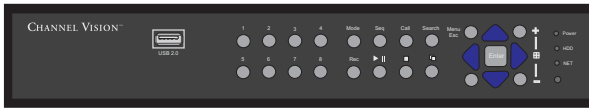


INSTRUCTIONS



DVR-4HE, DVR-8HE, DVR-16HE High Resolution 960H DVR

 **CHANNEL VISION™**
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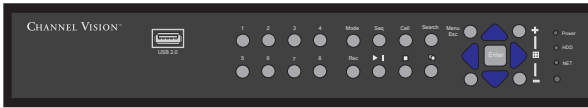
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Model DVR-4HE, DVR-8HE, DVR-16HE

DVR-4HE



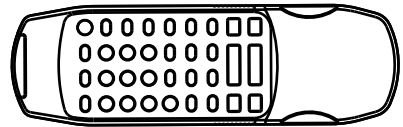
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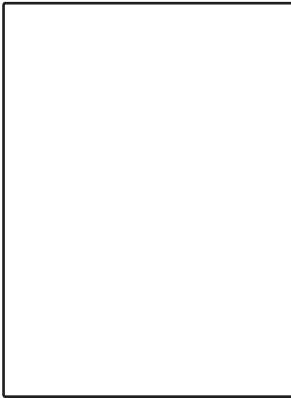
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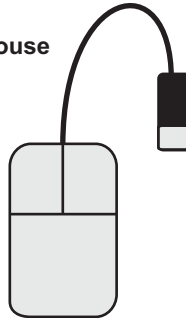
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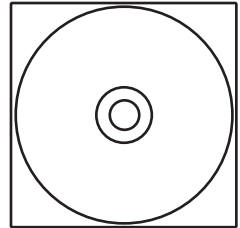
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Mouse



Software Disk



Power Supply



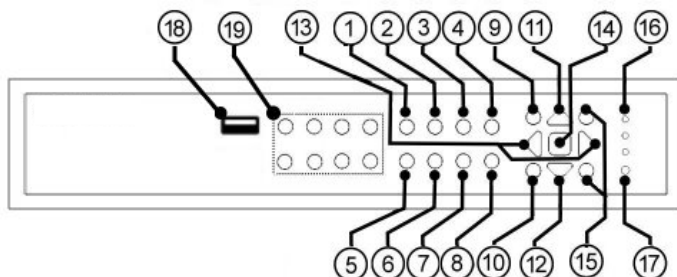
Product Introduction

The HE series 960 DVRs are designed for use within a surveillance system and are a combination of a hard disk recorder, video multiplexer, and web server. To achieve the highest connectivity and operability, this series of digital video/audio recorders are all based on industry-leading front-end to back-end surveillance infrastructure. With state-of-the-art system architecture, powerful hardware, compression, intelligent recording algorithms, sixfold operation can be achieved without sacrificing the increasing demands of functionality, performance, reliability, or availability in the surveillance industry.

Key Features

- Supports 960H High Resolution cameras (960x480)
- Smart search & playback
- Intelligent motion detection with programmable area and sensitivity
- Compatible with Internet Explorer, Chrome, Firefox & Safari
- Windows & Macintosh software included
- Simultaneous HDMI, VGA, and BNC outputs
- Supports UPnP
- POS integration (16 Channel model only)
- Compatible with standard or 960 CCTV cameras
- iPhone, iPad, & Android app
- Digital Zoom

Front Panel (8 Channel Only)



1. Mode Button:

In some dialogs, this button is used as a miscellaneous function key.
During playback, this button is used for the “slow rewind” function.

2. Seq Button:

Use this button to switch to or return from SEQ display mode in main screen display.
In some dialogs, this button is used as a miscellaneous function key.
During playback, this button is used for the “slow forward” function.

3. Call Button:

Use this button to switch to or return from the full screen display of the current camera or cameras. In some dialogs, this button is used as a miscellaneous function key.

4. Search Button:

Use this button to display the search menu while viewing the live video screen.
In some dialogs, this button is used as a miscellaneous function key.

5. Rec Button:

Use this button to force manual recording. To stop manual recording, press it again.

6. Play/Pause Button:

Use this button to playback recorded data, or pause the playback.

7. Stop Button:

Use this button to stop the playback.

8. Copy Button:

Use this button to copy the playback data to an internal DVD burner or external USB device.
Use this button again to stop copying the data.

9. Menu/Esc Button:

Use this button to display the main menu or escape to the upper level display.
During playback, use this button to take a snapshot of the currently playing video.

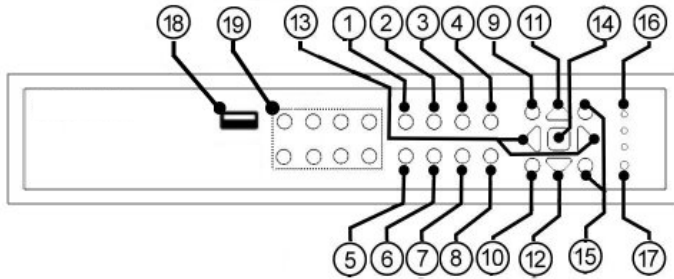
10. Page Button:

Use this button as a page down function in multi screen displays.

11. Up/BS Button: (▲/BS)

Use this button to move the cursor or currently selected item. During PTZ control, use this button to tilt up the camera. In text editing mode, this button is used as the backspace key.

Front Panel Continued



12. Down/DEL Button: (▼/DEL)

Use this button to move the cursor or currently selected item. During PTZ control, use this button to tilt down the camera. In text editing mode, this button is used as the delete key.

13. Left/Right Buttons: (◀, ▶)

In PTZ control mode, use these buttons to pan the camera.
In the other menus, use this button to move the cursor or currently selected item.

14. Enter Button:

This button is used as enter key in most menus.
During PTZ control, this button is used to start/stop the selected PTZ control mode.

15. (Split Windows) +/- Buttons:

In a split-window display, press these buttons to navigate to the next/previous split-window display. These buttons are also frequently used to change the values of numbers or options.

16. LEDs:

These are indicators for Power, HDD, and Network connectivity.

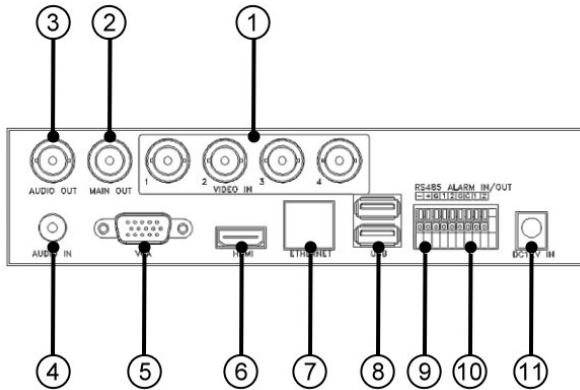
17. Remote I/R Sensor:

Used to receive a signal from an external IR receiver.

18. USB connector:

Connect to a USB 2.0 compatible device, such as a USB 2.0 disk drive, or a USB 3G dongle.

Back Panel (4 Channel)



1. Analog Video input Connectors:

Connect analog cameras to these BNC connectors. 75Ω termination is always active.

2. Video Out: (Main)

Connect a TV monitor to the upper BNC connector to display the main video output. On some DVR models, the Call menu is available as well, and will provide an alternative output for a TV.

3. Audio Out Connector:

This connector provides a line-out audio signal to external devices such as speakers. Recorded audio will stream to the audio output during playback.

4. Audio Input Connector: (Audio in)

Connect an audio input.

5. VGA Connector:

Connect VGA monitor to the VGA connector for main monitor display.

6. HDMI Connector:

Connect an HDMI monitor to the HDMI connector to view the main monitor display. Audio can also be outputted from this connector.

7. Ethernet Connector: (lower port)

Connect the DVR to a 10/100Base-T Ethernet network through this port.

8. USB Mouse Connector:

Connect to USB 2.0 compatible mouse.

9. RS-485 Connector:

Use this connector to connect to the DVR to a RS-485 compatible PTZ camera or keyboard. Refer to the manual of the PTZ camera being used to verify you are using the correct settings.

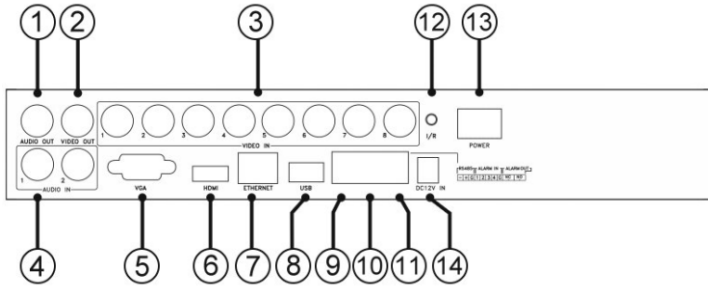
10. Alarm Input/Output Connectors: (Panic, Alarm Set/Unset,)

Use these connectors to external devices, such as sensors or door switches.

11. Power Input: (12vDC in)

Connect to the included 12vDC power supply.

Back Panel (8 Channel)



- 1. Audio Out Connector:** This connector provides a line-out audio signal to external devices such as speakers. Recorded audio will stream to the audio output during playback.
- 2. Video Out:** (Call, Main)
Connect a TV monitor to the upper BNC connector to display the main video output. On some DVR models, the Call menu is available as well, and will provide an alternative output for a TV.
- 3. Analog Video input Connectors:**
Connect analog cameras to these BNC connectors. 75Ω termination is always active.
- 4. Audio Input Connector:** (Audio in) Connect an audio input.
- 5. VGA Connector:**
Connect VGA monitor to the VGA connector for main monitor display.
- 6. HDMI Connector:**
Connect an HDMI monitor to the HDMI connector to view the main monitor display. Audio can also be outputted from this connector.
- 7. Ethernet Connector:** (lower port)
Connect the DVR to a 10/100Base-T Ethernet network through this port.
- 8. USB Mouse Connector:** (Reserved)
Connect to USB 2.0 compatible mouse.
- 9. RS-485 Connector:**
Use this connector to connect to the DVR to a RS-485 compatible PTZ camera or keyboard. Refer to the manual of the PTZ camera being used to verify you are using the correct settings.
- 10. Alarm Input Connectors:** (Panic, Alarm Set/Unset,)
Use these connectors to external devices, such as sensors or door switches.
- 11. Alarm Output Connectors:** Connect N.C. connectors (left) to a Normally Closed (N.C.) alarm output, or connect the N.O. connectors (right) to a Normally Open (N.O.) alarm output. Note: You can use N.O. or N.C. but not both at the same time.
- 12. Remote Sensor Connector:** This feature will be added in later product firmware updates.
- 13. Power Switch:** (Power) Use this switch to turn the unit on/off.
- 14. Power Input:** (12vDC in) Connect to the included 12vDC power supply.

Remote Control

Basic operation can be achieved via the remote control instead of using the buttons on the front panel if needed. The effective operating distance of the remote control is about 32 feet. (Line of sight)



Most of the buttons correspond to a button on the DVR's front panel.

1. Alpha-numeric Buttons: (1-9, 0, *, #)

Use these buttons for direct camera selection.
These buttons can also be used to enter text and numbers.

2. Alarm Reset Button:

Use this button to cancel alarm activation.

3. Mute/Next Button:

During PTZ control, use this button to move to the menu selection.
In the other menus, use this button to mute the audio.

4. X2/Goto Button:

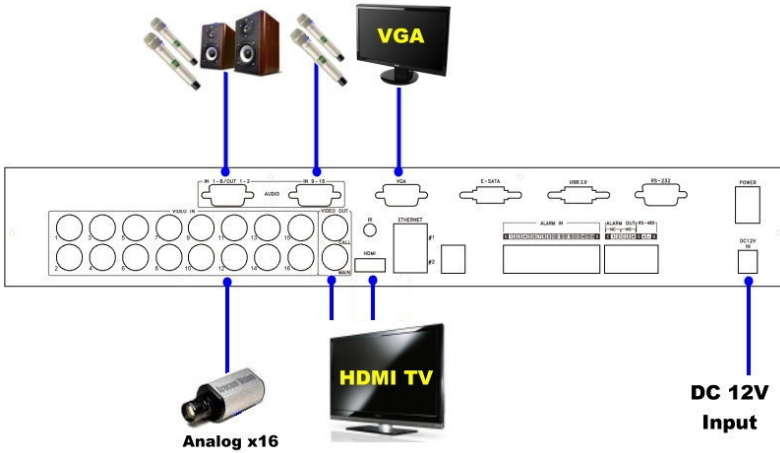
In PTZ control, use this button to move the camera to a specified preset position.
If viewing a single camera, use this button to activate Digital Zoom (X2/X4).

5. (Vol/Zoom) +/- Buttons (/ /):

During PTZ control, use these buttons to zoom in/out the camera.

Basic Connections

The diagram below shows the basic connections and ports on the DVR HE series. Not all connections are available on all models. The 16 channel model is shown below.



Verify the NTSC/PAL Selector Switch on the main board is set properly. In the US or Canada, the switch should be set to NTSC.

- **Cameras:**

Connect the camera video BNC connectors to the video inputs on the back of the DVR.

- **Main monitor:**

Connect the main monitor connector (BNC/VGA/HDMI) to a surveillance TV/VGA monitor. This monitor will display the live screen as well as all menus.

- **Hard Disk Drive(s):**

Install at least one SATA hard disk drive (Max. storage size 4TB/HDD) inside the DVR. Do not exceed 4TB per HDD bay.

HDD Installation

1. To install a hard drive, power off the DVR & use a Phillips screwdriver to remove the cover.
2. Remove the brackets you are going to use from the DVR using a Phillips screwdriver.
3. Secure the hard drive to the brackets that you removed using the provided screws and a Phillips screwdriver.
4. Place the hard drive you connected to the brackets back into the DVR, and secure it with a Phillips screwdriver.
5. Plug in the SATA cable(s) and power cable(s) to each HDD.

8 Channel Model



16 Channel Model

Each of the hard drives must be formatted before it can be used to record video/audio. Refer to page 39 for instructions on how to format the HDDs.

Note: If you install a DVD burner (not included) it must be connected to SATA #6 connector on the 16 Channel DVR, or the SATA #2 connector on the 4 or 8 Channel DVR.

Connections

- **Audio Inputs:**

Connect the Audio in/out connector to an Audio in/out cable, and then connect the audio input connectors to the audio line-outputs from the system cameras or other audio sources. Associate the audio inputs with the cameras in Camera Setup as described on page 7.

- **Audio Output:**

Connect the Audio in/out Connector to an Audio in/out cable, and then connect the audio output connectors of that cable to the audio line inputs from speakers. You may also use a HDMI monitor to output audio.

- **Alarm Inputs:**

Connect the alarm inputs to NC and/or NO depending on your alarm type. Set up the alarm configurations in Alarm Setup as described on page 32 and 33.

- **Alarm Outputs:**

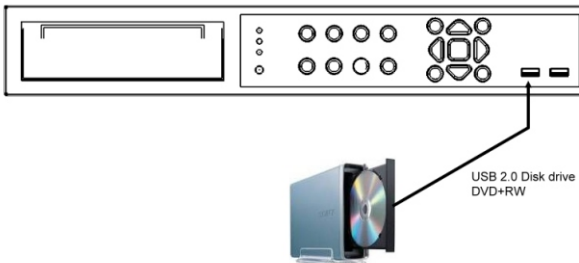
Use alarm outputs 1 & 2 for Normally Closed type signals, and alarm outputs 3-4 for Normally Open types signals.

- **Ethernet:**

Connect the Ethernet connector on the DVR to a standard twisted-pair Ethernet cable for remote access via Intranet or internet.

- **USB 2.0 disk drives, DVD+RW, card reader, etc:**

To install a USB or DVD driver, connect it to the USB 2.0 port.



- **Call Monitor:**

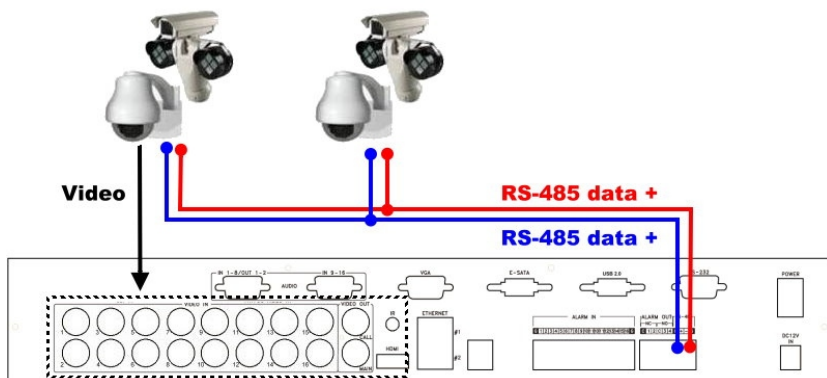
Connect the call monitor output to a surveillance or TV monitor. This monitor displays the full screen video of cameras associated with events (alarm or motion) or the video from the installed cameras sequentially according to the Seq Display Setup in the call monitor menu. Note: this feature is only available on the 16 channel model.

Connections Continued

- **PTZ Cameras**

Connect the RS-232 or RS-485 connector to the PTZ camera(s) via the appropriate cable. The DVR supports a variety of different PTZ cameras, including any camera that supports the Pelco D protocol (all Channel Vision PTZ cameras), Samsung SCC-641P, Kalatel Cyber Domes, Bosch AutoDome cameras, etc. Different PTZ cameras can only coexist in the same system if they all support and use the same protocol. Set the PTZ ID and protocol in the DVR, and then connect the PTZ camera directly to the DVR via RS-232 or RS-485.

For more information on setting up PTZ cameras, refer to pages 46 & 59.



- **RS-485 Keyboard or Terminal:**

Connect the RS-485 connector to a RS-485 keyboard or the VT-100 terminal using the appropriate cables. Verify the RS-422/485 configurations as described on page 46.

- **eSATA Hard Disk:**

Connect the eSATA connector to an eSATA HDD. To use more than one eSATA HDD, connect the internal SATA cable to SATA #6 connector on the DVR board, (16 channel model) or SATA # 2 (4 and 8 channel model). A DVD burner cannot be used if the eSATA feature is used. The DVR circuit board is labeled with each connector number.

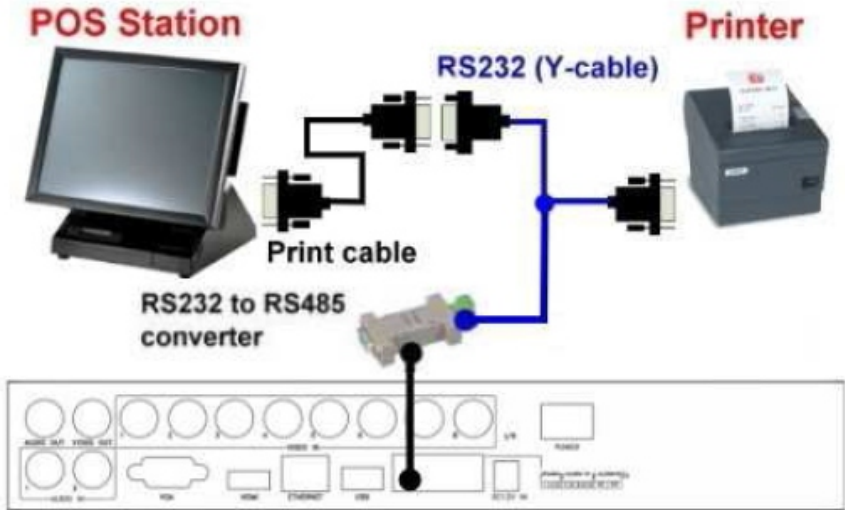
- **GPS Modem:**

Connect the RS-232 connector to a GPS modem via the appropriate cable. This DVR supports GPS modems that use the NMEA0183 protocol. The RS-232 port must be set up according to the instructions on pages 46-49.

