GE
Security

DVSR
User manual

Version 1.6, August 2006

GE imagination at work

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Contents

Introduction

This is the DVSR user manual. This document includes an overview of the product and detailed instructions explaining how to install and program all models. There is also information describing how to contact technical support if you have questions or concerns.

To use this document effectively, you should have the following minimum qualifications:

- A basic knowledge of CCTV systems and components; and
- A basic knowledge of electrical wiring and low-voltage electrical connections.

Read these instructions and all ancillary documentation entirely before installing or operating this product.

Conventions used in this manual

The following conventions are used in this document:

Bold	Menu items and buttons.
Italic	Emphasis of an instruction or point; special terms.
	File names, path names, windows, panes, tabs, fields, variables, and other GUI elements.
	Titles of books and various documents.
Blue italic	(Electronic version.) Hyperlinks to cross-references, related topics, and URL addresses.
`Monospace`	Text that displays on the computer screen.
	Programming or coding sequences.
	A Note provides extra information, which assists the reader in understanding the information.

Safety terms and symbols

These terms may appear in this manual:

 **CAUTION:**	Cautions identify conditions or practices that may result in damage to the equipment or other property.

 **WARNING:**	Warnings identify conditions or practices that could result in equipment damage or serious personal injury.

Product overview

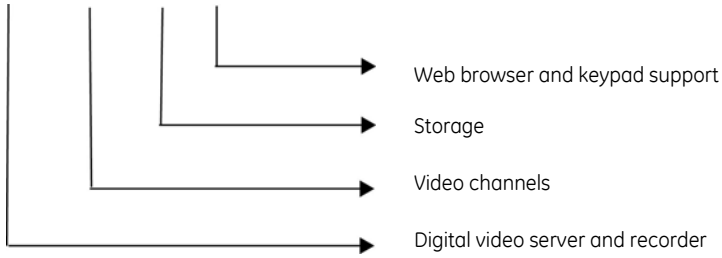
Product description

DVSR-XXRT series embedded digital video recorder is a digital surveillance product. It uses an embedded microcontrol unit (MCU) and an embedded real-time operating system (RTOS), combining the most advanced technology in the information industry, such as video and audio encoding/decoding, hard disk recording and TCP/IP. The firmware is burned into the flash, making it more stable and reliable.

DVSR-XXRT series has the features of both a digital video recorder (DVR) and a digital video server (DVS). It can be used as a standalone device but also to build a powerful surveillance network, such as widely used in the banking, telecommunications, manufacturing, and transportation sectors.

Key to product model numbers

PPPP – VV – SSSS XX/Y



DVSR04-80RT/K is the DVSR (Digital Video Streaming Recorder) Series, 4 ch MPEG-4 DVR, 100 fps, 80 GB HDD, Web browser and keypad support.

Features

Compression

- Up to 16 channel video inputs (PAL/NTSC). Each channel is independent, MPEG4-AVC hardware compression and real time (PAL: 25 FPS, NTSC: 30FPS). Supports both variable bit rate and variable frame rate.
- Up to 16 channel audio inputs. Each channel is independent with OggVorbis compression and a bit rate of 16 Kbps.
- Compressed video and audio are synchronous. Either mixed stream or video-only stream can be selected.
- 4CIF, DCIF, 2CIF, CIF and QCIF resolution
- Multi-area motion detection
- On-screen display (OSD) and changeable OSD position

Local functions

Record

- Multiple recording types, including real time, manual record, motion detection, external alarm, motion & alarm, motion or alarm
- 8 IDE HDDs. The combined HDD memory is 2400 GB.
- HDD S.M.A.R.T technology
- Cycle or none cycle record

- Backup recorded files and clips. USB flashkey, USB hard drive and IDE CD-R/W supported to backup.

Preview and playback

- Analog monitor and VGA output
- Multiple preview modes
- Sensitive area masking
- Camera anti-masking alarm
- Two-channel synchronous playback. Supports play forward, backward, pause, frame-by-frame, etc.
- Playback by files or by time
- Display local record status

PTZ

- Several PTZ protocols supported
- Preset, sequence and ShadowTour

Alarms

- Exception alarm, motion detection alarm, external alarm, etc.

Others

- IR control
- RS-485 keyboard (KTD-405U)
- Multi-level user management

Network

- TCP, UDP, RTP, Multicast for network preview
- PPPoE for broadband dialup
- PSTN for narrow band dialup
- Remote parameters setup
- Alarm information can be sent to a remote software
- Network control PTZ
- Network record the real time stream
- Network download and playback the recorded files in DVSR
- Remote upgrade the firmware
- RS-232 supports transparent channel function so that the remote PC can use the DVSR to control serial devices.
- Bi-directional voice (talk) or one-way voice broadcast
- IE to preview and configure DVSR
- Log

Development support

- Network SDK available
- Client demo source code available

DVSR installation

Unpacking the DVSR and its accessories

When you receive the product check the package and contents for damage, and that all the items are included. There is an item list in the package. If any of the items are damaged or missing, please contact your local supplier.

Figure 1: Items shipped with product

Installation environment

Ventilation: Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vents in the unit's enclosure, and ensure that they are not obstructed. Regularly clean the unit by gently brushing it.

Temperature: Consider the unit's operating temperature (-10 to 50°C) and non-condensing humidity specifications (10 to 90%) before choosing an installation location. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install the unit on top of other hot equipment. Leave space between rack mounted units.

Moisture: Do not expose the unit to rain or moisture. Moisture can damage the internal components. Do not install the unit near sources of water.

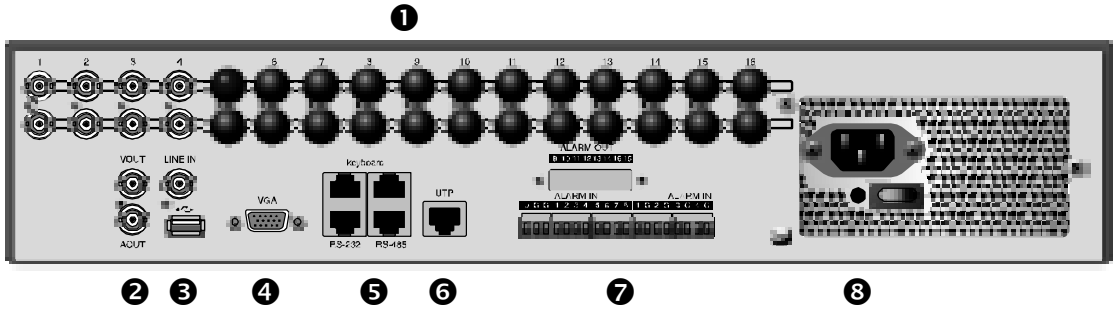
Chassis: Other equipment may be placed on top of the unit if it weighs less than 16 kg.

WARNING: Before installing the DVSR, please ensure that the power to the DVSR is switched off.

Back panel connections

There are variations between the different model types.

Figure 2: DVSR-16RT/K back panel connections



Number	Item	Description
1	Video inputs	Standard BNC
	Audio inputs	Standard BNC
2	Video output	Connect monitor, output video and menu.
	Audio output	Local audio output
3	Line in	Audio line input for voice
	USB port	USB 1.1
4	VGA port	VGA display
5	Keyboard port	Connect keyboard. One port is for GE keyboard, and other is for DVSR cascade.
	RS-232 port	Connect RS-232 devices
	RS-485 port	Connect PTZ
6	UTP network port	Connect network devices
7	External alarm input	4/8/16 Alarm in
	Relay output	4 Alarm out
8	On/Off switch	Switch DSR on and off. The unit is autosensing for 220/110 V

Connecting a KTD-405 keypad to the DVSR

KTD-405 keypad installation guidelines

Recommended cable types:

Signal	Cable	Minimum Size
RS-485	STP (shielded twisted-pair)	22 AWG
RS-422	UTP (unshielded twisted-pair)	22 AWG

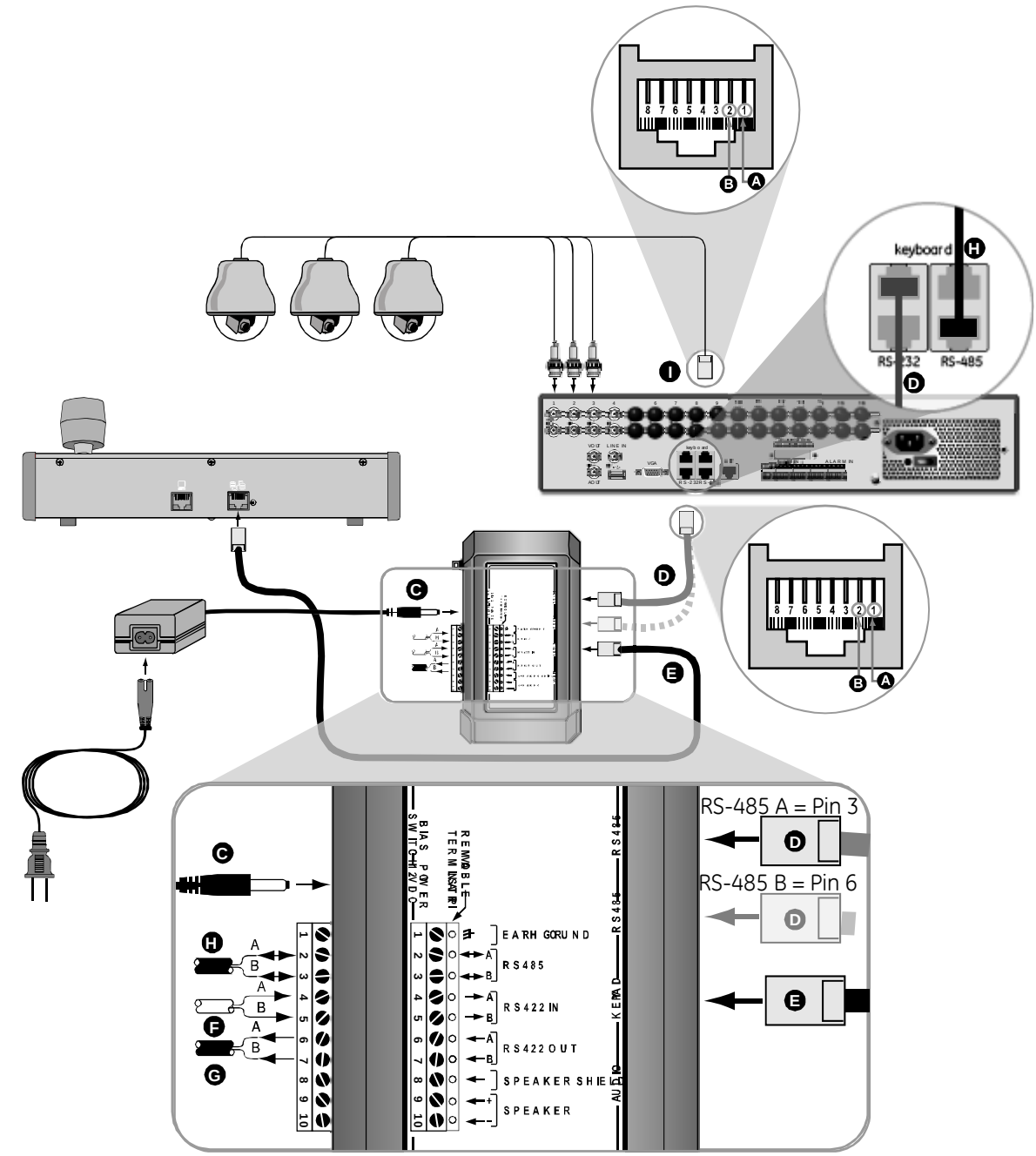
Refer to device manuals for specific cabling requirements.

