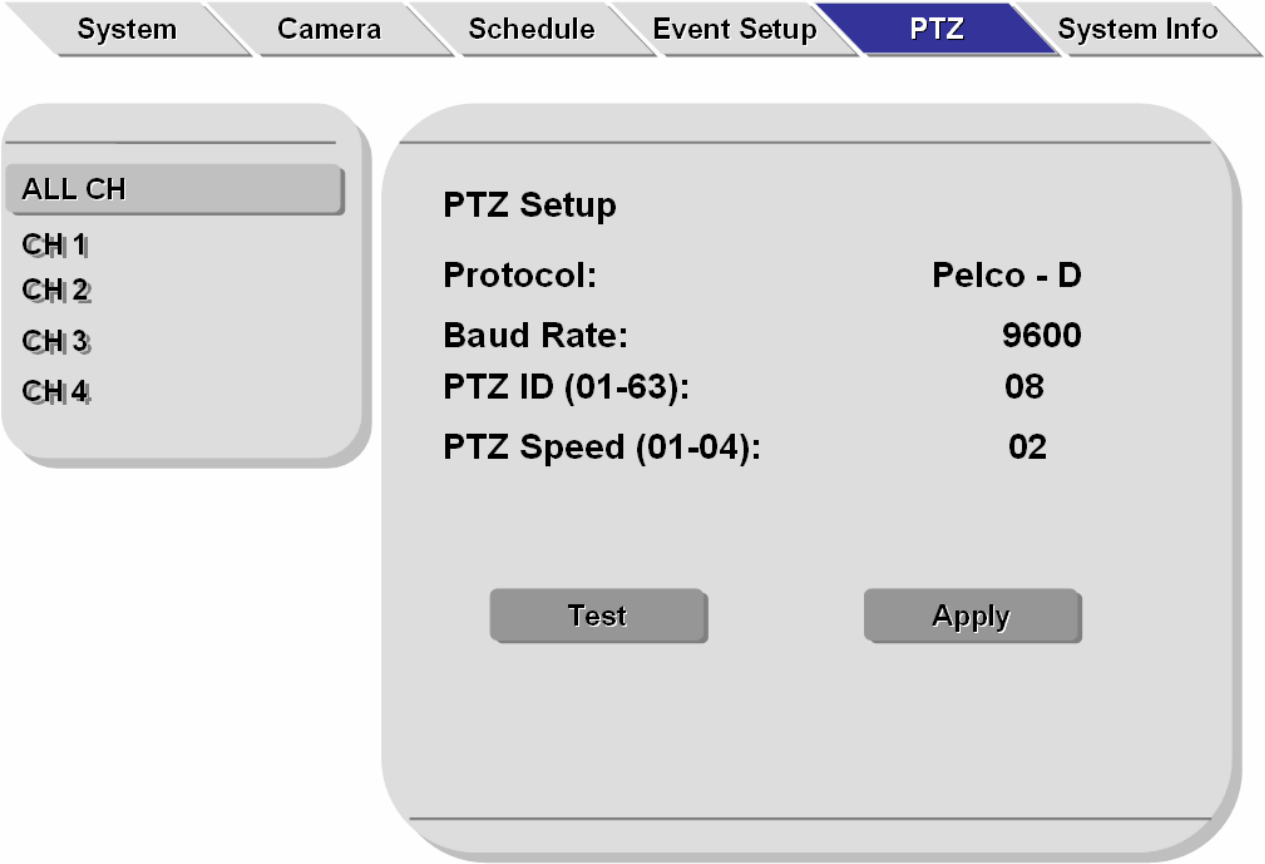
LOCK MOTION: To enable the event does not erase during the over-write process of hard disk;

LOG MOTION: Enable the motion detection in the log record file;

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

V-5 PTZ Setup:

The MDR can support to connect with PTZ (Pan/Tilt/Zoom) camera and control via the IR remote controller.

