

Network Video Recorder

with Power over Ethernet

User Manual

Model: SI10404, 4 - Channel



Model: SI10808, 8 - Channel



Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.
PLEASE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING

TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

NOTE: This equipment has been tested and found to comply with the limits for a Class "A" digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause radio interference in which case the users will be required to correct the interference at their own expense.

FCC Caution: To assure continued compliance, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This Class A digital apparatus meets all the requirements of the Canadian Interference Causing Equipment Regulations.

LIMITATION OF LIABILITY

- THIS PUBLICATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTIBILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THE THIRD PARTY'S RIGHT.
- THIS PUBLICATION MAY INCLUDE TECHNICAL INACCUACIES OR TYPOGRAPHICAL ERRORS. CHANGES MAY BE ADDED TO THE INFORMATION HEREIN, FOR THE PURPOSE OF IMPROVEMENT TO THIS PUBLICATION AND / OR CORRESPONDING PRODUCT(S).

DISCLAIMER OF WARRANTY

IN NO EVENT SHALL THE SUPPLIER BE LIABLBE TO ANY PARTY OR ANY PERSON FOR THE FUNCTION OF THE DEVICE, INCLUDING BUT NOT LIMITED TO:

- DAMAGE OR LOSS, INCLUDING DIRECT OR INDIRECT SPECIAL OR EXEMPLARY CONSEQUENCES, ARISING FROM OR RELATING TO THE DEVICE OR ITS USE:
- PERSONAL INJURY OR DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION BY THE USER:
- UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICATION OF THE DEVICE:
- CONSEQUENCES INCONVENIENCE LOSS OR DAMAGE, ARISING FROM USE OF THE DEVICE COMBINED WITH THOSE OF A THIRD PARTY:
- CLAIMS OR ACTION FOR DAMAGES BROUGHT BY PERSONS OR ORGANIZATIONS, BEING OF A PICTORIAL OR AUDITORY SUBJECT. PARTICULARLY VIOLATIONS OF PRIVACY, WITH THE RESULT THAT IMAGES ARE USED FOR PURPOSES OTHER THAN SURVEILLANCE OR BECOME PUBLIC.

PRECAUTIONS

- Please refer all work related to the installation of this product to qualified service personnel or system installers.
- Do not operate the appliance beyond its specified temperature, humidity or power source ratings.

Operating temperature must remain between 0°C to +40°C (32°F to 122°F) and below 85% humidity.

The input power source for this device is regulated **+12VDC** (and **+48VDC** for **PoE**). Performance and lifetime of hard disk drives are affected by heat. Operating temperature should be kept within the range of **20°C** to **+30°C** (**68°F** to **86°F**).

■ Handle the hard disk drives with care.

We suggest surveillance quality HDD's which are designed for the intensive read / write CCTV demands. Allow 30 seconds after removing power before moving this device, as it is possible to damage your Hard Disk Drives if they are moved while their motors are still running. Protect your HDD's from static electricity. Do not stack them or keep them upright. Do not use an electric screwdriver to repair.

- Clean only with dry cloth.
- Do not block any ventilation openings.
- Do not use the appliance near any heat sources such as radiators, heat registers, stoves or other apparatus that produces heat.
- Protect the power cord from being stepped on or pinched particularly at plugs, receptacles and the points where they exit the device.
- Do not drop metal parts through slots. This could permanently damage the device. Should metal have entered your device, turn power off immediately and contact qualified service personnel to resolve.
- Handle the device with care. Do not strike or shake, as this may cause irreparable damage.
- Do not expose the device to water or moisture, or try to operate it in wet areas. If the device becomes wet, turn off power and refer to qualified service personnel. Moisture may damage the device and even cause electric shock.
- Do not use strong or abrasive detergents when cleaning the devices case. When the dirt is hard to remove, use a mild detergent and wipe gently.
- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.
- Please note of your settings and save them. This may help when you are required to change the system configuration, or when unexpected failure or trouble occurs.
- Distributing, copying, disassembling, reverse compiling, reverse engineering, and also exporting in violation of export laws of the software provided with this product, is expressly prohibited.

Table of Contents

1. Product Overview	8
1.1 Features	8
2. Panels And Remote Control	10
2.1 Front Panel	10
2.2 Back Panel	11
2.3 Remote Control	13
3. Installations	15
3.1 Basic Connections	15
3.2 Optional Connections	17
4. Main Screen And Basic Operations	19
4.1 Text Input	20
4.2 Login And Logout	21
4.3 Basic Operations	22
4.4 Digital Zoom	24
5. Menu Display	25
5.1 Status Display	26
5.2 Volume Control	27
5.3 Video Adjustment	28
5.4 Display	29
5.5 Backup Device	31
5.6 Software Upgrade (Administrator)	33
5.7 System Shutdown (Administrator)	34
6. Setup (Administrator)	35
6.1 Pre-Camera Setup	36
6.2 Camera Setup	38
6.2.1 Video Loss Setup	40
6.2.2 Motion Setup	42
6.3 Alarm Setup	46
6.4 Main / SEQ Display Setup	48
6.5 Scheduled Record Setup	51
6.6 HDD Setup	54
6.6.1 HDD Format/Clear	56
6.6.2 Advanced HDD Setup	59
6.7 Password Setup	61
6.8 System Setup.	65
6.9 RS-232 / 485 / IR Setup	67
6.10 Network Setup	69

6.10.1 Notification Setup	71
6.10.2 FTP Setup	72
6.10.3 3G Modem Setup	
6.10.4 Advanced Network Setup	
7 DT7 Control	77
7. PTZ Control	//
8. Search/Playback/Archive (Administrator/Supervisor)	79
8.1 Search By Time	80
8.2 Search By Event / Log Display	82
8.3 Search Archived Files	84
8.4 POS Search	85
8.5 Playback / Archive For Search By Time	87
8.6 Playback / Archive For Search By Event	91
8.7 Playback For Archived Files	91
8.8 Playback / Archive For POS Search	92
9. Remote Access	92
9.1 PC Remote Access	92
Appendix A - Specifications	102
Appendix B – Time Zone Table	104
Appendix C – Keyboard Control Protocol	107
Appendix D – MS-Windows HEM Utilities	109
Appendix E – GPS Function in Remote Software with Google Earth	114
Appendix F – Protocol Converter for Multiple POS	118

1. Product Overview

This **Network Video & Audio Recorder** is designed for use as a surveillance system. It is a combination of a hard disk recorder, video multiplexer, web server and some carefully designed firmware. To achieve the highest inter-connectivity and inter-operability, this series of network video & audio recorders are all based on industry-leading surveillance technologies. State-of-the-art system architecture, a powerful compression / decompression engine, and intelligent recording algorithms, six fold operation can be easily achieved without sacrificing the increasing demands of function, performance, reliability, and availability - from the surveillance industry.

1.1 Features

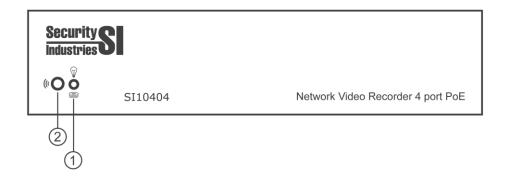
- Up to 4 or 8 CH 1080p/720p IP-CAMERAs can be connected
- H.265 or H.264 video compression & decompression with configurable quality
- G.726 (ADPCM) / G.711 (PCM) audio compression / decompression
- Record, Live View, Playback, Backup, Control, & Remote access *simultaneously*, real sixfold operation.
- Record capabilities IP-CAMERA: up to 120fps@1080p, 240/200fps@720p.
- Playback capabilities
 - IP-CAMERA: 80fps@1080p, 160fps@720p.
- 56Mbps maximum total incoming IP-CAMERA bandwidth
- Realtime live display
- HDMI and VGA outputs supported
- Touch display with USB interface supported
- Event recording, time-lapse recording or both
- Playback search by time or event (alarm, motion, or video loss)
- Snapshot video playback
- Versatile display formats: full-screen, 4, 7, and 9 split windows
- Digital zoom, X2 & X4
- Motion detection with programmable area and sensitivity
- Powerful alarm processor with configurable triggering conditions and reactions
- Push alarm notification to Android & Apple mobile phones
- 1 or 2 internal 3.5" SATA hard disk drive bays for storage <4TB per HDD
- Video & audio backup to USB2.0 storage devices

- Ethernet and USB 3G interface for remote access through web browser or proprietary remote software. Remote alarm notification, FTP video & audio storage, remote setup, and remote software upgrade
- Free DDNS server
- UPnP, P2P and QR code supported
- 1 I.E. / Firefox software for unlimited number of NVRs
- PTZ & RS-485 keyboard control capabilities
- Multi language menu support
- Multi-level password & authentication key protection ensures a high degree of security
- Dynamic streaming video for mobile phone or PDA, no Apps required
- Dynamic N-Streaming internet / intranet remote access
- iPhone / iPad / Android / Mac software app's available free
- GPS support
- POS support
- USB mouse operation supported

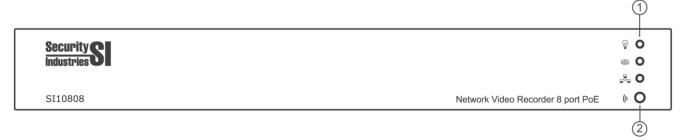
2. Panels and Remote Control

2.1 Front Panel

SI10404 Front Panel



SI10808 Front Panel

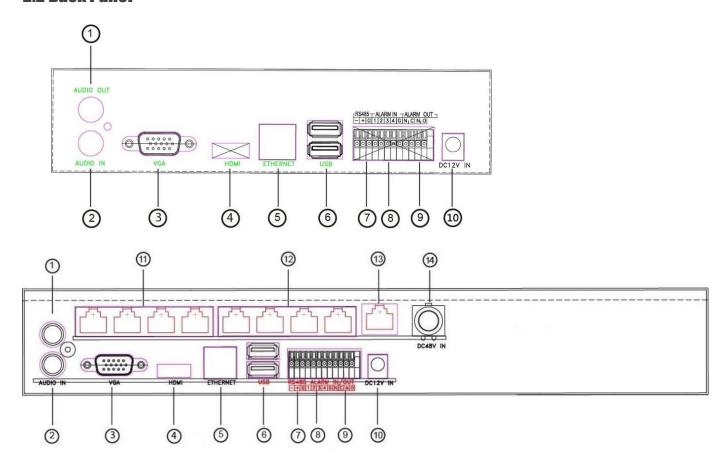


1. LEDs



2. Remote I/R Sensor ((
Receives signal from (optional) Infra Red remote Control.

2.2 Back Panel



1. Audio Output Connector (AUDIO OUT)

Recorded line out audio is supplied from AUDIO OUT during playback to external devices such as amplifiers etc.

2. Audio Input Connectors (AUDIO IN)

RCA connector accepts line-in audio signals from external devices such as microphones etc.

3. Main Monitor Output VGA Connector (VGA)

Connect VGA monitor to the optional D-SUB 15-pin female connector for main monitor display.

4. HDMI Connector

Connect HDMI monitor for main monitor display.

5. Ethernet Connector

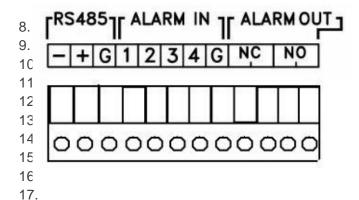
Connect to a 10/100Base-T Ethernet network through this port. Please note this connector is not used if PoE module is used (11-14).

6. USB Connectors

Connect to USB 2.0 mouse or compatible storage device, etc. An optional wireless Bluetooth USB mouse can assist concealing DVR location.

7. RS-485 Connector

Connect to RS-485 compatible PTZ camera(s) or keyboard. Please refer to the manuals with RS-485 compatible device for the correct settings. Please refer to Appendix C for the Keyboard Control Protocol for the network video recorder.



18. Alarm Input Connectors (ALARM IN 1-4)

Connect to external detectors such as sensors or door switches.

19. Alarm Output Connectors (ALARM OUT NC(1) / NO(2))

Connect NC connectors (left) to Normally Closed (NC) alarm output, or NO connectors (right) to Normally Open (NO) alarm output. Installer must choose between NC or NO connector as only one can be used at a time.

20. Power Cord Inlet (DC 12V)

Connect to **DC** +12V regulated power source. 12V vehicle power is unsuitable as it is unregulated and can reach 15V.

21. Ethernet Connectors (with PoE where fitted)

Connect these connectors to PoE IP-CAMERAs, provides +48V DC for each IP-CAMERA.

22. Ethernet Connectors (with PoE where fitted)

Connect these connectors to PoE IP-CAMERAs, provides +48V DC for each IP-CAMERA.

23. Ethernet Connector (where fitted)

Connect to a 10/100Base-T Ethernet network through this port instead of the Ethernet connector mentioned in item 5.

24. PoE Power Inlet (DC 48V)

Connect to regulated **DC +48V** power source. Powers **PoE** module.

2.3 Remote Control

The Remote Control Unit is an optional accessory that can simplify recorder operation. Instead of USB mouse you can access all operations with the RCU. The maximum distance the RCU can reach is about 10 meters over an open path, without interference from ambient light.



RCU key function descriptions include:

1. NVR ID Selection Keys (DVR #1-4)

To select the NVR to be controlled by the remote control press these keys. The remote Control can control up to 4 sets of NVR. Please make sure that the NVR ID (in IR Setup) for each of the NVRs is set correctly.

2. Alpha-numeric Keys (1-9, 0, *, #)

To select a camera, in most circumstances press these keys. These Keys can also be used to enter text and numbers in a similar way to most mobile phones.

3. Alarm Reset Key

To cancel an alarm activation and return the system to its condition before the alarm was activated, press this Key.

4. REC Key

To force manual recording, press this key. To stop manual recording, press it again.

5. MUTE /NEXT Key

To mute the audio, press this key.

6. **X2 / GOTO Key**

In full screen display, for Digital Zoom (X2/X4) press this key.

7. MENU / ESC Key

To display Main Menu or escape to an upper level display, press this key.

8. Up / BS Key (▲ / BS)

To move the cursor or focus window, under most circumstances press this key. In text editing mode, this key is used as "backspace" key.

9. Down / DEL Key (▼ / DEL)

To move the cursor or focus window, under most circumstances press this key. In text editing mode, this key is also used as "del" key.

10. Left / Right Keys (◀,▶)

To move the cursor or focus window, press these keys.

11. ENTER Key

This key is used to provide an "enter" command.

12. (Split Windows) +/- Keys (H)

In split-window display, for next / previous split-window display press these keys. In the others, press these keys to change the contents.

13. (Vol / Zoom) +/- Keys (□+/□-/○)

To change the audio volume level, press these keys.

14. MODE Key

To toggle between live mode and playback mode in main screen display press this key. In some dialogs, this key is used as a miscellaneous function key. Playing, this Key is used as "slow review".

15. **SEQ Key**

To switch to or return from SEQ display mode in main screen display, press this Key. In some dialogs, this key is used as a miscellaneous function key. Playing, this Key is used as "slow forward".

16. CALL Key

To switch to or return from full screen display of the focus camera in main screen display, press this key. In some dialogs, this key is used as a miscellaneous function key.

17. **SEARCH Key**

To display the search menu in main screen display, press this key. In some dialogs, this Key is used as a miscellaneous function key.

18. Fast Review Key (◀)

For fast review playback, press this key.

19. Fast Forward Key (►►)

For fast forward playback, press this key.

20. Single Step Key (►)

To play the recorded images frame by frame, press this key.

21. **Copy Key (1**)

To copy the playback images to the storage device connected to the USB port, press this key. Press this key again to stop copying.

22. Play/Pause Key (►/Ⅱ)

To play the recorded images or pause the playback, press this key.

23. **Stop Key (**■**)**

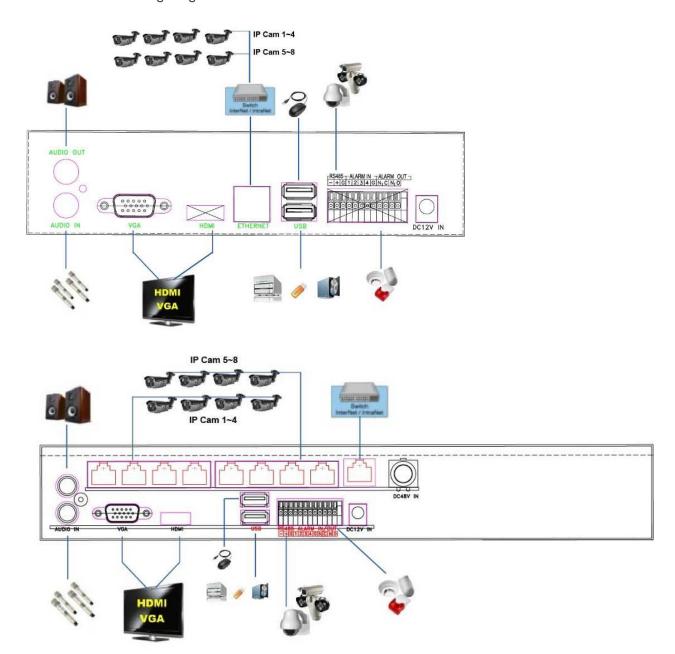
To stop the playback, press this key.

3. Installations

Installations should be made by qualified service personnel or experienced system installers.

3.1 Basic Connections

Refer to the following diagram for connections.



■ Cameras

Connect the IP-CAMERAs to the upper Ethernet ports (for PoE models). Ensure the related configuration described in <u>Section 6.1</u> are setup.

■ Main monitor

Connect the main monitor output (VGA/HDMI) connector to a surveillance TV or VGA monitor. The displays select live or recorded cameras in any available split window format.

■ Hard disk drive

Install at least one Surveillance quality 3.5" SATA hard disk (Max. storage size >4TB) inside the NVR. Follow these steps:

1. Power down the device, and use a hand screwdriver to remove the case cover.



2. Connect the cables to the SATA HDD.



3. Hold the HDD in place, and use a screwdriver to fix it.



4. Replace the device's cover and the securing screws.



Note 1: The HDD must be formatted before it can be used to record video / audio. Please refer to Section 6.6.1 to format the HDD.

■ Power

Connect DC 12V power source to regulated **DC 12V**, vehicle 12V supplies are not suitable. Also connect DC 48V power PoE source to regulated **DC 48V**.

3.2 Optional Connections

Audio input

Connect the audio input to the audio line-out from a suitable audio source. Associate the audio input with the most relevant cameras in Camera Setup, as described in Section 6.2.

Audio output

Connect the audio output to the audio line-in from amp or speakers.

■ Alarm input

Connect the alarm inputs to NC and / or NO type alarm signals. Setup the alarm configurations as described in <u>Section 6.3</u>.

Alarm output

Connect the alarm output #1 to an NC alarm device, or alarm output #2 to an NO type alarm device.

■ Ethernet

For remote access via LAN or internet, connect the (WAN) Ethernet connector to a standard twisted-pair Ethernet cable. Setup the related configurations as described in <u>Section 6.10</u>.

■ USB 2.0 disk drives, DVD+RW, card reader, etc.

To use a USB2.0 peripheral device to retrieve important recorded images and / or audio, insert it into the USB2.0 port connector.