POS Setup

- **POS System: 16 channel model (4 & 8 channel models do not support POS)**

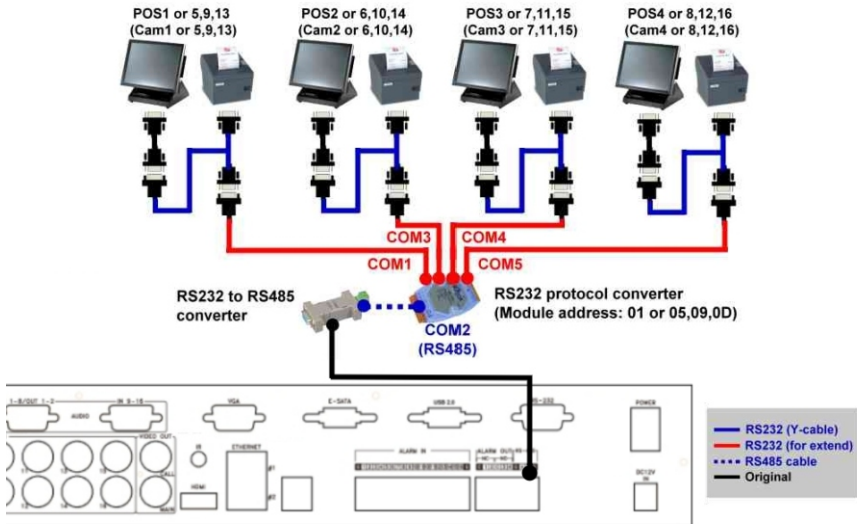
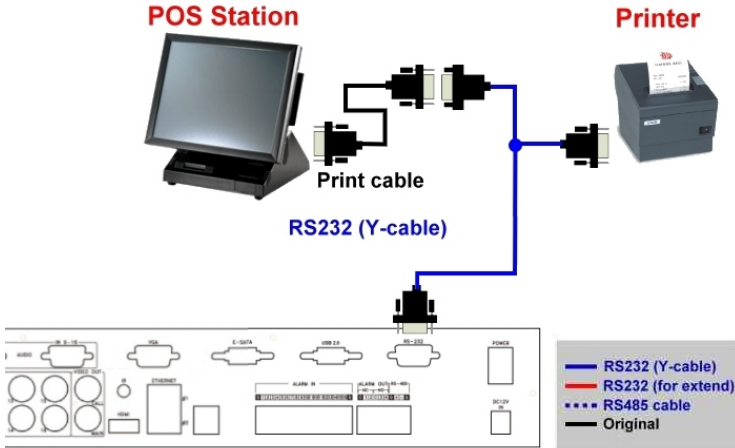
Connect the DVR's RS-232 connector to a POS system via the appropriate cable. This DVR supports POS systems that are compatible with the following printers: Epson-TM200, Epson-TMU295, Epson-TMU300, Epson-TMU675, Epson-TMT882, Epson-RPU420, and Epson MD332S. The RS-232 port must be set up according to the instructions on pages 46-49. To use POS on the 4 and 8 channel model, an RS-232 to RS-485 adaptor is needed.



POS Setup Continued

• POS System:

Connect the DVR's RS-232 connector to a POS system via the appropriate cable. This DVR supports POS systems that are compatible with the following printers: Epson-TM200, Epson-TMU295, Epson-TMU300, Epson-TMU675, Epson-TMT882, Epson-RPU420, and Epson MD332S. The RS-232 port must be set up according to the instructions on pages 46-49.

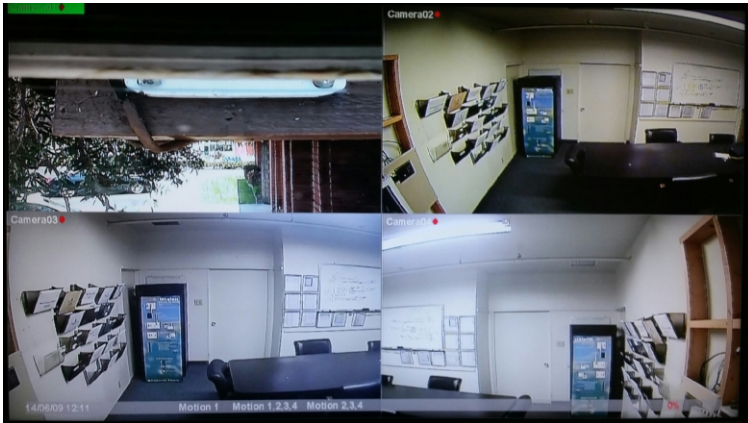


Basic Operation

Login / Logout	
Login Name	aa
Password	**
Login	
Logout	

Logging into the DVR:

There are three preset access levels in the system, including Administrator (highest), Supervisor, and Operator (lowest). In addition, the system also provides a custom password level. If you do not login the system, it will default to "Guest" which can only view the live video display. The system allows up to 18 user accounts. The administrator can set the login name and password for each user. An Operator can view the live video display. A Supervisor can view the live video display, image playback and archive. In the Login/Logout display, follow the Text Input method described on page 17 to enter the Login name & Password. Press ▲▼ to highlight/select the Login option, and then press Enter to login the system. To logout of the system, press ◀▶ to highlight and select the Logout option, and then press Enter. Press Esc to exit without making changes. There is one factory-preset login name/password aa/11 at the Administrator level. If you forget all the administrator-level passwords, please contact Channel Vision Technical support to reset the password.



There are several types of split-window screens. The system will remember the last screen before (normal) shutdown of the system. In addition to the split windows, the system time is displayed on the lower-left corner. The current system state is shown on the lower-right corner. The rolling screen messages display when certain events occur such as video loss or HDD failure.

The system states, from right to left, are described below.

1. Alarm Set/Unset
2. Normal recording percentage
3. Alarm recording percentage
4. X2 state: X1, X2, or X4
5. Manual record On/Off: Rec shown for on.
6. Backup state: Backup icon shown for backup
7. Seq display On/Off or playback state: Seq icon shown for Seq display on, other icons for different playback states.

Notes: If a mouse is connected, the mouse operational icons are shown when the mouse cursor is moved to the bottom of the screen. The Recording icon, Motion, & Alarm for the camera will be shown after the camera title if active.

Basic Operation Continued

In many cases, the DVR will require you to enter text such as the system login, camera title setup, etc. The steps to enter text are outlined below.

1. Press Enter to edit the highlighted option.
The flashing cursor is shown to indicate the editing point.
2. Press ◀▶ to move the cursor to the left/right.
3. Press Code in text editing mode to change the text case. (If the entry you are on will accept numbers only, pressing code will have no effect.) Indicators show the current state.
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, the others as shown on the keypad) If internal code is selected, a code box will be shown (after the first code is Entered) for each new code to be Entered. Check the internal code table for the selected language. For a 2-byte code, e.g. Chinese or Japanese, the accepted codes are from 0000 - FFFF.
5. Press Mark to bring up a list of punctuation marks and special characters. The highlighted character on the list shows what is selected. Use ▲, ▼, ◀, & ▶ to change the selection.
6. If you make a mistake, press Backspace 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, or press Esc to exit without saving changes.




Basic Operation Continued

Basic operation of the DVR is described below.

- **Numeric:** (Enter) (Mouse: Click on item)

Use these buttons to switch to a full-window display of the camera.

- **Alarm Reset:** (Mouse: )

Use this button to cancel an alarm activation, i.e. reset the alarm outputs and silence the buzzer.

- **Seq:** (Mouse: )

Use this button to switch to or return from Seq display mode. In Seq display mode, each page in the sequence will be shown for the preset dwelling time sequentially, and the Seq icon will be shown on the lower-right corner of the screen.

- **Call:** (Mouse: left-click in focus camera window)

In the live split-window display, use this button to switch to or return from full screen display of a specific camera.

- **Search:** (Mouse: ) (Administrator/Supervisor)

In the live split-window display, use this button to open the search menu.

- **Rec:** (Mouse: )

Use this button to start manual recording. To stop manual recording, Use the button again. All cameras will be recorded (audio and video) and Rec will be shown on the lower-right corner of the screen if manual recording is on.

- **Menu:** (Mouse: )

In the live split-window display, use this button to display the menu. During playback, Use this button to take a snapshot of the currently playing video.

- **PTZ:** (Mouse: )

In the live split-window display, use this button to enter PTZ control mode if the current camera is a PTZ camera.

- **X2:** (Mouse: )

In full screen display, use this button to Enter Digital Zoom mode.

- **▲▼◀▶:** (Mouse: left-click)

Use these buttons to change the highlighted item.

- **Vol+/- (/), Mute:** (Mouse: )

Use this button to mute or un-mute the audio.

Basic Operation Continued

- +/- (Mouse: )

Use these buttons to circulate up/down among the available live split-window displays.

- **Page:** (Remote: #, Mouse: current split-window icon)


Press this button for page down in multi-split-window displays.

- **Enter:** (Mouse: )

Press this button to display the GPS/POS data. 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.



The DVR SD series supports X2/X4 Digital Zoom.

To use this function, use the X2 button (Mouse: ) in full screen display to enter Digital Zoom mode. There will be a zoom window shown in the video channel. The zoom window (a) will always be shown at zoom level X1, (b) can be shown or hidden at zoom level X2, and (c) will never be shown at zoom level X4. To control digital zoom, follow the instructions below.

- ▲▼◀▶: (Mouse: Click in the current video channel)

Use the following buttons to: (a) Move the zoom window if it's shown in the current channel
(b) Navigate the video window around if the zoom factor is X2 or X4.

- **Enter:** (Mouse: Click in the zoom window)

Use this button to zoom into the current channel from X1 to X2, or from X2 to X4. This will only work if the zoom window is shown in the current channel you are viewing.

- **X2:** (Mouse: ) Use this button to:

(a) Show/hide the zoom window if the current zoom factor is X1/X2.
(b) Go back to zoom factor X1 if the current zoom factor is X4.

- **ESC:** (Mouse:  or Right Click)

Use this button to escape from Digital Zoom mode and return to the normal full screen display. The current channel you are viewing will always return to zoom level X1.

Menu

During live camera viewing, press MENU (Mouse: Right-Click) to call up the Main Menu.



There are a variety of options displayed in the menu. Each icon will open a sub-menu, which allows many different features and settings to be changed.

To navigate the menu, follow the instructions below. :

• ▲▼◀▶ :

Use these buttons to select the desired menu or area.

• **Enter:** (Mouse: Click in the menu item)

Use this button 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) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.

Status Menu




In the Main Menu, use ▲▼◀▶ to change the highlighted option to Status, and then press Enter to call up Status menu 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 the Status menu, and return to Main Menu.

Status				
Alarm Record	Size(GB):	1464	Recorded(%):	0
Normal Record	Size(GB):	0	Recorded(%):	0
Cameras	Motion	□ □ □ □ □ □ □ □		
	Video Loss	□ □ □ □ □ □ □ □		
Alarm Inputs		□ □ □ □ □ □ □ □		
Serial No.	1052 - 8cc6 - 769c - 2642			
Version				
Hardware	01.00.00	Software	07.84.95	

Volume Control Menu



In Main Menu, use ▲▼◀▶ to change the highlighted option to Volume,  then press Enter to call up the Volume Control menu. The general operations of this menu are described below:

- ▲▼◀▶: (Mouse: Click in the sub-menu you want to Enter)
Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Mute:** Use this button to mute the selected audio channel. Use Enter or +/- to check/uncheck this option. By default, the setting is "-" (unchecked).
- **Volume:** Use this button to adjust the volume of the selected audio channel. Use the +/- buttons to change the value (1-10).


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
Live #9	-	9
Live #10	-	9

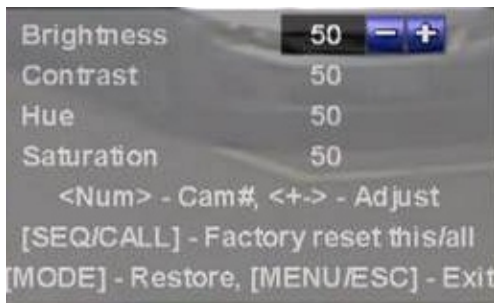
Video Adjustment Menu



In Menu display, use ▲▼◀▶ to change the highlighted option to Video Adjustment, and then use Enter to call up Video Adjustment display as shown. For analog cameras, there are 4 items which can be adjusted, including Brightness, Contrast, Hue, and Saturation.

The general operations of this menu are described below:

- ▲▼: Use these buttons to select the desired menu.
- **Numeric:** (Enter) (Mouse:  etc)
Use these buttons to change the analog camera.
- +/- :
Use these buttons to adjust the selected item.
- **Seq:**
Use this button to reset the settings for this camera to factory default values.
- **Call:**
Use this button to reset the settings for all cameras to factory default values.
- **Mode:**
Use this button to restore the values.
- **Esc:** (Mouse: Right Click)
Use this button to escape from this screen, and return to Menu display. The settings will be saved for future reference.



Display Menu



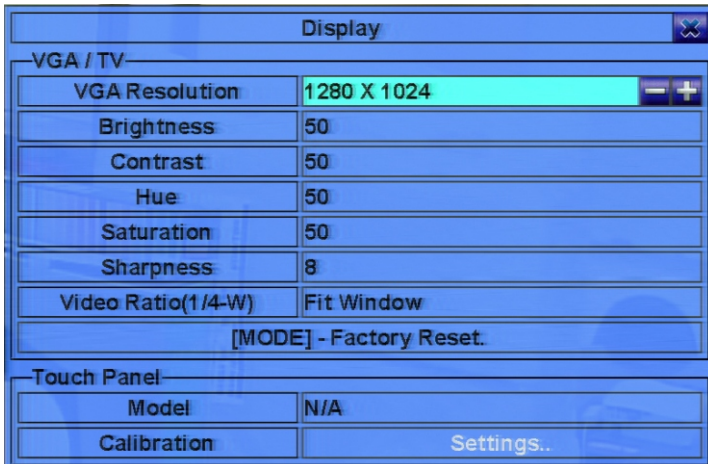
In the Main Menu, press ▲▼◀▶ to change the highlighted option to Display, and then press Enter to call up the Video Display menu.

There are several options which can be adjusted, including Resolution, Brightness, Contrast, Hue, etc. In addition, the video ratio of a 1/4-window display can be set to "Fit Window" or "Proportional". The general operations of this menu are described below:

- ▲▼: (Mouse: Click in the respective item)
Use these buttons to select the desired menu or area.
- +/- :
Press these buttons to adjust the selected item.
- **Mode:** (Mouse: Left click)
Press this button to restore the display menu to factory default settings.
- **Touch Panel Model:** Press the +/- buttons to change the supported model. If your touch panel is not listed on the supported models, you may still select one of the existing models, and use Calibration Settings to try to calibrate the touch panel.
- **Calibration Settings:** These settings are used to calibrate the touch panel.
Press Enter (Mouse: Left click) in Settings to call up the Calibration menu for the touch panel. Follow the calibration instructions to calibrate the touch screen.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving. If you change to a resolution that is not supported by your monitor, when the system reboots, no video will be shown after rebooting. If this happens, you will need to reset the system to default settings. Press Menu, ◀, Enter, Mode, Esc, Enter all at once to reset the settings to default. The system will reboot again.

To change the resolution, verify first that the resolution is supported by the monitor. Changing the resolution will cause the DVR to reboot.

For VGA, the default sharpness setting should be set to fine. If you are using an HDMI monitor, the sharpness setting may need to be lowered for optimum quality.



Backing Up & Exporting Video



In the Main Menu, press ▲▼◀▶ to change the highlighted option to Backup Device, and then press Enter to Enter the Backup menu.

If you choose to install a DVD drive into the DVR, it is important to note the following requirements. Compatible types of drives and media are DVD+RW, DVD+R, and DVD-R. DVD-RW drives or disks are not supported. The general operations of this menu are described below:

- ▲▼◀▶ : Use these buttons to select the desired menu.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Mode:**
Eject the tray and disconnect. (Internal DVD only)
- **Seq:**
Load the tray and connect. (Internal DVD only)
- **Connect/Disconnect:** First, plug your USB/DVD into one of the USB ports of the system and/or insert a DVD for DVD. Then, check the status menu to verify the system is detecting the drive or DVD. (Mouse: Left click) to command the system to connect with the device you connected. If the device is already connected and working, read/write will be shown in the Status menu. To remove the drive or device when complete, press Enter (Mouse: Left click) to command the DVR to disconnect from the connected device.

Below are some common troubleshooting steps if there are any issues with backing up data.

- Do not format the DVD before using it. Let the DVR format it.
- Before using USB/Thumb drive, format it using the FAT32 file system.
- Before you can copy anything, the DVR must detect the device you plugged into it.
If the DVR will not detect your device, unplug the device, reboot the DVR, and plug it into the USB port again.
- Some backup devices may have compatibility issues if they use non standard drivers.

- **Backup:** (Backing up the DVR settings)
Press Enter (Mouse: Left click) when this icon is selected to backup the configuration of your DVR to the connected USB device.
- **Restore:** (Restoring previously saved DVR settings)
Press Enter (Mouse: Left click) when this item is selected to restore the configuration files from the connected USB device. It is also possible to Enter the specific directory in which the backed up configuration file is stored.

Updating Firmware



In the Main Menu, press ▲▼◀▶ to change the highlighted option to Software Upgrade, and then press Enter to call up Software Upgrade menu. The general operations of this menu are described below:



- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu.
- **Esc**: (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Backup Device**: Press Enter (Mouse: Left click) to open the Backup Device dialog.
- **Disk Storage**: Select the disk storage to upgrade.
Press the +/- buttons to select between available storage devices.
- **Upgrade File**: Press Enter (Mouse: Left click) to start the upgrade process when you have selected the correct firmware file. A confirmation dialog will be shown on the screen. Press Enter to confirm to upgrade the system software. After the software is upgraded, the DVR will restart immediately. The split window display will still be shown while the DVR is preparing to reboot. Do not unplug the DVR during this process.

Updating Firmware Remotely



Using Internet Explorer, use the  button call up the remote firmware update dialog.

The current firmware version of the DVR will be shown in the status field. Select the DVR & firmware file from your PC or USB drive.

To begin the update, push the Start button. To cancel the firmware update, push Stop/Close. There must be at least one formatted HDD in the DVR to update firmware remotely. When the firmware update is complete, the DVR will restart immediately.

Setup Menu



In the Main Menu, use ▲▼◀▶ to navigate to the Setup Menu, then press Enter to enter the Setup Menu.(You must be logged in as Administrator to access this menu.)
The general operations of this menu are described below:

- ▲▼◀▶: Use these buttons to select the desired menu or area.
- **Enter:** (Mouse: Left click)
Use this button to Enter the setup menu of the highlighted option.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Factory Default:** To reset the DVR settings to factory default, use ▲▼◀▶ to highlight Factory Defaults, then press Enter. A confirmation dialog will be shown. Press Enter again to make the changes. Click ESC (Mouse: Right Click) to exit the dialog.



Pre Camera Setup



In the Setup Menu, use ▲▼◀▶ to change the menu highlighted option to Pre-Camera, and then press Enter (Mouse: Left click) to open the Pre-Camera Setup menu. The Pre-Camera Setup menu allows the administrator to define fundamental attributes and settings of each camera/channel. The general operations of this menu are described below:

- ▲▼◀▶ : Use these buttons to select the desired menu or area. The display will scroll up/down if the selected item is not shown on the screen.
- **Numeric:** (Enter) Use these buttons to select the camera you want to modify.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving. When you exit this menu, the DVR will automatically calculate the available recording time left based off your settings. Click Ok to continue.
- **Compression:** There are two options available, Normal or High. A high compression ratio will result in less HDD space used, and more recorded data. 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 +/- buttons to modify each setting.
- **Watermark:** To record with a digital watermark, select this option. If you select yes, all recorded video from the cameras will have digital watermark embedded. Press Enter or +/- (Mouse: Left click) to check/uncheck this option. By default, digital watermark is activated.
- **Installed:** This shows whether a camera will be plugged into the corresponding channel. If installed, the other options will be configurable. Press Enter or +/- to check/uncheck this option. By default, this setting is checked.
- **Resolution:** This defines the record resolution for the camera. Use the +/- buttons to select the resolution to use with each camera. On NTSC, the available settings are as follows: 960x480, 720x480, 960x240, 720x240, 480x240, & 360x240. On PAL, the available settings are as follows: 960x576, 720x576, 960x288, 720x288, 480x288, & 360x288.
- **PTZ ID:** This must match the setting of the installed PTZ camera. Refer to the manual of the PTZ camera for the ID setting. Use the +/- buttons to change the PTZ ID (N/A or 0-255). The default setting is "N/A" – Not Available, which indicates the corresponding channel is not a PTZ camera.