- Each keypad requires its own I/O box. You can connect multiple I/O boxes to each other to establish multiple keypads for controlling one system. For systems that are more complicated than are diagrammed in these instructions, contact your local supplier for assistance.

- Observe polarity when installing the RS-422, RS-485, and 12 VDC cables (if not using the provided transformer with positive polarity center plug).
- The earth grounds for the I/O boxes are separate from the earth grounds for the RS485 shield.
- The keypad itself is not grounded.
- Grounding the I/O box is optional, but it does provide some additional protection against equipment damage due to electrical storm induced power surges.
- There must be no current flowing in the shield of shielded cables. Maintain an open circuit (non-continuous path) for the shield and hold it at the earth ground potential by grounding it at only one location.
- You can connect the RS-485 shield of individual cable segments to each other, but to nothing else. You will still ground the resulting shield circuit at one location only, despite the number of shield junctions.
- Each electrical circuit (RS485 segment) must be biased. If keypads reside on separate electrical circuits (i.e., separated by fiber or Ethernet bridges), then more than one keypad might have the bias switch set to ON (one for each circuit).
- The bias is 12-VDC polarity sensitive. If polarity on the power line is reversed, the keypad will not be damaged but it will not operate correctly.
- Each electrical segment being terminated must be terminated at each end, and at one location for the bias. Termination is generally required for the first and last device on a longer line. The termination switches are located within or on the devices themselves (e.g., keypads and cameras). Refer to device manuals for termination requirements and methods.

See Figure 3 for instructions on how to connect the KTD-405 keypad to the DVSR.

Figure 3: Connecting a KTD-405 keypad to the DVSR



Observe polarity for
a. RS-422
b. RS-485
c. 12 VDC power (12 VDC transformer must have a positive center polarity plug)

A PIN 8 to RS-485 shield (ground one end only)

B PIN 7 to RS-485 A

C 12 VDC (observe polarity. If provided transformer is not used)

D RS-485 OUT
(data out to devices such as multiplexers or DVSRs; ground at mux/DVSR)

E KEYPAD IN
(RS-422 and RS-485 data in from keypad; RS-422 data and power out to keypad

F RS-422 IN
(data from devices such as alarm units, ASCII converters, or keypads (see guidelines))

G RS-422 OUT
(data out from devices such as domes, switchers, or keypads (other than KTD-405s))

H RS-485
(data out to devices such as multiplexers or DVSRs; ground at mux/DVSR)

I RS-485
(data out to devices such as Domes)

Connecting the DVSR cables

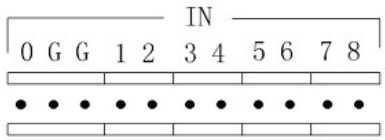
Connecting the external alarm I/O cable

Alarm input port

G (GND): Connect the sensor GND.

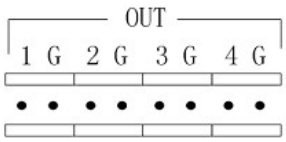
1 to 16: Alarm inputs. Support NO/NC.

0: Reserved.

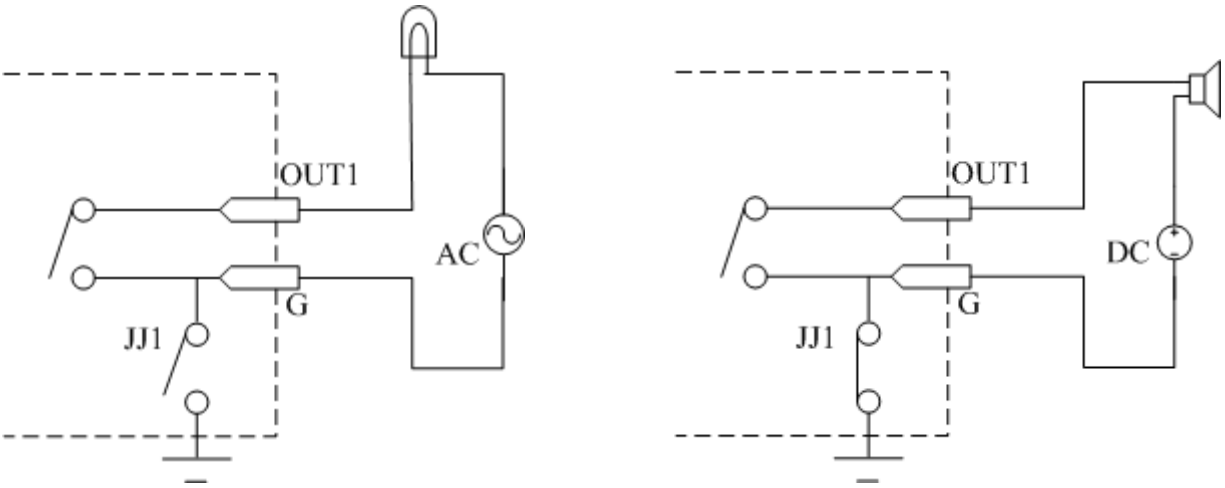


Alarm output port

1G to 4G: 4 relay outputs.



Alarm output connection



For direct current (DC), set jumper 1 (JJ1) to Normally Open (NO) or Normally Closed (NC). It should be less than 12 VDC, 1A.

For alternating current (AC), set JJ1 to open. There are four jumpers (JJ1, JJ2, JJ3 and JJ4) on the DVSR main board, which correspond to a 4-alarm output. Default is NC.

CAUTION: Open the jumpers if you use AC input for relay output.

Connecting the RS-232 cable

Pin configuration

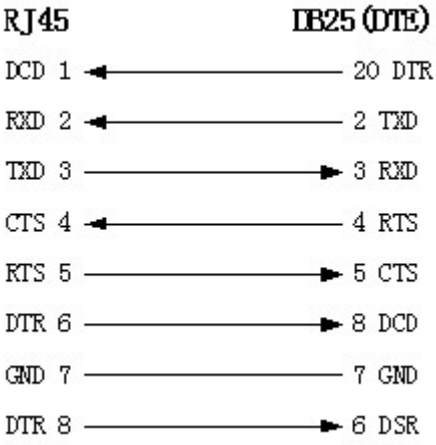
The RJ-45 pin configuration:

Pin	Name	I/O	Description
1	DCD	I	Carrier detect
2	RxD	I	Receive data
3	TxD	O	Transfer data
4	CTS	I	Clear data
5	RTS	O	Request to send
6	DTR	O	Terminal device ready
7	GND		Ground
8	Null	—	—

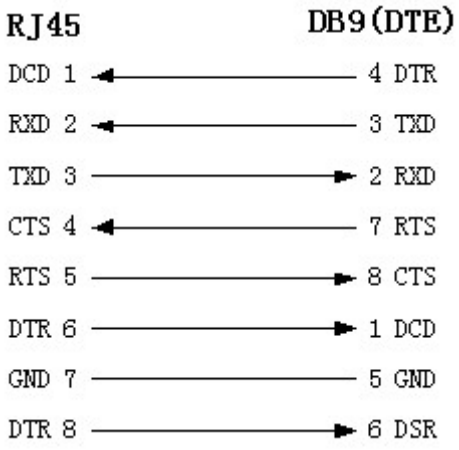
I = DVSR input; O = DVSR output

There are three ways to make the serial plug-in:

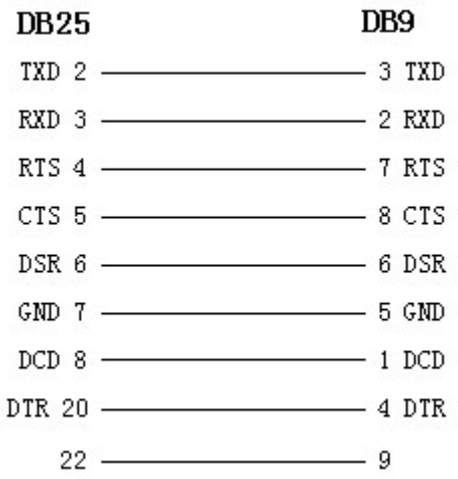
1. When the serial port of the DVSR is connected to a DTE device using a DB-25 plug-in (for example, computers, annunciators, door access, etc), configure the pins as follows:



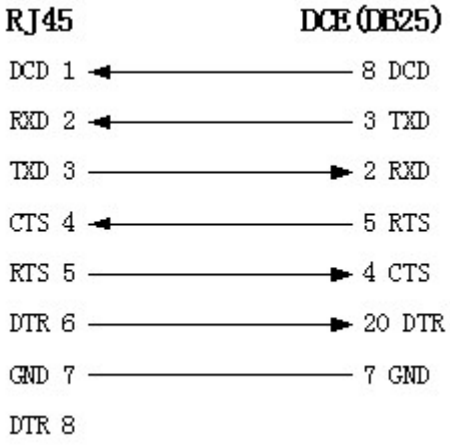
2. When the serial port of the DVSR is connected to a DTE device using a DB9 plug-in, configure the pins as follows:



25-pin to 9-pin converter internal connection is defined as follows:



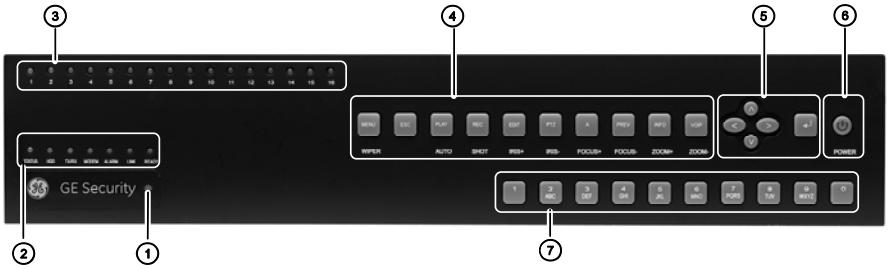
3. When the serial port of DVSR is connected to a DCE device (such as MODEM), and one end of the cable is 8-pin RJ-45 plug-in, and the other end is DB-25 pin plug-in, configure the pins as follows:



Basic operations

Front panel description

DVSR-XXRT front panel



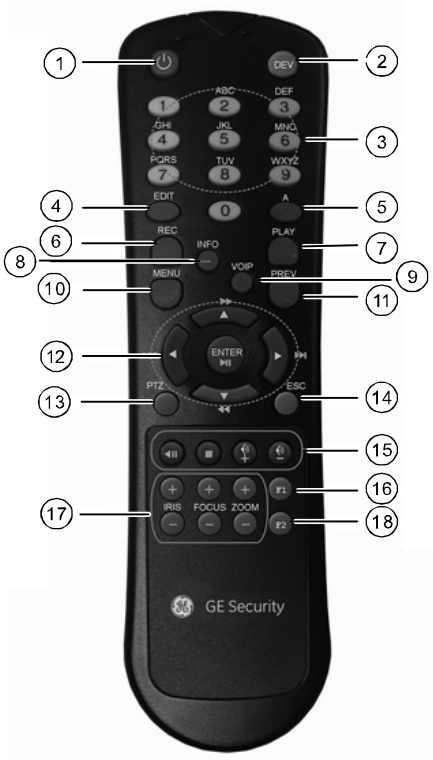
No.	Description			
1	Receiver for IR remote control			
2	STATUS HDD TX/RX MODEM ALARM LINK READY	Unit under remote control (LED green) Unit accessing the HDD in read or write operation (LED red) Unit is connected via a remote user (LED flashing green) Unit is currently connected to a network (LED green) An alarm (LED red) Unit is linked to a network DVSR is ready		
3	Channel status	**Green**: Recording is in progress **Red**: Camera is being viewed over the network **Orange**: Both recording and network transfers are in progress		
4	MENU	**Main menu button**. Switch from viewing live images to the programming menus.	A	**Input method button.** • In live viewing mode activate/deactivate the onscreen channel status icons. • In an alphanumeric window toggle between the different character types (Number, Letter, and Symbol).
	ESC	**ESC button**. Cancel the current operation and return to the previous menu.		
	PLAY	**Playback button**. Open Playback menu to search for recorded video files.		
	REC	**Record button**. Open the manual record menu. The privileged user can then start/select / deselect / stop manual recording for each video channel.	PREV	**Preview button**. • Cycle through the multiscreen displays. Inactive cameras display NO VIDEO SIGNAL. • Switch from programming menu to viewing live images.
	EDIT	**Edit button**. Enter editing mode. Also delete characters in front of the cursor.	INFO	**System information button**. For future use.
	PTZ	**PTZ button**. Activate PTZ control of the currently viewed camera.	VOIP	**Voice communication button**. For future use.

5	< , > , ∧ , ∨ **Arrow buttons**. • Use to navigate the cursor in the programming menus to select settings. • If PTZ is activated the arrows control the PTZ camera. • Increase/decrease the frame-by-frame speed of the playback video.
	Enter button. Display submenus, and confirm settings.
6	**Power switch.** On/Off switch. Press for at least 5 seconds to turn off the DVSR. LED green: Unit is working LED red: Unit is turned off LED off: No power. The power switch on the back panel is off or the power cable is disconnected.
7	**Alphanumeric buttons.** • Select video channels. • Select full-screen display for the selected channels. • Enter text and numbers in submenus.

To silence the audible button feedback

At any time press and hold down the **MENU** button for at least five seconds. The audible button feedback will activate or deactivate depending on the current status. Press **ESC** to return to the live viewing screen.

IR remote control description



No.	Name	Description
1	POWER	Turn DVSR on/off.
2	DEV	Enable/Disable IR remote control
3	Alphanumeric buttons	Same as alphanumeric button on front panel.
4	EDIT	Same as **EDIT** button on front panel.
5	A	Same as **A** button on front panel.
6	REC	Same as **REC** button on front panel.
7	PLAY	Same as **PLAY** button on front panel.
8	INFO	Same as **INFO** button on front panel.
9	VOIP	Same as **VOIP** button on front panel.
10	MENU	Same as **MENU** button on front panel.
11	PREV	Same as **PREV** button on front panel.
12	< , > , ∧ , ∨ Enter	Same as < , > , ∧ , ∨ buttons and **Enter** button on front panel.
13	PTZ	Same as **PTZ** button on front panel.
14	ESC	Same as **ESC** button on front panel.
15		Reserved
16	F1	Reserved.
17	Lens control	IRIS, FOCUS ZOOM for lens control.
18	F2	Reserved.

To insert batteries into the IR remote control

1. Remove the battery cover on the remote control.
2. Insert the batteries. Observe the correct battery polarity (+ and -).
3. Replace the battery cover.

To turn on the IR remote control

1. Press the **DEV** button on the remote control.
2. With the remote control enter the DVSR device ID. The default is “01“

   See page 34 for how to change the device ID.

3. Press the **Enter** button. When the STATUS LED on the DVSR front panel becomes green, the IR remote control can now be used to operate the DVSR.

To switch off the IR remote control

When IR remote control STATUS LED on the DVSR front panel is lit, press the **DEV** button. The STATUS LED switches off and the IR control cannot be used to operate the DVSR.

To switch off the DVSR with the remote control

When IR remote control STATUS LED on the DVSR front panel is lit, press the **POWER** button for several seconds. The DVSR will be switched off.

When IR remote control does not function properly

- Check the battery polarities.
- Check that the batteries are sufficiently charged.
- Check that the IR remote control sensor is not masked.

If the problem persists, please contact your administrator.

Initial setup

The DVSR is delivered with preconfigured settings. You only need to connect the cameras and a monitor. After powering up, the unit will start to record immediately.

Before you program the DVSR to suit your requirements, return all settings to factory default.

To return DVSR settings to factory default

1. Push the menu button on the front panel. In the Login dialog box that appears select admin and enter the password 3477. Press **OK** to confirm. The Menu screen appears.
2. Use the < and > buttons to navigate the action frame to Utilities. Press **Enter**.
3. Navigate the action frame to the **RestorePara** icon and press **Enter**. The RestorePara pop-up dialog box appears.
4. Select **OK** to confirm. The system will automatically reboot.

CAUTION: If during rebooting the DVSR makes a lot of noise check that the video standard is correctly set to PAL in the Display menu.

Live viewing

The DVSR enters live viewing mode when switched on.

At the bottom of the live screen there is status bar that has a colored icon for each channel. The number of channels displayed (4, 8, or 16) depends on the DVSR model. The icon represents the channel status in both Recording and Alarm mode so that you can quickly see if there are problems. DVSR automatically switches between the two status screens as it sequences between the cameras.

To modify the live viewing properties see section *Live viewing configuration* on page 77.

Figure 4: Record status in live viewing (Preview) mode (16-channel system shown)

The camera record status is as follows:

Icon	Icon color	Status description
	White	No video signal
	Yellow	Video input
	Pink	Manual recording
	Green	Real time recording
	Blue	Motion detection recording
	Red	External alarm recording

Figure 5: Alarm status in live viewing mode (16-channel system shown)

The camera alarm status is as follows:

Icon	Icon color	Status description
	White	Video signal lost
	Yellow	Tamper alarm
	Pink	Motion and external alarm
	Green	No alarm
	Blue	Motion alarm
	Red	External alarm

To activate/deactivate the onscreen channel status icons

Press the **A** button to activate/deactivate the channel status icons.

Figure 6: Recording/Alarm status deactivated in live viewing mode (16-channel system shown)

To view a full screen display

While in live viewing mode press the number button on the front panel or IR remote control of the desired camera.

Fewer than 10 cameras connected to the system:	Press the number button that corresponds to the camera number. For example, press button **2** to preview camera number 2.
10 cameras or more connected to the system:	Press the two number buttons that correspond to the camera number. For example, press buttons **0 2** to preview camera number 2, and press buttons **1 2** to preview camera number 12.

If the DVSR has 10 or more cameras and you enter a single number for a camera (for example, **2** for camera number 2), the view will not move to that camera. You must enter a two-digit camera number (for example, 02).

To cycle the full screen displays

Press the **EDIT** button to manually cycle the live displays. You can set the auto preview mode in the Preview (live viewing) menu. See section *Configuring the live viewing parameters* on page 78.

To view a multiscreen display

Press the **PREV** button to switch to multiscreen live viewing. If the multiscreen display does not include all the cameras you want to see, keep pressing the **PREV** button to increase the number of screens displayed.

CAUTION: Signal loss: The recording will still start from a channel even if a camera is not connected to it. A black picture with video loss will be shown on live viewing and playback for this channel. DVSR has no camera autodetection mode.

Accessing the menu options

You must be in live viewing mode to access the menu mode. You can setup or change the DVSR parameters in menu mode.

To access the menu mode

1. Using either front panel of the DVSR or the IR remote control press one of the following buttons:

Shortcut button	Description
REC	To jump to the manual record screen that allows you to manually select which channel to record. See section *Recording images* manually below for more information.
PLAY	To jump to the playback screen that allows you to search for recorded files and play them back. See page 22 for more information.
PTZ	To jump to the PTZ control screen that allows you to select the camera you want to control. See page 27 for more information.
MENU	To jump to the DVSR main menu screen that allows you to change the DVSR parameters. See page 28 for more information.

The Login screen will appear asking you to enter your name and password.

2. Enter your user name and password. The requested menu screen appears.

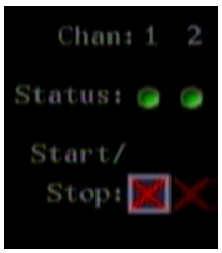
The factory default user name is “admin “ and the password is “ 3477 “ .

3. Press the **ESC** button to quit the menu and return to the live viewing mode.

Recording images manually

You must be in live viewing mode to record images. When a channel is recording, its corresponding LED on the front panel is green. This green LED is also repeated in the Manual Record menu screen. You can start or stop a channel recording from this menu.

Figure 7: What the options mean in the Manual Record screen



When the Status radio button is:

- Green: the channel is recording
- White with a red cross: the channel is not recording

When the Start/Stop option is:

- A red ×: you can stop recording
- A red ✓: you can start recording

In this example, channel 1 is currently recording but you can stop the recording.

To manually start or stop a recording

1. In the Preview (live viewing) mode use either the front panel of the DVSR or the IR remote control to press the **REC** button. The system will ask for your user name and password.
2. Enter your user name and password and then press **Enter** twice. The manual record screen appears, listing all the channels. The Status line shows which channels are currently recording. Channels that are not recording have a white radio button with a red cross.