■ I/R remote Control (optional)

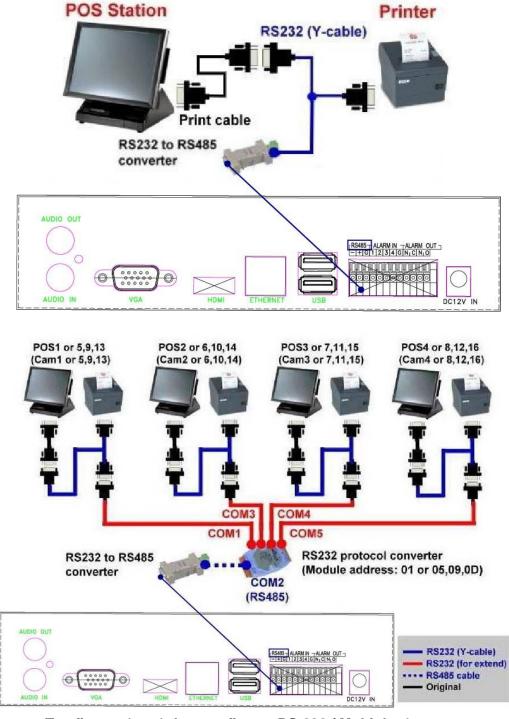
A compatible I/R remote control may be used to control the recorder.

■ RS-485 keyboard or Terminal

Connect the RS-485 connector to a RS-485 keyboard Control or VT-100 terminal via the appropriate cables. Please make sure to setup the RS-485 configurations as described in Section 6.9. Refer to Appendix C for the Keyboard Control Protocol for the digital video recorder.

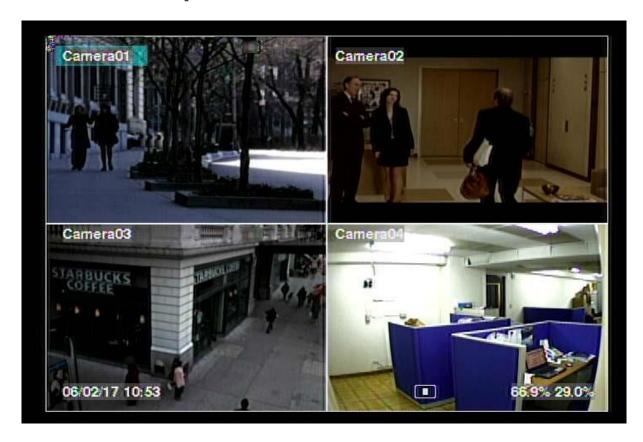
■ POS system

Connect the RS-485 connector to POS system via the appropriate cable. The system supports the POS systems which can be connected to the following printers – Epson-TM200, Epson-TMU295, Epson-TMU300, Epson-TMU675, Epson-TMT882, Epson-RPU420, and Epson-MD332S. Please be sure to setup the RS-485 port (Section 6.9).



Top figure: 1-to-1; bottom figure: RS-232 / Multiple, 1-to-many

4. Main Screen And Basic Operations



The split-window screen shown above, is the main screen after system startup. There are several types of split-window screens, including 1, 4, 7, and 9-Window. The system remembers the last selection before normal system shutdown (as described in <u>Section 5.7</u>). In addition to the split windows, system time is displayed in the lower-left corner, system states on the lower-right corner, and any rolling screen messages, if shown while certain event occurs, on the lower corner.

The system states, from right to left, are described as follows:

- (1) Normal recording percentage,
- (2) Alarm recording percentage,
- (3) X2 state X1, X2, or X4,
- (4) Manual record ON/OFF REC shown for ON,
- (5) Backup state Backup icon shown for backup, and
- (6) SEQ display ON/OFF or playback state SEQ icon shown for SEQ display ON, other icons for different playback states.
- * If mouse is connected, the mouse operation icons will show when the mouse cursor is moved to the bottom of the screen.
- * Recording icon, Motion, & Alarm for the camera may show after camera title.

4.1 Text Input

There are certain circumstances that the system requires the user to enter text, such as system login, camera title setup etc. Please follow the steps below to enter text:

- (1) Press **ENTER** to edit the highlighted option. The flashing cursor will show to indicate the edit point.
- (2) Press ◀ or ▶ to move the cursor to the left or right.
- (3) Press **code** in text editing mode to change text case. (If this entry can accept number only, pressing **code** will have no effects.) Indicators on the screen show the current setting:

123 = Number only

abc = No capital letters

ABC = All capital letters

CODE = Internal code for the selected language, such as Chinese, Japanese, etc.

- (4) Press a number key (1-9, 0) repeatedly until the character you want appears (1 for 1 or space, 2 for 2, a/A, b/B, or c/C, etc.). If internal CODE is selected, a CODE box will show (after the first code is entered) for each new code to be entered. Please check the internal code table for the selected language. For 2-byte code, e.g. Chinese or Japanese, the code accepted is from 0000 FFFF.
- (5) Press **mark** to bring up a list of punctuation marks and special characters. The highlighted character in the list shows the selected one. Press ▲ ▼ ◀ ▶ to change the selection.
- (6) If you make a mistake, press **BS** to remove the character to the left of the cursor, or press **DEL** to delete the character at the current cursor position.
- (7) In text editing mode, internal code box, and mark list, press **ENTER** to exit and save changes, press **ESC** to exit without making changes.

Note: If the user clicks on the left Key of the mouse on the item, a **Keyboard Simulator** will show. Click on '#' (or "abc", ..) to change text case. Click on the alpha-numeric characters to enter text (or CODE). Click on '*' for **mark**.

4.2 Login And Logout

There are three preset password levels in the system, including **Administrator** (highest), **Supervisor**, and **Operator** (lowest). Besides, the system also provides **Customized** password level. If the user does not login the system, he/she will be treated as "Guest" and can only view live video display.

The system allows up to 18 user accounts. The administrator can set up the login name and password for each user. (Please refer to <u>Section 6.7</u> for Password Setup.)

The Operator can operate live video display, the Supervisor live video display, image playback and archive, and the Administrator everything.

To login/logout the system, press **MENU** in split-window display to call up Menu display, and then press **ENTER** when the highlighted option is **Login/Logout** to enter Login/Logout display as shown.



In Login/Logout display, follow the Text Input method described in <u>Section 4.1</u> to enter the **Login name** and **Password**, press $\blacktriangle \blacktriangledown$ to highlight and select **Login** option, and then press **ENTER** to login the system. If the user wants to logout the system, just press $\blacktriangle \blacktriangledown$ to highlight and select **Logout** option, and then press **ENTER**. Press **ESC** to exit without making changes.

There is one factory-preset login name/password aa/11 at **Administrator** level. The user can use it to login the system for the first time.

Should the user have forgotten all the administrator-level passwords, please contact the local dealer or installer to fix it.

4.3 Basic Operations

The basic user's operations after he/she has logged into the system are described below:

- Number (Mouse: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16)

 Press these Keys to switch to the full-window display for the camera.
- Alarm Reset (Mouse: □□)

 Press this Key to cancel alarm activation, i.e. reset the alarm outputs and silence the buzzer.
- MODE (Mouse: (Administrator/Supervisor)
 In split-window display, press this Key to change circularly the live/playback mode for the focus window and the other windows that form a rectangle on the screen.
- CALL (Mouse: left-click in focus camera window)
 In split-window display, press this Key to switch to or return from full screen display of the focus camera.
- SEARCH (Mouse: (Administrator/Supervisor)
 In split-window display, press this Key to display the search menus. The system will remember the last one the user chose.
- Press this Key to force manual recording. To stop manual recording, press it again. All cameras will be recorded as if the scheduled record is A/V, and REC will show on the lower-right corner of the screen if manual recording is ON.
- MENU (Mouse: Light Click)
 In split-window display, press this Key to display the versatile menu. At playback, press this Key for the snapshot of the playback video.
- PTZ (Mouse: In split-window display, press this Key to enter PTZ control mode if the focus camera is a PTZ camera.

■ X2 (Mouse: 🍑)

In full screen display, press this Key to enter Digital Zoom mode. Please refer to <u>Section 4.4</u> <u>Digital Zoom</u> for the detailed operations in Digital Zoom mode.

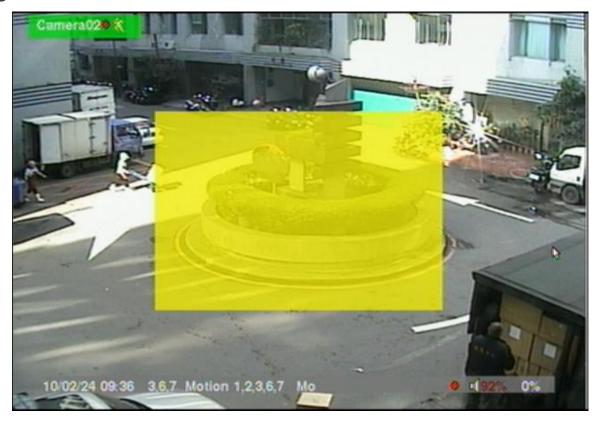
■ **▲** ▼ **◆** ► (Mouse: left-click)

Press these Keys to move focus. The title of the camera for the focus window is highlighted as shown on the screen.

- Vol+/- (□+/□-), MUTE (Mouse: □)
 Press these Keys to control the volume.
- +/- (Mouse: Press these Keys to circulate up/down among the available split-window displays.
- PAGE (I/R remote Control: #, Mouse: current split-window icon)
 Press this Key for page down in multi-split-window displays.
- ENTER (Mouse: 🍱)

Press this Key to display the **GPS/POS** data if there's GPS/POS data fed to the DVR/NVR. Please select the Type (GPS or POS), Position, Background, Rows, and number of Characters on the screen, and then press **ENTER** to display the GPS/POS data, or **ESC** to cancel. **The user may also enable/disable OSD display for certain fields in main screen.** In **GPS/POS display**, press ▲ ▼ for page up/down, press **ENTER** to close it, or press **MENU/SEARCH/..** to call up the corresponding display as if there's no GPS/POS display.

4.4 Digital Zoom



The system supports X2/X4 Digital Zoom function. To use this function, press **X2** Key (**Mouse:**) in full screen display to enter Digital Zoom mode. There will be a zoom window shown in the video window as shown. The zoom window (a) will always show at zoom factor X1, (b) can show or hidden at zoom factor X2, and (c) will never show at zoom factor X4. The operations in Digital Zoom mode are as below:

■ ▲ ▼ ◀ ► (Mouse: Click in the video window)

Press these Keys to

- (a) move the zoom window if it's shown in the video window, or
- (b) navigate the video window around if the zoom factor is X2 or X4.

■ ENTER (Mouse: Click in the video window)

Press this Key to zoom in the zoom window, from X1 to X2 or from X2 to X4, if the zoom window is shown in the video window.

■ X2 (Mouse: **△**)

Press this Key to

- (a) show/hide the zoom window if the current zoom factor is X1/X2, or
- (b) zoom out the video window back to zoom factor X1 if the current zoom factor is X4.

■ ESC (Mouse: Mouse or Right Click)

Press this Key to escape from Digital Zoom mode, and return to normal full screen display. The video window will always return to zoom factor X1.

5. Menu Display

In split-window display, press **MENU (Mouse:)** to call up Menu display as shown.



There are a variety of displays under Menu display. In Menu display and all the subsequent displays, the items enabled are shown in black-colored text, and those disabled in white-colored text. Please refer to <u>Section 4.2</u> for Login/Logout display.

The user's operations are described as the followings:

Press these Keys to change the highlighted item.

■ ENTER (Mouse: Click in the menu item)

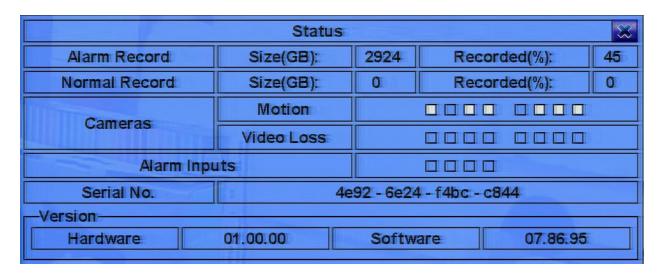
Press this Key to enter the detailed display of the highlighted option. For the details of each option, please refer to the following sections.

■ ESC (Mouse: Right Click)

Press this Key to escape from Menu display, and return to split-window display.

5.1 Status Display

In Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Status**, and then press **ENTER** to call up Status display as shown.



Status display includes Alarm Recording Status, Normal Recording Status, Camera Status, Alarm Input Status, Product Serial Number, and Product Version Number. Press **ESC** (Mouse: Right Click) to escape from Status display, and return to Menu display.

5.2 Volume Control

In Menu display, press $\blacktriangle \lor \blacktriangleleft \blacktriangleright$ to change the highlighted option to **Volume**, and then press **ENTER** to call up Volume Control display as shown.

Volume Control 💥			
Audio	Mute	Volume	
Live #1	-	9	
Live #2	-	9	
Live #3	-	9	
Live #4	-	9	
Live #5	-	9	
Live #6	-	9	
Live #7	-	9	
Live #8	-	9	

The general operations are as below:

■ ▲ ▼ ◀ ► (Mouse: Click in the respective item)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Menu display. If the contents have been modified, a Save dialog will show to ask the user to save the changes, press **ENTER** to exit and save, **ESC** to exit without saving.

Following is a brief description for each item and its specific operations:

- Mute to mute the selected audio channel. Press ENTER or +/- to check/uncheck this item. The default setting is "-" unchecked.
- **Volume** the volume of the selected audio channel. Press +/- Keys to change the value (1-10).

5.3 Video Adjustment

In Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Video Adjustment**, and then press **ENTER** to call up Video Adjustment display as shown.



There are 4 items which can be adjusted, including Brightness, Contrast, Hue, and Saturation. The operations are as below:

- Press these Keys to select t
 - Press these Keys to select the items.
- Number (Mouse: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16)

 Press these Keys to change the camera.
- +/-Press these Keys to adjust the selected item.
- SEQ (Mouse: □)

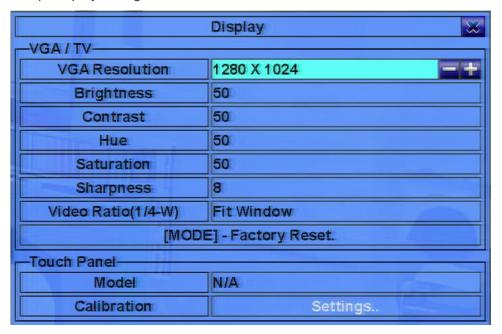
 Press this Key to reset the settings for this camera to factory default values.
- CALL (Mouse: □□)

 Press this Key to reset the settings for all cameras to factory default values.
- MODE (Mouse: Press this Key to restore the values.
- ESC (Mouse: or Right Click)

 Press this Key to escape from this screen, and return to Menu display. The settings will be saved for future reference.

5.4 Display

In Menu display, press $\blacktriangle \lor \blacktriangleleft \blacktriangleright$ to change the highlighted option to **Display**, and then press **ENTER** to call up Display dialog as shown.



There are several items which can be adjusted, including Resolution, Brightness, Contrast, Hue, etc. Besides, Touch panel models are also supported. The operations are as below:

- ▲ ▼ (Mouse: Click in the respective item)

 Press these Keys to select the items.
- +/Press these Keys to adjust the selected item.
- MODE (Mouse: Left click)
 Press this Key to restore the items above to factory default values.
- Touch Panel Model the models supported are LP080S/LOF150B5A. Press +/- Keys to change the supported model. If your touch panel is not listed, you may still select one of the supported models, and use Calibration Settings to try to calibrate the touch panel. However, it's not guaranteed to be successful.
- Calibration Settings.. used to calibrate the touch panel. Press ENTER (Mouse: Left click) in Settings.. to call up Calibration display for the touch panel. Please follow the screen instructions to touch the center of mark until successful or failed.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen. If the contents have been modified, a Save dialog will show, press **ENTER** to exit and save, **ESC** (**Mouse: Right Click**) to exit without saving. Please note that the display may not be able to support the resolution newly selected, and hence the display will show nothing. If so, please press **ESC** or wait for 15 seconds to restore the original resolution. If users press **ENTER** to accept the resolution change, the system will reboot. If the display shows nothing after reboot, please press **MENU**, ◀, **ENTER**, **MODE**, **ESC**, **ENTER** one by one to reset the settings to default, and the system will reboot.

5.5 Backup Device

In Menu display, press ▲ ▼ ◀► to change the highlighted option to **Backup Device**, and then press **ENTER** to call up **Backup Device** display as shown below.

Backup Device				
Devices	Status	-	Configuration	
USB Drive	-	Connect	Backup	Restore
USB DVD		Connect	Backup	Restore

The system supports a variety of USB 2.0 storage devices, including Storage Disk such as USB 2.0 storage disk drives and DVD Disc (including DVD+RW, DVD+R, and DVD-R). (DVD-RW is not supported.) The operations are as below:

Press these Keys to select the items.

- ESC (Mouse: Right Click)
 - Press this Key to escape from this screen, and return to previous display.
- Connect/Disconnect If the backup device is disconnected (as shown in Current Status), please plug the device in the USB port and/or insert a DVD for DVD device, and then press ENTER (Mouse: Left click) to command the system to connect with it. If the device is already connected (EX. R/W Read/write, as shown in Current Status), please press ENTER (Mouse: Left click) to command the system software to disconnect with the device, and then unplug the device from the backup port.
- Note 1: DO NOT format the DVD disc for better performance and compatibility.
- Note 2: Before using USB pen drive, please format it to FAT32 file system by MS-Windows.
- Note 3: The backup device has to be connected by the system software before it can be used to read/write. If it failed to connect, please unplug the device, and then plug the device in the USB port again.
- Note 4: Some backup devices may have compatibility problems. Please contact your local dealer or installer for the supported devices.

■ Backup

Press ENTER (Mouse: Left click) when this item is selected to backup the configurations of this unit to the corresponding USB device. The user may enter the directory to backup the configurations to.

■ Restore

Press ENTER (Mouse: Left click) when this item is selected to restore the configuration files in the corresponding backup device to this unit. The user may enter the directory to restore the configurations from.

Some USB 2.0 Devices Tested

USB-Storage Enclosures 5.25" – Macpower's Alumni Prefect USB 2.0 - PF-U2MS

USB-Disk Storage —
Transcend's JetFlash 150/V60 Series, JetFlash V33 8GB
Apacer's Handy Steno AH220
Pretec's i-Disk Wave 512M-Black
Kingston's DataTraveler USB Flash Driver(DTI/512FE)
Kingston's DataTraveler DT100 8GB
SanDisk's Cruzer micro USB Flash Driver
Sandisk's Cruzer Titanium 4GB, Cruzer Contour 4GB
Sony's MICRO VAULT Classic Series
OCZ's ATV 4GB, Rally2 4GB

DVD Writer -

Asus DRW-1608P Series

Pioneer DVR-A11, DVR-X152 Series

BenQ EW200G Series

LITEON LightScribe DVD Writer SHM-165H6S, 20X DVD Writer DX-20A4P

Sony DVD/CD Rewritable Drive Model DRX-810UL Series

NEC DVD/CD Rewritable Drive Model ND-4550A Series

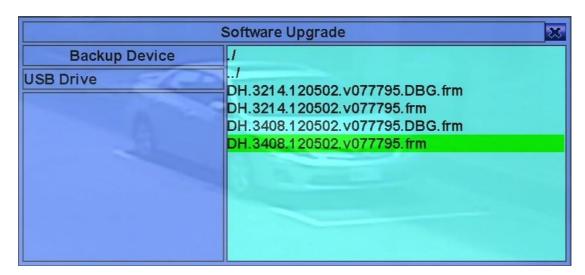
HP dvd9404e External 18X Super Multi DVD Writer Series

Some DVD Discs Tested – Only single-side, single-layer disc supported

Infomedia DVD+R 16X
Mitsubishi DVD+RW 1-4X
Philips DVD+RW 1-4X
Ritek DVD-R 8X, DVD+RW 1-4X
Verbatim DVD+RW 1-4X

5.6 Software Upgrade (Administrator)

In Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Software Upgrade**, and then press **ENTER** to call up Software Upgrade display as shown.