Pre-Camera Setup			
Compression			High - +
Watermark			✓
Camera	Installed	Resolution	PTZ ID
1	✓	720x480	N/A
2	✓	720x480	N/A
3	✓	720x480	N/A
4	✓	720x480	N/A
5	✓	720x480	N/A
6	✓	720x480	N/A
7	✓	720x480	N/A
8	✓	720x480	N/A
9	✓	720x480	N/A
10	✓	720x480	N/A

Camera Setup



In the Setup Menu, use ▲▼◀▶ to navigate to the Camera menu, and then Use Enter (Mouse: Left click) to call up Camera Setup menu. The Camera Setup menu allows the administrator to define the attributes for each camera. The general operations of this menu are described below:

- ▲▼◀▶ : (Mouse: Left click)
Use these buttons to select the desired menu or area. The display will scroll left/right if the selected item is not shown on the screen.
- **Numeric:** (Enter)
Use these buttons to select the camera you want to modify.
- **Copy:**
Use this button to copy all settings, excluding detailed Motion settings & Video Loss settings, Title/Audio of the current camera. For example, if focus camera is 3, its settings will be copied to each of the other cameras.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving. The estimated total recording time (in days) will be shown in the dialog when you exit.
- **Title:** The title (Max. 16 characters) of this camera. Follow the Text Input method described on page 17 to name each camera.
- **Video Loss Settings:** This option is used to set the action settings when video loss is detected for the corresponding camera. Press Enter (Mouse: Left click) to call up Video Loss Setup display for the camera.
- **Motion Detection:** This defines whether the motion detection feature of the corresponding camera is enabled or disabled. (Note: this field has no effect on Smart Search). Press Enter or +/- to check/uncheck this option as needed. By default, this option is checked.
- **Motion/Mask Settings:** This option is used to set the privacy mask and motion settings, used for Motion Detection or Smart Search, on this camera. Press Enter (Mouse: Left click) in Settings. to call up Motion Setup for the camera. If Motion Detection is disabled, the default factory motion settings will function normally for smart search.

Camera Setup Continued




- **Covert:** This option defines whether or not camera is set to covert. If the camera is set to covert, the video of the corresponding camera can only be seen if the user has logged in as Administrator. Press Enter or +/- (Mouse: Left click) to check/uncheck this option. By default, this option is unchecked.
- **Call By Event:** This option defines whether the corresponding camera is shown on the main monitor when certain types of events occur. There are 4 options, including Off, Motion, Alarm, Both (Motion & Alarm). Press +/- buttons to select the desired option.
- **Dwell Time:** This is the dwell time if Call By Event is set to Motion, Alarm, or Both. Press the +/- buttons to adjust the value (3-60 seconds, discrete).
- **Audio:** This sets the audio input of the corresponding camera. The audio signal for the selected Audio In will be recorded with the video data for this camera. Press the +/- buttons to select no audio (N/A) or Audio Inputs (1, 2, 3, etc). The default setting is "N/A".
- **Record Quality:** This option defines the recording quality of the corresponding camera. Use the +/- buttons to select the value (1-9, with 1 being the lowest quality, & 9 being the highest quality).
- **Event Record IPS:** This option defines the IPS (Images Per Second) for the corresponding camera when certain event types (Motion, Alarm) occur on the corresponding camera. The camera is recorded at this rate when an event occurs. Use the +/- buttons to select the value (0 – 25 (PAL) / 30 (NTSC), discrete).
- **Pre-record IPS:** This option defines the pre-record IPS (Images Per Second) when certain event types (Video Loss, Motion, Alarm) occur on the corresponding camera. The camera is recorded at this rate if an event occurs. For this DVR, the value is always the same as the Event Record IPS. The total Event Record IPS / Pre-record IPS should not exceed the DVR recording capacity, or the DVR will lower the recording rate automatically.
- **Normal Record IPS:** This option defines the normal record IPS (Images Per Second) on the corresponding camera. This camera will be recorded at this rate if no event occurs. Normal Record IPS is always the same value as Event Record IPS.

Camera Setup		
Camera	1	2
Title	Camera01	Camera02
Video Loss	Settings..	Settings..
Motion Detection	✓	✓
Motion/Mask	Settings..	Settings..
Covert	-	-
Call By Event	Off	Off
Dwell Time	10 Sec.	10 Sec.
Audio	N/A	2
Record Quality	9	9
Event Record IPS	30	30
Pre-record IPS	30	30
Normal Record IPS	30	30

Video Loss Menu

In Camera Setup, click Enter to access the Video Loss Setup menu. The Video Loss Setup allows the administrator This defines how the system responds when video loss is detected. General operations of this menu are defined below.

- **▲▼** (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Numeric:** (Enter) Use the number buttons to select the camera.
- **Copy:** Use this button to copy the Video Loss settings of the focus camera to all the following cameras. (EX. focus camera is 5, its Video Loss settings will be copied to those of cameras 6-16.)
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, Esc (Mouse: Right Click) to exit without saving.
- **Duration:** This defines the response duration for how long (in seconds) the Alarm Out relay and the Buzzer will be triggered after video loss is detected on the corresponding camera. The Alarm Out relay and Buzzer will be reset immediately once the camera returns to a normal state. Use the +/- buttons to adjust the duration.
- **Camera to go:** This defines what preset position the camera is set to go to if video loss is detected on the corresponding camera. "Camera to go" is a function meant specifically for a PTZ camera.
- **Goto Preset:** This defines the preset position on the "Camera to go" channel if video loss is detected.
- **Pre-record:** This defines how long video will be saved if video loss is detected on the corresponding camera. Use the +/- buttons to adjust the value (0-10 seconds, discrete). The actual pre-recorded time may be shorter than the value set if the size of the pre-recorded file exceeds the designated buffering size of the DVR's memory.
- **Alarm Out:** This defines which Alarm Output will be triggered when video loss of the corresponding camera is detected. Use the +/- buttons to select none (N/A) or one of the Alarm Outputs (1-4).
- **Buzzer:** This defines activation of the internal Buzzer when video loss is detected on the corresponding camera is detected. Use the Enter button or +/- (Mouse: Left click to check/uncheck this option. By default, this setting is checked.
- **Log:** This defines whether or not system events are logged. Click Enter or +/- to check/uncheck this option. By default, this setting is checked.
- **Screen Message:** This option defines whether the event message appears on the screen or not. Use the Enter button or +/- to check/uncheck this option. By default, this setting is checked.
- **E-mail:** This option defines whether an event e-mail is sent to a remote email address or not. The e-mail will be sent to the predefined recipients the moment when the event is triggered. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.
- **FTP:** This option defines whether a file of a recorded event video/audio files is sent to an FTP server. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.



Video Loss Setup-Camera1	
Duration	10 Sec. [- +]
Camera To Go	1
Goto Preset	N/A
Pre-record	5 Sec.
Alarm Out	N/A
Buzzer	<input checked="" type="checkbox"/>
Log	<input checked="" type="checkbox"/>
Screen Message	<input checked="" type="checkbox"/>
E-mail	<input type="checkbox"/>
FTP	<input type="checkbox"/>

Motion Setup Menu

In the Camera Setup menu, Use the Enter button to call up the Motion Setup menu. The Motion setup allows the administrator to define how the system responds when motion is detected by the corresponding channel. General operations of this menu are defined below.

- ▲▼◀▶: (Mouse: Left click)
Use these buttons to select the desired menu or area.

- **Numeric:** (Enter)
Use these buttons to select the camera.

- **COPY:**
Use this button to copy the Motion settings, including motion detection settings, of the current camera to all the additional cameras.

- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.

Motion Setup-Camera1	
Duration	10 Sec. - +
Camera To Go	1
Goto Preset	N/A
Pre-record	5 Sec.
Post-record	10 Sec.
Alarm Out	N/A
Detection	Settings..
Buzzer	-
Log	✓
Screen Message	✓
E-mail	-
FTP	-
Privacy Mask	Settings..

- **Duration:** This option defines the response duration (in seconds) the Alarm Out relay & the Buzzer will be triggered after motion is detected on the corresponding camera. However, the Alarm Out relay and the Buzzer will reset immediately once the camera state returns to normal. Use the +/- buttons to adjust the value (3 seconds - 60 minutes, discrete, '-' for 'Forever').

- **Camera to go:** This defines what preset position the camera is set to go to if video loss is detected on the corresponding camera. "Camera to go" is a function meant specifically for a PTZ camera.

- **Goto Preset:** This defines the preset position on the "Camera to go" channel if motion is detected on the corresponding camera.

- **Pre-record:** This defines how long video will be saved if motion is detected on the corresponding camera. Use the +/- buttons to adjust the value (0-10 seconds, discrete). The actual pre-recorded time may be shorter than the value set if the size of the pre-recorded file exceeds the designated buffering size of the DVR's memory.

- **Post-record:** This defines how long video will be saved after motion is detected on the corresponding camera. Use the +/- buttons to adjust the value (0 second - 60 minutes, discrete).

- **Alarm Out:** This option defines which Alarm Output will be triggered when motion on the corresponding camera is detected. Use the +/- buttons to select none (N/A) or one of the Alarm Outputs (1-4).

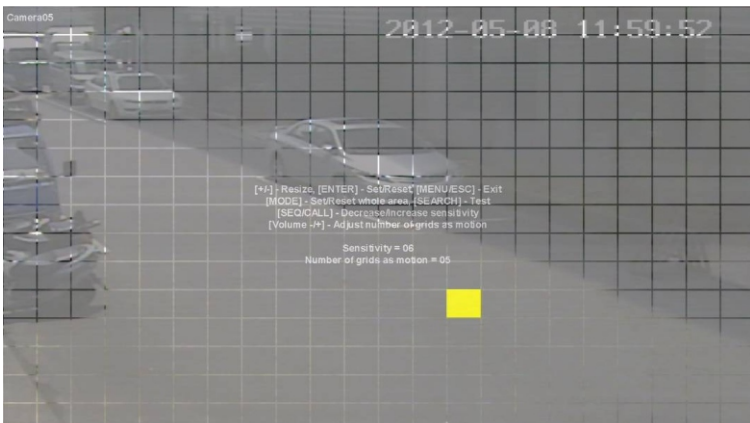
- **Buzzer:** This option defines whether or not to activate the internal buzzer when motion on the corresponding camera is detected. Use the Enter or +/- (Mouse: Left click) to check/uncheck this option. By default, this setting is checked.

- **Log:** This defines whether or not system events are logged. Click Enter or +/- to check/uncheck this option. By default, this setting is checked.

- **Screen Message:** This option defines whether the event message appears on the screen or not. Use the Enter button or +/- to check/uncheck this option. By default, this setting is checked.

Motion Setup Menu Continued

- **E-mail:** This option defines whether an event e-mail is sent to a remote email address or not. The e-mail will be sent to the predefined recipients the moment an event is triggered. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.
- **FTP:** This option defines whether a recorded event video/audio files are sent to an FTP server or not. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.
- **Detection Settings:** This menu is used to set up the motion detection settings, including detection area & sensitivity when motion is detected on the corresponding camera. The detection area & sensitivity are also used for Smart Search. Smart Search will not function outside the detection area set in the motion menu. It is recommended to select the entire image for motion detection if using Smart Search. Use the Enter button in Settings to call up Motion Detection Setup on the corresponding camera. In the Motion Detection Setup, the area is divided into small grids. Grids that are colored gray are activated and used for motion detection. Grids that are marked transparent are grids that are not used for motion detection. Use the yellow square and the Enter button to select or unselect each grid.
- **Numeric:** Use these buttons to select the camera.
- **▲▼◀▶:** Use these buttons to select the desired menu or area.
- **+/-:** (Mouse: Left click and drag) Use these buttons to resize the Mask window.
- **Enter:** Use this button to set/reset the area under the Mask window.
- **Mode:** Use this button to set/reset the video channel you are editing.
- **Seq / Call:** Use this button to decrease or increase the sensitivity, 1 – 10, of the corresponding camera.
- **Vol+/-:** (/) Use this button to increase or decrease the number of grids active for motion detection on the corresponding camera.
- **Search:** Use this button to test the motion detection feature on the corresponding channel. Motion that is detected will be shown on the screen. Press this button again to stop testing.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Privacy Mask Settings:** This menu is used to setup the privacy mask settings. Use the Enter button in the Settings menu to open Privacy Mask Setup on the corresponding camera. The Privacy Mask Setup menu is similar to Motion Detection Setup, but the grayed area of the camera will be blacked out for live & recorded video.



Alarm Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to Alarm, and then use Enter to open the Alarm Setup menu. The Alarm Setup menu allows the administrator to define the attributes for Panic, Alarm Set/Unset, and each alarm input. It also defines what occurs when said actions are triggered. There are up to 16 alarm inputs which can be connected to the system, depending on the model of DVR you are using. When Panic is triggered, all cameras will be recorded at their highest possible frame-rate. When the alarm is set, alarm & motion will be detected based on schedule setup. When the alarm is not set, alarm and motion will not be detected. General operations of this menu are defined below.

- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Numeric:** (Enter) Use these buttons to select the alarm input.
- **Copy:** Use this button to copy the settings of the current alarm input to all the other alarm inputs.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Normal State:** Use the +/- buttons to select N/A, Closed or Open. Check the signal type, normally closed or normally open, for the device you are connecting to the alarm input terminal on the rear panel of the DVR. If you're not using this feature, select N/A – Not Available. By default, the state is set to "Open" for Normally Open.
- **Title:** This defines the title (Max. 8 characters) of this alarm input. Follow the text input method described on page 16 to name each alarm input.
- **Delay:** This defines the how long the input contact will be delayed after it is triggered. Delay time (0-15 seconds). Choose 0 sec. if you do not want a delay.

Alarm Setup				
Alarm In	Set/Unset	Panic	1	2
Normal State	Open	Open	Open	Open
Title			AI01	AI02
Delay			0 Sec.	0 Sec.
Focus Camera			1	2
Duration			10 Sec.	10 Sec.
Goto Preset			N/A	N/A
Pre-record			5 Sec.	5 Sec.
Post-record			10 Sec.	10 Sec.
Alarm Out	N/A	N/A	N/A	N/A
Buzzer	-	✓	✓	✓
Log	✓	✓	✓	✓
Screen Message	-	✓	✓	✓
Notification	✓	✓	✓	✓
FTP	-	-	-	-

Alarm Setup Continued

- **Focus Camera:** This option is used to call up the corresponding camera on the video outputs.
- **Duration:** This option defines the response duration (in seconds) of the Alarm Out relay & Buzzer when an alarm is triggered. The Alarm Out relay and the Buzzer will be reset immediately once the alarm input returns to normal. Use the +/- buttons to adjust the value (3 seconds - 60 minutes, discrete, or choose '-' for continuous activation).
- **Goto Preset:** This option defines the preset position the current camera (if a PTZ camera) will go to if an alarm input is triggered on that camera.
- **Pre-record:** This defines how long video will be saved when an alarm input is triggered on the corresponding camera. Use the +/- buttons to adjust the value (0-10 seconds, discrete). The actual pre-recorded time may be shorter than the value set if the size of the pre-recorded file exceeds the designated buffering size of the DVR's memory.
- **Post-record:** This defines how long video will be saved if after an alarm input is detected on the corresponding camera. Use the +/- buttons to adjust the value.
- **Alarm Out:** This option defines which Alarm Output will be triggered when the Alarm Input on the corresponding camera is triggered. Use the +/- buttons to select none (N/A) or one of the Alarm Outputs (1-4).
- **Buzzer:** This option defines whether or not to activate the internal Buzzer when the Alarm Input on the corresponding camera is detected. Use the Enter or +/- (Mouse: Left click) to check/uncheck this option. By default, this setting is checked.
- **Log:** This defines whether or not system events are logged. Click Enter or +/- to check/uncheck this option. By default, this setting is checked.
- **Screen Message:** This option defines whether the event message appears on the screen or not. Use the Enter button or +/- to check/uncheck this option. By default, this setting is checked.
- **Notification:** This option defines whether or not to send an event e-mail to a mobile device when an Alarm Input is detected. If the mobile device has push notifications for the DVR enabled, an e-mail will be sent to the predefined email addresses when the event is triggered. Press Enter or +/- to check/uncheck this item. By default, this setting is checked.
- **FTP:** This option defines whether a file of a recorded event video/audio files is sent to an FTP server. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.

Alarm Setup				
Alarm In	Set/Unset	Panic	1	2
Normal State	Open	Open	Open	Open
Title			AI01	AI02
Delay			0 Sec.	0 Sec.
Focus Camera			1	2
Duration			10 Sec.	10 Sec.
Goto Preset			N/A	N/A
Pre-record			5 Sec.	5 Sec.
Post-record			10 Sec.	10 Sec.
Alarm Out	N/A	N/A	N/A	N/A
Buzzer	-	✓	✓	✓
Log	✓	✓	✓	✓
Screen Message	-	✓	✓	✓
Notification	✓	✓	✓	✓
FTP	-	-	-	-

Main & Sequence Display Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to Main/Seq Display, and then press Enter to call up Main/Seq Display Setup. The Main/Seq Display menu allows the administrator to define the display in Seq Display for the main monitor and call monitor. Note: The Call Monitor supports 1/4 split window display only, and is not available on all models. General operations of this menu are defined below.

- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Call Monitor 1/4W:** This option is used to select split window on the Call Monitor. Use the +/- buttons to select the desired value.
- **Main Display Type:** Default will set the main display to a standard multi-plex screen. Seq will set the main display type to the Seq mode, meaning it will sequence through the cameras.
- **Main Display Called By Event:** This option allows a camera that has detected motion to take over the screen for the duration of said event.
- **Total Pages:** This option defines the total pages under Seq Display Type. The maximum number varies according to the display type. Press +/- buttons to select the desired number from the available list.
- **Dwell Time:** This option defines the dwell time (3 ~ 60 seconds, discrete) for each page of this display type. Use the +/- buttons to change the value.
- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Numeric:** (Enter) Use these buttons to change the selected camera.
- +/- : Use these buttons to change the current page for the Seq Display Type.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, & return to the previous menu. If the Save dialog is shown, press Enter to exit and save, Esc to exit without saving.

Main / SEQ Display Setup				
Display Type		Total Pages	Dwell Time	Page
Main Monitor	1W	4	5 Sec.	Settings..
	4W	1	5 Sec.	Settings..
	7W	1	5 Sec.	Settings..
	9W	1	5 Sec.	Settings..
	10W	1	5 Sec.	Settings..
	13W	1	5 Sec.	Settings..
	16W	1	5 Sec.	Settings..
Call Monitor	1W	4	5 Sec.	Settings..
Main Display Type			Default	
CVBS			Main Monitor	
Main Display Called By Event			On	

Scheduled Record Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to Scheduled Record, 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 day of the week. General operations of this menu are defined below.

- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Copy:** Use this button to: copy the settings of (1) the current camera to all the following cameras or (2) the currently selected day to all the following days in the menu.
- **Mode:** (Mouse: Left click) Use this button to enter the Easy Setup menu for Schedule Record.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Mode:** This option defines whether or not the selected mode applies to all cameras or an individual camera. Use the +/- buttons to change the value.
- **Camera:** Use the +/- buttons to select an individual camera.
- **Start:** Defines the start time of the current time segment, in increments of 30 minutes. (The end of this time segment is set as the start time of next time segment, or the start time of the first time segment on the same day.) Use the +/- buttons to select the desired start time.
- **Alarm:** This option defines the recording mode when an alarm is triggered. (No, Video, Audio/Video) "Off" is for alarm detection Off. Use the +/- buttons to change the value..
- **Motion:** This option defines the recording mode when motion is detected. (No, Video, or Audio/Video) "Off" is for motion detection Off. Use the +/- buttons to change the value.
- **Normal:** This option defines the normal recording mode, including No, V (Video only), or A/V (Audio/Video). Use the +/- buttons to change the value.

Scheduled Record Setup				
Mode		All		
Camera		-		
T1				
Weekday	Start	Alarm	Motion	Normal
SUN	00:00	A/V	A/V	A/V
MON	00:00	A/V	A/V	A/V
TUE	00:00	A/V	A/V	A/V
WED	00:00	A/V	A/V	A/V
THU	00:00	A/V	A/V	A/V
FRI	00:00	A/V	A/V	A/V
SAT	00:00	A/V	A/V	A/V
[MODE]-Easy Setup				
[COPY]-Copy				

Scheduled Record Setup Continued

In a time segment, if both Alarm and Motion are set to "Off", the audio/video will record normally unless video loss is detected. General operations for Scheduled Record: Easy Setup menu are defined below. This menu allows the administrator to use a simple and easier way to set the scheduled recording 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 day in Scheduled Record will be changed accordingly.

- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Copy**: Use this button to copy the settings of the current camera to all the following cameras.
- **Numeric 1-6**: (Mouse: Left click) Use these buttons to select the active Recording Mode. Press Enter 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 (not selectable).
- +/- : (Mouse: Left click and drag) Use these buttons 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) Use this button to escape from the current screen, and return to the previous menu. The time segments for each weekday in Scheduled Record will be updated accordingly.

Scheduled Record-Easy Setup							✕	
Mode		All					-	+
Camera		-						
		00	04	08	12	16	20	
SUN	[Grid of 24 pink squares]							
MON	[Grid of 24 pink squares]							
TUE	[Grid of 24 pink squares]							
WED	[Grid of 24 pink squares]							
THU	[Grid of 24 pink squares]							
FRI	[Grid of 24 pink squares]							
SAT	[Grid of 24 pink squares]							
✓1 [Icon]		2 [Icon]			3 [Icon]			
4 [Icon]		5 [Icon]		6 [Icon]		[Icon]		
[COPY]-Copy								

HDD Setup


In the Setup Menu, use ▲▼◀▶ to change the highlighted option to HDD, and then press Enter to call up HDD Setup as shown. Alarm video/audio is much more important than normal video/audio. The DVR is designed to allow the ability to divide each HDD into an alarm partition and a normal partition. Alarm video/audio will be recorded in the alarm partition, & normal video/audio will be recorded in the 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 behavior of Alarm Record and Normal Record if it runs out of space on the last HDD installed.

- ▲▼◀▶ : Use these buttons to select the desired menu or area.
- **Mode Format/Clear:** (Mouse: Left click) Use this button to format/clear the HDDs.
- **Seq Advanced HDD Setup:** (Mouse: Left click) Press this button to enter Advanced HDD Setup.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Size (GB):** This shows the total size of HDD storage in GB for Alarm Record and Normal Record. If the total alarm record size is zero, the alarm video/audio will be recorded in the normal record partition of the HDD. If the total normal record size is zero, the normal video/audio will be recorded in the alarm record partition of the HDD.

HDD Setup		
Record Type	Alarm Record	Normal Record
Size (GB)	1777	585
Auto Overwrite	✓	✓
HDD Full Action	✓	✓
Duration	10 Sec.	10 Sec.
Alarm Out	N/A	N/A
Buzzer	✓	✓
Log	✓	✓
E-mail	-	-
[MODE] - HDD Format / Clear		
[SEQ] - Advanced HDD Setup		

HDD Setup Continued

- **Auto Overwrite:** If activated, this selection will overwrite the recorded video/audio from HDD#1 when the Alarm/Normal Record disk drive capacity is full. If Auto Overwrite is disabled & the Alarm/Normal Record disk drive capacity is full, the system will not overwrite the recorded video/audio, and will not record Alarm/Normal video/audio until the Alarm Reset button is pressed. Use +/- to check/uncheck this item. By default, this setting is checked.
- **HDD Full Action:** This option defines what action the DVR will take when the Alarm/Normal Record disk drive capacity is full. Press +/- to check/uncheck this item. By default, this setting is checked.
- **Duration:** This option defines the response duration (in seconds) of the Alarm Out relay and Buzzer activation when the corresponding partition is filled up. Use the +/- buttons to adjust the value (3 seconds - 60 minutes, discrete, '-' for 'Forever'). By default, this setting is checked.
- **Alarm Out:** This option defines which Alarm Output will be triggered when the corresponding partition, Alarm Record or Normal Record, is full. Use the +/- buttons to select none (N/A) or one of the Alarm Outputs (1-4).
- **Buzzer:** This option defines whether or not to activate the internal DVR Buzzer when the corresponding partition, Alarm Record or Normal Record, is full. Press Enter or +/- to check/uncheck this item. By default, this setting is checked.
- **Log:** This defines whether or not system events are logged. Click Enter or +/- to check/uncheck this option. By default, this setting is checked.
- **E-mail:** This option defines whether an event e-mail is sent to a remote email address or not. The e-mail will be sent to the predefined recipients the moment when the event is triggered. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.

HDD Setup 		
Record Type	Alarm Record	Normal Record
Size (GB)	1777	585
Auto Overwrite	✓	✓
HDD Full Action	✓	✓
Duration	10 Sec.	10 Sec.
Alarm Out	N/A	N/A
Buzzer	✓	✓
Log	✓	✓
E-mail	-	-
[MODE] - HDD Format / Clear		
[SEQ] - Advanced HDD Setup		

HDD Formatting

In the HDD Setup menu, press Mode top open the HDD Format/Clear screen. Each of the HDDs 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 & Normal Record partition for each HDD. The HDD IDs start from ID 1 and any NAS device will be the last HDD. General operations of this menu are defined below.

- **▲▼◀▶**: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Mode - Format**: (Mouse: Left click) Use this button to format the selected HDD. A confirmation dialog will be shown on the screen. Press Enter to confirm, or Esc to cancel. It can take up to 10 minutes to format a hard drive. Do not turn off the DVR during this process. By default, the HDD will be formatted & 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 in the HDD will still be accessible.
- **Seq - Clear**: (Mouse: Left click) Use this button to erase the selected HDD. A confirmation dialog will be shown on the screen, press Enter to confirm, or Esc to cancel.

HDD Format / Clear						
Recording HDD	Alarm :		5	Normal :		1
HDD	◀ 1	2	3	4	5	6 ▶
Size (GB)	2924	2924	2924	2924	1464	1464
Normal Record(%)	0	0	0	0	0	0
Alarm Record(%)	100	100	100	100	100	100
NAS	Setup	Setup	Setup	Setup	Setup	Setup
[MODE]-Format			[SEQ]-Clear			
[CALL]-Physical Format						

- **Call - Physical Format**: (Mouse: Left click) Use this button to physically format the selected HDD. A confirmation dialog will be shown on the screen, press Enter to confirm, or Esc to cancel. The recording will be always optimized for performance. It is always recommended to use the physical format function to format the HDD for the first time.
- **Esc**: (Mouse: Right Click) Use this button to escape from this screen, and return to HDD Setup display. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Alarm Recording HDD**: This shows if you are using this feature on the HDD.
- **Normal Recording HDD**: This shows if you are using this feature on the HDD.
- **Size (GB)**: This shows the total size available in GB for this HDD once it has been formatted.
- **Alarm Record(%)**: This shows Alarm Record Size (in percentage) for the HDD. Follow the text Input method described on page 16 to change the value. The alarm record percentage for all HDDs is zero, the alarm video/audio will be recorded in normal record partition. If the total normal record size is zero, the normal video/audio will be recorded in alarm record partition.
- **Normal Record(%)**: This shows the Normal Record Size (in percentage) for this HDD. It equals (100% - Alarm Record Size).
- **NAS/Setup**: This option is used to setup NAS (Network Attached Storage) & related parameters if a NAS drive is connected to the DVR. Press Enter (Mouse: Left click) in Setup to enter the NAS.

Advanced HDD Setup

In the HDD Setup display menu, press Seq to call up Advanced HDD Setup menu.

The HDD Failure Action in the Advanced HDD Setup allows the administrator to define how the system responds when a HDD failure is detected. Privacy settings allow the administrator to set the DVR to record for a Limited Period and define the Retention Period for data. The HDD Failure Action will be triggered when no available formatted HDD is detected.

General operations of this menu are defined below.

- ▲▼ : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Duration:** This defines the response duration (in seconds) the Alarm Out relay and the Buzzer will be triggered after a HDD failure is detected. Use the +/- buttons to adjust the value (3 seconds - 60 minutes, discrete, '-' for 'Forever').
- **Alarm Out:** This option defines which Alarm Output will be triggered when a HDD failure is detected. Use the +/- buttons to select none (N/A) or one of the Alarm Outputs.
- **Buzzer:** This option defines whether or not to activate the internal DVR Buzzer when a HDD failure is detected. Press +/- to check/uncheck this item. By default, this setting is checked.
- **Log:** This defines whether or not system events are logged. Click Enter or +/- to check/uncheck this option. By default, this setting is checked.
- **E-mail:** This option defines whether an event e-mail is sent to a remote email address or not when a HDD failure is detected. The e-mail will be sent to the predefined recipients the moment when the event is triggered. Use the Enter button or +/- to check/uncheck this option. By default, this setting is not checked.
- **Limited Period:** This option defines whether the HDD storage is used for a limited period or not. Press Enter or +/- to check/uncheck this item. By default, this setting is not checked.
- **Retention Period (hour):** This defines the retention period of used HDD storage if the Limited Period is option is checked. Follow the text Input method described on page 16 to change the value. If this item is set to 0, the Limited Period function is not active.

Advanced HDD Setup	
HDD Failure Action	
Duration	10 Sec.
Alarm Out	N/A
Buzzer	✓
Log	✓
E-mail	-
Privacy	
Limited Period	-
Retention Period (hour)	0

Nas Setup

▲▼: (Mouse: Left click) Use these buttons to select the desired menu or area.

- **Esc:** (Mouse: Right Click) Use this button to escape from the NAS Setup dialog. If a Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving. If the NAS settings have been changed, you will be asked to reboot the system in order for the new settings to take effect. The NAS device will be always the last storage item in the HDD list.
- **Type:** "NFS" or "N/A". Press +/- buttons to select.
- **URL:** This is the defined URL for the NAS device. Follow the Text Input method described on page 16 to put the URL.
- **Path:** This defines the path of the NAS device you wish to use to store video/audio. Follow the text input method on page 16 to define the path. Links are case sensitive.

NAS Setup	
Type	N/A
URL	
Path	

Password Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to Password, and then press ENTER to open the Password Setup menu. This menu 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, including Administrator (highest), Supervisor, and Operator (lowest). The Operator & Supervisor can view live video, use the playback and archive feature. The Administrator can perform any function. In addition to the default password levels, the user can also set a "Customized" user level. These DVRs allow up to 18 user accounts. By default, the Administrator username is aa, and the password is 11. General operations of this menu are defined below.

- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **MODE:** Select/Deselect as default (Mouse: Left click) Use this button to select a user as the default one at login, or deselect this option if this user is not the default user to login. An asterisk (*) will be shown along with the user number of the default login user. This login username name/password will be the default one used each time the login dialog is shown, so the user doesn't have to manually enter the text every time to login the system.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, Esc (Mouse: Right Click) to exit without saving.

Password Setup				
Local Guest Level		-		
Remote Guest Level		-		
Auto Logout		-		
No.	Login Name	Password	Level	
▲	*1 aa	**	Admin	Adv.
2			Operator	Adv.
3			Operator	Adv.
4			Operator	Adv.
5			Operator	Adv.
▼	6		Operator	Adv.
[MODE] - Set default login				

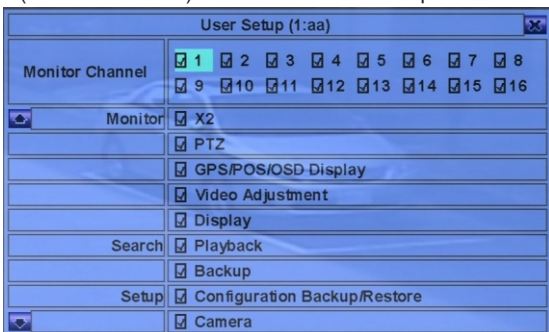
User Setup

- **Local Guest Level:** This is the access level (Administrator, Supervisor, Operator, or any user) of a user that does not login the system. Use the +/- buttons to change the level.
- **Remote Guest Level:** This is the remote access level without logging into the system. Use the +/- buttons to change the level.
- **Auto Logout:** If there is no activity from 1 minute to 24 hours, the current user is automatically logged out. Use the +/- buttons to change the value.
- **Login Name:** Use the text input method described on page 16 to name each user.
- **Password:** A password will only accept numbers as characters. Follow the text input method described on page 16 to set the password.
- **Level:** This defines the authority level of the user (Administrator, Supervisor, Operator, or Customized). Use the +/- buttons to change the user level.
- **Adv:** Press Enter (Mouse: Left click) to open the Advanced User Setup menu. The Advanced User Setup menu allows the administrator to set each user's access rights on the DVR.
- **▲▼◀▶:** (Mouse: Left click) Use this button to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from this screen, and return to the Password Setup display.
- **Monitor Channel 1-16:** The selected user can only monitor the channels that are checked. Press Enter or +/- (Mouse: Left click) to check/uncheck this option.
- **X2:** This option will enable the user to perform X2 operation during live/playback if checked. Press Enter or +/- (Mouse: Left click) to check/uncheck this option.
- **PTZ:** This option will enable the user to use the PTZ cameras if checked. Press Enter or +/- (Mouse: Left click) to check/uncheck this option.
- **GPS/POS/OSD Display:** This option will enable the user to change GPS/POS/OSD Display if checked. Press Enter or +/- (Mouse: Left click) to check/uncheck this option.
- **Volume:** This option will enable the the user change volume if "checked". Press Enter or +/- (Mouse: Left click) to check/uncheck this option.

Password Setup				
Local Guest Level		-		
Remote Guest Level		-		
Auto Logout		-		
No.	Login Name	Password	Level	
↑ *1	aa	**	Admin	Adv.
2			Operator	Adv.
3			Operator	Adv.
4			Operator	Adv.
5			Operator	Adv.
↓ 6			Operator	Adv.
[MODE] - Set default login				

User Setup Continued

- **Video Adjustment:** This option will enable the user to adjust video settings if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Display:** This option will enable the user to change display settings if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Playback:** This option will enable the user to playback video/audio if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Backup:** This option will enable the user to backup video/audio if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Configuration Backup/Restore:** This option will enable the user to backup/restore configurations if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Camera:** This option will enable the user use the Camera Setup menu if checked. Press Enter or +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Alarm:** This option will enable the user to use the Alarm Setup menu if checked. Press Enter or +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Main/Seq Display:** This option will enable the user to use the Main/Seq Display Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Scheduled Record:** This option will enable the user to use the Scheduled Record Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup HDD:** This option will enable the user to use the HDD Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Password:** This option will enable the user to use the Password Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup System:** This option will enable the user to use the System Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup RS-232/422/485:** This option will enable the user to use the RS-232/422/485 Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Network:** This option will enable the user to use the Network Setup menu if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Setup Factory Defaults:** This option will enable the user to restore factory defaults to the entire DVR if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Software Upgrade:** This option will enable the user to upgrade the DVR firmware if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.
- **Shutdown:** This option will enable the user to shutdown the DVR if checked. Press Enter or use +/- (Mouse: Left click) to check/uncheck this option.



System Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to System, and then press Enter to call up System Setup menu. The System Setup menu allows the administrator to set the system time, time zone, time synchronization, language, etc. General operations of this menu are defined below.

- ▲▼◀▶ : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Time Zone:** Use the +/- buttons to select the time zone for the DVR.
- **Daylight Saving Time:** Press Enter or +/- to check/uncheck this option.
- **Synchronization:** This option defines the whether or not the time is synchronized with a TSP Server. Use +/- to change the value. By default, this setting is not checked. Local Server means the DVR is used as the time server.
- **TSP Server:** TSP (Time Synchronization Protocol) server name if Time Synchronization is set to The DVR will attempt synchronization with the specified TSP server at a preset interval. Follow the text input method on page 16 to specify a TSP server.
- **Date:** This option defines the system date. Use the +/- buttons to define the system date.
- **Time:** This option defines the system time. Use the +/- buttons to define the system time.
- **Display Format:** This option defines the format used for the system time as displayed on the lower-left corner of the main screen (HDMI, BNC, and VGA outputs). Use the +/- buttons to select the desired time format.
- **Language:** Use the +/- buttons to select the language desired for your system.
- **Protection Key:** This defines the protection key used for remote access of the DVR. This protection key is used for authentication when any remote device requests to connect to the DVR. The same protection key must be entered to install the remote software if it is to be used to access the DVR.

System Setup			
Time Zone			
Taipei [GMT+08:00]			
Daylight Saving Time		-	
System Time			
Synchronization		TSP Server	
TSP Server		time.windows.com	
Date	2012	May	08
Time	12	05	06
Display Format		YY/MM/DD HH:MM	
Language		English	
Protection Key	1000	1001	1002 1003

RS-232/422/485 Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to RS-232/422/485, and then press Enter to open the RS-232/422/485 menu. This menu allows the administrator to setup the RS-232 control port, RS-422, or the RS-485 control port. General operations of this menu are defined below.

- ▲▼◀▶: (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Device Type:** This is the defined device type. The options available are PTZ, Keyboard, GPS, POS, PTZ+Keyboard or N/A (Not Available). Use the +/- buttons to change the device type. A PTZ camera can use RS-232 or RS-422/485, but not both.
- **Model:** The PTZ model (for PTZ and PTZ+Keyboard), Keyboard model, GPS protocol, or POS printer type for the connected devices. The PTZ models supported include Pelco D protocol cameras, Samsung SCC-641P, Kalatel Cyber Dome, PIH-series, Dynacolor, Bosch AutoDome, Video Trek, etc. Keyboard models supported include Terminal (EX. VT-100) and Control Protocol keyboards. For the Terminal type, use the corresponding ASCII characters to to define the type. The GPS protocol that is supported by these DVRs 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. Use the +/- buttons to change the supported model or protocol. If the PTZ+Keyboard is selected on Device Type, the Keyboard model is always set to Control Protocol, and all other settings (Baud Rate, Data Bit, Stop Bit, & Parity) are the same as the PTZ Model selected.
- **Baud Rate:** Use the +/- buttons to change the value.
- **Data Bit:** Use the +/- buttons to change the value.
- **Stop Bit:** Use the +/- buttons to change the value.
- **Parity:** Use the +/- buttons to change the value. (Odd, Even, or None).
- **DVR/Camera ID:** This setting is for a PTZ/Keyboard. The device ID for the Keyboard must not conflict with the other devices connected in the same control port. When using GPS/POS, in order for the Camera ID to receive the GPS/POS data, "Multiple" must be selected on the POS menu. Multiple POS will only function on an RS-232 port, so it will only function on the 16 channel model. Use the +/- buttons to change the ID of the selected device.

RS-232 / 422 / 485 Setup		
COM Port	RS-232 - +	RS-422/485
Device Type	N/A	PTZ
Model	Terminal	PTC-400C
Baud Rate	1200	9600
Data Bit	5	8
Stop Bit	1	1
Parity	None	None
DVR/Camera ID	0	1

RS-232 Protocol

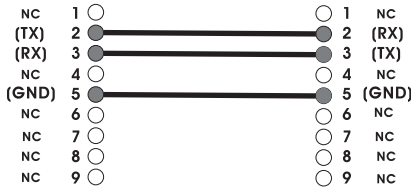
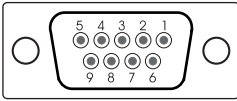
•RS-232 Control:

General settings of the RS-232 control port are defined below.