Figure 8: The manual record screen with eight channels displayed

3. Use the < and > buttons to navigate the action frame to the **Start/Stop** line to start recording.
4. Use the < and > buttons to navigate the action frame to a channel that is not recording. Press **Enter** to switch on the channel. The channel status LED on the front panel and the status radio button on screen turn green, and the Start/Stop button on screen displays a red "×".

Press **Enter** again to deselect the channel. The status radio button on screen turn white with a red "×" and the Start/Stop button on screen displays an "✓".

Recording has now started from that channel.

5. Navigate the action frame to the next channel you want to start recording. Press **Enter** to switch on the channel.
6. Navigate the action frame to **Start All** to switch on all channels. All the channel status LEDs on the front panel and the onscreen status radio buttons turn green.

   Select **Stop All** to switch off all channels.
7. Press the **ESC** button to quit the menu and return to the live viewing mode.

Searching recorded files

You can search for and playback recorded files. You must be in live viewing mode to play them back. You can search recorded files by several different options, such as:

- Manually, motion detection, or alarm recorded files
- Start and end time of recording
- Text (for example, from an ATM)

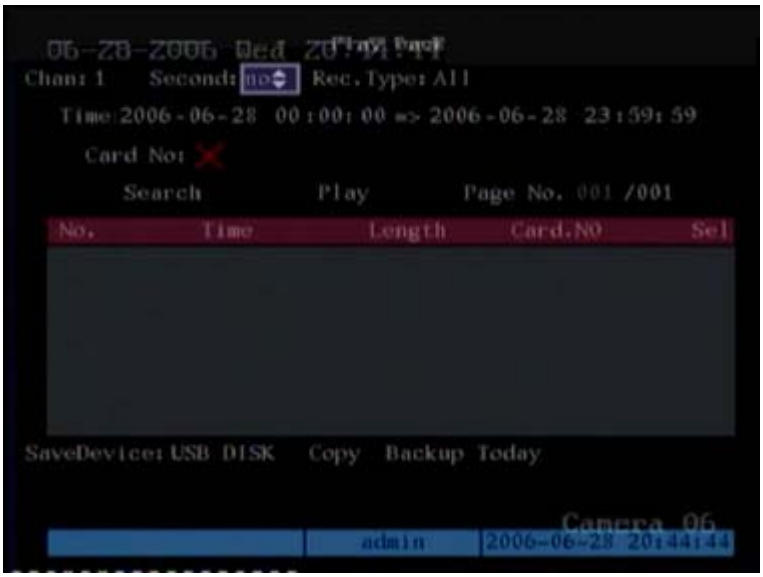
You must have playback rights to playback recorded images. See page 83 for more information.

The system also lets you playback two channels simultaneously so that the images appear side-by-side onscreen.

To search for recorded files

1. Using either the front panel of the DVSR or the IR remote control press the **PLAY** button to enter playback mode.
2. Enter your user name and password and then press **Enter**. The playback screen appears.

Figure 9: The Playback menu screen



3. Use the < and > buttons to navigate the action frame to the **Chan:** list box. Use the ^ and v buttons to select the channel you want to search.
4. If you want to playback two channels simultaneously, navigate the action frame to the **Second** list box and select the second channel to record.
5. Select **Rec.Type** to select which type of recorded files you want to search for:

Option	Search for recorded file types
All	All recordings
Manual	Only manually recorded files
Alarm	Only alarm recorded files
Motion Det.	Only motion detected files
All Time	Only scheduled time recorded files

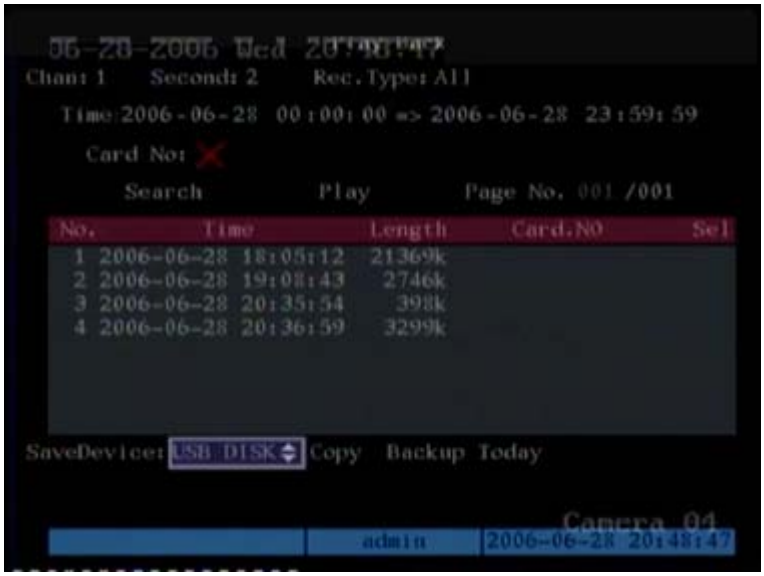
6. Use the < and > buttons to navigate the action frame to **Time**, and then use ^ and v buttons to enter the starting and ending dates and times to be searched.

   Times are written in the 24-hour format, and dates in the year:month:day format.

7. If you want to search for images from a particular ATM, for example, use the < and > buttons to navigate the action frame to Select **Card No.**, and press **Enter** to activate (✓). Navigate the action frame to the text box alongside it. The text box is not visible until you place the cursor on it. Type the text to be searched (for example, the text that appears on an ATM screen.)
8. Navigate the action frame to **Search** and press **Enter** to start the search. When the search is completed a list of all the files found appears. The list may extend over several pages. The newest file is listed first. See Figure 9 for an example.

   To playback selected files, see *To playback a recorded file* on page 24.

Figure 10: Example of a search result



If you get a message saying that there are no recordings but you were expecting some to be listed, check that you have selected the correct Rec. Type option for your search.

9. Press **ESC** to quit playback mode and return to live viewing mode.

To playback a recorded file

1. Using either the front panel of the DVSR or the IR remote control press the **PLAY** button to enter playback mode.
2. Enter your user name and password and then press **Enter** twice. The Play Back screen appears
3. Search for the files you need. See *To search for recorded files* on page 22.
4. There are two ways to playback a recorded file:
   a. Use the < and > buttons to navigate the action frame to **Play** and press **Enter**. The system will play each file listed, starting with the first file.

      or

   b. In the search window use the ∧ and ∨ buttons to select the video file you want to play and press **Enter**. Only the selected file will be played back.
5. Press **ESC** to return to the Play Back screen.

   ✍ All the files you selected for playback are now deselected.
6. Press **ESC** again to quit playback mode and return to live viewing mode.

Archiving recorded files

You can archive recorded files on external devices. As well as being able to archive a complete recorded file, you can also archive specific incidents in a file. You must be in live viewing mode to playback a recorded file.

✍ You must have playback rights to playback recorded images. See page 83 for more information.

Avoid moving the external recording device when backing up information onto it.

To archive a recorded file

1. Using either the front panel of the DVSR or the IR remote control press the **PLAY** button. The Play Back screen appears.
2. Search for the recorded files you want to copy. See *To search for recorded files* on page 22 for more information.
3. Use the ∧ and ∨ buttons to navigate to the video file you want to copy from the list.
4. Press **EDIT** to select the file. A red ✓ appears in the row under the SEL column.
5. Select other files you want to archive and press **EDIT** to select each one. Each selection must have a red ✓.

   ✍ Press **ESC** to quit playback mode at any time.
6. Navigate the action frame to **SaveDevice** and select the desired medium on which to archive.
7. Navigate the action frame to **Copy** and press **Enter** to write the files to the medium selected. A message appears when copying is completed. Press **OK**.
8. Press **ESC** to quit playback mode and return to live viewing mode.

To archive all of today's recorded files

1. Using either the front panel of the DVSR or the IR remote control press the **PLAY** button. The Play Back screen appears.
2. Use the < and > buttons to navigate the action frame to **SaveDevice** and select the desired medium on which to archive.
3. Navigate the action frame to **Backup Today**.
4. Press **Enter** to write the files to the medium selected. A message appears when copying is completed. Press **OK**.
5. Press **ESC** to quit playback mode and return to live viewing mode.

To archive all the found recorded files in a search

1. Using either the front panel of the DVSR or the IR remote control press the **PLAY** button. The Play Back screen appears.
2. Search for the recorded files you want to copy. See *To search for recorded files* on page 22. The oldest file is listed first.
3. Press **A** to select all the video files listed. A red✓ appears in the Sel column of each file. To deselect all the files, press **A** again.
4. Use the < and > buttons to navigate the action frame to **SaveDevice** and select the desired medium to which to copy.
5. Navigate the action frame to **Copy** and press **Enter** to write the files to the medium selected. A message appears when copying is completed. Press **OK**.
6. Press **ESC** to quit playback mode and return to live viewing mode.

To archive specific incidents in a recorded file

1. Using either the front panel of the DVSR or the IR remote control press the **PLAY** button. The Play Back screen appears.
2. Search for the recorded files you want to copy. See *To search for recorded files* on page 22 for more information. The newest file is listed first.
3. If you want to save the copy to a medium that is different from that listed under **SaveDevice**, navigate the action frame to **SaveDevice** and select the desired medium to which to copy.
4. Use the ∧ and ∨ buttons to navigate to the video file in the search results list that you want to archive.
5. Press **Enter** to see the playback of the selected file.

   On the bottom of the Play Back screen you will see the playback options available on the selected file. See Figure 11.

Figure 11: Playback information on a selected recorded file

Audio	Playback progress	Playback speed	Current playback time	Total playback time
Press **PLAY** to silence the audio recording associated with this video. Press **Play** again to reactivate the audio. Audio in this example is on.	Shows how far you have progressed through the recorded file.	Press the ^ and v buttons to change the rate of playback. Nine options are available: - **Single**: Press **Enter** to advance one frame at a time. **1/8x**: An eight of actual speed. **1/4x**: Quarter of actual speed. **1/2x**: Half of actual speed. **1x**: Actual speed. **2x**: Twice actual speed. **4x**: Four times actual speed. **8x**: Eight times actual speed. **MAX**: Maximum speed.	Playback always starts from time zero. The actual time of the recording is shown on the top of the screen. Press the < button to jump backwards 30 seconds, and the > button to jump forwards 30 seconds.	Shows the duration of the recorded file. In this example, it is 8 minutes and 46 seconds.

6. Adjust the playback variables as required.

   ✍ Press **Enter** to pause playback. Prees **Enter** again to recommence.

7. When you reach the part of the playback you want to copy press **EDIT** to start copying. A red Copy radio button appears in the right hand corner.

   Press **EDIT** again to stop copying. The red Copy radio button disappears. You can copy several sections of the same playback file.

8. When finished copying this file, press **ESC** to exit. A message appears asking you to confirm that you want to copy the file. Press **OK**.