The operations are as below:

■ ▲ ▼ ◀ ► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Menu display.

Following is a brief description for each item and its specific operations:

- Backup Device press ENTER (Mouse: Left click) to call up Backup Device dialog (if there's no backup device connected).
- **Disk Storage** to select the disk storage to upgrade. Press +/- Keys to select the available storage.
- Upgrade File press ENTER (Mouse: Left click) to start the upgrade process when the highlighted file is a correct upgrade file. A confirmation dialog will show on the screen, press ENTER to confirm to upgrade the system software.

Note: After the software is upgraded, the system will restart immediately. The split window display will show after restart, please wait a moment.

5.7 System Shutdown (Administrator)

In Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Shutdown**, and then press **ENTER (Mouse: Left click)** to shutdown the system. A confirmation dialog will show on the screen, press **ENTER** to confirm the shutdown. The system will save all the files and all the states, and then display a power-off message in the rolling screen message area. The user may power off the system safely when the power-off message is shown.



6. Setup (Administrator)

In Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Setup**, and then press **ENTER** to call up Setup Menu display as shown. (To enter Setup Menu display of the system, please login as Administrator first.)



The user's operations are described as the followings:

Press these Keys to change the highlighted item.

■ ENTER (Mouse: Left click)

Press this Key to enter the setup of the highlighted option. For the details of each option, please refer to the following sections.

■ ESC (Mouse: Right Click)

Press this Key to escape from Setup Menu display, and return to Menu display.

If the user wants to reset all the settings to factory default values, he/she may press ▲ ▼ ◆ ► to change the highlighted option to **Factory Defaults**, and then press **ENTER**. A confirmation dialog will show, press **ENTER** again to make the changes, **ESC (Mouse: Right Click)** to not do it.

6.1 Pre-Camera Setup

In Setup Menu display, press ▲ ▼ ◀► to change the highlighted option to **Pre-Camera**, and then press **ENTER** (**Mouse**: **Left click**) to call up Pre-Camera Setup display.

There are up to 8/4 IP CAM which can be connected to the system. The Pre-Camera Setup allows the administrator to define some fundamental attributes for the cameras.

Pre-Camera Setup				
Compression		High		
Watermark			J	
Camera	Туре	Resolution	PTZID	IPCAM
1	IPCam 1	1080P	N/A	Settings
2	IPCam 2	1080P	N/A	Settings
3	IPCam 3	720P	N/A	Settings
4	IPCam 4	720P	N/A	Settings
5	IPCam 5	720x480	N/A	Settings
6	IPCam 6	1080P	N/A	Settings
7	IPCam 7	720P	N/A	Settings
8	IPCam 8	720P	N/A	Settings

The general operations are as below:

Press these Keys to select the items.

■ Number

Press these Keys to select the camera.

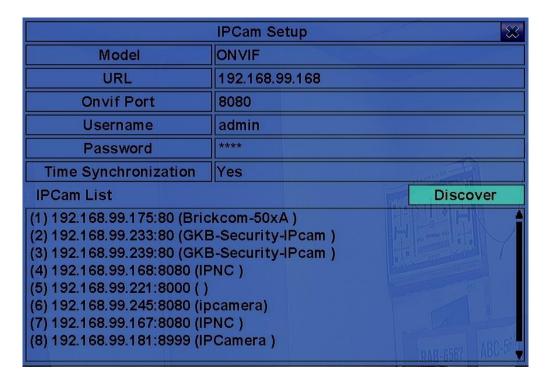
■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the contents have been modified, a Save dialog will show to ask the user to save the changes, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

Following is a brief description for each item and its specific operations:

- Compression Compression ratio of Normal or High. High compression ratio will result in smaller storage size, and hence longer recording time; but the Normal Record IPS will always be the same as Event Record IPS in Camera Setup, and Dual Streaming will always be used for network video. Press +/- Keys to change the setting.
- Watermark to record with digital watermark or not. If yes, all the recorded images for all the cameras will have digital watermark embedded. Press ENTER or +/- (Mouse: Left click) to check/uncheck this item. The default setting is "" checked.

- Type whether this camera is IP CAM or N/A. If IP CAM, the IP CAM settings will be settable. Press +/- (Mouse: Left click) to change the type.
- **Resolution** the record resolution for the camera. For IP CAM, it can be 1080p, 720p or D1. Press +/- Keys to select the resolution.
- PTZ Whether it's a PTZ camera. Press +/- Keys to change the value (N/A or Yes). The default setting is "N/A" Not Available, which means that it's not a PTZ camera.
- IP CAM Settings.. used to setup the IP CAM related settings for this camera. Press ENTER (Mouse: Left click) in Settings.. to call up IP CAM Setup display for the camera as shown below.



Please select **ONVIF** for the IP CAM that can support **ONVIF profile S**, or **RTSP** for IP CAM that cannot. For **ONVIF**, user can click on **Discover** to discover the IP CAM (static IP or DHCP) in the LAN automatically, and then click on the IP CAM in the list for the **URL** and **Onvif Port**. For **RTSP**, please enter **Main Stream URL** and **Dual Stream URL** manually. Please also enter the correct Username, Password, and if it's to be time-synchronized with the NVR for the IP CAM. Please note that camera setup is not supported for RTSP. However, live/network view, record, and playback are supported, but users need to configure the bit rate and the frame rate of main/dual stream manually so that the Max. incoming bandwidth won't be exceeded. For plug-and-play, please note that it is only supported when there's no manually configured IP-CAMERA for the NVR, and only two predefined sets of username/password for IP-CAMERA is supported.

6.2 Camera Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to Camera, and then press ENTER (Mouse: Left click) to call up Camera Setup display.

Camera Setup			
Camera	4 1	2	
Title	Camera01	Camera02	
Video Loss	Settings	Settings	
Motion Detection	J AL≡DYW	J	
Motion/Mask	Settings	Settings	
Covert			
Call By Event	Off	Off MARKE	
Dwell Time	10 Sec.	10 Sec.	
Audio	N/A	N/A	
Record Quality	8	8	
Event Record IPS	8	15 / 100	
Pre-record IPS	8	15	
Normal Record IPS	8	15	
Actual Event Record IPS	5	15	

The Camera Setup allows the administrator to define the attributes for each camera. There are up to 8/4 IP CAM, which can be connected to the system.

The general operations are as below:

■ **▲** ▼ **◆** ► (Mouse: Left click)

Press these Keys to select the items. The display will scroll left / right if the selected item is not shown on the screen.

■ Number

Press these Keys to select the camera.

■ COPY (1)

Press this Key to copy all the settings - excluding detailed Motion settings, Video Loss settings, Title/Audio - of the focus camera to all the following cameras. (EX. focus camera is 1, its settings will be copied to those of cameras 2-8/4.)

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- **Title** The title (Max. 16 characters) of this camera. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Video Loss Settings.. used to setup the action settings when video loss is detected for this camera. Press ENTER (Mouse: Left click) in Settings.. to call up Video Loss Setup display for the camera. Please refer to Section 6.2.1 for the details.
- Motion Detection whether the motion detection of this camera is enabled or not. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- Motion Settings.. used to setup the motion settings, used for Motion Detection, for this camera. Press ENTER (Mouse: Left click) in Settings.. to call up Motion Setup display for the camera. Please refer to Section 6.2.2 for the details.
- Covert covert or not. If the camera is covert, the video of this camera can only be seen if the user has logged in as Administrator. Press ENTER or +/- (Mouse: Left click) to check/uncheck this item. The default setting is "-" unchecked.
- Call By Event whether to switch the monitor to the video of this camera if certain event occurs for this camera. There are 4 options, including Off, Motion, Alarm, Both (Motion & Alarm). Press +/- Keys to select one.
- **Dwell Time** the dwell time if **Call By Event** is set to Motion, Alarm, or Both. Press +/- Keys to adjust the value (3-60 seconds, discrete).
- Audio the AUDIO IN corresponding to this camera. The audio data for the selected AUDIO IN will be recorded with the video data for this camera. Press +/- Keys to select none (N/A) or AUDIO Input (1) or "Yes" for IP-CAMERA audio. The default setting is "N/A".
- **Record Quality** the record quality for this camera. Press +/- Keys to select the value (1-9, with 1 the lowest (rough) quality, 9 the highest (fine) quality).
- Event Record IPS the IPS (Images Per Second) for this camera if certain event (Motion, Alarm) occurs for this camera. This camera will be recorded at this rate for Post-record time since the event occurs. (Please refer to the following sections for Post-record time.) Press +/- Keys to select the value (0 25 (PAL) / 30 (NTSC), discrete).
- Pre-record IPS the pre-record IPS for this camera if certain event (Video Loss, Motion, Alarm) occurs for this camera. This camera is recorded at this rate for Pre-record time before the event occurs. (Please refer to the following sections for Pre-record time.) For this NVR, the value is always the same as Event Record IPS.

- Normal Record IPS the normal record IPS for this camera. This camera will be recorded at this rate if no event occurs. Press +/- Keys to select the value (0 Pre-record IPS for this camera, discrete). Please note that for High compression ratio in Pre-Camera setup, Normal Record IPS is always the same as Event Record IPS.
- Actual Event Record IPS the actual event record IPS set to the IP-CAMERA, maybe because of the limitation of IP-CAMERA or the total system performance.

6.2.1 Video Loss Setup

In Camera Setup, press **ENTER** to call up Video Loss Setup of the selected camera as shown when the highlighted option is **Video Loss Settings..** of the camera to setup. The Video Loss Setup allows the administrator to define how the system responds to the detected video loss for the camera.



The general operations are as below:

■ ▲ ▼(Mouse: Left click)

Press these Keys to select the items.

■ Number (ENTER)

Press these Keys to select the camera.

■ COPY (**1**)

Press this Key to copy the Video Loss settings of the focus camera to all the following cameras. (EX. focus camera is 1, its Video Loss settings will be copied to those of cameras 2-8/4.)

■ ESC (Mouse: Right Click)

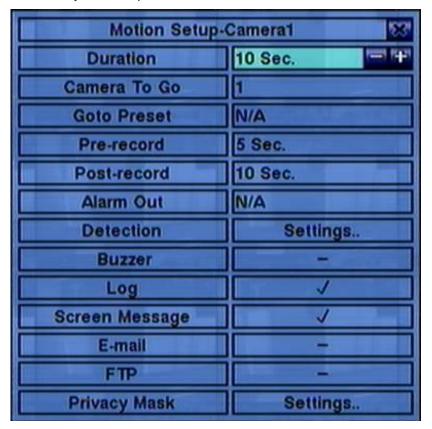
Press this Key to escape from this screen, and return to Camera Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- **Duration** response duration to define at most how long (in seconds) the Alarm Out relay and the Buzzer will keep being triggered after video loss is detected for this camera. However, the Alarm Out relay and the Buzzer will be reset immediately once the camera returns to normal. Press +/- Keys to adjust the value (3 seconds 60 minutes, discrete, '-' for 'Forever').
- Camera to go the camera to go to the preset position in next field after video loss is detected for this camera. "Camera to go" camera must be a PTZ camera.
- Goto Preset to define the preset position to go to for the "Camera to go" Camera in last field if video loss is detected for this camera. For more details about preset locations, please refer to Chapter 7 PTZ Control.
- **Pre-record** to define how long before video loss is detected this camera shall be intensively recorded at Pre-record IPS. Press +/- Keys to adjust the value (0-10 seconds, discrete). Please note that the actual pre-record time may be shorter than the value set if the total size of the pre-record pictures exceeds the pre-record buffer size of the system.
- Alarm Out to define which Alarm Output will be triggered when this alarm is triggered. Press ENTER to call up Alarm Output Source Setup. Up to 32 alarm outputs can be selected, and the definitions are similar to alarm inputs.
- Buzzer to activate the internal Buzzer or not when video loss of this camera is detected.

 Press ENTER or +/- (Mouse: Left click) to check/uncheck this item. The default setting is "-" checked.
- Log to log to event logs or not. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- Screen Message to display the event message on the screen or not. Press ENTER or +/to check/uncheck this item. The default setting is "" checked.
- E-mail to send the event e-mail to remote station or not. The e-mail will be sent to the predefined receivers at the moment when the event is triggered. Press ENTER or +/- to check/uncheck this item. The default setting is "—" unchecked.
- FTP to send the recorded event video/audio files to FTP server or not. Press ENTER or +/to check/uncheck this item. The default setting is "—" unchecked.

6.2.2 Motion Setup

In Camera Setup, press **ENTER** to call up Motion Setup as shown when the highlighted option is **Motion Settings..** of the camera to setup. The Motion setup allows the administrator to define how the system responds to the detected motion for the camera.



The general operations are as below:

■ ▲ ▼ (Mouse: Left click)

Press these Keys to select the items.

■ Number

Press these Keys to select the camera.

■ COPY (**1**)

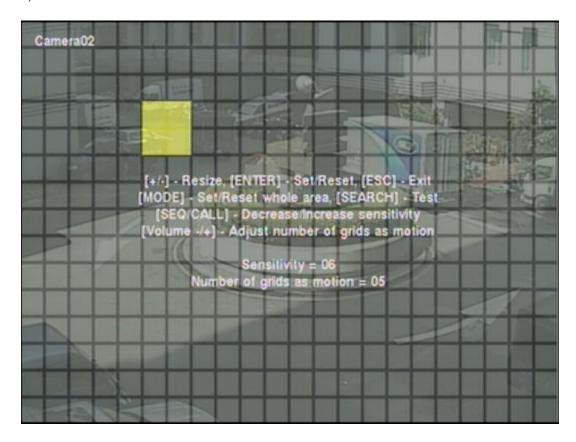
Press this Key to copy the Motion settings, including Detection settings, of the focus camera to all the following cameras. (EX. focus camera is 1, its Motion settings will be copied to those of cameras 2-8/4.)

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Camera Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- **Duration** response duration to define at most how long (in seconds) the Alarm Out relay and the Buzzer will keep being triggered after motion is detected for this camera. However, the Alarm Out relay and the Buzzer will be reset immediately once the camera returns to normal. Press +/- Keys to adjust the value (3 seconds 60 minutes, discrete, '-' for 'Forever').
- Camera to go the camera to go to the preset position in next field after motion is detected for this camera. "Camera to go" camera must be a PTZ camera.
- Goto Preset to define the preset position to go to for the "Camera to go" Camera in last field if motion is detected for this camera. For more details about preset locations, please refer to Chapter 7 PTZ Control.
- **Pre-record** to define how long before motion is detected this camera shall be intensively recorded at Pre-record IPS. Press +/- Keys to adjust the value (0-10 seconds, discrete). Please note that the actual pre-record time may be shorter than the value set if the total size of the pre-record pictures exceeds the pre-record buffer size of the system.
- Post-record to define how long after motion is detected this camera shall be intensively recorded at Event Record IPS. Press +/- Keys to adjust the value (0 second 60 minutes, discrete).
- Alarm Out to define which Alarm Output will be triggered when this event is triggered. Press ENTER to call up Alarm Output Source Setup. Up to 32 alarm outputs can be selected, and the definitions are similar to alarm inputs.
- Buzzer to activate the internal Buzzer or not when motion of this camera is detected. Press ENTER or +/- (Mouse: Left click) to check/uncheck this item. The default setting is "" checked.
- Log to log to event logs or not. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- Screen Message to display the event message on the screen or not. Press ENTER or +/to check/uncheck this item. The default setting is "" checked.
- E-mail to send the event e-mail to remote station or not. The e-mail will be sent to the predefined receivers when the event is triggered. Press ENTER or +/- to check/uncheck this item. The default setting is "—" unchecked.
- FTP to send the recorded event video/audio files to FTP server or not. Press ENTER or +/to check/uncheck this item. The default setting is "-" unchecked.

■ **Detection Settings..** – used to setup the motion detection settings, including detection area and sensitivity, when motion is detected for this camera. Press **ENTER** in **Settings..** to call up Motion Detection Setup (as shown) for this camera. In Motion Detection Setup, the video area is divided into many small grids, and the area with **gray grids** is the area which will **be detected for motion**, while transparent grids not detected for motion. Besides, there is a (yellow) Mask window.



Following is a brief description for the operations:

- Number (Mouse: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16)
 Press these Keys to select the camera.
- ▲ ▼ ◀ ▶
 Press these Keys to move the Mask window.
- +/- (Mouse: Left click and drag)
 Press these Keys to resize the Mask window.
- ENTER (Mouse: Press this Key to set/reset the area under the Mask window.
- MODE (Mouse: Press this Key to set/reset the whole video area.

■ SEQ (Mouse: M) / CALL (Mouse: M)

Press this Key to decrease/increase the sensitivity, 1 - 10, for the motion detection of this camera.

■ Vol+/- (□+/□-) (Mouse: Ш)

Press this Key to increase/decrease the "number of grids treated as motion" for the motion detection of this camera.

■ SEARCH (Mouse: Press this Key to test the motion detection of this camera

Press this Key to test the motion detection of this camera. The detected motion will show on the screen. Press this Key again to stop testing.

- ESC (Mouse: or Right Click)

 Press this Key to escape from Motion Detection Setup, and return to Motion Setup.
- Privacy Mask Settings.. used to setup the privacy mask settings. Press ENTER in Settings.. to call up Privacy Mask Setup for this camera. The Privacy Mask Setup is similar to Motion Detection Setup, except that the grayed area of the camera will be blacked out for live/recorded video.

6.3 Alarm Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Alarm**, and then press **ENTER** to call up Alarm Setup display as shown. The Alarm Setup allows the administrator to define the attributes for each alarm input, and the actions if it's triggered. Up to 32 alarm inputs can be configured, which are directly connected to the system or the alarm inputs of IP-CAMERA.



The general operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ Number

Press these Keys to select the alarm input.

■ COPY (**1**)

Press this Key to copy the settings of the focus alarm input to all the following alarm inputs. (EX. focus alarm input is 1, its settings will be copied to those of alarm inputs 2-32.)

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- Source used to setup the Alarm Input Source, including Source Type which is N/A, Local or IP-CAMERA, Source ID which is 1-4 for Local or the camera ID for IP-CAMERA, and Sub ID which is 1-4 for IP-CAMERA. Press ENTER in Source to call up Alarm Input Source Setup.
- Normal State press +/- Keys to select N/A, Close, Open, Close (Level) or Open (Level). Please check the signal type, normally close or normally open, connected to the alarm input terminal on the rear panel of the system. If there's no signal connected, please select N/A Not Available, and the following items will not be settable. The default setting is Open. Please note that for Close (Level) and Open (Level), the Duration and Post-record mentioned below will keep being activated when the alarm input is at alarm state.
- **Title** The title (Max. 8 characters) of this alarm input. Please follow the Text Input method described in Section 4.1 to modify this item.
- **Delay** the alarm input will be treated as if it's triggered Delay time (0-15 seconds) later after being really triggered, 0 sec. for no delay.
- Focus Camera the camera corresponding to this alarm input.
- **Duration** response duration to define at most how long (in seconds) the Alarm Out relay and the Buzzer will keep being triggered after this alarm input is triggered or returns to normal. Press +/- Keys to adjust the value (3 seconds 60 minutes, discrete, '-' for 'Forever').
- **Goto Preset** to define the preset position to go to for the Focus Camera if this alarm input is triggered and the Focus Camera is a PTZ camera. For more details about preset locations, please refer to Chapter 7 PTZ Control.
- **Pre-record** to define how long before this alarm input is triggered the Focus Camera shall be intensively recorded at Pre-record IPS. Press +/- Keys to adjust the value (0-10 seconds, discrete). Please note that the actual pre-record time may be shorter than the value set if the total size of the pre-record pictures exceeds the pre-record buffer size of the system.
- **Post-record** to define how long after this alarm input is triggered or returns to normal the Focus Camera shall be intensively recorded at Event Record IPS. Press +/- Keys to adjust the value (0 second 60 minutes, discrete).
- Alarm Out to define which Alarm Output will be triggered when this alarm input is triggered. Press ENTER to call up Alarm Output Source Setup. Up to 32 alarm outputs can be selected, and the definitions are similar to alarm inputs.
- Buzzer to activate the internal Buzzer or not when this alarm input is triggered. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.