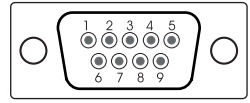
Note: RS-232 is only available on the 16 channel model.

Serial Cable Pin Out

DVR RS-232 Pins
DB-9P, Female



External Device
RS-232 Pins
DB-9P, Male



Commands

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)

RS-232 Protocol Cont

Code	Value (MSB set for key press, MSB reset for release)
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 Backward	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')
Copy	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 'l' – small L)
ENTER	0x6b (ASCII character 'k')

RS-232 Protocol Cont

Code	Value (MSB set for key press, MSB reset for release)
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

Network Setup

In the Setup Menu, use ▲▼◀▶ to change the highlighted option to Network, and then press Enter to call up Network Setup menu. The Network Setup menu allows the administrator to setup all Ethernet network related parameters. Check with your network administrator to verify you are setting these parameters correctly. General operations of this menu are defined below.

- ▲▼◀▶ : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Net Type:** This option is used to select your network type. The options available are Static IP, PPPoE, or DHCP. For internet access, make sure the below IP Address is a public IP address. Otherwise, a router with public IP address is required, and the router must be setup for port mapping (forwarding) to the DVR, or a CMS server must be used. Use the +/- buttons to change the Network type.
- **IP Address:** This option defines the Ethernet IP address. Follow the text input instructions on page 16 to enter this address.
- **Net Mask:** This option defines the Subnet Mask used for your Ethernet IP address. Follow the text input instructions on page 16 to enter this address.
- **Gateway:** This option defines the Ethernet Gateway IP address. The priority of the Gateway is (1) Ethernet Gateway and (2) a 3G Gateway. Follow the text input instructions on page 16 to enter this address.
- **DNS:** This option defines the DNS (Domain Name Server) IP address for your Ethernet connection. Follow the text input instructions on page 16 to enter this address.

Network Setup						
Net Type	DHCP					
Static IP	IP Address	192	168	2	76	
	Net Mask	255	255	255	0	
	Gateway	192	168	2	1	
	DNS	192	168	2	1	
PPPoE	Username					
	Password					
DDNS	Type	Fly2DNS				
	URL	web130530847.fly2dns.net				
	Username	a43418cb8f5445a5				
	Password	*****				
Notification	FTP	3G	Advanced			

Network Setup Continued

- **Username:** This is the PPPoE username for your system if PPPoE is used. Follow the text input instructions on page 16 to enter this address.
- **Password:** This is the PPPoE password for the system if PPPoE is used. Follow the text input method described on page 16 to set the password.
- **DDNS Type:** This option defines the DDNS type. The options available are Dynamic, Static, Custom DDNS (Dynamic Domain Name Server) type, etc. Contact your local DDNS Service Provider to get the DDNS URL, username, and password. Use the +/- buttons to modify this field. Fly2DNS is a free, built-in DDNS server. The URL/DDNS, Username/DDNS Password will be filled in automatically if you enter, exit, or save your changes on the DDNS menu. The URL can be changed if desired.
- **URL:** This option defines the URL (Uniform Resource Locators) for the system. Follow the text input instructions on page 16 to enter this address.
- **DDNS Username:** This option defines the DDNS username for the DVR. Follow the text input instructions on page 16 to enter this username.
- **DDNS Password:** This option defines the DDNS password for the DVR's DDNS. Follow the text input instructions on page 16 to enter this password.
- **Notification:** Press Enter (Mouse: Left click) to open the Notification Setup menu.
- **FTP:** Press Enter (Mouse: Left click) to open the FTP Setup.
- **3G:** Press Enter (Mouse: Left click) to open the 3G Modem Setup.
- **Advanced:** Press Enter (Mouse: Left click) to open the Advanced Network Setup.

Note: If you select FreeDNS as the DDNS type, the URL must be appended with "#". # is then automatically extracted from the grab URL batch file that is downloaded from freedns.afraid.org. You receive a randomly generated, free DDNS URL.

Network Setup					
Net Type	DHCP				
Static IP	IP Address	192	168	2	76
	Net Mask	255	255	255	0
	Gateway	192	168	2	1
	DNS	192	168	2	1
PPPoE	Username				
	Password				
DDNS	Type	Fly2DNS			
	URL	web130530847.fly2dns.net			
	Username	a43418cb8f5445a5			
	Password	*****			
Notification		FTP		3G	
				Advanced	

Notification Setup

In the Network Setup menu, press Enter to open the Notification Setup menu when the highlighted option is Notification. The Notification Setup menu allows the administrator to set notification (email & push alarm) related parameters. When an event occurs, & Notification/E-mail is enabled for the corresponding action, a notification will be sent based on the parameters set. General operations of this menu are defined below.

- ▲▼ : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **SMTP Server:** This option defines the SMTP mail server name. Follow the text input instructions on page 16 to enter this address.
- **SMTP Port:** This option defines the SMTP port for e-mail transmission. The default value is 25. Follow the text input instructions on page 16 to enter this port.
- **Authentication:** This option defines whether or not the SMTP mail server requires authentication. Press Enter or +/- to check/uncheck this option.
- **Username:** This option defines the SMTP mail server requires authentication. Follow the text input instructions on page 16 to enter this username.
- **Password:** This option defines the SMTP mail server requires authentication. Follow the text input instructions on page 16 to enter this password.
- **Mail From:** This option defines the e-mail address of this DVR unit, i.e. the sender of the e-mails originated from the triggered events. Follow the text input instructions on page 16 to enter this email address.
- **Mail To #1-5:** This option defines the receivers' e-mail addresses. The DVR can send the e-mails created by triggered events to up to 5 different receivers. Follow the text input instructions on page 16 to enter these addresses.
- **Attachment:** This option defines the attached snapshot when an e-mail is sent. Use the +/- buttons to modify this setting.
- **Push Alarm:** This option defines whether Push Alarm is enabled for network notification. Press Enter or +/- to check/uncheck this option.

Notification Setup	
E-mail	
SMTP Server	msa.hinet.net
SMTP Port	25
Authentication	-
Username	
Password	
Mail From	
Mail To #1	
Mail To #2	
Mail To #3	
Mail To #4	
Mail To #5	
Attachment	N/A
Push Alarm	✓

FTP Setup

In the Network Setup menu, press Enter to call up FTP Setup when the highlighted option is FTP. The FTP Setup menu allows the administrator to set the FTP related parameters. When an event occurs & FTP is enabled, the recorded video/audio for that event will be sent to the FTP server, based on the parameters set in this menu. General operations of this menu are defined below.

- **▲▼:** (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **FTP Server:** This option defines the FTP server web/IP address with or without directory path. Follow the text input instructions on page 16 to enter this address.
- **FTP Port:** This option defines the FTP port. The default value is 21. Follow the text input instructions on page 16 to enter this port.
- **Username:** This option defines the username of the DVR in the FTP server. Follow the text input instructions on page 16 to enter this username.
- **Password:** This option defines the password of the DVR in the FTP server. Follow the text input instructions on page 16 to enter this password.
- **Prefix Of Filename:** This option defines the prefix of the filenames of the files sent to the FTP server. If the field is empty, the filenames will be "cam"; if not, the filenames will be "Prefix-cam". For example, if the DVR prefix is "DVR01", then the filenames will be "DVR01-cam". Follow the text input instructions on page 16 to define this prefix.

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

3G Modem Setup


In the Network Setup menu, press Enter to call up 3G Modem Setup menu when the highlighted option is 3G.

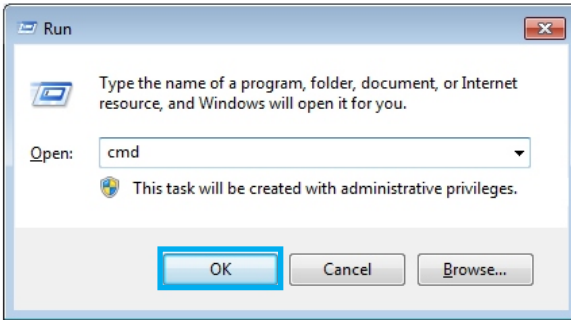
3G Modem Setup				
Username				
Password				
Dial String	*99#			
APN	internet			
PIN				
IP Address	180	207	236	44
Net Mask	255	255	255	255
Gateway	10	64	64	69
DNS	61	31	233	1

The 3G Modem Setup allows the administrator to set related parameters if a USB dongle 3G modem is plugged into the USB port. General operations of this menu are defined below.

- ▲▼: (Mouse: Left click) Use these buttons to select the desired menu or area.
- Esc: (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Username:** This option defines the username if requested by ISP. Follow the text input instructions on page 16 to enter this username.
- **Password:** This option defines the password if requested by ISP. Follow the text input instructions on page 16 to enter this password
- **Dial String:** This option defines the 3G dial command. Follow the text input instructions on page 16 to define the Dial String.
- **APN:** This option defines the (Optional) APN info. Follow the text input instructions on page 16 to define the APN value.
- **PIN:** This option defines the PIN associated with the SIM card used. Follow the text input instructions on page 16 to define or enter the PIN.
- **IP Address:** This option defines the 3G IP address of the system. To obtain the static IP address, contact your local ISP (Internet Service Provider).
- **Net Mask:** This option defines the Subnet Mask for the 3G IP address.
- **Gateway:** This option defines the 3G Gateway IP address. The prioritized Gateway is (1) the Ethernet Gateway and (2) the 3G Gateway.
- **DNS:** This option defines the DNS (Domain Name Server) IP address for the 3G network.

Assigning an IP Address (Static)

1. Click the start icon on your computer. 
2. Type the word "run" and select enter on your keyboard.
3. Type in 'cmd' and press enter on your keyboard, or press ok.



4. Type in 'ipconfig /all' into the command prompt that appears. Press "Enter".
5. Write down your computer's IP address.

Do not use the same IP address as the computer in the DVR.

In the example below, the computer's IP address is 192.168.1.74.

The IP address of the DVR must be different than the IP address in the computer.

Each network-able device in your network has an IP address assigned.

The IP chosen for your DVR is not the same address as any other device on your network.

```
Administrator: C:\Windows\system32\cmd.exe

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : internal.channelvision.com
    Description . . . . . : Broadcom NetXtreme Gigabit Ethernet
    Physical Address. . . . . : 
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : 
    IPv4 Address. . . . . : 192.168.1.86(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Lease Obtained. . . . . : Friday, June 20, 2014 7:45:40 AM
    Lease Expires . . . . . : Monday, June 30, 2014 7:43:02 AM
    Default Gateway . . . . . : 192.168.1.1
    DHCP Server . . . . . : 192.168.1.7
    DHCPv6 IAID . . . . . : 339478356
    DHCPv6 Client DUID. . . . . : 

Wireless LAN adapter Wireless Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : internal.channelvision.com
    Description . . . . . : Broadcom 802.11n Network Adapter
    Physical Address. . . . . : 
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Tunnel adapter isatap.internal.channelvision.com:

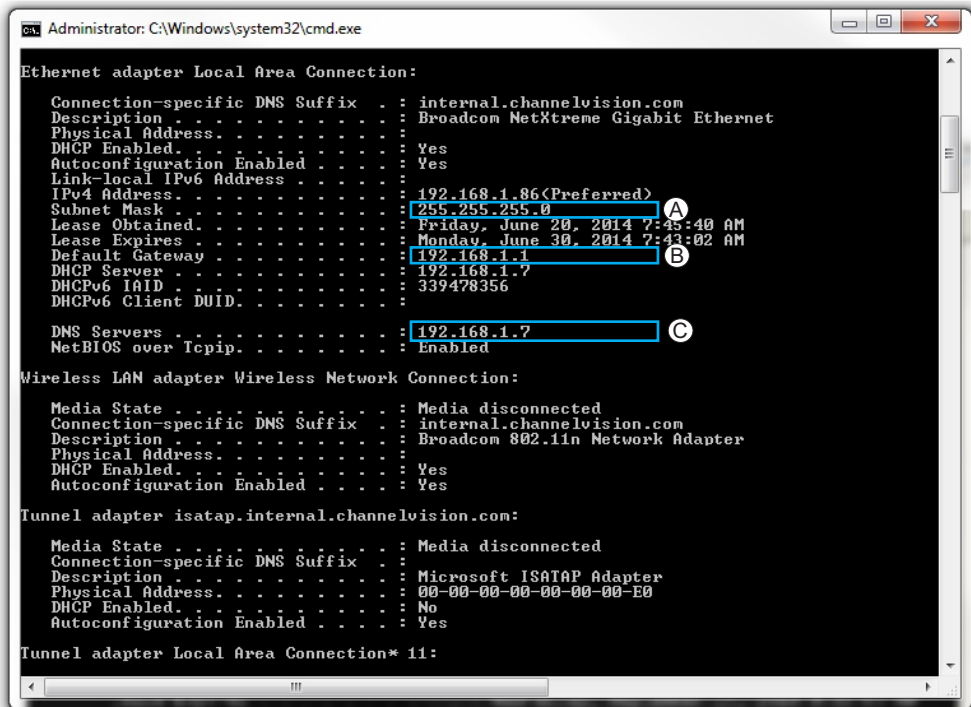
    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 
    Description . . . . . : Microsoft ISATAP Adapter
    Physical Address. . . . . : 00-00-00-00-00-00-E0
    DHCP Enabled. . . . . : No
    Autoconfiguration Enabled . . . . : Yes

Tunnel adapter Local Area Connection* 11:
```

Assigning an IP Address (Static) Continued

6. Copy/write down the following information from the DOS prompt.

- A. Subnet Mask (Example 255.255.255.0)
- B. Default Gateway (Example 192.168.1.1)
- C. DNS Server (if 2 servers, use the first one, for example 192.168.1.7)



Advanced Network Menu

In the Network Setup menu, press Enter to call up Advanced Network Setup menu when Advanced is the highlighted option. The Advanced Network Setup menu allows the administrator to set advanced network parameters. If you are not qualified, it is highly recommended you not use this menu without consulting a professional. General operations of this menu are defined below.

- ▲▼ : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Control Port:** This option defines the control port for remote access. The default port is 67. Follow the text input instructions on page 16 to define the Control Port.
- **Data Port:** This option defines the data port for remote access. The default port is 68. Follow the text input instructions on page 16 to define the Data port.
- **HTTP Port:** This option defines the HTTP (web page) port for remote access. The default port is 80. This port is used to enable you to view the DVR in a browser. Follow the text input instructions on page 16 to define the HTTP port.
- **UPnP Port Forwarding:** UPnP standards for Universal Plug and Play. This is the easiest way to enable remote access to the DVR if you are not familiar with networking. To use UPnP port forwarding for the Control, Data, & HTTP port, your router must be compatible with UPnP. Use the +/- buttons to enable or disable this feature. If UPnP port forwarding is used, the DVR will attempt a connection to your router via UPnP after you exit the UPnP menu. UPnP Port Forwarding may take up to 10 minutes to be active. If successful, the new Control, Data, & HTTP port will be shown with a (*) in front each value.

Advanced Network Setup				
Control Port	67			
Data Port	68			
HTTP Port	80			
UPNP Port Forwarding	N/A			
WAP Picture Quality	Normal			
Video Stream Resolution	HD:1/16,SD:CIF			
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 00:50:56:07:AB:BF				

Advanced Network Menu Continued

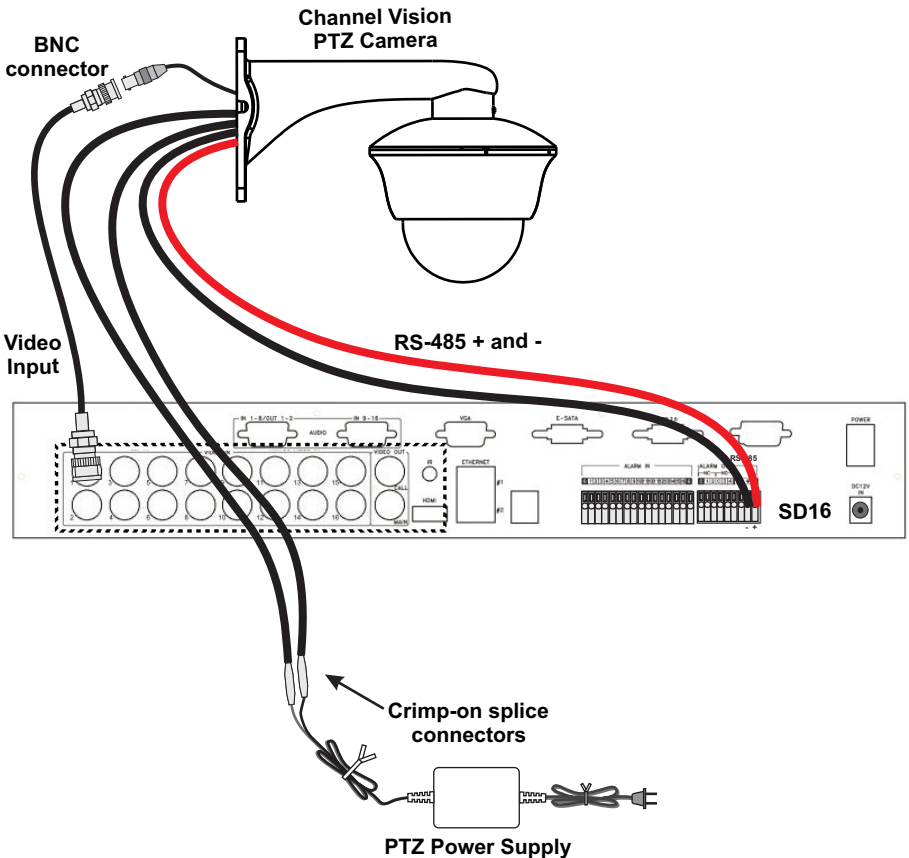
- **WAP Picture Quality:** This option defines the WAP picture quality if WAP access is supported on the DVR. Use the +/- buttons to change enable or disable this feature.
- **Video Stream Resolution:** This option defines the network live video stream resolution. Use the +/- buttons to customize the Video Resolution Stream.
- **Video Stream Quality:** This option defines the live video stream quality on your network. Use the +/- buttons to adjust the quality. There are quality limitations based off the DVR model in use.
- **DVR Name:** This option defines the "DVR Name" used in the "CMS Server" if a CMS Server (described below) will be used with the DVR. Follow the text input instructions on page 16 to name the DVR.
- **CMS Server URL #1-2:** This option defines the URL for the CMS Server #1 and #2. The DVR can connect to two CMS servers automatically if set properly. If using this feature, the DVR is not used as a web server, the computer hosting the CMS software/server would be used as the web server. Follow the text input instructions on page 16 to define these URLs.
- **IP Filter #1-4:** This option defines IP filters #1-4 for remote access. Only those PCs with IP addresses matching one of the IP filters can access the DVR remotely. Follow the text input instructions on page 16 to define the IP Filters. For example, if you have a static IP at your residence, and the DVR is installed at your business, you can restrict all other IP addresses from connecting to the DVR at your business, with the exception of the static IP of your residence. If the Control Port or Data Port are not available or accessible during remote access, the system will automatically reset the ports to their default values, in other words, they will be set to 67 & 68.

Advanced Network Setup				
Control Port	67			
Data Port	68			
HTTP Port	80			
UPNP Port Forwarding	N/A			
WAP Picture Quality	Normal			
Video Stream Resolution	HD:1 /16,SD:CIF			
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 00:50:56:07:AB:BF				

PTZ Control

A variety of PTZ cameras are supported. An example of how to connect a PTZ camera is shown on page 13 of this manual, as well as below. If a camera is also a PTZ camera, there will be an asterisk (*) preceding its title in the video window in split-window display. Press the PTZ button to enter PTZ control mode. The asterisk (*) will be changed to an inverted color to indicate that the camera is now in PTZ controlling mode. General PTZ operations are defined below.