| System | Camera | Schedule | Event Setup | **PTZ** | System Info |

ALL CH
CH 1
CH 2
CH 3
CH 4

PTZ Setup

Protocol:	Pelco - D
Baud Rate:	9600
PTZ ID (01-63):	08
PTZ Speed (01-04):	02

Test   Apply

ALL CH: Enable all camera have same PTZ setting or use the CH1 ~ CH4 for difference PTZ setting with difference PTZ cameras;

Protocol: Support totally 16 protocols, which including: Pelco-D, Pelco-P, DSCP, FastDome, PIH 1016, PIH 1017, Pelco06, Pelco07, Pelco08, Pelco09, Pelco10, Pelco11, Pelco12, Pelco13, Pelco14, Pelco15.
If no corresponding protocol in here, please contact with local distributor, we can provide the technical support to add the special protocol if user can provide PTZ details information;

Baud Rate: Selectable with 1200, 2400, 4800, 9600

PTZ ID: Can allow user defined from 01 to 63 PTZ ID

PTZ Speed: PTZ turning speed level from 01 to 04, which defined as 01 for slow, and 04 as fastest.
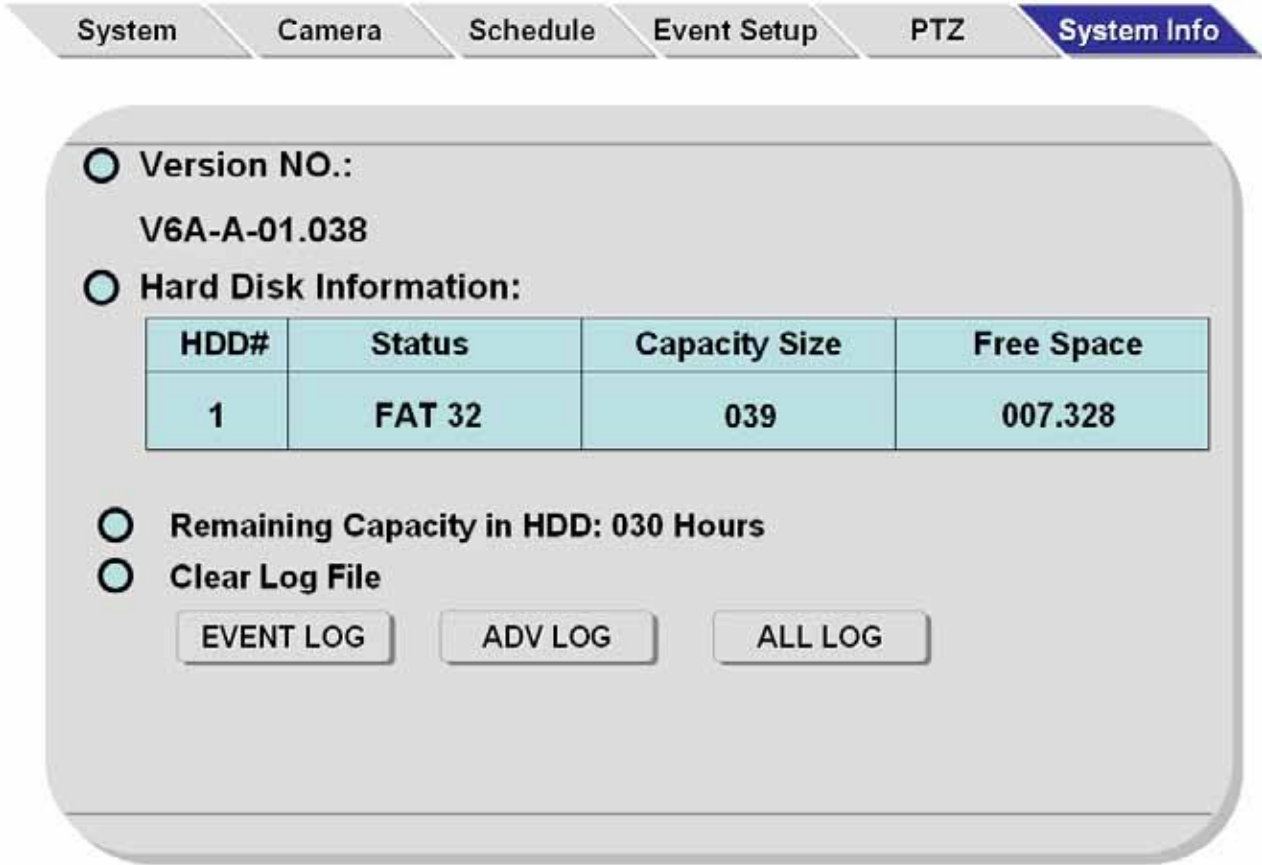
TEST: Can be test with corresponding camera with PTZ setting;