- Log to log to event logs or not. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- Screen Message to display the event message on the screen or not. Press ENTER or +/to check/uncheck this item. The default setting is "" checked.
- Notification to notify mobile phones and/or send the event e-mail to remote station or not. The mobile phones with alarm notification from the NVR enabled will be notified, and the e-mail will be sent to the predefined receivers when the event is triggered. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- FTP to send the recorded event video/audio files to FTP server or not. Press ENTER or +/to check/uncheck this item. The default setting is "-" unchecked.

6.4 Main/SEQ Display Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to Main/SEQ Display, and then press ENTER to call up Main/SEQ Display Setup.

Main / SEQ Display Setup				
Display Type		Total Pages	Dwell Time	Page
有一人人 與 [1] 可	1W	8 -+	5 Sec.	Settings
	4W	2 - 0 4 5 5	5 Sec.	Settings
	7W	2	5 Sec.	Settings
Main Monitor	9W	1	5 Sec.	Settings
	10W	1	5 Sec.	Settings
	13W	1	5 Sec.	Settings
	16W	1	5 Sec.	Settings
Call Monitor	1W	8	5 Sec.	Settings
Main Displ	Main Display Type		Default	
CVBS		Main Monitor		
Main Display Called By Event		On		

The Main/SEQ Display Setup allows the administrator to define the display pages in SEQ Display for main monitor and call monitor. Please note that Call Monitor supports 1/4 split window display.

The general operations are as below:

■ ▲ ▼ ◀ ► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- Call Monitor 1/4W (disabled) select split window of Call Monitor. Press +/- Keys to select the desired value.
- Main Display Type "Default" for default main display type and "SEQ" for main display to use SEQ settings.
- CVBS (disabled) CVBS out for "Main Monitor" or "Call Monitor".
- Main Display Called By Event to switch the main monitor to the video of the event camera or not.
- Total Pages total pages for this SEQ Display Type. The maximum number varies according to the display type. Press +/- Keys to select the desired number from the available list.
- **Dwell Time** the dwell time (3 ~ 60 seconds, discrete) for each page of this display type. Press +/- Keys to change the value.
- Page Settings.. used to set the camera in each viewing window for each page of this SEQ Display Type. Press ENTER (Mouse: Left click) to call up Display Page Setup as shown.



In Display Page Setup, the split window display for the current page is shown. And the title of the camera for the focus window is highlighted. Following is a brief description for the operations:

- ▲ ▼ ◀ ► (Mouse: Left click)

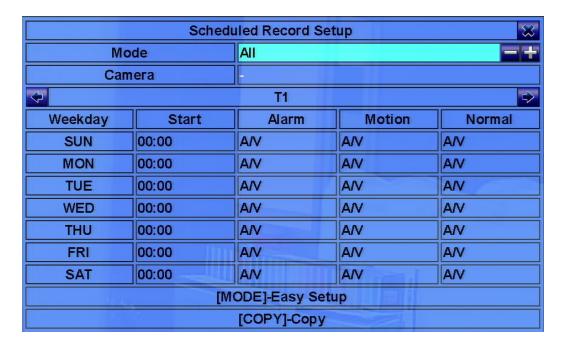
 Press these Keys to move the focus window.
- Number (Mouse: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16)

 Press these Keys to change the camera for the current page.
- ESC (Mouse: or Right Click)

 Press this Key to escape from Display Page Setup, and return to SEQ Display Setup.

6.5 Scheduled Record Setup

In Setup Menu display, press ▲ ▼ ◀► to change the highlighted option to **Scheduled Record**, and then press **ENTER** to call up Scheduled Record Setup.



The Scheduled Record Setup allows the administrator to define when and how to record for the system. There are up to 16 time segments (T1 - T16) for each weekday.

The general operations are as below:

■ **▲** ▼ **◆** ► (Mouse: Left click)

Press these Keys to select the items. The display will scroll left/right if the selected item is not shown on the screen.

■ COPY (**1**)

Press this Key to copy the settings of (1) the focus camera to all the following cameras, or (2) the focus weekday to all the following weekdays. (EX. focus weekday is TUE, its settings will be copied to those of weekdays WED-SAT.)

■ MODE (Mouse: Left click)

Press this Key to enter Easy Setup for Schedule Record as described in the following paragraphs.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

Following is a brief description for each item and its specific operations:

- **Mode** the schedule below applies to **All** cameras or **Individual** camera. Press +/- Keys to change the value.
- Camera select the camera if Individual is selected. Press +/- Keys to select the camera.
- Start the start time of this time segment, increment at 30 minutes. (The end time of this time segment is implicitly set as the start time of next time segment, or the start time of the first time segment of the same weekday if it's the last one.) Press +/- Keys to select the desired start time.

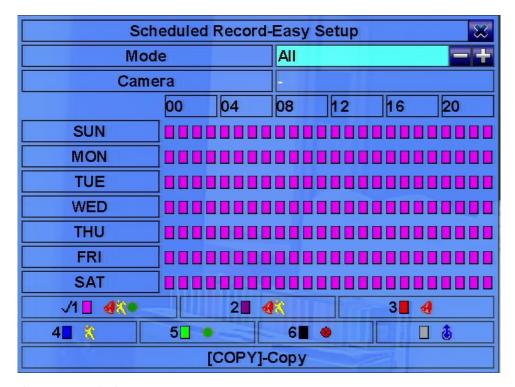
Example: If the user sets the start time of T1/MON as 9:00, T2/MON as 18:00, T3-T16/MON as N/A (Not Available), then T1/MON is 9:00-18:00, T2/MON is 0:00-9:00, and 18:00-24:00.

- Alarm record mode (No, Video, Audio/Video) when certain alarm input is triggered. "OFF" is for alarm detection OFF. Press +/- Keys to change the value. Please note that the alarm is the alarm for the focus camera (in Alarm Setup) if Individual is selected.
- **Motion** record mode (No, Video, or Audio/Video) when motion is detected for certain camera. "OFF" is for motion detection OFF. Press +/- Keys to change the value.
- Normal normal record mode, including No, V (Video only), or A/V (Audio/Video). Press +/Keys to change the value.

Note: In a time segment, if both Alarm and Motion are set to "OFF", the audio/video will be treated as Normal unless there's Video Loss.

Scheduled Record – Easy Setup

The Scheduled Record – Easy Setup allows the administrator to use a simpler and easier way to setup the scheduled record of the system. In Easy Setup, there are **Six Selectable Recording Modes:** Alarm+Motion+Normal, Alarm+Motion, Alarm, Motion, Normal, and No Record. Video & Audio are all recorded for the selectable Recording Modes except "No Record". After the Easy Setup, the time segments for each weekday in Scheduled Record will be updated accordingly.



The operations are as below:

Press these Keys to move the focus.

■ COPY (1)

Press this Key to copy the settings of the focus camera to all the following cameras. (EX. focus camera is 2, its schedule settings will be copied to those of the cameras 3-4/8.)

■ Number 1-6 (Mouse: Left click)

Press these Keys to select the active Recording Mode. The user may also press **ENTER** when the focus is on the Recording Mode to activate it. The Recording Modes are: "1" – **Alarm+Motion+Normal**, "2" – **Alarm+Motion**, "3" – **Alarm**, "4" – **Motion**, "5" – **Normal**, "6" – **No Record**, and Others (which is not selectable).

■ +/- (Mouse: Left click and drag)

Press these Keys to set the focus interval (one grid for one hour) upwardly/downwardly to the Active Recording Mode. The user may also press **ENTER** to set the focus interval to the Active Recording Mode.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Scheduled Record Setup display. The time segments for each weekday in Scheduled Record will be updated accordingly.

6.6 HDD Setup

In Setup Menu display, press ▲ ▼ ◀► to change the highlighted option to **HDD**, and then press **ENTER** to call up HDD Setup as shown.

HDD Setup				
Record Type	Alarm Record	Normal Record		
Size (GB)	2924	0		
Auto Overwrite	1	1		
HDD Full Action	1	1		
Duration	10 Sec.	10 Sec.		
Alarm Out	N/A	N/A		
Buzzer	1	1		
Log	1	1		
E-mail	_			
[MODE] - HDD Format / Clear				
[SEQ] - Advanced HDD Setup				

In the surveillance applications, alarm video/audio is much more important than normal video/audio. So, this digital video/audio recorder is designed to allow the user to divide each HDD into alarm partition and normal partition. And, alarm video/audio will be recorded in alarm partition, normal video/audio in normal partition.

The HDD Setup allows the administrator to format/clear each HDD, set Alarm Record size and Normal Record size of each HDD, and define the behaviors for Alarm Record and Normal Record if it reaches the end of the last HDD in the system.

The general operations are as below:

- ▲▼◀► (Mouse: Left click)
 Press these Keys to select the items.
- MODE => Format/Clear (Mouse: Left click)

 Press this Key to format/clear the HDDs as described in Section 6.6.1.
- SEQ => Advanced HDD Setup (Mouse: Left click)

 Press this Key to enter Advanced HDD Setup as described in Section 6.6.2.
- ESC (Mouse: Right Click)

 Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press ENTER to exit and save, ESC (Mouse: Right Click) to exit without saving.

- Size (GB) the total HDD storage in GB (Giga-Byte) for Alarm Record and Normal Record respectively. This item is just for information. Please refer to Section 6.6.1 for more detailed information and setup of each individual HDD. Please note that if the total alarm record size is zero, the alarm video/audio will be recorded in normal record partition. Please note that if the total normal record size is zero, the normal video/audio will be recorded in alarm record partition.
- Auto Overwrite automatic overwrite of the recorded video/audio from HDD#1 when the Alarm/Normal Record disk drive capacity reaches the end of the last HDD. If Auto Overwrite is disabled and the Alarm/Normal Record disk drive capacity reaches the end, the system will not overwrite the recorded video/audio, and hence not record Alarm/Normal video/audio, until the user presses the Alarm Reset Key. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- HDD Full Action actions when Alarm/Normal Record disk drive capacity reaches the end of the last HDD. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- **Duration** response duration to define at most how long (in seconds) the Alarm Out relay and the Buzzer will keep being triggered after the corresponding partition, Alarm Record or Normal Record, is full. Press +/- Keys to adjust the value (3 seconds 60 minutes, discrete, '-' for 'Forever').
- Alarm Out to define which Alarm Output will be triggered when this event is triggered.

 Press ENTER to call up Alarm Output Source Setup. Up to 32 alarm outputs can be selected, and the definitions are similar to alarm inputs.
- Buzzer to activate the internal Buzzer or not when the corresponding partition, Alarm Record or Normal Record, is full. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- Log to log to event logs or not. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- E-mail to send the event e-mail to remote station or not. The e-mail will be sent to the predefined receivers when the event is triggered. Press ENTER or +/- to check/uncheck this item. The default setting is "–" unchecked.

6.6.1 HDD Format/Clear

In HDD Setup display, press **MODE** to call up HDD Format/Clear screen as shown.

HDD Format / Clear			
Recording HDD	Alarm: 1	Normal: 1	
HDD	1	2	
Size (GB)	1952	-	
Normal Record(%)	0		
Alarm Record(%)	100		
NAS	Setup	Setup	
[MODE]-Format	[SEQ]-Clear		
[CALL]-Physical Format			

The HDD must be formatted before it can be used to record video/audio. The HDD Format/Clear screen allows the administrator to format and/or clear each HDD, and set the size for Alarm Record partition and Normal Record partition for each HDD. Please make sure there's no remote user before formatting the HDD.

Please note that if NAS device is connected and setup correctly, it will be always the last storage in the HDD list.

The general operations are as below:

■ MODE => Format (Mouse: Left click)

Press this Key to format the HDD. A confirmation dialog will show on the screen, press ENTER to confirm, or ESC to cancel. Please note that it would take about 40 seconds to format a brand new 160GB HDD.

Note: If the HDD has not been formatted, it will be formatted and partitioned with default record size, 100% for Alarm and 0% for Normal. If it has been formatted, it will be formatted according to the Alarm REC Size (%) and Normal REC Size (%) displayed on the screen, but the previously recorded contents within the new size won't be cleared and will be accessible.

■ SEQ => Clear (Mouse: Left click)

Press this Key to clear the HDD. A confirmation dialog will show on the screen, press **ENTER** to confirm, or **ESC** to cancel.

Note: If the HDD has not been formatted, it will be formatted and partitioned with default record size, 100% for Alarm record and 0% for Normal record. If it has been formatted (and

recorded), it will be partitioned according to the Alarm Record Size (%) and Normal Record Size (%) displayed on the screen, and the previously recorded contents will all be cleared.

■ CALL => Physical Format (Mouse: Left click)

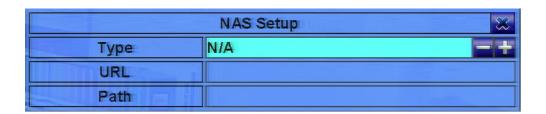
Press this Key to physically format the selected HDD. A confirmation dialog will show on the screen, press ENTER to confirm, or ESC to cancel. Please note that the recording will be always optimized for performance & lifetime no matter it's for the first time or for the one hundredth time. The formatting would take less than 1 minute. We strongly recommend that the user use this physical format function to format the HDD for the first time.

Note: The HDD will be physically formatted and partitioned with default record size, **100% for Alarm record and 0% for Normal record**. All the previously recorded contents will be cleared.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to HDD Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- **Size (GB)** the total storage in GB (Giga-Byte) for the HDD if it has been formatted. This item is just for information.
- Alarm Record (%) Alarm Record Size (in percentage) for this HDD. Please follow the Text Input method described in Section 4.1 to change the value. Please note that if the alarm record percentage for all HDDs is zero, the alarm video/audio will be recorded in normal record partition. Please note that if the total normal record size is zero, the normal video/audio will be recorded in alarm record partition.
- Normal Record (%) Normal Record Size (in percentage) for this HDD. It equals to (100% Alarm Record Size). This item is just for information.
- NAS/Setup used to setup NAS (Network Attached Storage) related parameters if NAS is connected to the NVR. Press ENTER (Mouse: Left click) in Setup to call up NAS Setup display as shown.



Following is a brief description for each item and its specific operations:

■ ▲ ▼ (Mouse: Left click)

Press these Keys to select the item.

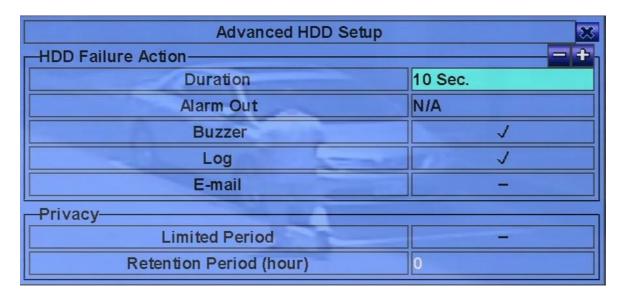
■ ESC (Mouse: Right Click)

Press this Key to escape from the NAS Setup dialog. If the Save dialog is shown, press ENTER to exit and save, ESC (Mouse: Right Click) to exit without saving. Please note that if the NAS settings are changed, the user will be asked to reboot the system for the new settings to take effect. Please also note that the NAS device will be always the last storage in the HDD list.

- **Type** "NFS" or "N/A". Press +/- Keys to select.
- URL the URL (Uniform Resource Locators) for the NAS device. Please follow the Text Input method described in Section 4.1 to modify this item.
- Path the path in the NAS device to store video/audio. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item. Please note that lowercase and uppercase are treated differently. Besides, '/' is used for subdirectory.

6.6.2 Advanced HDD Setup

In HDD Setup display, press **SEQ** to call up Advanced HDD Setup display as shown.



The HDD Failure Action in Advanced HDD Setup allows the administrator to define how the system responds to the detected HDD failure, while the Privacy settings allow the administrator to set the NVR to record for Limited Period and the Retention Period of its HDD storage. **The HDD Failure Action will be triggered if there's no available formatted HDD detected.**

The general operations are as below:

■ ▲ ▼ (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

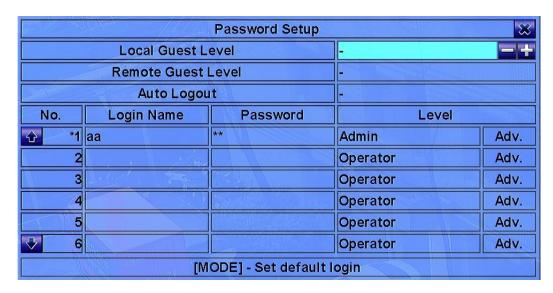
Press this Key to escape from this screen, and return to HDD Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- **Duration** response duration to define at most how long (in seconds) the Alarm Out relay and the Buzzer will keep being triggered after HDD failure is detected. Press +/- Keys to adjust the value (3 seconds 60 minutes, discrete, '-' for 'Forever').
- Alarm Out to define which Alarm Output will be triggered when this alarm input is triggered. Press ENTER to call up Alarm Output Source Setup. Up to 32 alarm outputs can be selected, and the definitions are similar to alarm inputs.

- Buzzer to activate the internal Buzzer or not when HDD failure is detected. Press ENTER or +/- (Mouse: Left click) to check/uncheck this item. The default setting is "" checked.
- Log to log to event logs or not. Press ENTER or +/- to check/uncheck this item. The default setting is "" checked.
- E-mail to send the event e-mail to remote station or not. The e-mail will be sent to the predefined receivers when the event is triggered. Press ENTER or +/- to check/uncheck this item. The default setting is "-" unchecked.
- Limited Period whether the HDD storage is for limited period or not. Press ENTER or +/to check/uncheck this item. The default setting is "—" No.
- Retention Period (hour) the retention period of the HDD storage if Limited Period is "". Please follow the Text Input method described in <u>Section 4.1</u> to modify this item. If this item is set as 0, it will be treated as No Limited Period.

6.7 Password Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Password**, and then press **ENTER** to call up Password Setup as shown.



The Password Setup allows the administrator to add new users, delete existing ones, and/or modify the user's name, password, and/or level.

There are three default password levels in the system, including **Administrator** (highest), **Supervisor**, and **Operator** (lowest). The Operator can operate live video display, the Supervisor live video display, image playback and archive, and the Administrator everything. Beside the default password levels, the user can also set "Customized" user level as described in the following paragraphs. The system allows up to 18 user accounts.

There is one factory-preset login name/password aa/11 at **Administrator** level. The user can use it to login the system for the first time.

The general operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items. The display will scroll up/down if the selected item is not shown on the screen.