- **ESC:** Use this button to exit PTZ control mode. The asterisk (*) will change back to a normal color.
- **◀▶▲▼:** (Mouse: Left-click in the up/down area of the video window)
Use these buttons to tilt the camera up, down, left, or right, or pan the camera.
- **ZOOM:** (+/ -) Use these buttons to zoom in or out on the PTZ camera.
- **GOTO:** Use this button to move the camera to a preset position. Use the numeric buttons 0-9 to enter the number of the preset position you want to move the camera to. The available range of preset positions are 00-254.
- **NEXT:** Use this button to navigate to the next misc functions. The misc functions include Focus, Iris, Auto PAN, SEQ, Preset, and Pan Speed. The active function will be shown on the lower right corner of the screen.



Search

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

- (a) **Search by time**
- (b) **Search by event**
- (c) **Smart search**
- (d) **Search archived files**
- (e) **POS search**

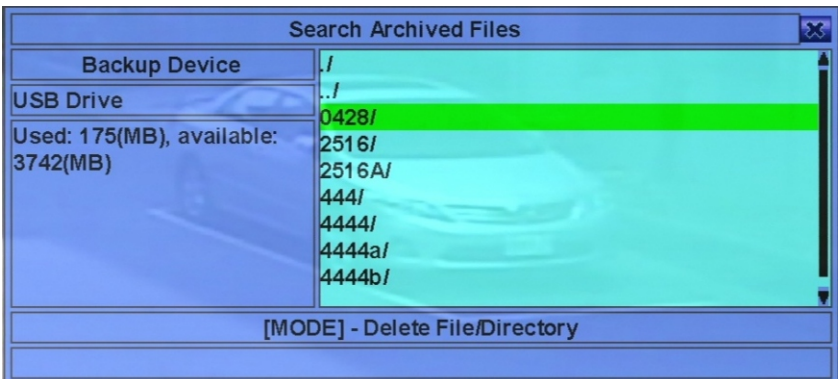
In the live video output, press the Search button to call up the Search Menu. General operations of this menu are defined below.



- **▲▼◀▶** : Use these buttons to select the desired menu or area.
- **Enter:** (Mouse: Left click) Use this button to enter the corresponding Search display menu. The Search menus and their operations are described in the following pages.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Instant Playback:** During live viewing, press the Play button to instantly call up the playback menu, select a specific time, and playback the recorded data.

Search Archive

- **▲▼◀▶** : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Enter:** (Mouse: Left click) Use this button to enter the corresponding Search display menu. The Search menus and their operations are described in the following pages.
- **Backup Device:** Use the Enter button (Mouse: Left click) to call up Backup Device dialog.
- **Disk Storage:** Select the storage device to search the archived files. Use the +/- buttons to select the available storage devices.
- **Archived File List:** This is a list of the archived files in the selected storage device. Select the file you wish to view and then press Enter to enter the Archived File Playback display of the selected file in this list, or press Play Buttons (Mouse: Left click twice) to play the file. Press Mode (Mouse: Left click) to delete the selected file.



Time Search

Follow the instructions below to use Time Search. The status field will show the 'Recorded from' time based on the selected time frame before searching. It will search for any Alarm, Motion, or Video Loss event, if checked. Above the status field is the 24 hour time slider an alarm, motion, video loss, & normal recording status (top to bottom). General operations of this menu are defined below.

- **▲▼◀▶** : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc**: (Mouse: Right Click) Use this button to escape from the playback menu, and return to live viewing.
- **Play Button**: (Mouse: Left click) Use this button to start playback of recorded video/audio within the selected search time frame. If no specific camera is selected, all the cameras in the current live screen will be shown and played back at once.
- **Copy Button**: (Mouse: Left click) Use this button to backup (copy) the selected type of recorded video/audio starting from the Search Time (described below) from the HDD to the connected backup device without review or playing back the video. This type of backup is performed in the background. Using this method, you can use any other feature of the DVR.
- **Search Time**: This defines the desired search time (Year, Month, Date, Hour, Minute) for the recorded data. The playback or backup will start from the time entered here when the playback or copy button is pressed. Use the +/- buttons to change the time values each item. It is also possible to select the calendar on the left by pressing the Enter key, and selecting the time with the mouse by dragging the slider icon. You may also use the ◀▶ or +/- keys for more specific increments.
- **Video/Audio**: This defines the specific type of search (Alarm, Motion, Video Loss, Normal). Use the Enter button or the +/- buttons to check/uncheck each option.

Search By Time
✕

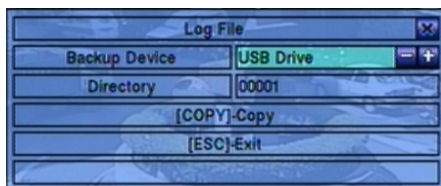
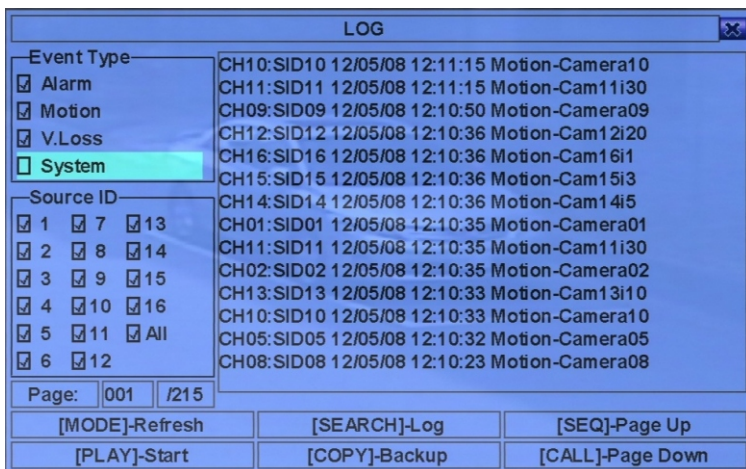
<	Oct 2013	>	Year	2013																			
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Month	10															
29	30	1	2	3	4	5	Date	8															
6	7	8	9	10	11	12	Hour	16															
13	14	15	16	17	18	19	Minute	36															
20	21	22	23	24	25	26	<div style="border: 1px solid black; padding: 5px;"> Video/Audio <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Alarm <input checked="" type="checkbox"/> Motion <input checked="" type="checkbox"/> Video Loss <input checked="" type="checkbox"/> Normal </div>																
27	28	29	30	31	1	2																	
3	4	5	6	7	8	9																	
0	1	2	3	4	5	6			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Recorded from : 2013/10/01 18:39	[PLAY]-Start	[COPY]-Backup
----------------------------------	--------------	---------------

Search By Event/Log

Follow the instructions below to use Event & Log Search. There are four different types of event logs, including Alarm, Motion, Video Loss, & System. 6000 of the most recent event logs are stored in the system. General operations of this menu are defined below.

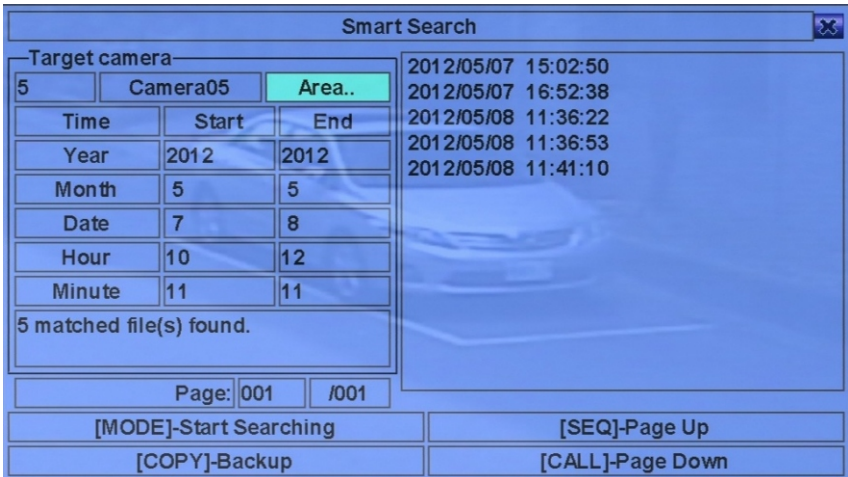
- **▲▼◀▶** : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc**: (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu. If the Save dialog is shown, press Enter to exit and save, or Esc (Mouse: Right Click) to exit without saving.
- **Mode: Refresh**: (Mouse: Left click) Use this button to refresh the log display. If there are new event logs that have been created, the log list will then show these new events.
- **Search Log**: (Mouse: Left click) Use this button to export the event log to backup device. A dialog will appear asking you to select the backup device, and enter the directory name. 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.
- **Numeric**: (Enter) (Mouse: Left click in the page number shown)
Use these buttons to select the displayed page of the event logs.
- **Event Type**: This option defines the the type of the events (Record, Alarm, Motion, Video Loss, System) to be shown in the log list. The Event Type "System" includes all system related events, including power on and Panic. Only Panic mode will trigger recording. Use Enter or +/- to check/uncheck the event type on the log list.
- **Source ID**: This option defines the source that triggered the event. For Alarm, it is the alarm input number. For Motion & Video Loss, the camera number is listed. The purpose of this ID is to filter log events for easy viewing and sorting. Use Enter or +/- to check/uncheck each option.



Smart Search

General operations of Smart Search are defined below.

- **▲▼◀▶** : (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc**: (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu.
- **Search / Mode**: (Mouse: Left click) Use this button to search through the recorded video/audio. Available options available are search time, camera, & motion masks. Search results are displayed on the right. Smart Search has the capability to find up to 500 files spanning 200 GB of each HDD partition during the search.
- **Seq - Page Up**: (Mouse: Left click)
- **Call - Page Down**: (Mouse: Left click)
- **Numeric (Enter)**: (Mouse: Left click in the page number shown) Use this button to select the desired page in the search results.
- **Camera ID**: This option defines the camera title in your search, shown on its right side. Use the +/- buttons to change the camera ID.
- **Start/End Time**: This option defines the (Year, Month, Date, Hour, Minute) of the recorded data. Files will be searched from the start & end time entered. Use the +/- buttons to change the time.
- **Matched File List**: This shows your search results according to the search time, camera, & motion masks. Files are arranged from oldest to newest. Available options are (1) press Enter to open Smart Search Playback display of a specific search result, (2) press the Play Buttons (Mouse: Left click twice) to playback the file directly, or (3) press the Copy Button (Mouse: Left click) to backup (copy) the selected video/audio directly to a USB drive.
- **Area**: This option defines the motion areas on the camera you want to use. The area you select on the camera will be searched. Press Enter (Mouse: Left click) to call up the Motion Area Setting screen. In that screen, the camera is divided into many small grids. If an area is transparent, it will not be searched. If an area is grey, it will be searched.
- **▲▼◀▶** : Use these buttons to move the selected grid.
- **+/-** : (Mouse: Left click and drag) Use these buttons to resize the selected area.
- **Enter**: Use this button to set/reset the selected area.
- **Mode**: Use this button to set/reset the entire area.
- **Esc**: Press this button to escape and return to Smart Search screen.



POS Search








The Status field will show the 'Recorded from' time in the HDDs before searching & in the search result after searching. General operations of this menu are defined below.

- ▲▼◀▶ (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Esc:** (Mouse: Right Click) Use this button to escape from the current screen, and return to the previous menu.
- **Search / Mode:** (Mouse: Left click) Use this button to start searching through the recorded video/audio based off the selected search time, camera, & keyword. The search results will be displayed on the right half of the screen. Up to 500 search results or 200 GB will be displayed as search results.
- **SEQ - Page Up:** (Mouse: Left click)
- **CALL - Page Down:** (Mouse: Left click)
- **Numeric:** (Enter) (Mouse: Left click in the page number shown) Use these buttons to select the displayed page.
- **Camera ID:** This option defines the camera title in your search, shown on its right side. Use the +/- buttons to change the camera ID.
- **Keyword:** This defines the keyword for the POS data search. Any POS data containing the keyword will come up in the search results. If the keyword is empty, all POS data will be searched. Follow the text input instructions on page 16 to define the keyword.
- **Start/End Time:** This defines the (Year, Month, Date, Hour, Minute) for the POS data. The data is searched from the start time to the end time entered in this field. Use the +/- buttons to define.
- **Matched file List:** This is the matching search results (HDD ID & time are shown) based off the selected search time, camera, and keyword. The results are shown from the oldest to the newest. The user may (1) press Enter to enter POS Search Playback of the selected file, (2) press the Play Button (Mouse: Left click twice) to play the video directly, or (3) press the Copy Button (Mouse: Left click) to backup (copy) the selected file to an external USB drive.

POS Search			
Camera	1		
Key word			
Time	Start	End	
Year	2012	2012	
Month	5	5	
Date	8	8	
Hour	10	12	
Minute	17	17	
No matched file found!			
Page: <input type="text"/>			
[MODE]-Start Searching		[SEQ]-Page Up	
[COPY]-Backup		[CALL]-Page Down	

Playback/Archive

In the Setup Menu, use the Mode button to change circularly the live/playback mode. General playback operations are defined below.

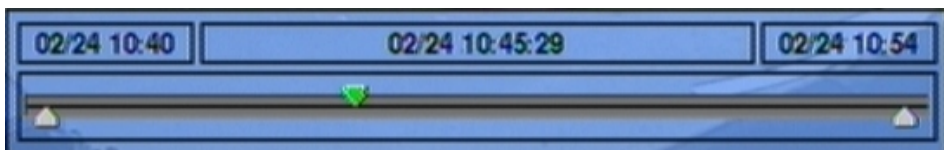
- **Play/Pause Button:** (Mouse: ) Use this button to play the recorded video/audio at 1X, or pause playback. If playback is paused, Use this button again to resume playing. Audio can only be played at 1X.
- **Stop Button:** (Mouse: ) Use this button to stop playing the recorded video/audio. Pressed a second time, this button will restart the current playback.
- **Fast Forward Button:** (Mouse: )
- **Slow Forward Button:** (Seq) (Mouse: ) Use this button to use fast/slow forward playback. Each time this button is pressed, the speed will become faster/slower from 2X, 4X, 8X, 16X, and then back to 2X.
- **Fast Backward Button:** (Mouse: )
- **Slow Backward Button:** (Mode) (Mouse: ) Use this button for fast/slow backward playback. Each time this button is pressed, the backward playback speed will become faster/slower, from 2X, 4X, 8X, up to 64/16X, and then back to 2X.
- **Single Step Button:** (Mouse: ) Use this button to playback frame by frame.
- **Enter:** Use this button 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:** During playback, use this button to take a snapshot of the current frame. A confirmation dialog will be shown. Press Enter to take a snapshot or Esc (Mouse: Right Click) to exit without taking a snapshot. The snapshot is saved under a directory called /Snapshot on your connected USB device.
- **Copy Button:** (Mouse: Left click) Use this button to backup (copy) from the HDD to the connected backup device.

Backup		
Backup Device	USB Drive	
Backup Speed	8	
Directory	00001	
Cameras	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> GPS	
GPS File Format	TXT	
End Time	Year: 2012	
	Month: 5	
	Date: 3	
	Hour: 8	
	Minute: 17	
[COPY]-Apply	[STOP]-Stop	[MENU/ESC]-Cancel
Used: 175(MB), available: 3742(MB)		


Backup

General backup operations are described below.

- **▲▼◀▶** (Mouse: Left click) Use these buttons to select the desired menu or area.
- **Copy Button:** (Mouse: Left click) Use this button to start a backup (copy) & to return to the previous menu. There will be a Copy icon on the lower-right corner indicating that the selected video/audio is being copied to the attached USB device.
- **Stop Button:** Use this button to stop copying and return to the previous menu. The Copy icon will disappear.
- **Esc:** (Mouse: Right Click) Use this button to cancel, and return to the previous menu.
- **Backup Device:** This is the USB storage device that you connected to the DVR. Press Enter (Mouse: Left click) to open the Backup Device dialog. Use the +/- buttons on the right to select the connected device.
- **Backup Speed:** This defines the backup speed from 1-9, with 1 being the lowest speed & 9 being the highest speed. Use the +/- buttons to change the value.
- **Directory:** This defines the directory in which files will be stored. Follow the instructions on page 16 to modify the directory.
- **Cameras:** This defines the cameras that will be backed up. Press Enter or +/- to select/deselect each of the selectable cameras. If a camera with GPS data is selected, the GPS data will be saved with the camera video in the same file. It is also possible to save GPS data separately.
- **GPS File Format:** This defines the file format of the GPS data. The supported formats are TXT and KML. Use the +/- buttons to select the value.
- **End Time:** This defines the end time (Year, Month, Date, Hour, Minute) for the recorded video/audio to be copied. Press the Copy button to begin copying, Use the +/- buttons to modify each field.
- **Search Button:** Use this button move the playback slider bar.




Playback/Archive Search By Event

In Log display, press Play Buttons () (Mouse: Left click) to playback the selected logs. This display is the same as the full screen display, and the playback buttons can be used to navigate. General playback operations are described below.

- **Playback Buttons:** (, , , , ,  Menu, Enter, Mode, Seq, Search)
(Mouse: Left Click)


Playback/Archive Smart Search

In the Smart Search menu press Enter to open the Smart Search Playback controls for the selected file, or press the Play Button () (Mouse: Left click twice) to playback directly. Smart Search can search through up to 500 files or 200GB of information. General playback operations are described below.

- **Playback Buttons:** (, , , , ,  Menu, Enter, Mode, Seq, Search)
(Mouse: Left Click)

- **Call:** During playback, press this button to show or hide the Motion Areas that are set.

Playback/Archive POS Search

In the POS Search menu, press Enter to open POS Search Playback controls for the selected search result, or press the Play Button () (Mouse: Left click twice) to playback the file directly.

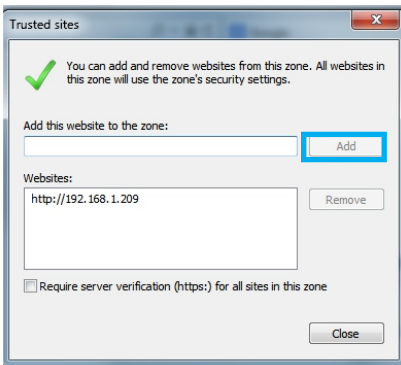
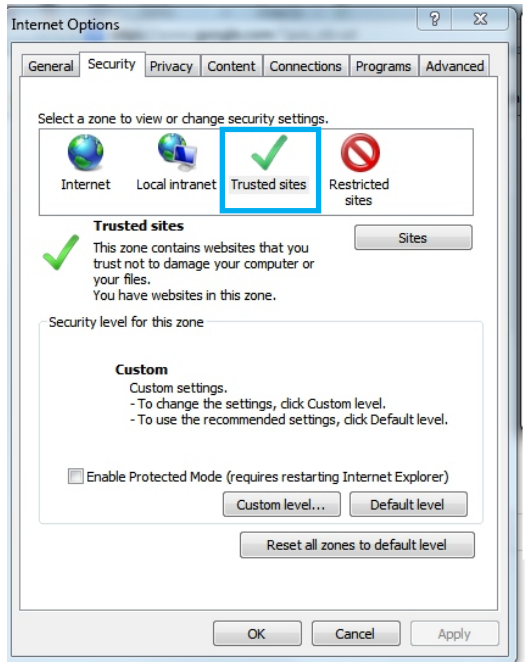
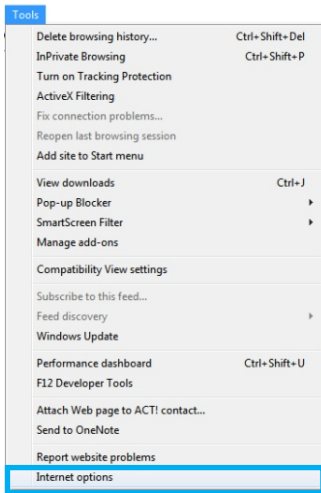
- **Playback Buttons:** (, , , , ,  Menu, Enter, Mode, Seq, Search)
(Mouse: Left Click)

Remote Viewing: IE

The DVR can be accessed using a web browser that is already installed on a PC. The DVR must be connected to a network, the internet or intranet.