9. Press **ESC** to quit playback mode and return to live viewing mode.

Using PTZ mode

You need to be in live viewing mode to enter PTZ mode. Several buttons on the front panel of the DVSR and IR remote control are used to control PTZ.

Figure 12: Description of the PTZ control buttons

DVSR front panel	PIR remote control	Description
<, >, ∧, ∨	<, >, ∧, ∨	Change the direction of the camera
INFO ZOOM+ VOIP ZOOM-	+ ZOOM -	Zoom in (+) and out (-)
A FOCUS+ PREV FOCUS-	+ FOCUS -	Focus in (+) and out (-)
EDIT IRIS+ PTZ IRIS-	+ IRIS -	Open (+) and close (-) the iris control
REC SHOT	REC	Adjust the preset button
PLAY AUTO	PLAY	Auto control button
MENU WIPER	MENU	Wiper control button
Not available	F1	Light control button (only available for the remote control)
Not available	F2	Auxiliary device control button (only available for the remote control)

To enter PTZ mode

1. Using either the front panel of the DVSR or the IR remote control press the **PTZ** button.
2. Enter the user name and password, and press **Enter** twice. **PTZ Control** will be displayed on the bottom of the screen.
3. Use the number buttons on the front panel of the DVSR or on the IR remote control to enter the number of the camera you want to control.
4. Use the < and > buttons to pan left/right and the ∧ and ∨ buttons to tilt up/down.
5. To exit PTZ mode press **ESC** or **Enter**. You will return to live viewing mode

To change the preset PTZ number used

1. In PTZ mode press the **REC / SHOT** button on the front panel of the DVSR. Use the number buttons to enter one of the preprogrammed three-digit preset numbers. The DVSR will adjust to the parameters of this preset number.
2. If you want to use a different preset PTZ number, press the **REC / SHOT** button again. Use the number buttons to enter another three-digit preset number. The DVSR will re-adjust to that preset number.

3. To exit PTZ mode press **ESC** or **Enter**. You will return to live viewing mode and the camera will stay in its current position.

> The PTZ preset number is preprogrammed. Please refer to the PTZ menu for the preset setup on page 67. DVSR can support from V1.4 firmware and can support a maximum of 128 preset numbers.

To start/stop autopan in PTZ control mode

1. In PTZ mode press the **REC / SHOT** button on the front panel of the DVSR.
2. Press **PLAY / AUTO** to start PTZ auto function. Press **PLAY/AUTO** again to stop.

> If the PTZ is in autopan mode, and you exit PTZ mode, PTZ will continue in autopan mode. You must re-enter PTZ mode, and press **PLAY / AUTO** to stop the autopan.

3. To exit PTZ mode press **ESC** or **Enter**. You will return to live viewing mode and the camera will stay in its current position.

Main menu description

The DVSR menu has an icon driven menu structure. Figure 13 shows the DVSR main menu screen. Each icon symbolizes the content of the submenu. The menu icon selected has a white action frame around it.

Many of the submenus are only available to privileged users, such as the system administrator.

Figure 13: The DVSR main menu screen

There are 12 menu icons that permit you to modify the DVSR parameters. See Figure 14 for the description.

Figure 14: Description of the 12 menu icons

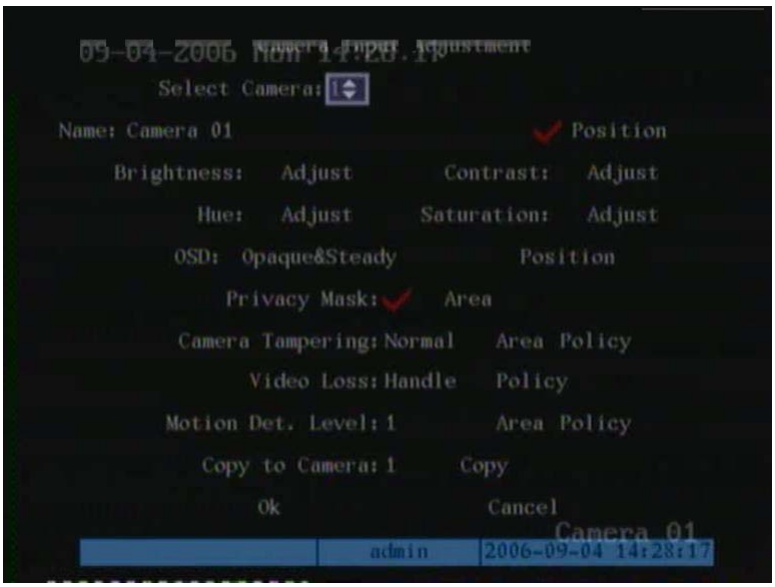
Menu icon	Description
Display	Configure the video output, screen brightness, menu transparency, unit name, device ID, screen saver time, password, VGS interface, and the system time/date. See section *Display configuration* on page 32.
Camera	Configure the camera names, position of the camera name on screen, camera brightness/contrast/saturation/hue, camera display properties, screen masking, viewing a tamper alarm, video loss alarm, and motion detection alarm. See section *Camera configuration* on page 36.
Recording	Configure the response to full HDD, video/audio recording, image resolution, bit rate, image quality, frame rate, motion alarm and external alarm recording times, and recording schedule, See section *Recording configuration* on page 48.
Network	Configure the NIC type, IP address, port access number, mask, gateway IP, DNS address, multicast IP address, remote host IP and port, network access storage, HTTP port, PPPoE, user name and password. See section *Network configuration* on page 55.
Alarms	Configure the alarm handling features of the DVSR. See section *Alarm configuration* on page 59.
Notification	Configure how warnings should be handled such as HHD full, NTSC/PAL, illegal access, IP address conflict, network failure, and HHD error. See section *Notification configuration* on page 64.
PTZ	Configure the RS-485 and PTZ parameters to match the PTZ protocol. See section *PTZ configuration* on page 66.
RS-232	Configure the RS-232. See section *RS-232 configuration* on page 71.
Preview (Live)	Configure live viewing mode, switch time, audio preview, and layout. See section *Live viewing configuration* on page 77.
User	Configure local and remote rights. See section *User management configuration* on page 80.
Transact	Configure the parameter for different links to ATMs. See section *Transaction information configuration* on page 86.
Utilities	Configure save and restore parameters, upgrade software, manage HHD, clear alarms, reboot the system, power off, view log, and view system information. See section *Utilities configuration* on page 90.

Selecting a menu icon

To select a menu icon

1. In the main menu screen use the < and > buttons on the front panel or remote control to navigate the action frame on screen to the desired menu icon.
2. Press **Enter** to enter into the selected menu. The menu screen then appears. Figure 15 shows the Camera menu screen.

Figure 15: The Camera menu screen



3. When you have finished modifying all the menu options required, use the < and > buttons to navigate the action frame to **OK** and press **Enter** to save the modifications. To abort all the modifications, select **Cancel** and press **Enter**, or press **ESC**. You return to the main menu screen.

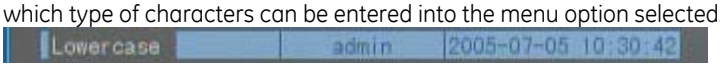
Modifying the menu parameters

The DVSR is delivered with default settings, which can be easily modified from the submenus. The list of default settings is given in *Appendix 3: DVSR default menu settings* on page 108.

CAUTION: If there is a power failure you will loose all user-modified settings. The systems will return to the programmed settings.

To modify parameters in a menu

There are four ways to modify the menu parameters:

Item	Description
Check box	You can select one of two options: ✓ is enabled, and × is disabled. Press **Enter** or **EDIT** to toggle between them.
List box	One of the listed options can be selected. Press ∧ or ∨ to select an option. For example, in Figure 15 above the item **Select Camera** has a list box to select a camera.
Edit box	You can type characters in an entry. Press **EDIT** to enter edit mode and then: • Press **A** to select the type of character required: number, upper case letter, lower case letter, or symbols. When you are in edit mode, the status bar on the bottom of the screen shows which type of characters can be entered into the menu option selected.  There are 24 different kinds of symbols to select. Press **0** to scroll between the four pages of symbols. • Press < and > buttons to navigate the cursor in the edit box. • Press the **EDIT** button to delete the character in front of the cursor. • Press the **Enter** or **ESC** buttons to exit edit mode.
Menu option button	You can execute a function or enter into the next submenu. For example, in the Image submenu (see Figure 15) select **OK** to save the parameters and return to the parent menu. Press the **Cancel** button to cancel and return to the parent menu. When a menu button is grey, it can only be selected when the parameter is enabled. In Figure 15 the menu options **Area** and **Policy** are grey because **View Tampering** is not enabled.

To exit the main menu and return to the live menu

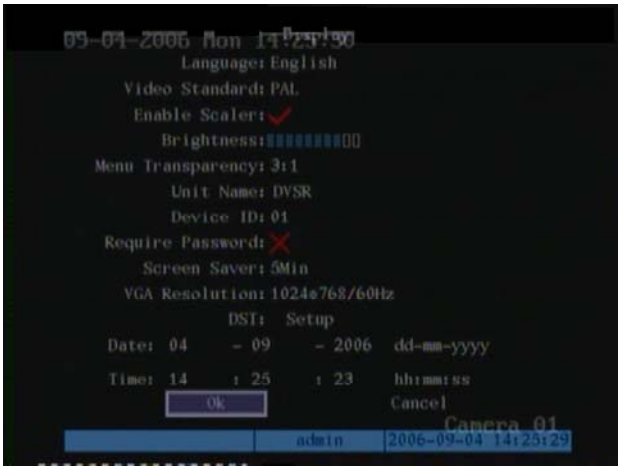
Press the **PREV** button on the DVSR front panel or the IR remote control to exit the main menu and return to live viewing mode.

Display configuration

The Display menu icon 

is located in the main menu. The following screen appears when you select the Display icon:

Figure 16: The Display menu screen



Menu description

Use this menu to configure:

- The unit language — You can modify the unit language. Default is English.
- The video output standard — Use the V_{OUT} BNC connector on the DVSR rear panel to connect the DVSR to an analog monitor. DVSR can support PAL or NTSC video output. You can modify the video output standard to match video input standard.
- The video output display resolution — You can change the settings of the monitor display size to accommodate for differently sized monitors. The default video output display resolution is 704 x 576 for PAL (704 x 480 NTSC.) This option allows you to use monitors with 640 x 576 PAL (640 x 480 NTSC), which can be found with older monitors.
- The brightness of the screen — You can modify the brightness of the screen.
- The menu transparency — You can modify the transparency of menu items on screen relative to the background to make the text on screen easier to read.
- The unit name — You can give a name to each DVSR unit used. The default unit name is “DVSR“.
- The device ID — When you use the IR remote control to operate the DVSR, the DVSR must have a device ID to able to select the DVSR. The default device ID of DVSR is “01“. If there is more than one DVSR used, each DVSR must have its own unique device ID as otherwise the IR remote control will control all the DVSRs together.
- If a password is required — You can setup whether a password must first be entered in order to access the system. See section *Configuring the user management parameters* on page 81 for information on creating passwords.
- The screen saver time — You can set a time after which a screen saver will appear in the screen. The time is in minutes.
- The VGA interface — The VGA interface on the rear panel of the DVSR is used to connect the DVSR to a VGA display. Use this menu to define the VGA resolution and refresh frequency.