■ MODE => Select/Deselect as default (Mouse: Left click)

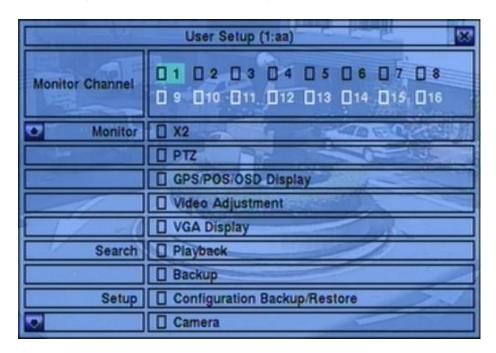
Press this Key to select this user as the default one at login, or deselect if this user is the default login user. An asterisk (*) will show preceding the number for the default login user. And this login name/password will be the default one each time the login dialog is shown, so the user doesn't bother to enter the text to login the system.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

Following is a brief description for each item and its specific operations:

- Local Guest Level the local access level (Administrator, Supervisor, Operator, -, or any user) without login the system. Press +/- Keys to change the level.
- Remote Guest Level the remote access level without login the system. Press +/- Keys to change the level.
- Auto Logout auto logout, if there's no user's operation in 1 minute to 24 hours, or not ("-"). Press +/- Keys to change the value.
- **Login Name** please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Password this item accepts numbers only. Please follow the Text Input method described in Section 4.1 to modify this item.
- Level the password level (Administrator, Supervisor, Operator, or Customized) for this user. Press +/- Keys to change the level.
- Adv. press ENTER (Mouse: Left click) to call up Advanced User Setup as shown below.



The Advanced User Setup allows the administrator to setup each user's detailed access right of the system.

The general operations are as below:

Press these Keys to move the focus. If the selected item is not shown on the screen, the screen will scroll up or down.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Password Setup display. The Password Setup contents will be updated accordingly.

- Monitor Channel 1-8/4 the user can only monitor those channels "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- X2 to enable the user to do X2 operation for live/playback video if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- PTZ to enable the user to do PTZ operation if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- **GPS/POS/OSD Display** to enable the user to change GPS/POS/OSD Display if "checked". Press **ENTER** or **+/- (Mouse: Left click)** to check/uncheck this item.
- Volume to enable the user to change volume if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Video Adjustment to enable the user to do video adjustment operation if "checked".

 Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- **Display** to enable the user to change display settings if "checked". Press **ENTER** or **+/-** (**Mouse: Left click**) to check/uncheck this item.
- Playback to enable the user to playback video/audio if "checked". Press ENTER or +/(Mouse: Left click) to check/uncheck this item.
- Backup to enable the user to backup video/audio if "checked". Press ENTER or +/(Mouse: Left click) to check/uncheck this item.
- Configuration Backup/Restore to enable the user to backup/restore configurations if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Setup Camera to enable the user to do Camera Setup if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Setup Alarm to enable the user to do Alarm Setup if "checked". Press ENTER or +/-

(Mouse: Left click) to check/uncheck this item.

- **Setup Main/SEQ Display** to enable the user to do Main/SEQ Display Setup if "checked". Press **ENTER** or **+/-** (**Mouse: Left click**) to check/uncheck this item.
- Setup Scheduled Record to enable the user to do Scheduled Record Setup if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Setup HDD to enable the user to do HDD Setup if "checked". Press ENTER or +/(Mouse: Left click) to check/uncheck this item.
- **Setup Password** to enable the user to do Password Setup if "checked". Press **ENTER** or +/- (Mouse: Left click) to check/uncheck this item.
- Setup System to enable the user to do System Setup if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Setup RS-232/422/485 to enable the user to do RS-232/422/485 Setup if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Setup Network to enable the user to do Network Setup if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- Setup Factory Defaults to enable the user to restore factory defaults to all setup related configurations if "checked". Press ENTER or +/- (Mouse: Left click) to check/uncheck this item.
- **Software Upgrade** to enable the user to upgrade NVR software if "checked". Press **ENTER** or **+/-** (**Mouse: Left click**) to check/uncheck this item.
- Shutdown to enable the user to shutdown the NVR if "checked". Press ENTER or +/(Mouse: Left click) to check/uncheck this item.

6.8 System Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **System**, and then press **ENTER** to call up System Setup as shown.



The System Setup allows the administrator to set the system time, time zone, time synchronization, language, etc.

The general operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press ENTER to exit and save, ESC (Mouse: Right Click) to exit without saving. Please note that if the selected language is changed, the user will be asked to reboot the system for the newly selected language to take effect.

- **Time Zone** press **+/-** Keys to select the time zone for the system. Please refer to <u>Appendix</u> <u>B</u> for the time zone table.
- Daylight Saving Time press ENTER or +/- to check/uncheck this item. The default value is set by selecting a different time zone, but the user may check/uncheck this item if the default setting is checked.

■ System Time –

- **Synchronization** time synchronized with TSP Server or not. Press +/- to change the value. The default setting is "–" unchecked. Please note that "Local Server" means this NVR is used as TSP server.
- **TSP Server** TSP (Time Synchronization Protocol) server name if Time Synchronization is set to "TSP Server". The system will try to do time synchronization with the specified TSP server at the system preset interval. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Date system date. Press +/- Keys to modify each of these items.
- **Time** system time. Press +/- Keys to modify each of these items.
- **Display Format** format used for the system time displayed on the lower-left corner of the main screen. Press +/- Keys to select the desired format.
- Language press +/- Keys to select the language for the system. The languages supported include: English, Russian, Simplified Chinese, Spanish, Traditional Chinese, Polish, Turkish, etc.
- **Protection Key** the protection key for the remote access of the system. Please follow the Text Input method described in Section 4.1 to modify these items.

Note: This protection key will be used for authentication when any remote station wants to connect with the system from Ethernet interface, either LAN or internet. So, the same protection key must be entered to install the remote software if it is to be used to access the system.

6.9 RS-232/485/IR Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to RS-232/485/IR, and then press ENTER to call up RS-232/485/IR Setup as shown.



The RS-232/485/IR Setup allows the administrator to setup RS-232/RS-485 control port and NVR ID for IR remote. Please refer to the manuals for the connected devices - PTZ cameras or keyboard Controls – to set the items in RS-232/485 Setup.

The general operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- Device Type PTZ, Keyboard, GPS, POS, PTZ+Keyboard or N/A (Not Available). Press +/- Keys to change the type.
- Model PTZ model (for PTZ and PTZ+ Keyboard), Keyboard model, GPS protocol, or POS printer type of the connected devices. The PTZ models supported include Pelco D protocol Dome, Samsung SCC-641P, Kalatel Cyber Dome, PIH-series, Dynacolor, Bosch AutoDome, Video Trek, etc. The Keyboard models supported include Terminal (EX. VT-100) and Control Protocol. For Terminal type, please use the corresponding ASCII characters for code as described in Appendix-C. The GPS protocol supported is NMEA0183. The POS printer types supported include Epson General (EX. Epson-TM200, Epson-TMU300, Epson-TMU675, Epson-TMT882, Epson-RPU420, and Epson-MD332S) and Epson-TMU295. Press +/- Keys to change the supported model (or protocol). Please note that if PTZ+Keyboard is selected for Device Type, the Keyboard model is always Control

Protocol, and the other settings (Baud Rate, Data Bit, Stop Bit, and Parity) are the same as the PTZ Model selected. Please also note that the installer must be sure that the Keyboard Control Protocol and the PTZ Protocol won't conflict with each other.

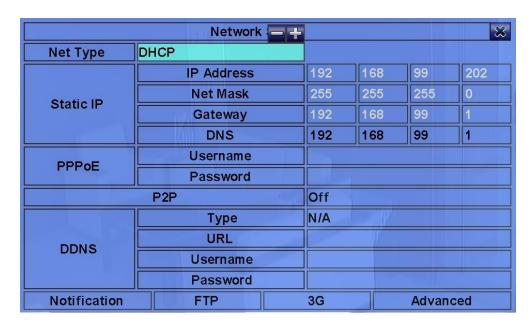
- Baud Rate press +/- Keys to change the value.
- Data Bit press +/- Keys to change the value.
- **Stop Bit** press +/- Keys to change the value.
- Parity (Odd, Even, or None). Press +/- Keys to change the value.
- DVR/NVR/Camera ID for PTZ/Keyboard => the device ID for this network video/audio recorder, and it must not conflict with the other devices connected in the same control port.; for GPS/POS => the Camera ID to receive the GPS/POS data. For IR => the DVR/NVR ID to receive the IR control signal, "-" to receive any DVR/NVR ID signal. Press +/- Keys to change the ID.

Some GPS Devices Tested

HOLUX GR-213 G-Mouse GPS Receiver Garmin GPS 18 OEM GlobalSat BR-355 Cable GPS

6.10 Network Setup

In Setup Menu display, press ▲ ▼ ◀ ▶ to change the highlighted option to **Network**, and then press **ENTER** to call up Network Setup as shown.



The Network Setup allows the administrator to setup all Ethernet network related parameters. Please check with your network administrator to set these parameters correctly.

The general operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Setup Menu display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- Net Type Static IP, PPPoE, or DHCP. For internet access, please make sure the below IP Address is a public IP address; otherwise, (1) a router with public IP address is required, and the router must be setup for port mapping (forwarding) to the NVR, or (2) CMS server must be used (Sec. 6.10.4). Press +/- Keys to change the Net Type.
- IP Address Ethernet IP address of the "Net Type" above for the system. To get the static IP address, please contact your local ISP (Internet Service Provider). Please follow the Text Input method described in <u>Section 4.1</u> to modify these items.

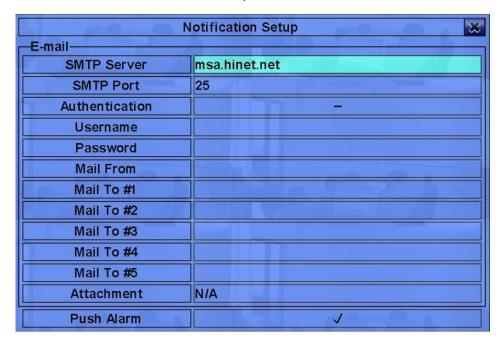
- **Net Mask** Net Mask for the Ethernet IP address. Please follow the Text Input method described in <u>Section 4.1</u> to modify these items.
- Gateway Ethernet Gateway IP address. Please note that the priority of Gateway is (1) Ethernet Gateway and (2) 3G Gateway. Please follow the Text Input method described in Section 4.1 to modify these items.
- **DNS** DNS (Domain Name Server) IP address for Ethernet. Please follow the Text Input method described in <u>Section 4.1</u> to modify these items.
- **PPPoE Username** PPPoE username for the system if PPPoE is used. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- PPPoE Password PPPoE password for the system if PPPoE is used. Please follow the Text Input method described in Section 4.1 to modify this item.
- P2P if enabled, the QR code of the NVR will show on the upper right corner, and users can scan it to access the NVR remotely through the QR code in the future. Please make sure that TCP hole punching is possible for the NAT, Full-cone or Address restricted cone, of the router connected to internet for the NVR or remote software.
- DDNS Type Dynamic, Static, Custom DDNS (Dynamic Domain Name Server) type, etc. Please contact your local DDNS Service Provider to get the DDNS URL, username, and password. Press +/- Keys to change this item. If internet is accessible, the user can select "Fly2DNS" for free built-in DDNS server, URL/DDNS Username/DDNS Password will be filled in automatically after the user exits and saves the settings. The user can change the prefix of the URL afterwards.
- URL the URL (Uniform Resource Locators) for the system. Please follow the Text Input method described in Section 4.1 to modify this item.
- **DDNS Username** DDNS username for the NVR for Static IP, PPPoE, or DHCP. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- **DDNS Password** DDNS password for the NVR for Static IP, PPPoE, or DHCP. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Notification press ENTER (Mouse: Left click) to call up Notification Setup. Please refer to Section 6.10.1 for the details.
- FTP press ENTER (Mouse: Left click) to call up FTP Setup. Please refer to <u>Section</u> 6.10.2 for the details.
- 3G press ENTER (Mouse: Left click) to call up 3G Modem Setup. Please refer to <u>Section</u> 6.10.3 for the details.
- Advanced press ENTER (Mouse: Left click) to call up Advanced Network Setup. Please refer to Section 6.10.4 for the details.

Note: If DDNS Type is FreeDNS, the URL must be appended with ",hash", where hash is extracted from the grab URL batch file that is downloaded from freedns.afraid.org.

6.10.1 Notification Setup

In Network Setup, press **ENTER** to call up Notification Setup as shown when the highlighted option is **Notification**.

The Notification Setup allows the administrator to set notification (email & push alarm) related parameters. When an event occurs and Notification/E-mail is enabled for the corresponding action, a notification will be sent based on the parameters set.



The general operations are as below:

■ **A** ▼ (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Network Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

- **SMTP Server** SMTP mail server name. Please follow the Text Input method described in Section 4.1 to modify this item.
- **SMTP Port** the SMTP port for e-mail transmission. The default value is **25**. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Authentication whether the SMTP mail server requires authentication. Press ENTER or +/- to check/uncheck this item.

- **Username** username if the SMTP mail server requires authentication. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Password password if the SMTP mail server requires authentication. Please follow the Text Input method described in Section 4.1 to modify this item.
- Mail From the e-mail address of this NVR unit, i.e. the sender of the e-mails originated from the triggered events. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Mail To #1-5 the receivers' e-mail addresses. The system can send the e-mails originated from the triggered events to up to 5 different receivers. Please follow the Text Input method described in Section 4.1 to modify these items.
- Attachment attached picture for the e-mail sent. The value could be (N/A, Original picture, QCIF picture). Press +/- Keys to change this item.
- Push Alarm whether Push Alarm is enabled for network notification. Press ENTER or +/to check/uncheck this item.

10.2 FTP Setup

In Network Setup, press **ENTER** to call up FTP Setup as shown when the highlighted option is **FTP**.

FTP Setup		
FTP Server (URL or URL:Path)	211.22.52.91:/temp/abc123	
FTP Port	21	
Username	maurice	
Password	******	
Prefix Of Filename		

The FTP Setup allows the administrator to set FTP related parameters. When an event occurs and FTP is enabled for the action, the recorded video/audio for that event will be sent to the FTP server based on the parameters set here.

The general operations are as below:

■ ▲ ▼ (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

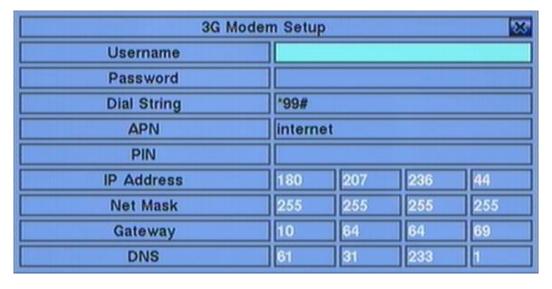
Press this Key to escape from this screen, and return to Network Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

Following is a brief description for each item and its specific operations:

- FTP Server FTP server web/IP address with or without directory path. Please follow the Text Input method described in Section 4.1 to modify this item.
- FTP Port the FTP port. The default value is 21. Please follow the Text Input method described in Section 4.1 to modify this item.
- **Username** username for this NVR unit in the FTP server. Please follow the Text Input method described in <u>Section 4.1 to modify this item.</u>
- Password password for this NVR unit in the FTP server. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- **Prefix Of Filename** the prefix of the filenames for the files sent to the FTP server. If it's empty, the filenames will be "cam..."; if not, the filenames will be "Prefix-cam...". For example, if the prefix is "NVR01", then the filenames will be "NVR01-cam...". Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.

6.10.3 3G Modem Setup

In Network Setup, press **ENTER** to call up 3G Modem Setup as shown when the highlighted option is **3G**.



The 3G Modem Setup allows the administrator to set 3G modem related parameters if USB dongle 3G modem is plugged in the USB port.

The general operations are as below:

■ ▲ ▼(Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Network Setup display.

Following is a brief description for each item and its specific operations:

- **Username** username if requested by ISP. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- Password password if requested by ISP. Please follow the Text Input method described in Section 4.1 to modify this item.
- **Dial String** the 3G dial command. Please follow the Text Input method described in Section 4.1 to modify this item.
- APN (Optional) APN info. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- PIN PIN associated with the SIM card used. Please follow the Text Input method described in Section 4.1 to modify this item.
- IP Address 3G IP address for the system. To get the static IP address, please contact your local ISP (Internet Service Provider). This field is for information only.
- Net Mask Net Mask for the 3G IP address. This field is for information only.
- Gateway 3G Gateway IP address. Please note that the priority of Gateway is (1) Ethernet Gateway and (2) 3G Gateway. This field is for information only.
- **DNS** DNS (Domain Name Server) IP address for the 3G network. This field is for information only.

6.10.4 Advanced Network Setup

In Network Setup, press **ENTER** to call up Advanced Network Setup as shown when the highlighted option is **Advanced**.

Advanced Netwo	ork Setup		
Control Port	67		
Data Port	68		
HTTP Port	80		
UPNP Port Forwarding	N/A		
WAP Picture Quality	Normal		
Video Stream Resolution	Dynamic		
Video Stream Quality	Fine		
DVR Name			
CMS Server URL #1			
CMS Server URL #2			
IP Filter 1	* * *		
IP Filter 2			
IP Filter 3			
IP Filter 4			
MAC Address 00:50:56:57:28:0E			

The Advanced Network Setup allows the administrator to set advanced network parameters. If the user is not familiar with network administration, please DO NOT modify the items in this dialog.

The general operations are as below:

■ **A** ▼(Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to Network Setup display. If the Save dialog is shown, press **ENTER** to exit and save, **ESC (Mouse: Right Click)** to exit without saving.

Following is a brief description for each item and its specific operations:

- Control Port the control port for remote access. The default value is 67. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- **Data Port** the data port for remote access. The default value is **68**. Please follow the Text Input method described in <u>Section 4.1</u> to modify this item.
- HTTP Port the HTTP (web page) port for remote access. The default value is 80. Please note that value 0 means to disable HTTP.
- UPNP Port Forwarding to use UPnP port forwarding for Control/Data/HTTP port for internet access if the router supports UPnP. Press +/- Keys to change the value. If UPnP port forwarding is used, the NVR will try to connect with UPnP router to set Control/Data/HTTP port after the user exits from this screen. It may take from a few seconds to a few minutes. If successful, new Control/Data/HTTP port will show with (*) in front of it.
- WAP Picture Quality the WAP picture quality if WAP access is supported for the NVR. Press +/- Keys to change the value.
- Video Stream Resolution network live video stream resolution. Press +/- Keys to change the value. "Dynamic" is for dynamic resolution adjustment based on remote/live video window resolution and network bandwidth. For better live display in multi split window display, please make sure the IP cameras support ONVIF and multi, at least dual, streaming.
- Video Stream Quality network live video stream quality. Press +/- Keys to change the value. Please note that the value cannot be changed due to the limitation of the main chip.
- **DVR/NVR Name** the "DVR/NVR Name" used in the "CMS Server" if CMS Server (described below) is (to be) connected with the DVR/NVR. Please follow the Text Input method described in Section 4.1 to modify this item.
- CMS Server URL #1-2 the URL (Uniform Resource Locators) for the CMS Server #1 and #2. The DVR/NVR will connect with up to two CMS servers automatically once it's running. Please note that with this feature, the NVR needs not to be a web server, while the CMS server needs to be a web server. Please follow the Text Input method described in Section 4.1 to modify these items.
- IP Filter #1-4 the IP filters #1-4 for remote access. Only those PCs with IP addresses matching one of the IP filters can access the DVR/NVR remotely. Please follow the Text Input method described in Section 4.1 to modify these items.

Note: If the Control Port or Data Port is not available or accessible during remote access, the system will reset the ports to their default values, i.e. 67/68.

7. PTZ Control

The network video/audio recorder supports a variety of PTZ cameras. The user can easily control the PTZ cameras through the operations described in this Chapter if those PTZ cameras have been connected and setup correctly. Please refer to <u>Section 6.1 Pre-Camera Setup</u> to set the camera as a PTZ camera.

If a camera is also a PTZ camera, there will be an asterisk (*) preceding its title in its video window in split-window display. Please press PTZ Key (Mouse:) to enter PTZ control mode if the focus camera is a PTZ camera. The asterisk (*) will be changed to inverse color to indicate that the camera is now in PTZ control mode.