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

V-6 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.

| System | Camera | Schedule | Event Setup | PTZ | System Info |

Version NO.:

V6A-A-01.038

Hard Disk Information:

HDD#	Status	Capacity Size	Free Space
1	FAT 32	039	007.328

Remaining Capacity in HDD: 030 Hours

Clear Log File

| EVENT LOG | ADV LOG | ALL LOG |

◆ **Version No**: This is the device firmware version number, it might need to used when there are any technical question and user require to refer this information to technical support staff;

◆ **Hard Disk Information**:
This will show that the built-in Hard disk format and size. If user find the hard disk status as FAT or size as "000". Please re-format hard disk to check the hard disk status again.

◆ **Remaining Capacity in HDD**:
This show the approximately available record hours, at 4 Cameras and highest setting (HD1, Quality: 1, FPS: 12FPS)

① **Notice : The Hard disk consumption calculator available by distributor or direct dealer;**

System Information (con't):

◆ **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.**

VI. System Firmware Upgrade Procedure

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

1. 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 MDR HDD
   d) Paste the file in the "ADS" folder by pressing ctrl + v or going to Edit -> Paste
   e) Restart the unit. The system will start to upgrade automatically and the screen display with "Upgrading in progress, please wait…."

   f) During the upgrade [POW] and [ALM] LEDs will start to flash
   g) Once completed the upgrade file will be deleted automatically

2. Compact Flash upgrade Instructions:

   A Compact Flash (CF) card can also be used to update the firmware in the unit. Please follow the instructions to update the flash using the CF card:

   a) Insert a CF card into the CF slot of your Windows PC (Drive letter appears)
   b) Using Windows Explorer, format the CF card as FAT32 format. All the data will be permanently erased from the CF card.
   c) Copy the new firmware (romfs.dvr file) on the CF card
   d) Remove the CF from the PC and insert it into the slot on your MDR while power off.
   ① Notice! Please make sure the CF card insert as face down. (The CF card must show the technical label upright and any graphics label on the face down.)
   e) Upon turning the power on, the unit will automatically start to update the new firmware from the CF card. During the upgrade [POW] and [ALM] LEDs will start to flash
   f) Remove the CF card from the MDR unit once completed.

WARNING: The upgrade procedure requires no power interruption. The CF card slot on the unit is a necessary opening on the unit. Please ensure that no liquid is spilled on the slot. In addition, install the system where dust and dirt are also not likely to contaminate the opening.
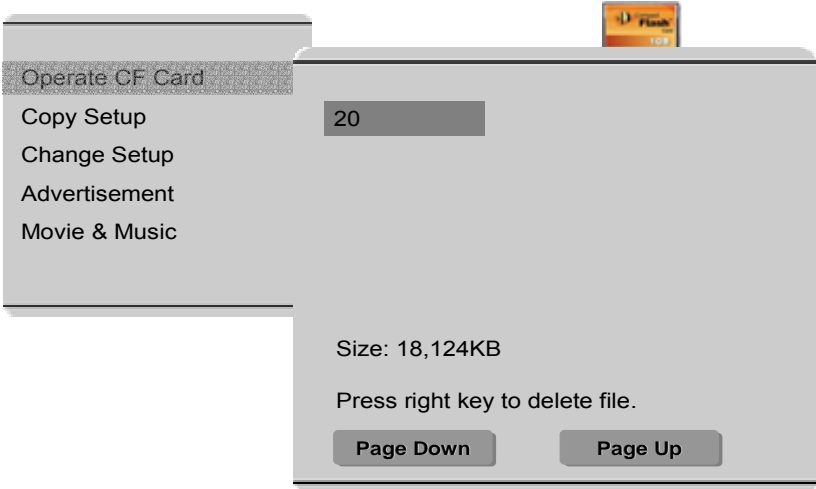
VII. Compact Flash Card management