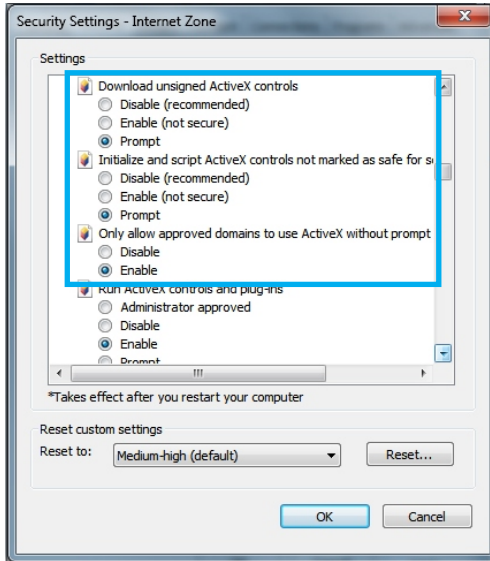
Before connecting to the DVR using Internet Explorer, or if you encounter issues, verify the steps below. To connect to the DVR, use the following format http://ip_address:http_port

1. Verify the DVR is plugged into the same router or switch as the PC you are using. Verify all network settings.
2. Verify that Microsoft DirectX® End-User Runtime 9.0 or above is installed in your PC. This software is available at www.microsoft.com if you do not have DirectX.
3. If using Windows XP, verify that Windows® update package KB319740 is installed in your PC if you are using Windows XP SP2. If you do not have this update, download it from Microsoft using the link below. www.microsoft.com/en-us/download/details.aspx?id=10083 (This package is a required bug fix meant for Windows XP SP2.)
4. Add the IP address of the DVR to trusted sites. To add to trusted sites in IE, go to Tools - Options - Security - Trusted Sites. If using IE7, set the security level for this zone to Low.

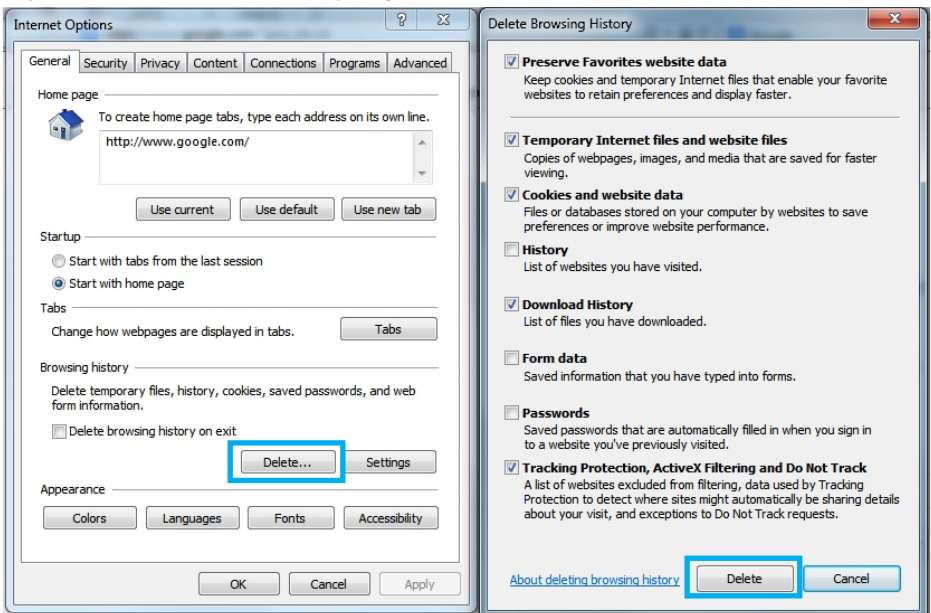


Remote Viewing: IE Continued

5. Change your IE settings to allow the DVR (ActiveX control) to install. Go to Tools - Security - Custom Level. Change the following settings to prompt: **Download unsigned ActiveX Controls** & **Install and run ActiveX Controls not marked as safe for scripting**.

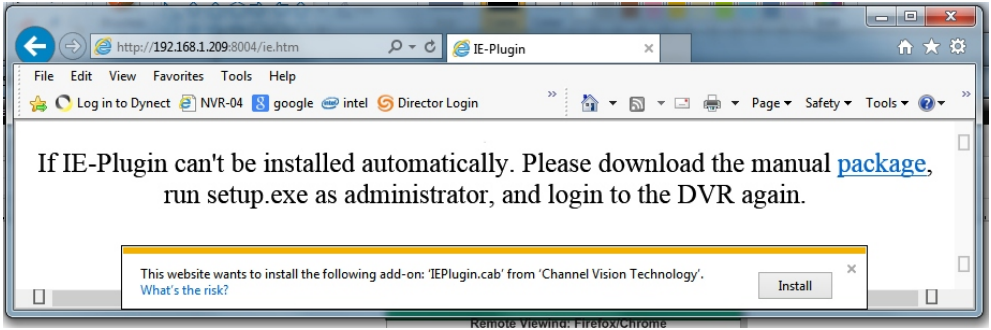


6. Verify that port 67 (control port) and port 68 (data port) are not blocked by your router or ISP (Internet Service Provider).
7. If you just updated your DVR firmware and the DVR stopped working in IE, go to Tools - Internet Options - General and select "Temporary Internet files" and all other offline content.

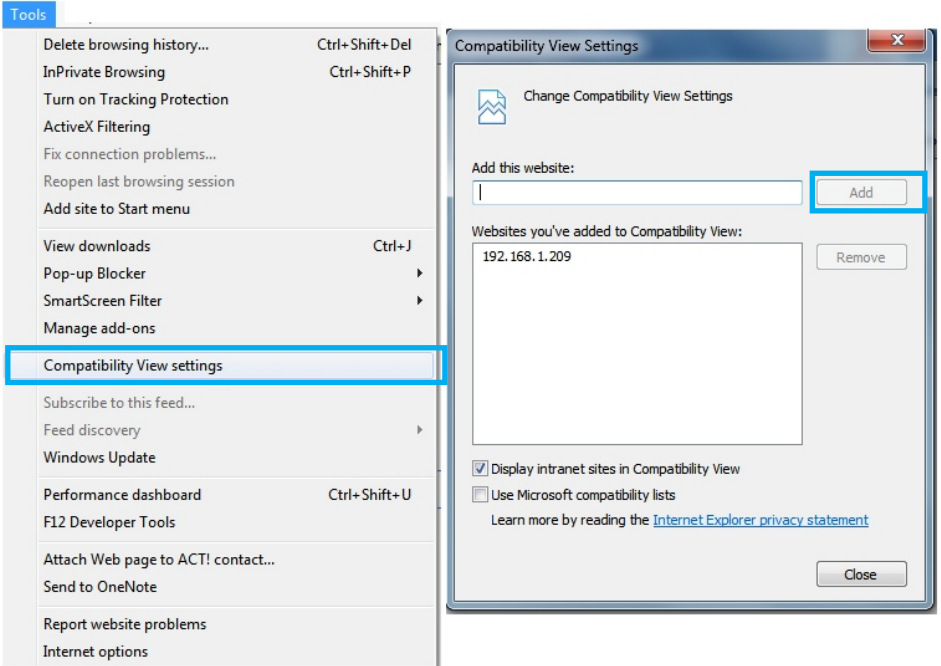


Remote Viewing: IE Continued

8. If instructions appear on the screen when connecting to the DVR in IE, follow the instructions to enable the DVR.



9. Add the DVR address to compatibility view. Go to Tools - Compatibility View - Add this website.



Remote Viewing: IE Continued

10. Enter the username and password of the DVR.
By default, the username is aa and the password is 11.

Login

IP Address	192.168.1.209
Username	aa
Password	••
Control Port	67
Data Port	68

OK Cancel



Remote Viewing: IE Continued

Live video can be displayed on several types of split-window screens, including 1/4/9/16-Window for a single DVR and 25/36/49/64 for multiple DVRs. In addition to the live display, there are a variety of different icons on the lower left corner and the right corner of the screen. The letter L following a camera title stands for Live display and the letter P stands for Playback. A camera title with a white background indicates the camera is detecting motion. General operations of the IE ActiveX control are defined below.

- The frame rate is limited by the available bandwidth of the network
- The image/video quality is based off the recording resolution and settings that are set in the DVR.
- On the live interface, right-click the mouse button to call up the Camera/Playback/Print Dialog. (Left) click on the Playback or Camera number to change the window to the corresponding camera & live/playback mode. Press the print button to print a snapshot directly.

- Use the following icons to switch the video aspect ratio between 4:3 and 16:9.



- Use the following icons to select the desired format. For a 4/9 split window, click on the icon, and select a different display page.



- Use this icon to switch to or return from SEQ display mode.



- Use this icon to toggle between live mode & playback mode for all live channels.



- Use this icon to freeze or unfreeze the live video.



- Use this icon to enable or mute the audio input from the PC. If the button is pressed down, the audio is enabled. If the button is not pressed down, the audio is muted. If enabled, the microphone input from the PC will be sent through the DVR to the audio output.



- Use this icon to enable or mute the audio output from the camera in the current channel or DVR. If the button is pressed down, the audio will mute. If the button is up, audio will play normally.



- Use this icon to show or hide the GPS data for (1) the selected DVR, or (2) the currently selected channel. If the button is pressed down, GPS data is shown. If the button is up, GPS data is hidden.



- Use this icon to show or hide the POS data (for 9-split-window or larger video window) for (1) the selected DVR, or (2) the current selected channel. If the button is pressed down, POS data is shown. If the button is up, POS data is hidden.



Remote Viewing: IE Continued

- **Backup:** Use this icon to backup video/audio. Select the DVR, cameras, event type, destination directory, time, & data range, and then click Apply or OK to begin the backup. Press Cancel to cancel the backup.



- **Snapshot:** Use this icon to take a snapshot of the camera channel you are viewing.



- **Broadcast:** Use this icon to broadcast audio to all the connected DVRs.



- **Toggle:** Use this icon to toggle between full screen and the normal display.



- **Full Screen Mode:** Use this icon to enter full screen mode (without any icons).



- **DVR Name:** The name of the selected DVR is shown on the interface.

Click on this icon to show all available DVRs.

DVR#3-DP-H.264

Once you click the DVR# icon, a list of available DVRs will be displayed. To connect to a DVR, click on its name. In the 1/4/9/16 split-window video display, the camera status & alarm input/output will all switch to correspond to the newly selected DVR. There is also a multiple option in the device list. Select this option to display live video from other DVRs in a 4/9/16 type format.

- **Playback Panel:** With this panel, basic operations such as fast Backward, Fast Forward, Single Frame, Play, Pause, Stop, and Copy are accessible.



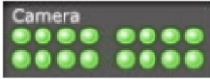
- **Copy:** The copy function can be used to archive both live and playback video. Check/uncheck the cameras that need to be archived when the Copy Dialog is shown, and then click the Apply button. If you use the Apply button & select & highlight one of the cameras, the current copy progress and status will be shown in the dialog.

- **PTZ Control Panel:** If the camera on the current channel is a PTZ camera, the following buttons can be used for PTZ control. Available operations include Tilt Up/Down, Pan Left/Right, Zoom In/Out, Focus Near, Focus Far, Iris – (Darker), Iris + (Lighter).



Remote Viewing: IE Continued

- **Camera:**



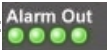
These icons are a status indicator for channels 1-16 (Green for normal, Red for motion) on the selected DVR. Click on any of these icons to open the corresponding camera of the selected DVR to be displayed by itself.

- **Alarm In:**



These icons are a Status indicator for the DVR alarm inputs (Green for normal, Red for alarm) for the selected DVR.

- **Alarm Out:**



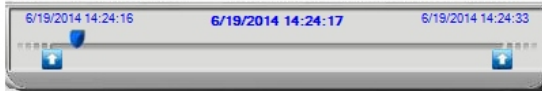
These icons are a Status indicator for the DVR alarm outputs

(Green indicates a normal state, Red indicates a triggered state) for the selected DVR. Click on any of these icons to change the corresponding alarm output from a normal state to a triggered state, or vice versa.

- **Time Search:**



Use this icon to open the Search-by-time dialog. Select the time (Year, Month, Date, Hour, & Minute) and type (Alarm, Motion, Video Loss, and Normal) to search for. Click the Search button to search.



Playback operations are similar to the normal DVR playback, except you can click the slider with your mouse and move it to a different time.

- **Event Search:**



Use this icon to open the Search-by-event dialog. The event logs will be shown on the screen. Select the DVR, event type, & source ID to search through the event logs. Use the Refresh, Up, or Down icons to update the event logs. Click on the desired event log to highlight to select it. Use the Ok button to search through the recorded video/audio.

- **Search Local HDD:**





Use this icon to open the search-PC-video dialog. Select the DVR type files in your local hard drive and press ok. Then, use the playback buttons to play the recorded video/audio file(s).

- **POS Search:**



Use this icon to call up the POS-Search dialog. Select the DVR, camera, keyword, & start/end time. Then, click on Search. The matching POS search results will be shown in a dialog. Select the desired POS data, and click "Backup" or "Play" on the selected items.

Remote Viewing: IE Continued

- **PTZ Control Panel:**  Use this icon to show/hide the full PTZ control panel.
- **Setup:**  Click on this icon to call up Setup dialog. An unlimited number of DVRs can be added to the device list. General operations of this menu are defined below.
 1. **Device Name:** This displays the name of the DVR.
 2. **Address:** This defines the IP address or URL domain name for the DVR. This is the same IP as the IP address (Static IP) or URL (PPPoE) on the Network Setup page of the DVR menu.
 3. **Control Port:** This defines the control port for the DVR. By default, the port is 67.
 4. **Data Port:** This defines the data port for the DVR. By default, the port is 68.
 5. **User Name:** This defines the username of the DVR.
 6. **Password:** This defines the password of the DVR.
 7. **Auto Connection:** This defines whether or not the DVR automatically connects when the software is opened.
 8. **Connected:** This shows whether or not the PC is connected with the DVR device now. If a DVR is connected, a V will show in the menu.
 9. **Properties:** Click properties to pull up the setup menu of the DVR.



- **GPS Configuration:**

Use this icon to open the GPS Configuration dialog. First, select the DVR. Then, select Display attributes & Output attributes for Live & Playback. If Data Exchange is enabled, the corresponding GPS data will be added to the file specified. Tag and Icon are used by GPS software such as Google Earth for display purposes. If COM Port is enabled, the corresponding GPS data will be fed out through the specified COM port of the PC. This data can be used as an input for a GPS application such as Google Earth.



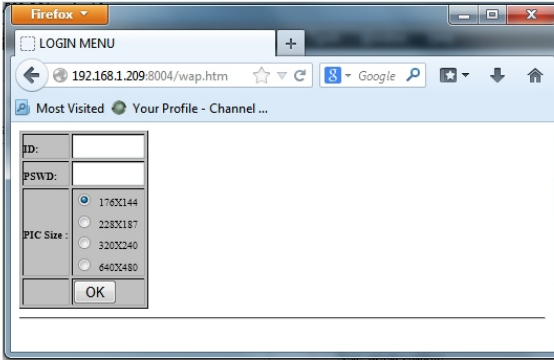
- **POS Configuration:**

Use this icon to open the POS Configuration dialog. First, select the DVR. Then, select Video Window or Pop-up Window to display the POS data.

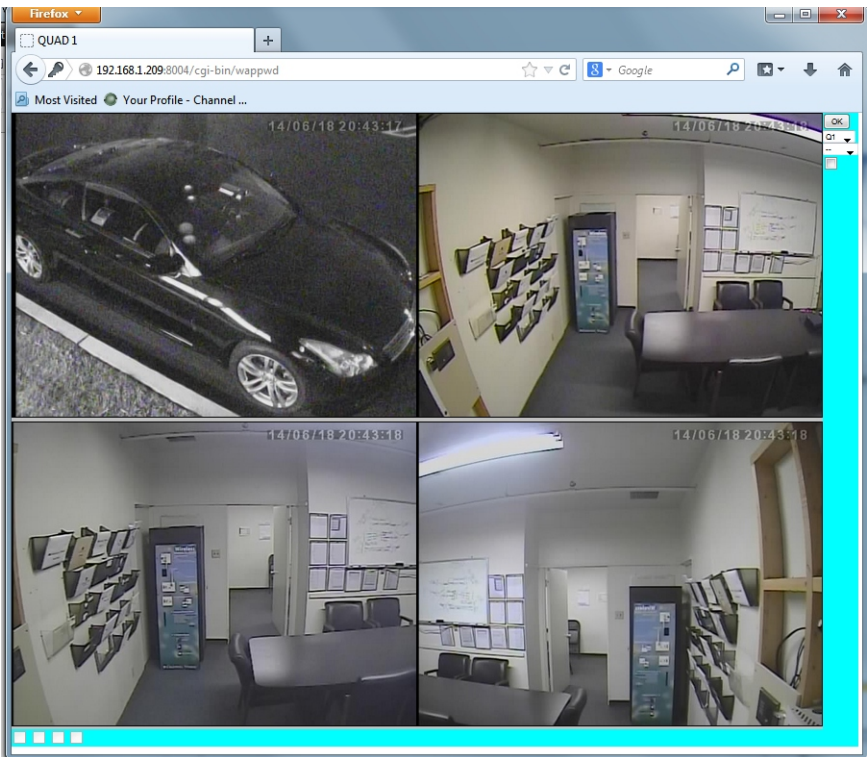
Remote Viewing: Firefox/Chrome

To connect to the DVR with Firefox, follow the steps below.

1. Launch Firefox or other browser.
2. Type in the DVR's IP address and http port. For example, Channel Vision's demo IP is <http://64.183.35.213:8004>



3. Enter the username and password. By default, this is aa and 11.
4. Select the desired resolution. Then, press OK.



Utilities

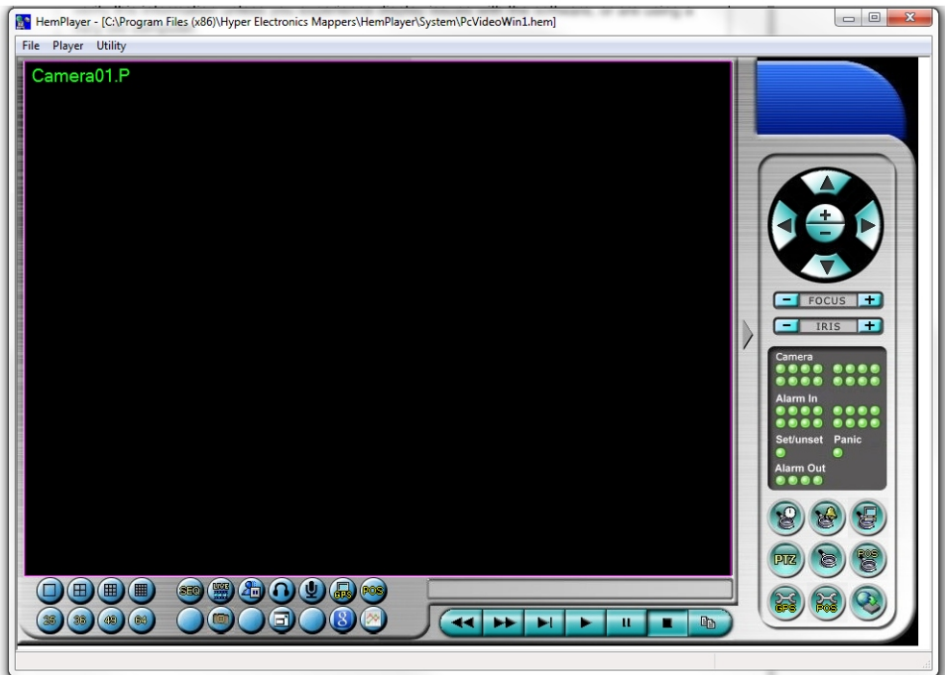
There are several utility programs included on the CD that comes with the DVR. These utilities include CMS, CMS Player, Keyboard Control Simulator, the H.264 to AVI/MP4 Conversion Utility, and the DVR Browser Utility. Double click on CMS/Setup.exe on the CD to install CMS, and Double click on Utilities/Setup.exe to install the utility programs. Follow the instructions on the screen to install the software. For the CMS software, please refer to the HEM CMS manual on the CD. Information and instructions for the other utility programs are shown below.