In PTZ control mode, the user's operations can be divided into general operations and miscellaneous function specific operations, and are described as the followings:

General operations:

- ▲ ▼ (Mouse: Left-click in the up/down area of the video window)
 Press these Keys to tilt the camera up/down.
- **(Mouse: Left-click in the left/right area of the video window)**Press these Keys to pan the camera left/right.
- ZOOM (○) +/- (Mouse: Press these Keys to zoom in/out the camera.
- GOTO (Mouse: Press this Key to move the camera to the preset position. The range of the preset positions is 00-254.

■ NEXT

Press this Key for the next miscellaneous function. The miscellaneous functions include Focus, Iris, Auto PAN, SEQ, Preset, and Pan Speed. And the active one will show on the lower right corner of the screen. The miscellaneous function specific operations are described in the following table.

Miscellaneous function specific operations:

Active function	Operations	Descriptions
Focus	+/- ENTER	focus far/near (Mouse:
Iris	+/-	Iris increase/decrease (Mouse:
Auto Pan (3) (Mouse:	+/- ENTER	Auto pan speed is shown in parenthesis increase/decrease speed
	#	start/stop Auto Pan set start position set end position
SEQ (5 sec.) (Mouse:	+/-, NUMBER ENTER	SEQ dwell time is shown in parenthesis. If SEQ mode is on, the camera will goto preset position 0-9 (or 1-10) sequentially. change dwell time start/stop SEQ mode, an asterisk (*) will show if SEQ mode is on
Preset (1) (Mouse:	+/-, NUMBER ENTER #	Preset location is shown in parenthesis change Preset location set Preset location clear Preset location
Pan Speed (3) (Mouse:	+/-	Manual pan speed is shown in parenthesis increase/decrease speed

8. Search/Playback/Archive (Administrator, Supervisor)

There are five ways to search the recorded video/audio for playback:

- (a) Search by time,
- (b) Search by event,
- (c) Search archived files, and
- (d) POS search.

In split-window display, press **SEARCH** Key (**Mouse**:) to call up Search Menu display as shown.



The user's operations are described as the followings:

Press these Keys to change the highlighted item.

■ ENTER (Mouse: Left click)

Press this Key to enter the corresponding Search display of the highlighted item. The Search displays and their operations are described in the following sections, followed by the playback operations of the searched video/audio.

■ ESC (Mouse: Right Click)

Press this Key to escape from Search Menu display, and return to split-window display.

Note: In split-window display, the user can press PLAY Key (Mouse: In split-window display, th

8.1 Search By Time

The screen for Search By Time is shown as below:



The Status field will show the 'Recorded from' time based on the selected Video/Audio before searching - alarm partition if any of Alarm, Motion, or Video Loss, is checked, and normal partition if Normal is checked. Above the status field is the 24H time slider and alarm/motion/video loss/normal recording status (from top to bottom).

The general operations are as below:

- ▲▼◀► (Mouse: Left click)
 Press these Keys to select the items.
- ESC (Mouse: Right Click)

 Press this Key to escape from this screen, and return to split-window display.
- Play Key () (Mouse: Left click)

 Press this Key to start playing the recorded video/audio with the selected search time and video/audio type. If there's no camera in playback mode, all the cameras in the current split window will be set to playback mode.
- Copy Key ((Mouse: Left click)

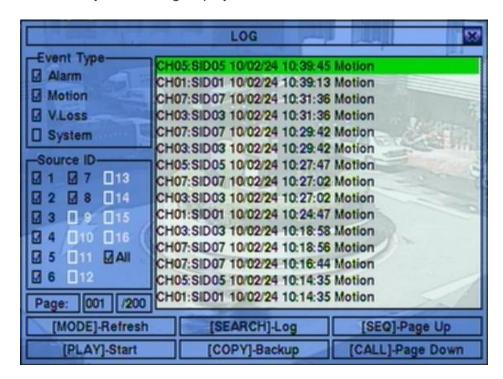
 Press this Key to backup (copy) the selected type of recorded video/audio starting from the Search Time (described below) in the HDD to the connected backup device without playback. The Backup display (described in Section 8.5) will show. Please note that this kind of backup is performed in the background, and the user can still do almost all the operations.

Following is a brief description for each item and its specific operations:

- Search Time (Year, Month, Date, Hour, Minute) for the recorded video/audio. The playback (or backup) will start from the time entered here when the user press the playback Keys (or Copy Key) later. Press +/- Keys to modify each item. User can also select the calendar on the left by mouse click or ENTER key, and select the time by mouse dragging the slider icon, or ◀▶ key for one-minute decrement/increment and -/+ key for thirty-minute decrement/increment.
- Video/Audio (Alarm, Motion, Video Loss, Normal). Check the types of the recorded video/audio you want to search for playback. Press ENTER or +/- to check/uncheck each item.

8.2 Search By Event / Log Display

The screen for Search By Event - Log display, is shown below:



There are four different types of event logs, including Alarm, Motion, Video Loss, and System. And up to 6000 most recent event logs can be stored in the system.

The general operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

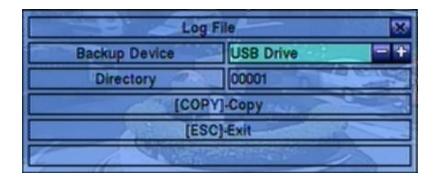
Press this Key to escape from this screen, and return to split-window display.

■ MODE => Refresh (Mouse: Left click)

Press this Key to refresh the log display. If there are new event logs after the screen is last updated, the log list shown will be updated accordingly.

■ SEARCH => Log (Mouse: Left click)

Press this Key to export the event log to backup device. The **Log File dialog** will show as below.



Please select the backup device, and enter the directory name you want, and then press **COPY** to copy the event log to the selected backup device.

- SEQ => Page Up (Mouse: Left click)
- CALL => Page Down (Mouse: Left click)
 Press SEQ/CALL to Page Up/Down the Log display.
- Number (ENTER) (Mouse: Left click in the page number shown)

 Press these Keys to select the display page of the event logs, the log list will also be updated.

Following is a brief description for each item and its specific operations:

- Event Type the type of the events (Record, Alarm, Motion, Video Loss, System) to show in the log list. The Event Type "System" includes all system related events, such as power on/off, and will not trigger recording. Press ENTER or +/- to check/uncheck the event type for the log list.
- Source ID the source which triggered the event. For Alarm, it's the alarm input number; for Motion and Video Loss, it's the camera number. It's used to filter the events to show in the log list. Press ENTER or +/- to check/uncheck each item. You may check/uncheck "All" for faster operation.
- Log List the event logs according to the Event Type and Source ID selected. The user may (1) press ENTER (Mouse: Left click) to select/deselect the highlighted log in this list, (multiple logs can be selected in this way) (2) press Play Keys ((Mouse: Left click) to playback all the selected logs, or (3) press Copy Key ((Mouse: Left click) to backup (copy) all the selected recorded video/audio to the connected backup device without playback. The Backup display (described in Section 8.5) will show. Please note that this kind of backup without playback is performed in the background, and the user can still do almost all the operations. Please refer to Section 8.6 Playback For Search By Event for the detailed operations for event playback.

8.3 Search Archived Files

The screen for Search Archived Files is shown below:



The operations are as below:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ ESC (Mouse: Right Click)

Press this Key to escape from this screen, and return to split-window display.

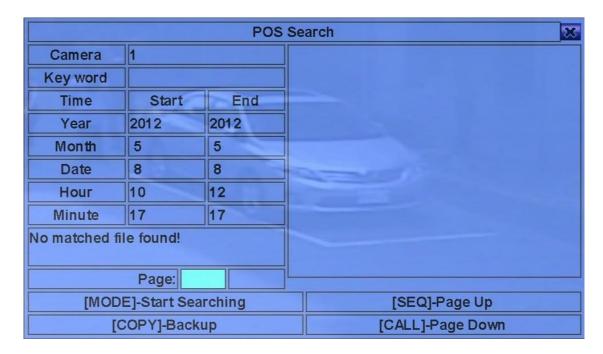
Following is a brief description for each item and its specific operations:

- Backup Device press ENTER (Mouse: Left click) to call up Backup Device dialog (if there's no Backup device connected).
- **Disk Storage** to select the disk storage to search the archived files. Press +/- Keys to select the available storage.
- Archived File List the archived files in the selected Disk Storage. Please select the file, and then press ENTER to enter Archived File Playback display of the selected file in this list, or press Play Key () (Mouse: Left click twice) to playback it directly. Please refer to Section 8.7 Playback For Archived Files for the detailed operations. Besides, you may press MODE (Mouse: Left click) to delete the selected file.

Note: The format of the filename is camNN-YYYYMMDD-hhmmss.h264, where NN stands for camera number, YYYY year, MM month, DD date, hh hour, mm minute, and ss second.

8.4 POS Search

The screen for POS Search is shown below:



The Status field will show the 'Recorded from' time in the HDDs before searching or the search result after searching.

The general operations are as below:

- ▲▼◀► (Mouse: Left click)

 Press these Keys to select the items.
- ESC (Mouse: Right Click)

 Press this Key to escape from this screen, and return to split-window display.
- SEARCH / MODE (Mouse: Left click)

Press this Key to start searching the recorded video/audio with the selected search time, camera, and key word. The search result will show on the right half of this dialog. To prevent the system from overloading by POS Search, up to 500 matched files or 200 GB of HDD storage for each record partition, alarm or normal, from the start time will be searched.

- SEQ => Page Up (Mouse: Left click)
- CALL => Page Down (Mouse: Left click)
 Press SEQ/CALL to Page Up/Down the Matched file display.

■ Number (ENTER) (Mouse: Left click in the page number shown)

Press these Keys to select the display page of the matched files in the list.

Following is a brief description for each item and its specific operations:

- Camera ID the camera to be searched for matched files. Press +/- Keys to change the camera ID.
- Key word the key word for the POS data of the camera to be searched for matched files.

 The POS data containing the key word will be selected as matched. If key word is empty, all POS data will be selected. Please follow the Text Input method described in Section 4.1 to input this item.
- Start/End Time (Year, Month, Date, Hour, Minute) for the POS data for the recorded video/audio. The files will be searched from the start time to the end time entered here when the user press the SEARCH/MODE Key later for the matched files. Press +/- Keys to modify each item.
- Matched file List the matched files (HDD ID & time are shown) according to the selected search time, camera, and key word. The files are shown from the oldest to the newest, and its page number is shown on the lower-left corner. The user may (1) press ENTER to enter POS Search Playback display of the selected matched file in this list, (2) press Play Key (Mouse: Left click twice) to playback it directly, or (3) press Copy Key (Mouse: Left click) to backup (copy) the selected recorded video/audio to the connected backup device without playback. The Backup display (described in Section 8.5) will show. Please note that this kind of backup without playback is performed in the background, and the user can still do almost all the operations. Please refer to Section 8.8 Playback/Archive For POS Search for the detailed operations for POS search playback.

8.5 Playback/Archive For Search By Time

In split-window display, press **MODE** Key (**Mouse**: to change circularly the live/playback mode for the focus window and the other windows that form a rectangle on the screen. The video windows for the windows in playback mode are grayed, while those in live mode display live video.

Please refer to <u>Section 4.3 Basic Operations</u> for how to change the camera(s) in the playback windows(s). After the playback windows and cameras are all set as you want, you may use the following Keys to control the playback:

■ Play/Pause Key (►/Ⅱ) (Mouse: ☑)

2X.

- Press this Key to play the recorded video/audio searched at forward speed 1X, or pause the playback. If the playback is paused, press this Key again to resume playing. Note that audio can only be played at forward speed 1X.
- Stop Key (■) (Mouse: □)

 Press this Key to stop playing the recorded video/audio. If the user press ►/■ Key later, the playback will start from the beginning.
- Fast Forward Key (►) (Mouse:), Slow Forward Key (SEQ) (Mouse:) =>
 (Mouse: to toggle)

 Press this Key for fast/slow forward playback. Each time this Key is pressed, the forward playback speed will become faster/slower, from 2X, 4X, 8X, up to 64/16X, and then back to

Press this Key for fast/slow review playback. Each time this Key is pressed, the review playback speed will become faster/slower, from 2X, 4X, 8X, up to 64/16X, and then back to 2X.

- Single Step Key (►) (Mouse: □)

 Press this Key to play the recorded images frame by frame.
- Press this Key to display the GPS/POS data if there's GPS/POS data accompanied with the playback camera. Please select the Type (GPS or POS), Position, Background, Rows, and number of Characters on the screen, and then press **ENTER** to display the GPS/POS data, or **ESC** to cancel. Press **ENTER** again to not display it.

■ MENU (Mouse: □□)

At playback, press this Key for the snapshot of the playback video. A confirmation dialog will show, press **ENTER** to snapshot, **ESC (Mouse: Right Click)** to exit without snapshot. The snapshot picture will be saved in the directory /Snapshot in the connected backup device.

■ Copy () (Mouse:)

Press this Key to copy or stop copying the playback video/audio to the storage device connected to the USB port. The **Backup display** will show as below.



Following is a brief description for the operations in Backup display:

■ ▲▼◀► (Mouse: Left click)

Press these Keys to select the items.

■ Copy Key () (Mouse: Left click)

Press this Key to start backup (copy) or apply the revised settings if it's copying, and return to the previous display. There will be a **Copy** icon on the lower-right corner indicating that the selected video/audio is being archived to the storage device. **For DVD disc, the files won't be written to the disc until the storage size reaches 1 GB or the user stop copying.** Writing to the disc may take more than 1 minute for every 100 MB (depending on the disc type).

■ Stop (■) (Mouse: Left click)

Press this Key to stop copying and return to the previous display. The **Copy** icon will be disappeared.

■ ESC (Mouse: Right Click)

Press this Key to cancel, and return to the previous display.

The description for each item and its specific operations is as below:

- Backup Device the backup device connected to the system. Press ENTER (Mouse: Left click) on the left Key to call up Backup Device dialog if there's no backup device connected. Press +/- Keys on the right selection to select the connected device. Please follow the steps described in Section 5.5 Backup Device to connect the backup device before copying.
- Backup Speed 1-9, with 1 the lowest speed, 9 the highest speed. Press +/- Keys to select the value.
- **Directory** the directory to store the archived files. Please follow the Text Input method described in <u>Section 4.1</u> to input the directory.
- Cameras the video/audio of the cameras to be archived. Press ENTER or +/- to select/deselect each of the selectable cameras. If the camera with GPS data is selected, the GPS data will be saved with the camera video in the same file. The user may save GPS data only (without saving camera video) by selecting GPS.
- **GPS File Format** for the backup of GPS data only. The supported formats are **TXT** and **KML**. Press +/- Keys to select the value.
- End Time (Year, Month, Date, Hour, Minute) for the recorded video / audio for the backup without playback of Search By Time. The files will be backup from the start time to the end time when the user press the COPY Key (Mouse: Left click) to start copying. Press +/- Keys to modify each item.
- Search Key () (Mouse:)

Press this Key to display the playback slider bar as shown below.



The left-most is the start time and its slider, the right-most is the end time and its slider, and the middle is the current playback time and its slider. Following is a brief description for the operations in playback slider bar:

■ ▲ ▼ (Mouse: Left click)

Press these Keys to select the focus slider.

- ◀► repeatedly & ENTER Key (Mouse: Left click and drag)
 Press ◀► repeatedly and then press ENTER to move the focus slider to a new time.
 The whole playback slider bar will be updated accordingly.
- Playback Keys (►/Ⅱ, ■, ►►, ◀◀, ►►)

 These playback Keys are still operational as described above.
- ESC (Mouse: Right Click)

 Press this Key to not show the playback slider bar.

Except the playback Keys, the user can still do all the other operations in split-window display as if there is no playback. Please refer to <u>Section 4.3 Basic Operations</u> for the operations of the other Keys.

Note: The format of the GPS filename is YYYYMMDD-hhmmss.txt (or .kml), where YYYY stands for year, MM month, DD date, hh hour, mm minute, and ss second. GPS file can be displayed in the archived file list, but cannot be played. Please use GPS applications such as Google Earth, PaPaGO, etc. to read/convert its contents.

Note: For each camera and each backup, a batch file will be generated as well as the backup files. A directory "/SelfPlayer" will also be generated if it's not existing in the backup storage device. The user can use the batch file to self-playback the corresponding backup files in a PC. If the PC has not been installed with the required player components, those components will be installed by running the batch file except Windows Vista. For Windows Vista, please run /SelfPlayer/SelfPlayerInstall.exe manually to install the required player components. To copy self-playback files, please copy the batch file and the backup files to the destination directory, and copy the whole directory "/SelfPlayer" to the root directory of the destination device.

8.6 Playback/Archive For Search By Event

In Log display, press **Play Keys** ((Mouse: Left click) to playback the selected logs. This display is the same as full screen display of the main display, and the playback Keys are effective.

The operations are as below:

■ Playback Keys (►/Ⅱ, ■, ►►, ◀, ►, È, ENTER, MODE, SEQ, SEARCH) (Mouse: □, ..)

These Keys are all the same as in <u>Section 8.5 Playback/Archive For Search By Time</u>.

■ The Other Keys

All the other Keys are the same as in Section 4.3 Basic Operations.

8.7 Playback For Archived Files

In Search Archived Files display, press **ENTER** to enter Archived File Playback display of the selected file, or press **Play Key** (**Mouse: Left click twice**) to playback it directly. This display is the same as full screen display of the main display, and the playback Keys are effective.

The operations are as below:

- Playback Keys (►/Ⅱ, ■, ►►, ◀ , ► , ENTER, MODE, SEQ, SEARCH) (Mouse: ☑, ..)

 These Keys are all the same as in Section 8.5 Playback/Archive For Search By Time. Please note that COPY Key (□) is not effective in this display.
- The Other Keys

All the other Keys are the same as in Section 4.3 Basic Operations.

8.8 Playback/Archive For POS Search

In POS Search display, press **ENTER** to enter POS Search Playback display of the selected matched file, or press **Play Key** (**Mouse: Left click twice**) to playback it directly. This display is the same as full screen display of the main display, and the playback Keys are effective.

The operations are as below:

■ Playback Keys (►/Ⅱ, ■, ►►, ◀ , ► , ■, ENTER, MODE, SEQ, SEARCH) (Mouse: □, ..)

These Keys are all the same as in Section 8.5 Playback/Archive For Search By Time.

■ The Other Keys

All the other Keys are the same as in Section 4.3 Basic Operations.

9. Remote Access

9.1 PC Remote Access

The network video/audio recorder can be accessed by using a web browser installed on a PC if this unit is connected to a network, either internet or intranet.

Before Logging On

Before accessing this unit through web browser, please make sure the followings (**For most PCs, only step 4 & 7 is needed!**):

- 1. This unit is connected to the network correctly, and the configurations are all setup correctly. Please refer to <u>Section 6.10 Network Setup</u> for the detailed configurations.
- 2. **DirectX**[®] **End-User Runtime 9.0** or above has been installed in your PC successfully. If not, please logon to http://www.microsoft.com to get the free download of it.
- 3. Windows XP KB319740 Package has been installed in your PC successfully if the PC is running Windows XP SP2. If not, please logon to http://www.microsoft.com/downloads/details.aspx?FamilyId=9B5EDFC8-A4BB-4080-9063-6518166 E2DAB&amp;displaylang=en to get the free download of it, or install it from the corresponding directory in the CD. (This package is a bug fix for Windows XP SP2.)