• Daylight Saving Time (DST)	You can setup when DST for the DVSR starts and stops in the year. It is deactivated by default.
• The system time and date	You can setup the DVSR date and time. This is the date and time that will appear on screen.

Configuring the display parameters

The following procedures show how to change the monitor display parameters from the Display menu. They can be changed in any order.

To access the Display menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Display menu icon and press **Enter**. The Display screen appears.

Once you are in the Display menu, you can change the following parameters. When you have finished making all the changes required, save them (see page 35.)

To select the language

Use the < and > buttons to navigate the action frame to the **Language** list box. Use the ^ and v buttons to select the language. The language on screen changes immediately. The default language is English.

The last language used on the DVSR will be the language used when the system is rebooted.

To select the video output standard

Use the < and > buttons to navigate the action frame to the **Video Standard** list box. Use the ^ and v buttons to select either NTSC or PAL video output format. PAL is the default format.

If you are using default settings but the images on screen flicker, there is a NSTC/PAL mismatch . Check the NTSC/PAL option selected in the Display menu.

To adjust the screen scaling

Use the < and > buttons to navigate the action frame to the **Enable Scaler**. Press **Enter** to activate/deactivate. When deactivated the video output display resolution is 704 x 576 (PAL). When activated the display resolution becomes 640 x 576 (PAL).

To adjust the screen brightness

Use the < and > buttons to navigate the action frame to the **Brightness**. Use the ^ and v buttons to adjust the screen brightness. The greater the number of blocks highlighted, the brighter the screen image.

To change the menu transparency

Use the < and > buttons to navigate the action frame to the **Menu Transparency**. Use the ^ and v buttons to select the transparency level. The screen transparency changes as you scroll through the list of options.

To name a unit

1. Use the < and > buttons to navigate the action frame to **Unit Name** and press **EDIT** to enter into Edit mode. The input status bar appears at the bottom of the screen.

   ✍ The default unit name is "DVSR".

2. Type in the unit name. A unit name can have up to 32 characters. To change the type of characters you can enter, press **A**.
3. When you have finished entering the new name, press **Enter** to confirm.

To give the unit a device ID

1. Use the < and > buttons to navigate the action frame to **Device ID** and press **EDIT** to enter into Edit mode. The input status bar appears at the bottom of the screen.
2. Using the number buttons enter the number of the device ID. The ID value can be between 01 to 99. The default device ID is 01.

To setup password requirement

Use the < and > buttons to navigate the action frame to **Require Password**. Press **Enter** to activate (✓). Press **Enter** again to deactivate. A password is required by default.

To setup the screen saver time

Use the < and > buttons to navigate the action frame to **Screen Saver**, and select one of the times listed from the drop-down list. The default value is 5 minutes.

To setup the VGA interface

1. Use the < and > buttons to navigate the action frame to **VGA Resolution**.
2. Use the ∧ and ∨ buttons to select an option from the list. There are three options available:
   - 1024*768/60 Hz (default)
   - 800*600/60 Hz
   - 800*600/75 Hz

To setup Daylight Saving Time (DST)

1. Use the < and > buttons to navigate the action frame to **DTS**, and press **Enter**. The DST Setup screen appears.
2. Navigate the action frame to **Enable DST** and press **Enter** to activate. Once activated, the dates become active.
3. Navigate the action frame to select the month and day when DST starts and stops.
4. Navigate to **OK** and press **Enter** to confirm. The Display screen appears.

To set the system time and date

1. Use the < and > buttons to navigate the action frame to **Date**.
2. Use the number buttons to enter the date. The default date format is dd-mm-yyyy.
3. Navigate the action frame to **Time**. The time format is hh-mm-ss.
4. Use the number buttons to enter the time. The time format is 24-hour.

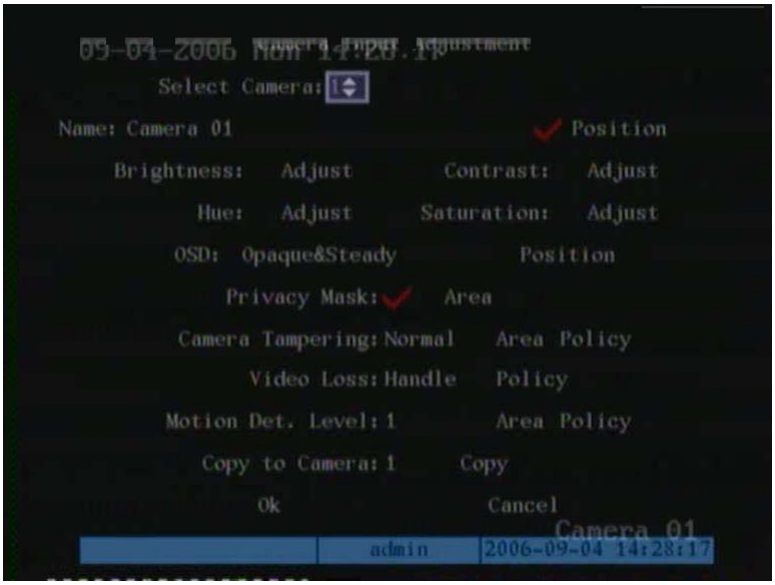
To save the changes made

When you have made all the changes required to the menu parameters in the Display menu navigate the action frame to **OK** and press **Enter** to save all the modifications. To abort the modification, select **Cancel** and press **Enter**. You will then return to the main menu.

Camera configuration

The Camera menu icon  is located in the main menu. The following screen appears when you select the Camera icon:

Figure 17: The Camera Input Adjustment screen



Menu description

Use this menu to configure:

- The name of each camera

  You can define name for each camera. A camera's name cannot be copied.

  If you do not name a camera, it is automatically pre-numbered.

- The position of the camera name on screen

  You can position the name of a camera anywhere on the monitor screen. You can also copy the camera name to other cameras.

- The camera brightness, contrast, saturation and hue

  Different cameras and backgrounds may need to have the screen image modified in order to obtain the best video image. Use this menu to configure the video image.

  You can setup each camera separately. You can also copy the video parameters of one camera to any other camera.

- The display properties of each camera (OSD)

  Use this option to setup the display properties for each camera, including the display status, position and format. You can copy the properties of one camera to all the other cameras.

- The area on screen to be masked

  You can mask a sensitive area on screen so that it remains hidden from view. An example would be when the view of a camera overlooks onto residential premises. The area hidden by the privacy mask will not be viewed live nor recorded, but will appear as a blank area on screen.

- When to view a tamper alarm

  You can setup the system to alert you when someone has deliberately blocked a camera view, such as by spraying paint on the lens (also known as anti-masking).

  You can set it up so that a specific part of the screen can detect a tamper and thereby trigger an alarm. You can also setup how the system will alert you to the tamper alarm. You can only setup one anti-masking area on screen.

• The video loss alarm	The video image can be lost if a video cable or camera develops a fault. The unit can be setup so that an alarm is triggered when a video loss fault occurs. However, the video loss alarm is only triggered if it occurs during a programmed time schedule.
• The motion detection alarm	The DVSR can be setup to trigger an alarm if a camera detects motion. You can: • Select the level of sensitivity to motion • Select where on screen the unit can detect the motion • Select the whole screen or several different areas of the screen to be sensitive to motion detection • Specify which cameras can record the motion when a motion alarm is triggered.

Configuring camera parameters

The following procedures show how to change camera parameters from the Camera menu. They can be changed in any order.

To access the Camera menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Camera menu icon and press **Enter**. The Camera Input Adjustment screen appears.

Once you are in the Camera menu, you can change the following parameters. When you have made all the changes required, save them (see page 47.)

To setup the camera name

1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ^ and v buttons to select the camera you want to name.
2. Navigate the action frame to the **Name Camera** edit box and press **EDIT** button to enter into edit status.
3. Enter the name. The edit box turns green when you start entering information. You can use numbers as well as uppercase and lowercase letters (Press **A** to change the character input type). The camera name can have up to 32 characters.
4. Press **Enter** key to exit edit status.

To position the camera name on screen

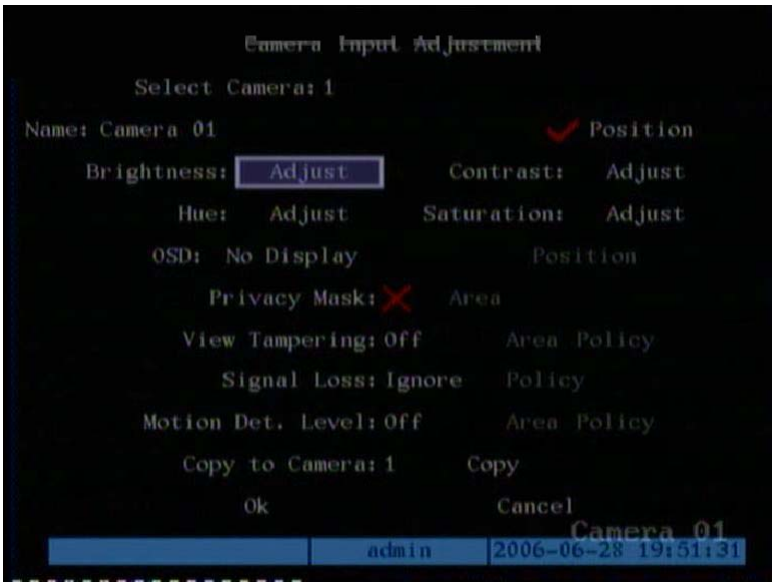
1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ^ and v buttons to select the camera whose name you want to position on screen. The selected name is highlighted in red.
2. Navigate the action frame to the **Position** edit box and select if you want the camera name to appear on screen:
   - ✓ Enabled. Name will appear on screen.
   - × Disabled. Name will not appear on screen.
3. Enable **Position** and Press **Enter**. The Position submenu screen appears.

4. Navigate the camera name around the screen. When you are satisfied with the position, press **Enter**. The Camera menu screen appears.

To setup a camera's brightness, contrast, saturation, and hue

1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ^ and v buttons to select the camera whose parameters you want to change.
2. Navigate the action frame to the **Brightness** edit box (Adjust) and press **Enter**. A scroll bar appears at the bottom of the screen. The default value is 128.