Insert the CF Card into CF Slot, the CF Card mark will show on the screen, press [CF] button on the handheld IR. A screen will pop up with the following options:

    ① Notice!   Please make sure the CF card insert as face down. (The CF card must show the technical label upright and any graphics label on the face down.)

Operate CF Card
Copy Setup
Change Setup
Advertisement
Movie & Music
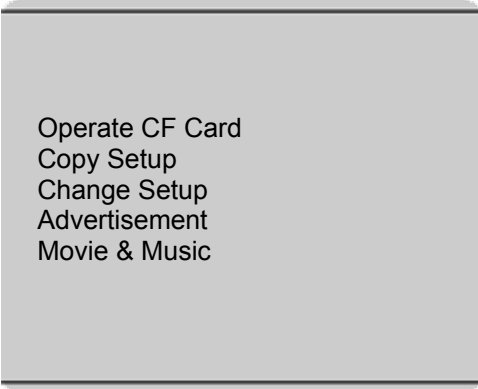
◆   **Operate CF Card**: If there are any video recorded files on the CF card this option allow to play back the recordings. Select the "Operate CF Card" and press [Enter], the screen will show as below:

Operate CF Card
Copy Setup
Change Setup
Advertisement
Movie & Music

20

Size: 18,124KB

Press right key to delete file.

Page Down   Page Up

◆ Please allow the system to show the record files on the CF card. Select the file and press [Enter] key to playback.
◆ If you want to delete the record file, press the right direction key [►].

◆ If CF does not contain any record files then "No Record" message will be displayed.

◆ **Copy Setup**: This option enables the user to copy the setup of MDR to CF Card. Use this option if the same settings are required to be applied on more than one MDR units. Once the backup finishes, take the CF card to second MDR unit and follow the Change Setup Option.

Operate CF Card
Copy Setup
Change Setup
Advertisement
Movie & Music

Please wait while the setup is backing up
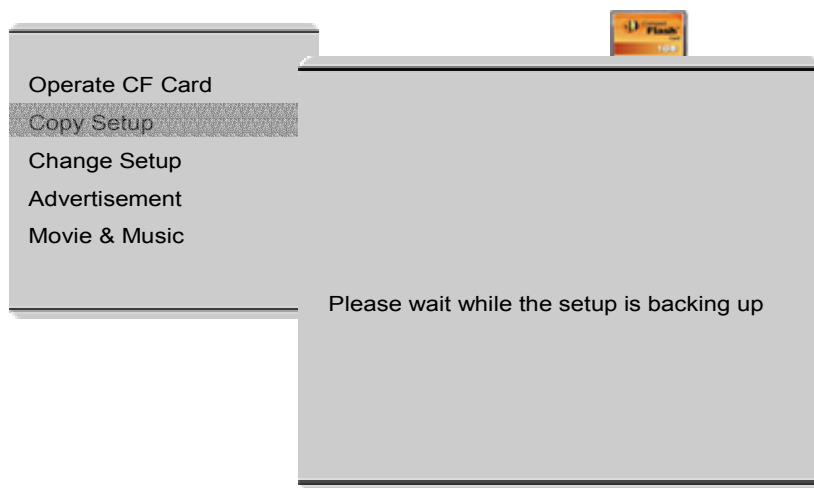
◆ **Change Setup**: This option allows changing the settings based on the setting file stored on the CF card. Select this option and press [Enter] button. A message will pop up "Changing setup…" while the setup process is changed. Once completed successfully the unit will display a confirmation message. The unit will restart for the new changes to take affect.