- 4. The domain name or IP address of the network video/audio recorder has been set as **trusted web site** in your PC, and the **(https:) server verification** for trusted web site is **unchecked**. If not, please go to Tools->Options->Security in your I.E. to do the settings. For **I.E. 7**, please set the **Security level for this zone** to **Low**.
- 5. The ActiveX control in your PC is not disabled. If you are not sure, please go to Tools->Options->Security->Custom in your I.E. to enable ActiveX control.
- 6. Port 67 (control port) or port 68 (data port) is not blocked out by your router or ISP (Internet Service Provider).
- 7. If the PC has used I.E. to access earlier software version of DVR/NVR, please go to Tools->Options->General in your I.E. to delete "Temporary Internet files" and all offline contents.
- 8. To have better look-&-feel for your PC, please go to Start->Setup->Control, and select Display->Visual Style->Windows XP Style.
- 9. Please go to Start->Setup->Control, select Display->Settings, and set the Screen Resolution to at least 1024x768 and Color to 32-bit.

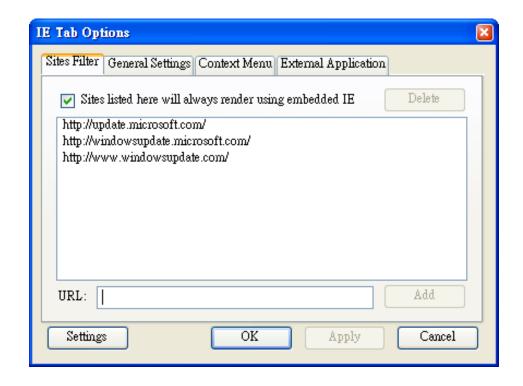
Note: If trusted web site is not set, please follow the instructions on the screen to download the manual package, logon the PC as administrator, and install the package in the PC.

After the package is installed, users should be able to logon to the DVR/NVR successfully.

Firefox

To use Firefox to access the DVR/NVR, please do the followings:

- 1. Launch Firefox.
- 2. Visit the web site "http://ietab.mozdev.org" to download and install IE Tab Plugin.
- 3. Select Tools->IE Tab Options.
- 4. Select Sites Filter.
- 5. Check the option "Sites list here will always render using embedded IE", and add NVR's URL into sites list.



Logon

After the above-mentioned items have been done correctly, restart your web browser and enter the domain name or IP address (EX. http://192.168.1.100 if HTTP port is 80, or http://192.168.1.100:800 if HTTP port is 800) of the network video/audio recorder in the Location/Address field of the web browser. The plug-in software in the system will be downloaded and run automatically in the web browser. Please note that up to 8 users can logon this DVR/NVR simultaneously.

Remote Display and Operations

After the plug-in software is downloaded and run in the web browser, you will be asked (1) to install redistributable software, and (2) for ActiveX control to interact with your PC. Please select Yes, and the remote login display will show. Please note that the PC user must have system administrator password for the PC; otherwise, the process will fail, and an error dialog will show. For some PCs, it may be necessary to click in the window with the message in red color, but outside the Login Dialog before the next step. Please enter the correct login name and password (and control port & data port if they have been changed) for the NVR to login the system. Please also enter the directory name if multiple profiles were saved. And the main remote display will show as below.



The video images can be displayed in several types of split-window screens, including 1/4/9/16-Window for single DVR/NVR and 25/36/49/64 for multiple DVR/NVRs. And the focus window is surrounded by a frame border. In addition to the video windows, there are different icons on the lower corner and the right corner of the screen for status display and control. (The ".L" following the camera title stands for Live display, ".P" for Playback, and the camera title with white background has detected motion.)

Note 1: The frame rate is limited by the bandwidth of the network and the pre-record IPS of the camera (Section 6.2).

Note 2: The picture quality depends on the recording resolution and recording quality of the camera (Section 6.2).

When the user leaves I.E., he/she may be asked to save changes to files, please enter the directory name (or use default if only one profile is needed), click on OK or Yes to save the changes. The operations and descriptions for these icons are as below:

■ In video window, right-click the mouse Key to call up Camera/Playback/Print Dialog. (Left) click on Playback or Camera number to change the window to the corresponding camera and live/playback mode. The user may click on the "Print" Key to print the video to the printer, or "Snapshot" the video. The user may also double click for 1-Window display.



Click on these icons to switch the video aspect ratio between 4:3 and 16:9.



Click on these icons for 1/4/9/16/25/36/49/64-Window display. For 4/9 split windows, the user can click on the icon, and select a different display page.



Click on this icon to switch to or return from SEQ display mode.



Click on this icon to toggle between live mode and playback mode for all the video windows.



Click on this icon to freeze/unfreeze the video images for all the video windows.



Click on this icon to enable/mute the audio input from the PC, Key down for enable, Key up for mute. If enabled, the audio input from the PC will be sent to the DVR/NVR. The default setting is 'mute'.



Click on this icon to enable/mute the audio output from the camera for the focus window (or DVR/NVR), Key down for enable, Key up for mute.



Click on this icon to show/hide the GPS data for (1) the selected DVR/NVR, or (2) the DVR/NVR for the focus camera, Key down to show, Key up to hide.



Click on this icon to show/hide the POS data (for 9-split-window or larger video window) for (1) the selected DVR/NVR, or (2) the DVR/NVR for the focus camera, Key down to show, Key up to hide.



Click on this icon to backup video/audio, and the Backup dialog will show. Please select the DVR/NVR, cameras, event type, destination directory, execution time, and data range, and then click on "Apply" or "OK" to backup, or "Cancel" to cancel. Please note that Execution of "Now" or "Once" is one-time backup, while "Daily" is daily backup.



Click on this icon for snapshot of the focus camera.



Click on this icon for audio broadcasting to all connected DVR/NVRs.



Click on this icon to toggle between full screen display and normal I.E. display.



Click on this icon for full video display (without any icon).



Click on this icon mirror, flip, or rotate 180 degrees for the video.



Click on this icon to zoom in the video. While enabled, click in the video for 2X, then 4X, and right click to back to 1X.

DVR#3-DP-H.264

The device name of the selected DVR/NVR is shown. Click on this icon, and the available DVR/NVRs will all show. The user may type alphanumeric characters to get the matched DVR/NVRs. Click on one of them to select a new DVR/NVR. The 1/4/9/16 split-window video display, the camera status, and the alarm input/output will all switch to correspond to the newly selected DVR/NVR. There's "Multiple" in the device list, the user can select it to display camera video from different DVR/NVRs in 4/9/16 split window display.



Playback panel for playback Keys, including Fast Review, Fast Forward, Single Step, Play, Pause, Stop, and Copy (from left to right). Please note that the Copy function can be used to archive both live and playback streams. Please check/uncheck the cameras to be archived when the Copy Dialog is shown, and then click on OK or Apply Key. If the user click on Apply Key and select & highlight one of the cameras, the current copying status for that camera will show in the dialog. For "SelfPlayer" (described in Sec. 8.6) to work correctly, please copy the file "vcredist_x86.exe" in the CD to Windows directory such as "/WINDOWS" or "WINNT".



PTZ control panel. If the camera in the focus window is a PTZ camera, these Keys in the PTZ control panel can be used for PTZ control. The operations include Tilt Up/Down, Pan Left/Right, Zoom In/Out, Focus Near, Focus Far, Iris – (darker), Iris + (brighter).

Camera

Status indicators for cameras 1-8/4 (GREEN for normal, RED for motion) for the selected DVR/NVR. Click on any of these icons to select the corresponding camera of the selected DVR/NVR to be displayed in the focus window.

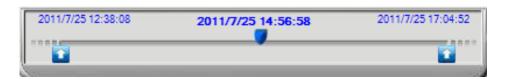
Status indicators for alarm inputs 1-4 (GREEN for normal, RED for alarm) for the selected DVR/NVR.

Alarm Out

Alarm outputs 1-2 (GREEN for normal state, RED for triggered state) for the selected DVR/NVR. For Administrator, click on any of these icons to control the corresponding alarm output from normal to triggered, or from triggered back to normal.



Click on this icon to call up Search-by-time dialog. Please select the time (Year, Month, Date, Hour, and Minute) and recorded video/audio type (Alarm, Motion, Video Loss, and Normal) to search for playback. Click on Search Key to start the search of the recorded video/audio. (If it failed, the result will show on the title of the dialog.) Now, you may use the playback Keys to play the recorded video/audio. If there's not any camera in playback mode, all cameras will be searched and played. A playback slider will show at playback for "Search By Time".



The operations are similar to DVR/NVR local operations, except the user may click on the bottom area of the playback slider to drag it to a different location.



Click on this icon to call up Search-by-event dialog. The event logs will show on the screen. Please select the device, event type, and source ID to search for the event logs. Click on Refresh, Up, or Down to update the event logs. Click on the desired event log to highlight and select it. Click on the OK Key to search the recorded video/audio for the highlighted event log. Now, you may use the playback Keys to play the recorded video/audio.



Click on this icon to call up search-PC-video dialog. Please select the **file(s)**, and then click on Open. Now, you may use the playback Keys to play the recorded video/audio in the file(s).



Click on this icon to call up POS-Search dialog. Please select the DVR/NVR, camera, key word, and start/end time, and click on "Search", then the matched POS data will show. Please select the desired POS data, and click on "Backup" or "Play" to backup or play the recorded video/audio corresponding to the POS data.



Click on this icon to show/hide full PTZ control panel. The user can click on the PTZ Panel (but outside of any object in it) (to call up the **Context menu**) to move it.



Click on this icon to call up Setup dialog. **Unlimited number of DVR/NVRs can be added to the device list.** Following is a brief description for each item:

- **Device Name** any meaningful name for the (DVR/NVR) device.
- Address IP address or URL domain name for the device. It should be the same as the IP address (for Static IP) or URL (for PPPoE) in Network Setup for the (DVR/NVR) device.
- Control Port the control port for the device. The default value is 67.
- **Data Port** the data port for the device. The default value is 68.
- Video Stream "Record" live video same as recording stream, or "Extra" extra network stream (set as in <u>Sec. 6.10.4 Advanced Network Setup</u>) if dual streaming is supported for the device. The default value is "Record".

- User Name the login user name for the device. It must be in the list in Password Setup for the device. Please note that different levels of users have different available operations.
- **Password** the corresponding password for the login user name for the (DVR/NVR) device.
- Auto Connection whether the user wants to connect automatically to this (DVR/NVR) device.
- Connected whether this PC is connected with the device now. If a DVR/NVR is connected, the user may select it, and click on "Reboot" to reboot it.

The other properties in the dialog are similar to those described in <u>Chapter 6</u>. Please refer to <u>Chapter 6</u> for the detailed descriptions. Besides, the user can **download/upload** the configurations from/to the connected DVR/NVR, or **open/save** the configurations from/to the designated directory.



Click on this icon to call up remote Software Upgrade dialog. The current software version of the DVR/NVR(s) will show in the "status" field. Please select the DVR/NVR device and upgrade file in the PC, and then click on Start Key to start the software upgrade process. The Upgrade status will be updated according to the progress. When the upgrade file is uploading, the user may click on Stop/Close Key to stop the upgrade process.

Note: There must be at least one formatted HDD in the DVR/NVR for the remote upgrade to succeed. After the software in the DVR/NVR is upgraded, the DVR/NVR will restart immediately and the PC will be disconnected from the DVR/NVR. Please do step 7 in Before Logging On, and then re-run the I.E. to connect to the DVR/NVR again.



Click on this icon to call up GPS Configuration dialog. Please select the device. Then select **Display attributes** and **Output attributes** for **Live & Playback** respectively. If **Data Exchange File** is enabled, the corresponding GPS data will be output to the file specified. Please note that **Tag** and **Icon** are to be used by GPS software such as Google Earth for display purpose. If **COM Port** is enabled, the corresponding GPS data will be output through the specified COM port of the PC. The output data can be used as input by GPS application software such as Google Earth.



Click on this icon to call up POS Configuration dialog. Please select the device. Then select **Video Window or Pop-up Window** to show the POS data. All the other attributes are similar to those for the DVR/NVR.

System Requirements of Remote PC

It is recommended to access the digital video/audio recorder using a PC that meets the following system requirements. If you use a PC that does not meet the following system requirements, it may cause problems such as slow imaging or the browser unable to operate.

■ PC

IBM PC/AT compatible with Intel® Pentium® 4, 1.7 GHz or above CPU.

OS

Microsoft[®] Windows[®] XP, Windows[®] 2003, Windows[®] Vista, or Windows[®] 8/7.

■ Monitor

1024 x 768 or above.

■ Memory (DRAM)

2048MB or above.

■ Web Browser

Microsoft® Internet Explorer® 6.0 or above, **32-bit mode**.

■ DirectX

Microsoft® DirectX® 9.0 or above.

■ Others

Windows XP KB319740 Package if Windows XP SP2 is installed.

Appendix A – Specifications

System	O.S.	Embedded Linux 3.0		
C) C (C)	Multiplex	Sixfold operation - simultaneous record, live, playback,		
	Widnipiox	backup, control, & remote access		
	Certification	FCC, CE, etc.		
Video	Format	IP-CAMERA: ONVIF Profile S		
	Input	Up to 8-CH 1080p		
	Main monitor	HDMI, with resolution up to 1920x1080,		
		VGA D-SUB 15-pin, with resolution 1920x1080,		
		Support touch panel with USB interface		
	Loss detection	Yes		
	Motion detection	Yes, with configurable detection area & sensitivity		
	Privacy mask	Yes		
Audio	Input	1 RCA-jack connector, line-in level (100mV-2Vrms)		
	Output	HDMI,		
		1 RCA-jack connector, line-out level (up to 2Vrms)		
Record	Compression	Video: H.265 or H.264		
		Audio: G.726(ADPCM)/G.711(PCM)		
	Max frame rate &	120fps@1080p, 240/200fps@720p		
	resolution	Up to 56Mbps incoming bandwidth, including		
		live display		
	Mode	Manual/Schedule/Alarm/Motion		
	Pre-record time	0 - 10 seconds		
	Post-record time	0 - 60 minutes		
Display	Resolution	1920x1080		
	Split windows	1/4/7/9		
	Frame rate	Up to 30 (NTSC) / 25 (PAL) FPS per display window		
	Freeze	Yes		
	Sequential switch	User adjustable		
	Digital Zoom	X2, X4		
Playback	Max frame rate & resolution	80fps@1080p, 160fps@720p		
	Search	Date/time, Camera, Alarm, Motion, & Video Loss		
	Operation	Play, Fast Forward, Review, Pause, Stop, Snapshot, etc.		
		Remote I.E. and HEM can also Print, Snapshot		
Storage	HDD	2/1 set of 3.5" SATA type HDDs, > 4TB/HDD		
		Advanced format HDD supported		
	Partitions	Configurable alarm partition size		
		Configurable auto-overwrite or not		
	Backup	1 USB 2.0 ports for USB 2.0 disk drives, DVD+RW, DVD+R, DVD-R, card readers, HDD, etc.		
		Self playback for backup files		

Alarm	Input	4 contact or TTL/CMOS signal, polarity selectable				
	Output	1 Normally Open or 1 Normally Closed relay output				
	Buzzer	Yes				
	Triggered by	Sensor input, Video loss, & Motion				
	Event log	Yes				
Network	Ethernet	1 RJ-45 10/100BaseT Ethernet connector				
		Optional 8 Ethernet connectors for IP-CAMERA				
	Web	Remote setup, monitoring, backup, alarm notification, &				
		remote software upgrade				
		1 I.E./Firefox for multiple DVR/NVRs				
		Configurable HTTP/e-mail/FTP/Control/Data port				
	DDNS	Free DDNS server				
	E-mail/Push alarm	Alarm notification to stationary or mobile devices				
	FTP	Alarm video/audio file storage				
	Video	1/4/9 split-window & SEQ mode for I.E. and HEM				
		Dynamic electronics maps for HEM				
		N-Streaming live view				
	Audio	Bidirectional				
	Protocol	TCP/IP, HTTP, PPPoE, DHCP, DDNS, FTP, TSP, NTP, RTSP, P2P				
	Remote users	Up to 8 users simultaneously				
	Bandwidth	TCP/IP type dynamic sliding window control				
	Remote stations	PC, Mac, mobile phone, and/or tablet				
		With free iPhone/iPad/Android software app.				
Control /	I/R	1 remote Control to control up to 4 NVRs				
GPS / POS	RS-485	2-pin for keyboard control				
	RS-232	Optional D-type male connector for keyboard/POS				
Setup	Local	On screen setup via keypad, I/R remote, touch panel , mouse, and/or RS-485 keyboard Control				
	Remote	Setup & upload via Windows application software				
	Multi-lingual	Yes				
Reliability	System recovery	Auto power on after power loss recovery				
	Watch Dog Timer	Yes				
	Timer	Built-in real time clock				
	Security	Multi-level password (4 levels, up to 18 accounts)				
		protection with authentication key for remote access				
Weights &	Dimension	430 x 280 x 55mm or 320 x 210 x 50mm				
Measures	Weight	3.0/2.0 KG (without HDD)				
Power	Source	+12 VDC w/o PoE and +48 VDC for PoE				
	Consumption	PoE excluded: Max. 60/36W				
		PoE: Max. 16W/port, total 100/50W				
Operating Te	emperature	0°C ~ +40°C				

Appendix B – Time Zone Table

Time Zone	Offset	DST	Start	End
Samoa	GMT - 11:00			
Hawaii	GMT - 10:00			
Alaska	GMT - 09:00	•	Mar, 2nd Sun, 2:00	Nov, 1st Sun, 2:00
Pacific Time (US & Canada)	GMT - 08:00	•	Mar, 2nd Sun, 2:00	Nov, 1st Sun, 2:00
Arizona, US Mountain	GMT - 07:00			
Chihuahua, La Paz, Mazatlan	GMT - 07:00	•	May, 1st Sun, 2:00	Sep, last Sun, 2:00
Mountain Time (US & Canada)	GMT - 07:00	•	Mar, 2nd Sun, 2:00	Nov, 1st Sun, 2:00
Central America, Saskatchewan	GMT - 06:00			
Central Time (US & Canada)	GMT - 06:00	•	Mar, 2nd Sun, 2:00	Nov, 1st Sun, 2:00
Guadalajara, Mexico City, Monterrey	GMT - 06:00	•	May, 1st Sun, 2:00	Sep, last Sun, 2:00
Bogota, Lima, Quito, Indiana (East)	GMT – 05:00			
Eastern Time (US & Canada)	GMT - 05:00	v	Mar, 2nd Sun, 2:00	Nov, 1st Sun, 2:00
Atlantic Time (Canada)	GMT - 04:00	~	Mar, 2nd Sun, 2:00	Nov, 1st Sun, 2:00
Caracas, La Paz	GMT - 04:00			
Santiago	GMT - 04:00	•	Oct, 2nd Sun, 0:00	Mar, 2nd Sun, 0:00
Newfoundland	GMT - 03:30	v	Apr, 1st Sun, 2:00	Oct, last Sun, 2:00
Brasilia	GMT - 03:00	~	Oct, 3rd Sun, 2:00	Feb, 3rd Sun, 2:00
Buenos Aires, Georgetown	GMT - 03:00	•	Oct, 3rd Sun, 2:00	Feb, 2nd Sun, 2:00
Greenland	GMT - 03:00	•	Mar, last Sun, 1:00	Oct, last Sun, 1:00
Mid-Atlantic	GMT - 02:00	•	Mar, last Sun, 2:00	Sep, last Sun, 2:00
Azores	GMT - 01:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Cape Verde	GMT - 01:00			
Casablanca, Monrovia	GMT + 00:00			
Dublin, London	GMT + 00:00	v	Mar, last Sun, 1:00	Oct, last Sun, 2:00
Western Europe, Central Europe	GMT + 01:00	•	Mar, last Sun, 2:00	Oct, last Sun, 3:00
West Central Africa	GMT + 01:00			
Eastern Europe	GMT + 02:00	•	Mar, last Sun, 0:00	Oct, last Sun, 1:00