• HEM Player

Before running HEM Player in your PC, verify the following.

1. Verify that Microsoft DirectX® End-User Runtime 9.0 or above is installed in your PC. This software is available at www.microsoft.com if you do not have DirectX.
2. Verify the Screen Resolution in your computer is at least 1024x768, with 32 bit color.
Note: 99% of any computer available nowadays meets this specification. There is no need to verify this information unless you experience display issues with the software, or are using a very old computer.

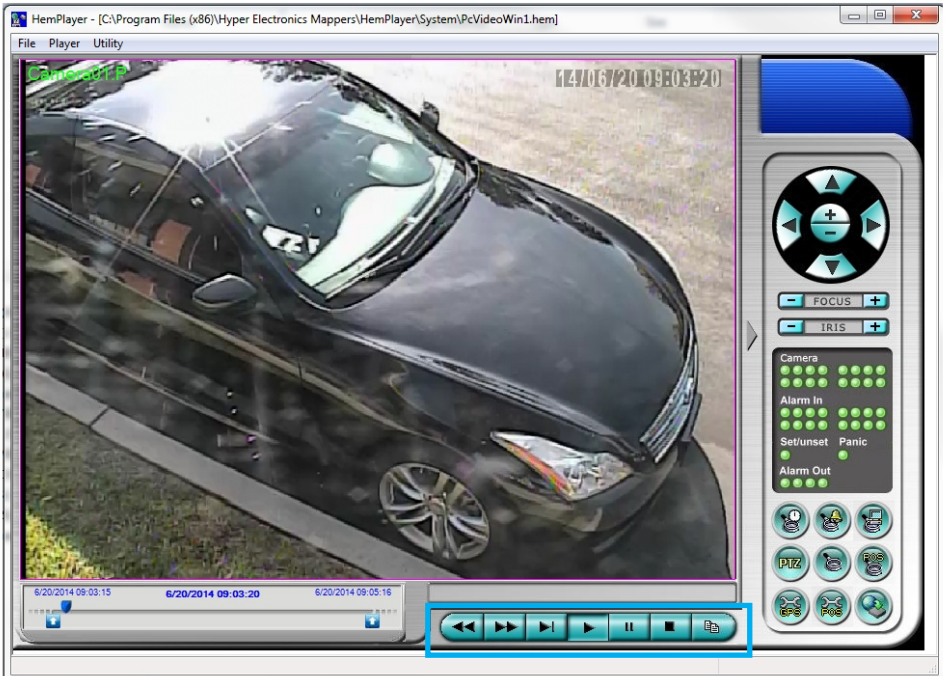
To open HEM Player, press the Windows start button - All Programs - Hyper Electronics Mappers - HemPlayer.



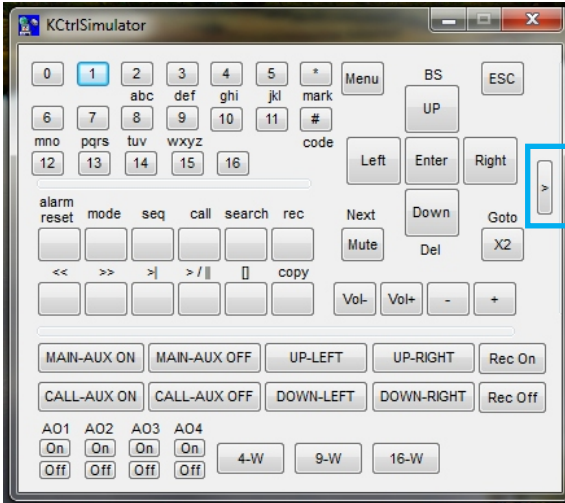
Utilities Continued

Since this utility is file player only, some of the functions are disabled. The mouse cursor will change to a "Hand" type if you place it over an active function.

To select an archived file for playback, click on the File menu, and then select Open.
After an archived file is opened, use the player controls to control the video.
Below is an image that shows the software after the Play button is pressed



Utilities Continued



Use this button to select the DVR to control

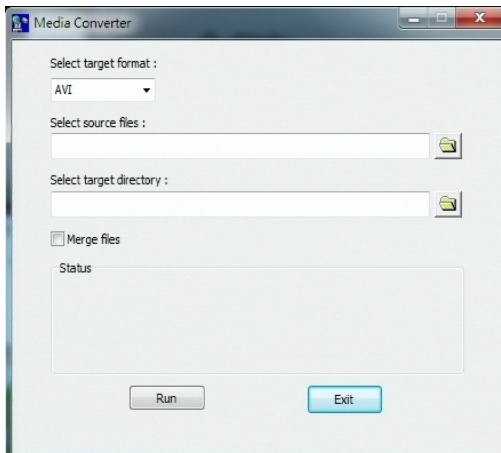
• Keyboard Control Simulator

To run the the Keyboard Control Simulator, press the Windows start button - All Programs - Programs - Hyper Electronics Mappers - KCtrlSimulator. Most of the buttons correspond to the keys on the front panel of the DVR itself. If you connect to a PC via RS-232 and use an RS-232/RS-485 converter to connect multiple DVRs, you can control multiple DVRs via this simulation software. To select the DVR you want to control, click on the button as shown in the above diagram to set the corresponding DVR ID. Refer to the setup instructions on pages 45-47. All settings must be correct, including the DVR ID & Control Protocol. Use the buttons Main-Aux On, Main-Aux Off, Call-Aux On, Call-Aux Off to switch on/off the output of the controlled DVR.

AVI Conversion

• H.264 to AVI/MP4 Conversion Utility

To run the H.264 to AVI/MP4 Utility in Windows, press the Windows start button - All Programs - Hyper Electronics Mappers - Media Converter or double-click on the Media_Converter.exe. Select the desired output format, AVI or MP4, and select the source files. For the DVR, the file extension is H264. Once converted, the .AVI or .MP4 files can be played by Windows Media Player or any other universal media player if the H.264 codec is installed in the PC.



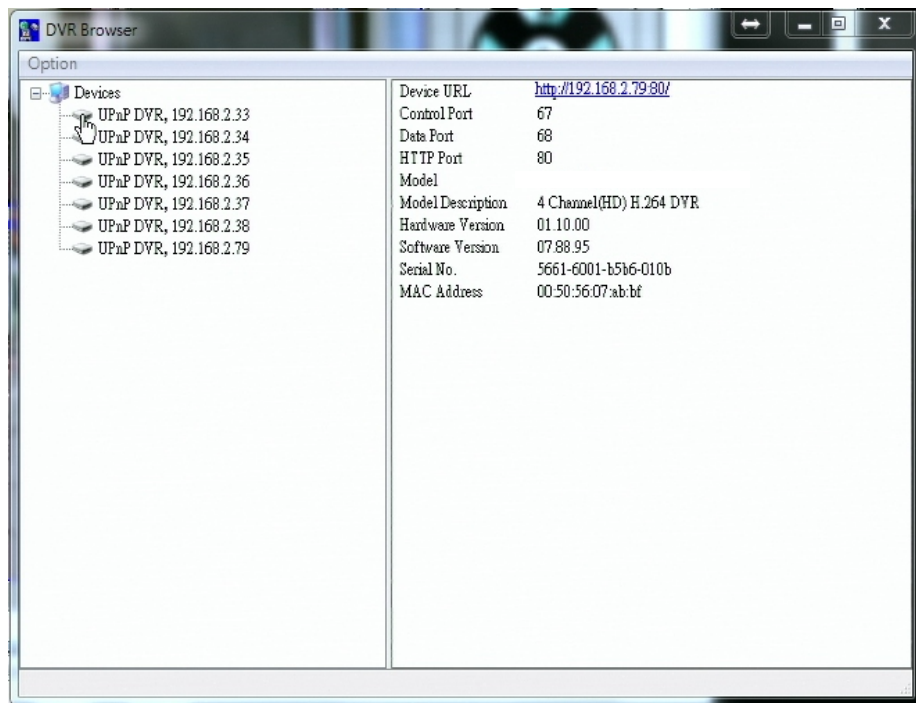
DVR Browser (Search Tool)

• DVR Browser Utility:

To run the DVR Browser Utility, press the Windows start button - All Programs - Hyper Electronics Mappers - DVR Browser or double-click on DVR_Browser.Exe.

This utility will run a scan for all DVRs that support UPnP in the LAN. Select your DVR device to display further details on the screen. You may (1) click on the URL to call up IE and login to the DVR, (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.



Port Forwarding

If you do not use UPnP port forwarding, to view the DVR from outside of your home or business network, port forwarding configuration will be required in your router. In the example below, there is a DVR running on port 8002 on the LAN. You will also need to forward Port 67 and 68.

1. Add the the DVR IP information, including the desired port into the port forwarding tab of "advanced" in the router
2. Check "Enable Port Forwarding"

Enable Port Forwarding

Description :	DVR
Local IP :	192.168.2.64
Protocol :	Both ▾
Local Port :	8002
Public Port :	8002

3. Click "Add"
4. Click "Select"

Current Port Forwarding Table :

NO.	Description	Local IP	Local Port	Type	Public Port	Select
1	DVR	192.168.2.64	8002	BOTH	8002	<input type="checkbox"/>

5. Select "Apply" to enable your new port forwarding rule

Supported HDDs

Compatible HDD List

3.5" SATA HDD		Solid State Drives
Seagate ST3160815AS 160GB	WD WD10EFRX 1TB	Kingston SNVP325-S2/64GB
Seagate ST3320620SV 320GB	WD WD15EARX 1.5TB	Intel SSD 320 Series 80GB
Seagate ST3500411SV 500GB	WD WD15EZR 1.5TB	Intel SSDSA2M080G2GC
Seagate ST3500410SV 500GB	WD WD15EADS 1.5TB	Intel SSD DC S3500 80G
Seagate ST3500418AS 500GB	WD WD20EADS 2TB	Intel SSDSA2CW120G3
Seagate ST3500320SV 500GB	WD WD20EVD 2TB	Intel SSD 320 Series 120GB
Seagate ST3500320AS 500GB	WD WD2002FAEX 2TB	Intel SSDSC2BB120G4ES 120G
Seagate ST3500312CS 500GB	WD WD20EARX 2TB	Intel SSD 320 Series 300GB
Seagate ST37500528AS 750GB	WD WD30EZR 3TB	Intel SSDSC2BB300G4ES 300G
Seagate ST37500330AS 750GB	WD WD30EURS 3TB	Intel SSD DC S3500 600G
Seagate ST31000524AS 1TB	WD WD4000FYYZ 4TB	Seagate ST200FP0021 200G
Seagate ST31000528AS 1TB	WD WD40PURX 4TB	
Seagate ST31000340NS 1TB	WD WD30PURX 3TB	
Seagate ST31000322CS 1TB	WD WD20PURX 2TB	
Seagate ST1000VX000 1TB	WD WD10PURX 1TB	
Seagate ST31500341AS 1.5TB	Hitachi HCT721010SLA360 1TB	
Seagate ST1500DL003 1.5TB	Hitachi HDS721075KLA330 750GB	
Seagate ST32000542AS 2TB	Hitachi HCP725050GLA380 500GB	
Seagate ST2000DL003 2TB	Hitachi HDS721050CLA362 500GB	
Seagate ST2000DM001 2TB	Hitachi HDS723020BLA642 2TB	
Seagate ST2000VX000 2TB	Hitachi HDS721050DLE630 500G	
Seagate Barracuda XT 3TB	Toshiba DT01ACA200 2TB	
Seagate ST3000DM001 3TB	Toshiba DT01ABA200V 2TB	
Seagate ST4000DM000 4TB	Toshiba DT01ACA300 3TB	
WD WD1600AVJS 160GB	WD WD10EARS 1TB	
WD WD1600AAJS 160GB	WD WD15EARS 1.5TB	
WD WD2500AAKS 250GB	WD WD20EARS 2TB	
WD WD2500AVJS 250GB	WD WD10EURS 1TB	
WD WD2500AVVS 250GB		
WD WD5002ABYS 500GB		
WD WD5000AAKS 500GB		
WD WD5000AAKX 500GB		
WD WD5000AVDS 500GB		
WD WD5000AUDX 500GB		
WD WD640AVVS 640GB		
WD WD10EVVS 1TB		
WD WD10EADS 1TB		
WD WD10EACS 1TB		
WD WD10EVD 1TB		
WD WD1002FBYS 1TB		
WD WD10EURS 1TB		
WD WD10EALX 1TB		
WD WD10EARX 1TB		
WD WD10EUCX 1TB		
WD WD10EZEX 1TB		
WD WD10EURX 1TB		

Supported Media Devices

USB Drives & DVD Burners		
USB Thumb Drive	USB DVD Burner	Int. DVD Burner
Transcend JetFlash V60	Asus DRW-1608P	Asus DRW-20B1ST
Transcend JetFlash 150	Pioneer DVR-X152	Asus DRW-22B1ST
OCZ ATV Turbo (4GB)	Liteon DX-204AP	PIONEER DVR-117
OCZ Rally2 Turbo (4GB)	Sony DRX-810UL	Liteon iHAS324
Sony's MICRO VAULT Classic	Benq EW200G	Liteon iHAS120
SanDisk's Cruzer micro	HP dvd9404e	LG GH22NS40
Kingston's DataTraveler		SONY DRU-V200S
Kingston DataTraveler 100 G2 (8GB)		SONY AD-7260S
Kingston DataTraveler 101 G2 (8GB)		
Pretec's i-Disk Wave		
SanDisk Cruzer Edge (8GB)		

Compatible 3G USB Modem List		
Huawei E220	D-Link DWM-156	ZTE R220
Huawei E173U	Huawei E303	Huawei E353

Compatible SD Card List		
SanDisk Extreme SDHC 16GB	ADATA SDHC CLASS10 32GB	Kingston ultimate X 120X SDHC Class10 8GB
TOSHIBA 16GB SDHC Class10	TOSHIBA 8GB SDHC Class10	

Compatible NAS List		
PROMISE VessRAID1830i		
Seagate 3TB BlackArmor NAS110		

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions for future reference.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with a dry cloth.
6. Install in accordance with these instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
8. Do not defeat the safety purpose of the polarized-type plug. A polarized plug has two blades with one wider than the other. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point of exit from the apparatus.
10. Only use attachments/accessories specified by Channel Vision.
11. Unplug this apparatus during lightning storms or when unused for long periods of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the inside of the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
14. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance accompanying the appliance.
15. Inside of apparatus shall not be exposed to dripping or splashing and objects filled with liquids.

CAUTION: To reduce the risk of electric shock, do not remove the cover (or back). There are no user-serviceable parts inside, refer servicing to qualified service personnel.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



Specifications

Operating System:	Embedded Linux 3.0
Compatible Operating Systems:	Microsoft® Windows XP, Windows 7, Windows 8/8.1 Apple® Macintosh 10.6 + NTSC/PAL
Video Format:	
Video Outputs:	(1) HDMI (1) BNC (1) VGA (16 channel model has 2nd BNC)
Audio Inputs & Outputs 4CH DVR:	(1) RCA Input (1) RCA Outputs (2Vrms) & HDMI audio
Audio Inputs & Outputs 8CH DVR:	(2) RCA Inputs (1) RCA Output (2Vrms) & HDMI audio
Audio Inputs & Outputs 16CH DVR:	(16) RCA Inputs (1) RCA Output (2Vrms) & HDMI audio
Audio Type:	Two way audio
Multiplex Operation:	Hexaplex operation, simultaneous record, live, playback, backup, control & remote access
Mouse Compatibility:	Wired USB 2.0 mouse
Storage:	4CH model: (1) SATA HDD bay; Max 4TB/bay 8CH model: (1) SATA HDDs bay; Max 4TB/bay 16CH model: (5) SATA HDDs bays; Max 4TB/bay
RS-232:	Standard on 16 channel model - D type female connector RS-485 to RS-232 adaptor required for 8 channel model
RS-485:	2-pin for keyboard and/or PTZ control
Remote Control:	Included
Compression:	H.264
Resolutions Supported:	NTSC: 960 x 480 (960H) ; PAL: 960 x 576 (960H) NTSC: 720 x 480 (D1) ; PAL: 704 x 576 (D1) NTSC: 720 x 240 (2CIF) ; PAL: 704 x 288 (2CIF) NTSC: 360 x 240 (CIF) ; PAL: 352 x 288 (CIF)
Frame Rate:	4CH Model: 960H: 120/100, Full-D1/Half-D1/CIF: 120/100 8CH Model: 960H: 180/150, Full-D1/Half-D1/CIF: 240/200 16CH Model: 960H: 480/400, Full-D1/Half-D1/CIF: 480/400
Quality Options:	Highest, High, Normal, Basic, Below Basic
Pre-Alarm Recording:	0-10 seconds
Post Alarm Recording:	0-60 minutes
Search Modes:	Smart Search, Time Search, Motion, Alarm & Video Loss
Ethernet:	(1) RJ-45 10/100M or 1G connector
Browsers Supported:	Internet Explorer®, Google Chrome®, Mozilla Firefox® & Apple Safari®
Camera Inputs:	4, 8 & 16 BNC inputs
Alarm Inputs:	4 channel model: (2) /TTL/CMOS signals, polarity selectable 8 channel model: (4) /TTL/CMOS signals, polarity selectable 16 channel model: (16) /TTL/CMOS signals, polarity selectable
Alarm Outputs:	4 channel model: (1) N.O. or N.C. relay output 8 channel model: (1) N.O. or N.C. relay output 16 channel model: (1) N.O. (1) N.C. relay outputs
User Accounts:	Up to 18
Power:	4 channel model: 12vDC 3 Amps 8 channel model: 12vDC 3 Amps 16 channel model: 12vDC 8.33 Amps
Max Power Consumption:	4 channel model with (2) HDDs: 12vDC 4.16 Amps 8 channel model with (2) HDDs: 12vDC 4.16 Amps 16 channel model with (5) HDDs: 12vDC 8.33 Amps
Operating Temperature:	Indoor Only: 32°F - 104°F (0°C - 40°C)

One Year Limited Warranty

Channel Vision Technology will repair or replace any defect in material or workmanship which occurs during normal use of this product with new or rebuilt parts, free of charge in the USA, for one year from the date of original purchase. This is a no hassle warranty with no mail in warranty card needed. This warranty does not cover damages in shipment, failures caused by other products not supplied by Channel Vision Technology, or failures due to accident, misuse, abuse, acts of God, or alteration of the equipment. This warranty is extended only to the original purchaser when purchased through an authorized reseller. A purchase receipt, invoice, or other proof of original purchase date will be required before warranty repairs are provided.

Mail in service can be obtained during the warranty period by calling (800) 840-0288 toll free. A Return Authorization number must be obtained in advance and can be marked on the outside of the shipping carton.

This warranty gives you specific legal rights and you may have other rights (which vary from state to state). If a problem with this product develops during or after the warranty period, please contact Channel Vision Technology, your dealer or any factory-authorized service center. Channel Vision products are not intended for use in medical, lifesaving, life sustaining or critical environment applications.

Channel Vision customers using or selling Channel Vision products for use in such applications do so at their own risk and agree to fully indemnify Channel Vision for any damages resulting from such improper use or sale.



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