Operate CF Card
Copy Setup
Change Setup
Advertisement
Movie & Music

Please wait while the setup is changed
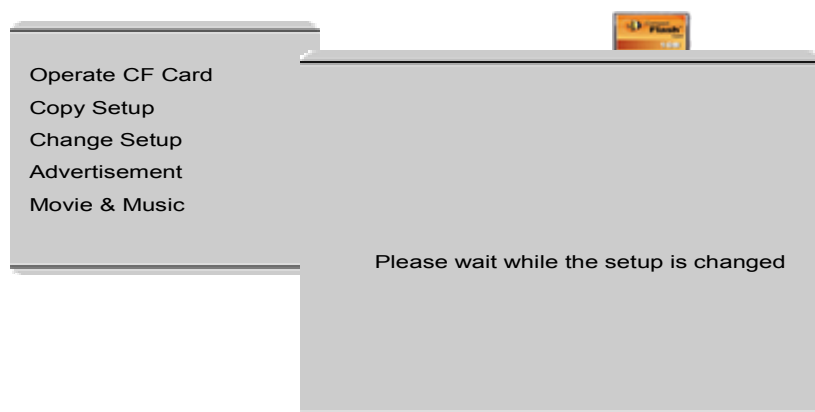
◆ **Advertisement:** Advertisement option displays the advertisement files on the CF card. Select

the desired file to upload and press [CF] button of the handheld control, the unit will copy the advertisement file to DVR. Status indicator will show the percentage of the files being copied. Once completed successfully the unit will display a confirmation message.
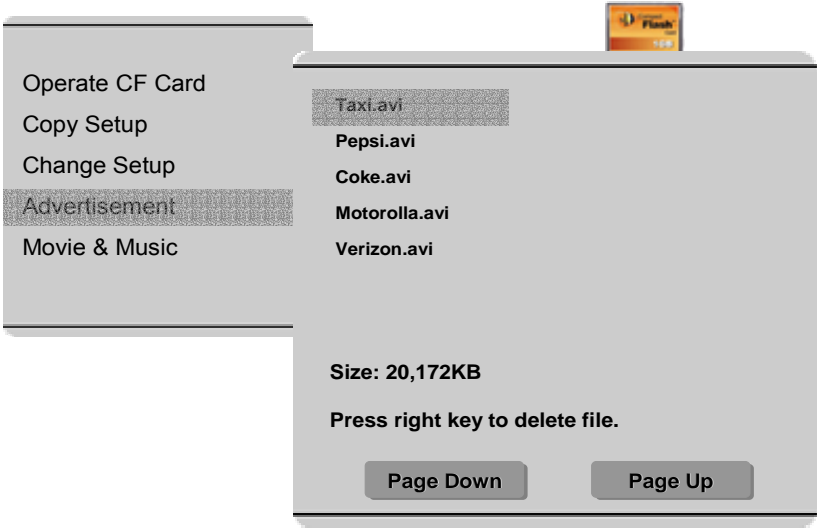
◆ **Movie & Music**: Movie & Music option displays the movie and music files on the CF card. Select the desired file to upload and press [CF] button of the handheld control, the unit will copy the file to DVR. Once completed successfully the unit will display a confirmation message.

VIII. 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	List of the advertisement file	Supported format: MPEG4, MPEG2, MPEG1 File extension : VOB, MPG, AVI, DAT
Ads_log	Log file for tracking all the advertisement playback history by DVR (this contains playback time, interval, number)	Use log viewer application to open this file (provide by)
Movie	List of the movie file	Supported format: MPEG4, MPEG2, MPEG1 File extension : VOB, MPG, AVI, DAT
Music	List of the music file	Supported format: WAV MP3 WMA
Record	Video recording	Requires client software to playback video from PC. All the record file are watermarked for authenticity
Time	System file	DO NOT DELETE THE FILE. THIS IS A NECCESSARY FILE NEEDED BY THE SYSTEM TO FUNCTION PROPERLY