Figure 18: The Brightness option in the Camera menu screen

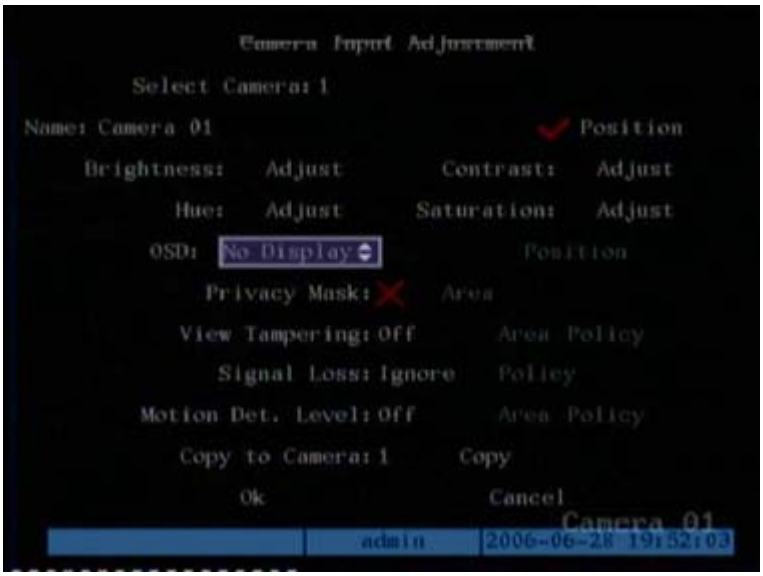


3. Use the ^ and v buttons to adjust the brightness level. The video camera changes at the same time.
4. When you are satisfied with the real time video camera, press **Enter**. The Camera menu screen appears.
5. Repeat steps 2 to 4 for the other parameters of this camera: Contrast, and Hue. The default values are 128.

To setup a camera's OSD information

1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ^ and v buttons to select the camera whose options you want to change.
2. Use the ^ and v buttons to navigate the action frame to the **OSD** edit box and select the display mode required:

Figure 19: The OSD option in the Camera menu screen



- Opaque&Steady — The text contrast automatically adjusts relative to the background. Default value.
- Transparent&Steady — The screen image appears through the text.
- Transparent&Flashing — The screen image appears through the text. The text flashes.
- Opaque&Flashing — The text contrast automatically adjusts relative to the background. The text flashes.
- No Display — Nothing is displayed.

3. Press **Enter** to confirm entry.
4. Navigate the action frame to the **Position** edit box and press **Enter**. A blue screen with the date/time bar in red appears.

Figure 20: Positioning date/time bar

5. Navigate the date/time bar around the screen. When you are satisfied with the position, press **Enter**. The Camera menu screen appears.

To setup a privacy mask

To mask an area on screen

1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ∧ and ∨ buttons to select the camera that needs a privacy mask.
2. Navigate the action frame to the **Privacy Mask** edit box and press **EDIT** to enable (✓). The **Area** option is activated. Disabled is the default value.

   ✍ No masked area appears onscreen when Privacy Mask is disabled.

3. Navigate the action frame to the **Area** edit box and press **Enter**.

   The mask area setup screen appears. For PAL there are 22 x 18 panes in the matrix. In the top left-hand corner of the matrix there is a yellow pane.

Figure 21: The Mask Area setup screen

4. Use the <, >, ∧ and ∨ buttons to navigate the yellow pane to the area on screen that you want to mask. Press **EDIT**. The pane turns red. The red pane indicates the area that will be masked.
5. Use the<, >, ∧ and ∨ buttons to extend the red pane. When you have finished marking out the red area to be masked, press **EDIT**. The square pane becomes yellow again. Continue masking, or press **ESC** to cancel.

   There can be up to four masked areas in a screen. The maximum size of a masked area is 8 x 8 panes. The minimum size is one pane.

Figure 22: Example of a masked area in the mark area setup screen

6. Press **Enter** to return to the **Camera** menu.
7. Repeat steps 1 to 6 for the other cameras that require masking.
8. When you have made all the changes required to the menu parameters save the changes (see page 47).

To clear all masked areas

In the mark area setup screen press **A** to clear all masked areas. It is not possible to clear a specific masked area.

To setup the viewing of a tamper alarm

1. **To set the detection sensitivity level to a tamper alarm**

   a. In the Camera menu the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ^ and v buttons to select the camera whose options you want to modify.

   b. Navigate the action frame to the **View Tampering** list box. Use the ^ and v buttons to select the sensitivity level required.

   The options are:

   - Off
   - Low
   - Normal (default)
   - High

   When Low, Normal, or High is selected, the **Area** and **Policy** setup edit boxes become active.

   The **Area** submenu allows you to select in which part of the screen a tamper can be detected and trigger an alarm.

   The **Policy** submenu allows you to setup how to handle warning notifications, such as alarm operational issues.

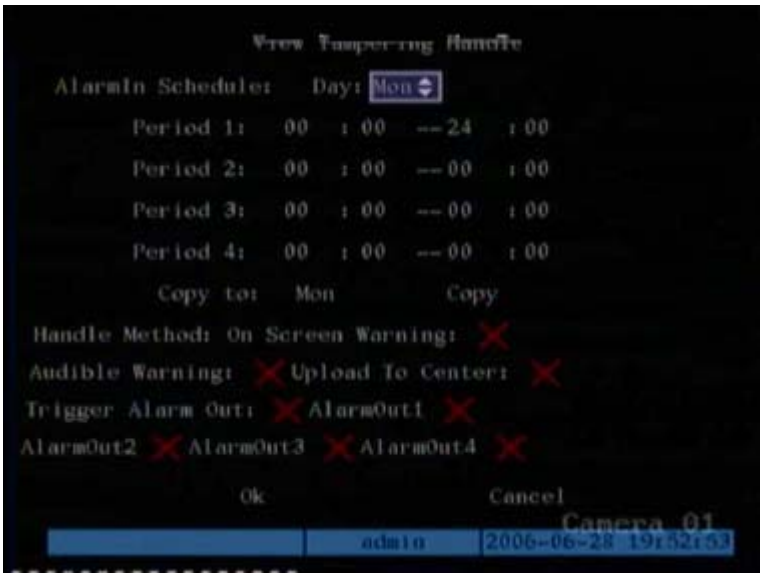
   c. When you have made all the changes required to the **Camera** menu, save the changes (see page 47).

2. **To set the area of the screen that can trigger a tamper alarm**
   a. Navigate the action frame to the **Area** edit box. Press **Enter** to access its setup menu.
   b. The setup is the same as for masking an area. See the section on setting up a privacy mask on page 40 for further instructions.

      ✍ Only one area can be masked to trigger an alarm.

   c. When you have finished masking the tamper area, press **EDIT** to save or press **ESC** to cancel, and then press **Enter** to return to the Camera menu.
   d. When you have made all the changes required to the Camera menu, save the changes (see page 47.)
3. **To setup the tamper alarm response**
   a. Navigate the action frame to the **Policy** edit box. Press **Enter** to access its setup menu.

Figure 23: The Policy submenu screen



   b. Navigate the action frame to the **Day** edit box. Use the ∧ and ∨ buttons to select the day of the week for which you want to set the response time schedule.
   c. Navigate the action frame to Period 1 and enter the time window for the response. You can set up to four time periods for each day of the week. The unit must be rebooted to make the time periods operational.

      ✍ The time periods selected for a day must not be repeated.

   d. Navigate the action frame to **Handle Method** and press **Enter** or **EDIT** to enable (✓) or disable (×) how you want the unit to respond to a tamper alarm:

• On Screen Warning	Warning appears on screen
• Audible Warning	An audible alarm sounds
• Upload to Center	Alarm information is sent to the remote IP (see *Network* section.)
• Trigger Alarm Out	When enabled, the AlarmOut is activated. Up to four alarm outputs can be enabled.

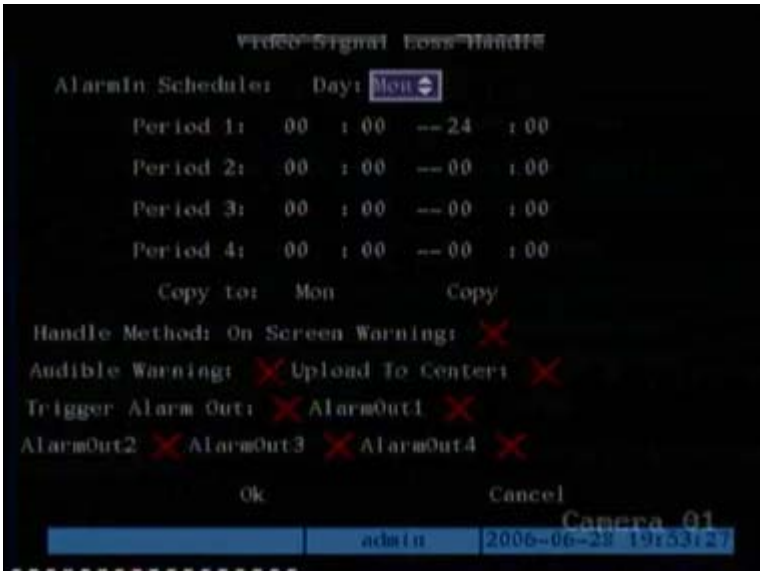
e. When you have finished modifying all the menu items required, scroll down to select **OK** and press **Enter** to return to the Camera menu.

4. Repeat steps 1 to 3 for each camera.
5. When you have made all the changes required to the Camera menu, save the changes (see page 47).

To setup the video loss alarm

1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ∧ and ∨ buttons to select the camera whose options you want to modify.
2. Navigate the action frame to the **Signal Loss** list box. Use the ∧ and ∨ buttons to select **Handle**.
3. Press **Enter**. The **Video Signal Loss Handle** submenu appears.

Figure 24: The Video Signal Loss Handle submenu



4. **To setup the time during which the DVSR can respond to an alarm**
   a. Navigate the action frame to **Day**. Use the ∧ and ∨ buttons to select the desired day.
   b. Move the action frame to Period 1 and enter the time for the alarm schedule. Time is entered in the 24-hour format.

   ✍ The four time periods during a day cannot be the same.

5. Navigate the action frame to **Handle Method** and press **Enter** or **EDIT** to enable (✓) or disable (×) how you want the unit to respond to a tamper alarm:

• On Screen Warning	When a video loss alarm occurs, the image from the camera triggered pops up on screen
• Audible Warning	When a video loss alarm occurs, an audible alarm sounds
• Upload to Center	Alarm information is sent to the remote IP (see *Network* section.)
• Trigger Alarm Out	When enabled, the AlarmOut is activated. Up to four alarm outputs can be enabled.

6. Navigate the action frame to select **OK** and press **Enter** to return to the Camera menu.
7. When you have made all the changes required to the Camera menu, save the changes (see page 47.)