Cairo	GMT + 02:00	v	Apr, last Fri, 2:00	Sep, last Fri, 2:00
Harare, Pretoria	GMT + 02:00			
Helsinki, Kyiv, Riga, Sofia, Tallinn	GMT + 02:00	•	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Jerusalem	GMT + 02:00	•	Apr 1, 2:00	Oct, 2nd Sun, 2:00
Baghdad	GMT + 03:00	v	Apr 1, 3:00	Oct 1, 4:00
Kuwait, Riyadh, Nairobi	GMT + 03:00			
Moscow, St. Petersburg, Volgograd	GMT + 03:00	•	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Tehran	GMT + 03:30	•	Mar, 4th Tue, 2:00	Sep, 4th Thu, 2:00
Abu Dhabi, Muscat	GMT + 04:00			
Baku, Tbilisi, Yerevan	GMT + 04:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Time Zone	Offset	DST	Start	End
Kabul	GMT + 04:30			
Ekaterinburg	GMT + 05:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Islamabad, Karachi, Tashkent	GMT + 05:00			
Chennai, Mumbai, New Delhi	GMT + 05:30			
Kathmandu	GMT + 05:45			
Almaty, Novosibirsk	GMT + 06:00	v	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Astana, Dhaka, Sri Lanka	GMT + 06:00			
Rangoon	GMT + 06:30			
Bangkok, Hanoi, Jakarta	GMT + 07:00			
Krasnoyarsk	GMT + 07:00	•	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Irkutsk, Ulaan Bataar	GMT + 08:00	•	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Beijing, Chingqing, H. K., Urumqi	GMT + 08:00			
Kuala Lumpur, Perth, Singapore	GMT + 08:00			
Taipei	GMT + 08:00			
Osaka, Seoul, Tokyo	GMT + 09:00			
Yakutsk	GMT + 09:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Adelaide	GMT + 09:30	v	Oct, last Sun, 2:00	Mar, last Sun, 3:00
Darwin	GMT + 09:30			

Brisbane, Guam, Port Moresby	GMT + 10:00			
Canberra, Melbourne, Sydney	GMT + 10:00	~	Oct, last Sun, 2:00	Mar, last Sun, 3:00
Hobart	GMT + 10:00	~	Oct, 1st Sun, 2:00	Mar, last Sun, 3:00
Vladivostok	GMT + 10:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Magadan, Solomon Is.	GMT + 11:00			
Auckland, Wellington	GMT + 12:00	~	Oct, 1st Sun, 2:00	Mar, 3rd Sun, 2:00
Fiji	GMT + 12:00			
Kamchatka	GMT + 12:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Anadyr	GMT + 13:00	~	Mar, last Sun, 2:00	Oct, last Sun, 3:00
Nuku'alofa	GMT + 13:00		_	

Appendix C – Keyboard Control Protocol

ubbount o	y Doard Control Frotocor
Data Format	5 Bytes –
	Byte 1 : Synchronization Byte (0xFF)
	Byte 2 : Address, i.e. Device ID (0 – 0xFF)
	Byte 3 : Code (see below)
	Byte 4 : Reserved (0x00)
	Byte 5 : Checksum (sum of Bytes 2 – 4)
Code	Value (MSB set for key press, MSB reset for release)
0 – 9	0x30 - 0x39 (ASCII characters '0' - '9')
10	0x21 (ASCII character '!')
11	0x40 (ASCII character '@')
12	0x23 (ASCII character '#')
13	0x24 (ASCII character '\$')
14	0x25 (ASCII character '%')
15	0x5e (ASCII character '^')
16	0x26 (ASCII character '&')
4-Window	0x2a (ASCII character '*')
9-Window	0x28 (ASCII character '(')
16-Window	0x29 (ASCII character ')')
*/mark	0x2d (ASCII character '-' - Minus sign)
#/code	0x3d (ASCII character '=' - Equal sign)
Alarm Reset	0x71 (ASCII character 'q')
MODE	0x77 (ASCII character 'w')
SEQ	0x65 (ASCII character 'e')
CALL	0x72 (ASCII character 'r')
SEARCH	0x74 (ASCII character 't')
REC	0x79 (ASCII character 'y')
	Byte 4: 0 for toggle, i.e. OFF->ON, ON->OFF,
	Byte 4: 1 for REC ON,
	Byte 4: 2 for REC OFF
Fast Review	0x61 (ASCII character 'a')
Fast Forward	0x73 (ASCII character 's')
Single Step	0x64 (ASCII character 'd')
Play/Pause	0x66 (ASCII character 'f')
Stop	0x67 (ASCII character 'g')
Сору	0x68 (ASCII character 'h')

MENU	0x75 (ASCII character 'u')
ESC/PTZ	0x6f (ASCII character 'o')
MUTE/NEXT	0x6e (ASCII character 'n')
X2/GOTO	0x2c (ASCII character ',' – Comma)
▲/BS	0x69 (ASCII character 'i')
▼/DEL	0x6d (ASCII character 'm')
◀	0x6a (ASCII character 'j')
>	0x6c (ASCII character 'I' – small L)
ENTER	0x6b (ASCII character 'k')
Vol –	0x7a (ASCII character 'z')
Vol +	0x78 (ASCII character 'x')
_	0x63 (ASCII character 'c')
+	0x76 (ASCII character 'v')
MAIN-AUX ON	0x62 (ASCII character 'b')
MAIN-AUX OFF	0x70 (ASCII character 'p')
CALL-AUX ON	0x5b (ASCII character '[')
CALL-AUX OFF	0x5d (ASCII character ']')
UP-LEFT	0x7b (ASCII character '{')
DOWN-LEFT	0x7c (ASCII character ' ')
UP-RIGHT	0x7d (ASCII character '}')
DOWN-RIGHT	0x7e (ASCII character '~')
Alarm out ON	0x3c (ASCII character '<')
	Byte 4: 1-4 for AO 1-4 respectively
Alarm out OFF	0x3e (ASCII character '>')
	Byte 4: 1-4 for AO 1-4 respectively

Appendix D - MS-Windows HEM Utilities

There are several MS-Windows utility programs in the bundled CD, including CMS, CMS Player, Keyboard Control Simulator, H.265 or H.264 to AVI/MP4 Conversion Utility, and DVR/NVR Browser Utility. Please insert the CD in the CD-ROM or DVD-ROM drive in your PC, and then double click on CMS/Setup.exe in the CD to install CMS, and Utilities/Setup.exe to install the utility programs. Please follow the instructions on the screen to install the software in the default directory "Program Files\Hyper Electronics Mappers" or the directory entered by the user. For CMS, please refer to the manual for HEM. For the other utility programs, please refer to the following paragraphs. Please note that for DVR/NVR Browser Utility on Windows XP or 2003, user needs to run dotnetfx_x86.exe to install .net frame work in the PC.

HEM Player

Before running **HEM Player** in your PC, please make sure the followings:

- 1. **DirectX**[®] **End-User Runtime 9.0** or above has been installed in your PC successfully. If not, please logon to http://www.microsoft.com to get the free download of it.
- 2. Please go to Start->Setup->Control, select Display->Settings, and set the Screen Resolution to at least 1024x768 and Color to 32-bit.

To run the **HEM Player** under Microsoft[®] Windows[®] XP or Windows[®] 2000, please select Start->Programs->Hyper Electronics Mappers->HemPlayer, and the screen will show as below.



Since this utility is a free player utility for the archived files, from USB backup or remote backup, some of the functions are disabled. The mouse cursor will change to "Hand" type if it's on those enabled function icons. The operations and their descriptions are the same as in <u>Chapter 9</u>. Remote Access.

To select an archived file for playback, please click on **File** menu, and then select **Open**. After an archived file is opened, the user may click on the player Keys to play the file. The following diagram shows the screen after the **Play** Key is pressed.



The user may print the whole player screen (including the current video image) or the current video image by selecting **File** menu, and then select **Print** or **Print Video** respectively.

Keyboard Control Simulator

To run the **Keyboard Control Simulator** under MS-Windows, please select Start->Programs->Hyper Electronics Mappers->KCtrlSimulator, and the screen will show as below.



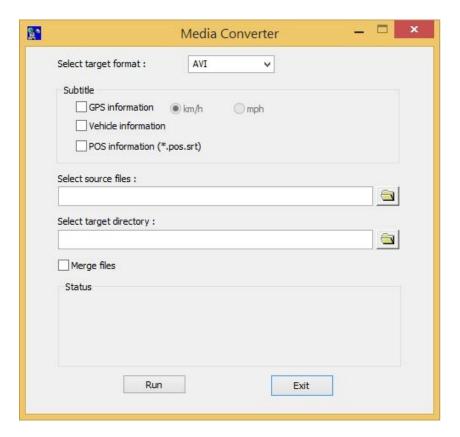
Please note that most of the Keys correspond to the keypads on the front panel. If you connect the PC through RS-232 and use an RS-232/RS-485 converter to connect to multiple DVR/NVRs, you would be able to control multiple DVR/NVRs via the simulation software. Please refer to Section 3.2 Optional Connections to connect/cascade the DVR/NVRs to the PC.

To select the DVR/NVR to control, please click on the Key as circled in the above diagram to set the corresponding DVR/NVR ID. Please note that the <u>RS-232/422/485 setup (Section 6.9)</u>, including the **DVR/NVR ID**, in the DVR/NVRs must be configured correctly (**Model** must be set as **Control Protocol**).

Note: **UP-LEFT**, **UP-RIGHT**, **DOWN-LEFT**, and **DOWN-RIGHT** are newly added to control the PTZ cameras diagonally.

H.264 to AVI/MP4 Conversion Utility

To run the **H.265** or **H.264 to AVI/MP4 Conversion Utility** under MS-Windows, please select Start->Programs->Hyper Electronics Mappers->Media Converter or double-click on the file **Media_Converter.EXE**, and the screen will show as below.



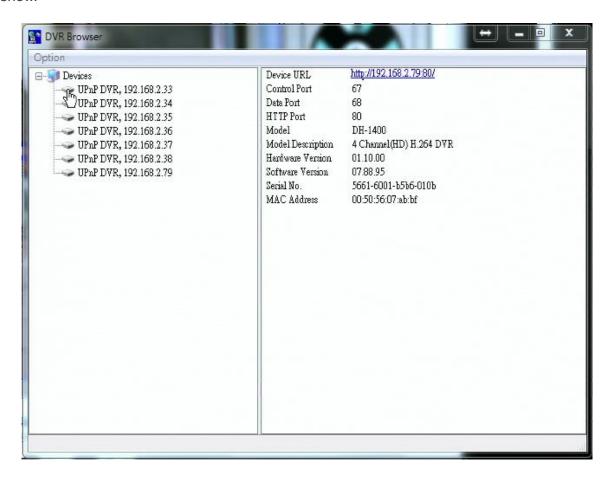
Please select the **target format – AVI or MP4**, the source files – **.H264** files archived from DVR, remote I.E., HEM, and FTP file transfer – to be converted from, the target directory to save the converted files, and check "Merge files" if you want chained backup files to be converted into one AVI/MP4 file, and then click on **OK** to do the conversion. If there's POS/GPS data for the files, please check the related items in [Subtitle]. The converted **.AVI** or **.MP4** files can be played by **Windows Media Player** if **DivX** or the other **H.265** decoder is installed in the PC.

To display subtitle in Media Player, please refer to http://www.brighthub.com/computing/windows-platform/articles/41466.aspx and logon to http://www.videohelp.com/software/VSFilter-DirectVobSub to download and install VSFilter / DirectVobSub. In Media Player, right click to display the menu and select [Lyrics, captions and subtitles]->[On if available] and enable it.

To display subtitle in VLC Player, please select [Tools]->[Preferences] ->[Subtitles/OSD] and check [Enable subtitles].

DVR/NVR Browser Utility

To run the **DVR/NVR Browser Utility** under MS-Windows, please select Start->Programs->Hyper Electronics Mappers->DVR Browser or double-click on the file **DVR_Browser.EXE**, and the screen will show.



The utility will scan all the DVR/NVRs which support UPnP in the LAN. Please select the desired DVR/NVR device, and its detailed information will show on the right as above. Users can (1) click on the URL to call up IE and logon to the device, (2) select Option->Rescan network, or (3) select Option->Export Device List. The exported device list can be imported to IE software or CMS software in the future.

Appendix E – GPS Function in Remote Software with Google Earth

The GPS output for the DVR/NVR and its remote software can be used by GPS software such as Google Earth. The user may use the following paragraphs as an example.

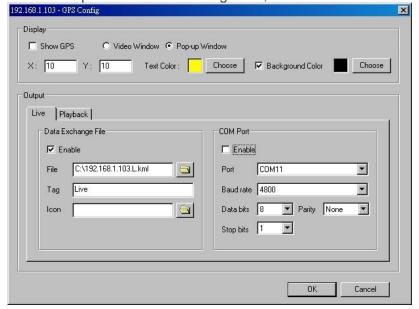
1. Open remote software such as IE Browser, and log on to the DVR/NVR or open and playback the archived file with GPS information.



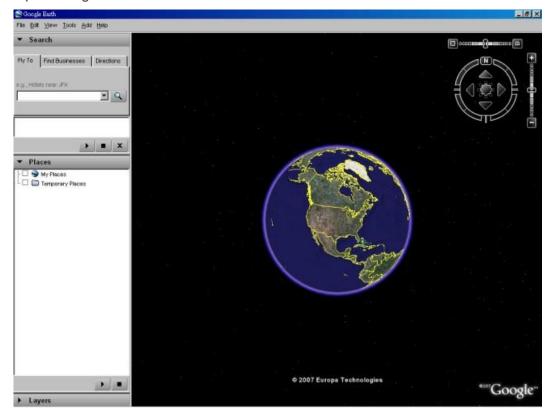
2. Select GPS Configuration ().



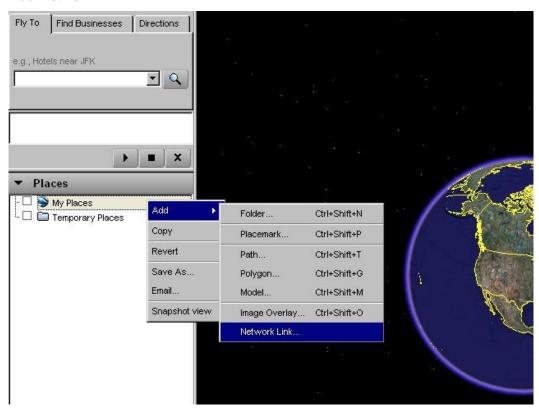
3. Enable Output with Data Exchange File, and set the related items (File, Tag, & Icon).



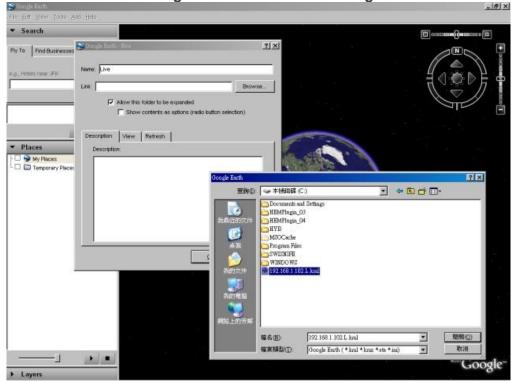
4. Open Google Earth.



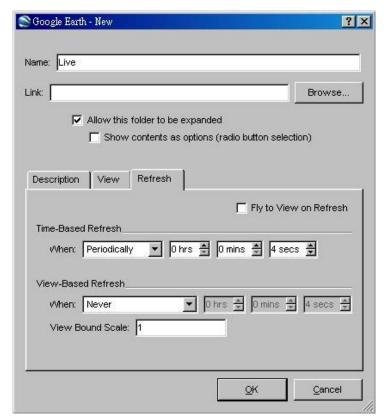
5. Add Network Link.



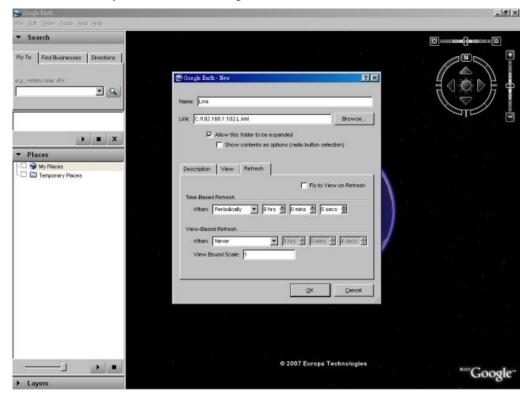
6. Select the Data Exchange File in the remote software as Link. Please note that the directory & filename MUST be in English for old version of Google Earth to work correctly.



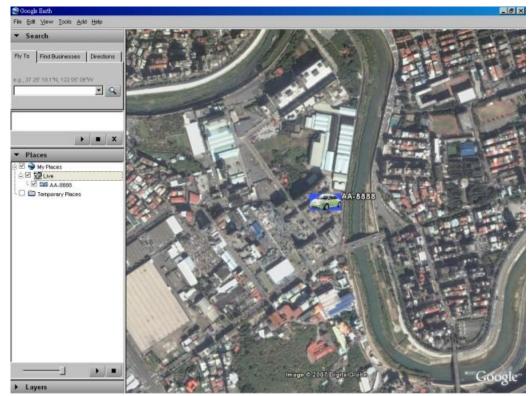
7. Set Time-Based Refresh.



8. Click on OK Key to save the settings.



9. Now, the GPS data will be fed from the DVR/NVR remote software to Google Earth, and the GPS position will be continuously updated in Google Earth.



Appendix F – Protocol Converter for Multiple POS

Multiple POS devices can be connected through the RS-232 port of the DVR/NVR. Please refer to Section 3.2 Optional Connections for the connections. Please refer to page 22/23 of 7524 Hardware User's Manual for the pin assignment of I-7523, which is similar to protocol converter I-7524.

Please note that the RS-485 module address of the protocol converter must be 1, 5, 9 or 13(Hex 0D), and the addresses of the POS devices connected are 1/2/3/4, 5/6/7/8, 9/10/11/12, and 13/14/15/16 respectively. The corresponding cameras for POS device addresses 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16 are cameras 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16.

The default RS-485 module address of the protocol converter is **1**. If the user wants to change the RS-485 module address of the protocol converter to **5**/**9**/**13**, please do the following steps:

- Connect the protocol converter to the RS-485 network of a host PC. (Please refer to page 9 in I-7524 Software User's Manual. RS-232-to-RS-485 converter can be used in place of 7520.)
- Execute 7188X.EXE in the host PC. (Please uncompress the file \Napdos\MiniOS7\utility\7188xw_20050127.zip in the bundled 7000/7188/8000 CD to get the executable.)
- 3. Select the active COM port of the host PC by pressing Alt-1 for COM1 or Alt-2 for COM2.
- 4. Change the baud rate to 38400 by pressing **Alt-C** first, then enter **b38400** to set baud rate to 38400.
- 5. Change to Line-Command-Mode by pressing **Alt-L**.
- 6. Change the RS-485 module address by entering **\$01AXX**. **(01** is the original module address, **XX** is the new module address such as **01/05/09/0D**.)

Please note that the other settings for the protocol converter are Baud Rate = 38400, Data Bit = 8, Stop Bit = 1, and Parity = None. Those settings cannot be changed, and have nothing to do with the RS-232/422/485 Setup (which is related to the settings of the POS printers connected).

©2019 Security Industries <u>www.laceys.tv</u> Errors and omissions excepted