IX. 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 Seed

4. The values of GPS are embedded on the video and could be retrieved by using the video playback function.

Appendix A

Pin Definition for DB37 and DB25
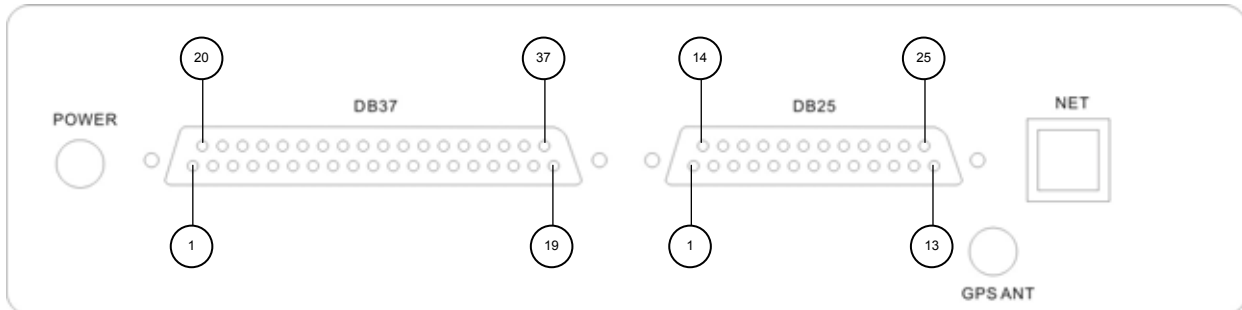
DB37	PIN	Connection	PIN	Connection	PIN	Connection
	1	V1 (Video Input 1)	15	A/D –IN2 (Analog Input 2)	29	SENSOR-IN2 (Sensor 3)
	2	V2 (Video Input 2)	16	SENSOR-IN-V (Speed Input)	30	SENSOR-IN3 (Sensor 4)
	3	V3 (Video Input 3)	17	SENSOR-IN-Z (Inertia Z input)	31	SENSOR-IN4 (Sensor 5)
	4	V4 (Video Input 4)	18	SENSOR-IN-X (Inertia X input)	32	SENSOR-IN5 (Sensor 6)
	5	A1 (Audio Input 1)	19	VCC-5V (5V Output)	33	SENSOR-IN6 (Sensor 7)
	6	A2 (Audio Input 2)	20	GND (Ground)	34	SENSOR-IN7 (Sensor 8)
	7	A3 (Audio Input 3)	21	GND (Ground)	35	A/D –IN1 (Analog Input 1)
	8	A4 (Audio Input 4)	22	GND (Ground)	36	SENSOR-IN-Y (Inertia Y input)
	9	GND (Ground)	23	GND (Ground)	37	GND (Ground)
	10	GND (Ground)	24	GND (Ground)		
	11	GND (Ground)	25	GND (Ground)		
	12	GND (Ground)	26	GND (Ground)		
	13	GND (Ground)	27	SENSOR-IN0 (Sensor 1)		
	14	GND (Ground)	28	SENSOR-IN1 (Sensor 2)		

DB25	PIN	Connection	PIN	Connection
	1	H (Video Line Output – Horizontal)	15	G (Video GREEN Signal Output)
	2	R (Video RED Signal Output)	16	GND (Ground)
	3	B (Video BLUE Signal Output)	17	V-OUT2 (Video Output 2)
	4	V-OUT1 (Video Output 1)	18	L-OUT (Audio Output – Left)
	5	GND (Ground)	19	GND (Ground)
	6	R-OUT (Audio Output – Right)	20	485-A (RS485 Signal A)
	7	VCC-12V (12V Voltage Output)	21	TX1 (RS232 Signal 1 Transmitter)
	8	485-B (RS485 Signal B)	22	RX1 (RS232 Signal 1 Receiver)
	9	GND (Ground)	23	GND (Ground)
	10	TX3 (RS232 Signal 3 Transmitter)	24	TX2 (RS232 Signal 2 Transmitter)
	11	RX3 (RS232 Signal 3 Receiver)	25	RX2 (RS232 Signal 2 Receiver)
	12	GND (Ground)		
	13	TX (Device Print Out Port [with Hyperlink]		
	14	V (Video Line Output – Vertical)		