To setup the unit to respond to a motion detection alarm

1. In the Camera menu use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ∧ and ∨ buttons to select the camera whose options you want to modify.
2. **To set the motion detection sensitivity level**
   a. Navigate the action frame to the **Motion Det. Level** sensitivity list box.

      There are seven levels to choose from: 0 (lowest) to 5 (highest) as well as “Off”. If “Off” is selected, the unit will not respond to any motion detection. If 0 to 5 is selected, motion detection **Area** and **Policy** setup buttons become active.

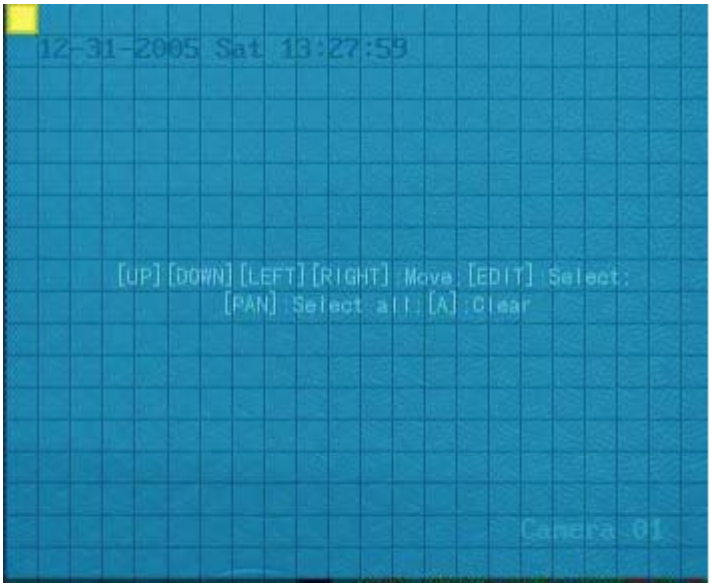
      ✍ To disable the Area and Policy parameters, set the motion detection level to “Off.

   b. Use the ∧ and ∨ buttons to select the desired motion detection sensitivity level required and press **Enter**.

3. **To select the motion detection area(s)**

   a. Navigate the action frame to the **Area** button and press **Enter**. The Motion Area Setup screen appears.

Figure 25: The Motion Area Setup screen



There is a yellow pane on the upper left corner. The motion area setup steps are the same as that of mask area setup (see page 40).

Use the following keys to setup the motion areas:

Button	Action
<, >, ∧, ∨	Moves the yellow pane to any position
EDIT	Toggle between the yellow and red panes
>	Increases the size of the red pane from the right
<	Decreases the size of the red pane from the left
∨	Increases the size of the red pane downwards
∧	Decreases the size of the red pane from above
PTZ	Selects the whole screen as a motion area
A	Clears all motion areas
Enter	Saves changes and returns you to the Camera menu
ESC	Cancels setup and returns you to the Camera menu

   b. Navigate the yellow square to the area on screen that you want to mark as a motion detection area. Press **EDIT**. The square turns red. The red square indicates the area that will detect motion.

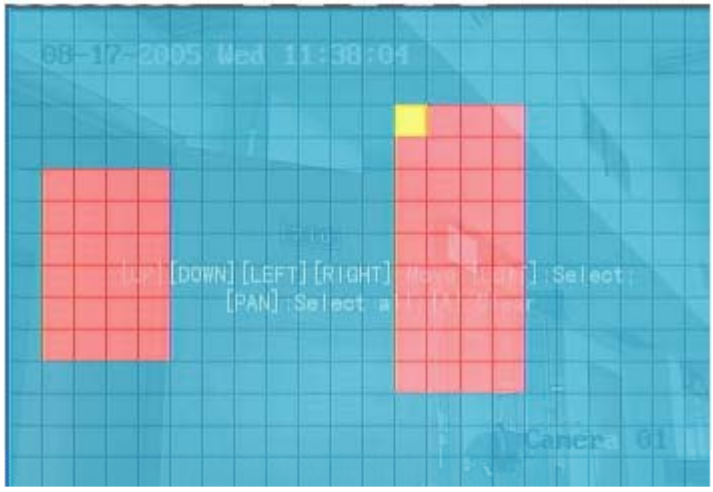
   c. Use the <, >, ∧ and ∨ buttons to extend the red square. When you have finished marking out the red to be masked, press **EDIT** to exit and return to the yellow square to continue masking, or press **ESC** to cancel.

      The yellow pane returns to the top left corner of the screen.

   d. Repeat steps b and c for each area where you want to detect motion.

An example of motion detection areas is shown below:

Figure 26: The motion detection areas



e. To clear part of a motion detection area, move the yellow pane to the red motion detection area that you want to delete. Press **EDIT**.

   The yellow pane becomes black. Using the arrow keys, increase or decrease the size of the black area. When finished, press **EDIT** to clear this black area.

   To clear all motion detection areas, press **A**.

f. Press **Enter** to save and return to the Camera menu or press **ESC** to cancel.

4. **To setup how the unit will respond to a motion alarm**

   a. Use the <, >, ∧ and ∨ buttons to navigate the action frame to the **Policy** list box and press **Enter**. The Motion Alarm Handle screen appears.

Figure 27: The Motion Alarm Handle screen

b. Navigate the action frame to **Record Chan.** and select which cameras you want to be able to record a motion alarm. Press **Enter** or **EDIT** to activate the option (✓). Press again to deactivate.

For the cameras to be able to record a motion alarm, they must first be setup for recording. This is done in the Recording menu. See page 52 for more information.

c. Navigate the action frame to **Alarm Schedule** and select when you want the unit to respond to a motion alarm. You can select up to seven days in a week and up to four time periods for each a day.

The four time periods during a day cannot be the same.

d. Navigate the action frame to **Handle Method**. Select how you would like the unit to respond to a motion alarm during live viewing mode. Press **Enter** or **EDIT** to activate the option (✓). Press again to deactivate.

Up to four options can be selected for each camera:

- Onscreen Warning — If an motion alarm is triggered and DVSR is in live viewing mode, the image from the camera triggered pops up on screen.
  If more than one camera is triggered, an image from each camera will pop up in turn every 10 seconds.
  When the triggered external alarm is de-activated, the DVSR returns to live viewing mode.
- Audible Warning — The DVSR beeps a warning when a motion alarm is triggered.
- Upload to Center — Alarm information is sent by the DVSR to the remote IP (see the section *Network* on page 56.)
- Trigger Alarm Out — The AlarmOut is activated when this option is enabled. Up to four alarm outputs can be enabled.

The unit returns to live viewing mode when there is no longer a motion alarm.

5. Navigate the action frame to select **OK** and press **Enter** to return to the Camera menu.
6. When you have made all the changes required to the Camera menu, save the changes (see page 47.)

To copy a camera's parameters to another camera

1. In the Camera menu navigate the action frame to **Select Camera**. Use the ∧ and ∨ buttons to select the camera whose options you want to copy.
2. Navigate the action frame to **Copy to Camera** and select the camera to which you want to copy the parameters.
3. Navigate the action frame to **Copy** and press **Enter**. All settings will be copied to the selected camera.

Motion alarm areas cannot be copied.

4. When you have made all the changes required to the menu, save the changes (see page 47.)

To save the changes made

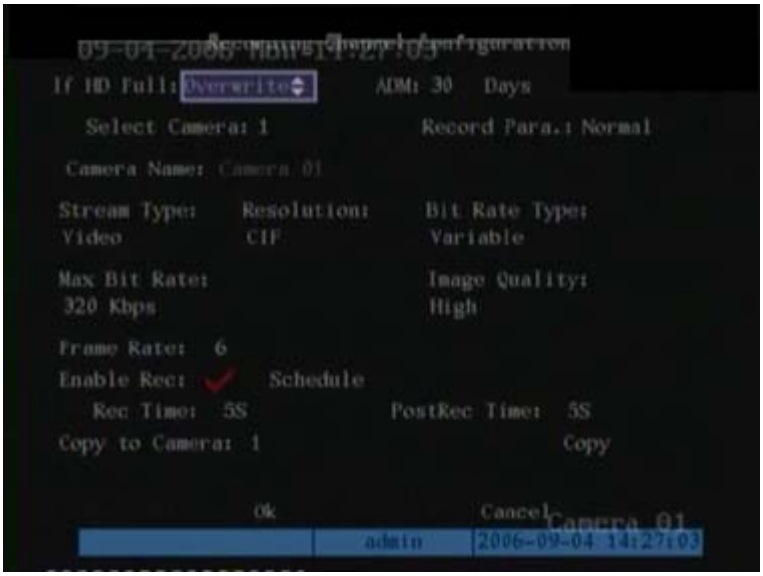
When you have finished changing all the menu items required navigate the action frame in the Camera menu to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

Recording configuration

The Recording menu icon 

is located in the main menu. The following screen appears when you select the Recording icon:

Figure 28: The Recording Channel Configuration screen



Menu description

Use this menu to specify:

- The camera whose parameters will be changed — You can change the recording parameters for each camera connected to the unit.
- How the unit will respond to full HDDs — You can select how the DVSR responds when its HDDs become full and there is no longer sufficient space to save new data.
- When autodelete mode (ADM) occurs — You can select the number of days (Duration) that recordings from a specific camera are saved before being automatically deleted.
- Recording parameters — You can select the recorded image parameters for both normal and alarm events. There are two options: Normal or Event. “Normal” includes both scheduled and manual recording. “Events” includes all alarms. The resolution, bit rate, and image quality differs between them; they are higher for alarm events. Both options have default values, which appear onscreen when they are selected, but you can change these values.
- The recording speed — You can select whether the recording rate is set to low or high. For normal events the speed rate will be set to slow. However, for alarm events the recording rate will be faster in order to have better results. Normal is the default value.
- Whether video or video/audio will be recorded — You can select whether the recording is video only (default), or audio and video.
  You need to reboot the DVSR after changing this option.
- The image resolution — You can select one of five video resolutions: QCIF, CIF (default), 2CIF, DCIF, and 4CIF. A high image resolution requires that a high bit rate must also be selected. QCIF is the lowest resolution value, and 4CIF the highest.
  For the DVSR-XXRT series, only the first, fifth, ninth, and thirteenth channels can support all five resolutions. The other channels can only support the QCIF and CIF resolutions.

You need to reboot the DVSR after changing this option.

- The type of the bit rate

  You can select whether you want the bit rate to vary depending on the amount of motion detected, or to be a fixed rate. A fixed bit rate saves HDD space.

  Variable: The unit will adjust the bit rate depending on the amount of video movement detected. Varying the bit rate according to the movement detected saves HDD usage and network bandwidth. The bit rate used is low when the video movement is low. Conversely, when a lot of movement is detection, the bit rate used is high. The maximum bit rate that can be used is defined in the Max Bit Rate menu option. This is the default value.

  Fixed: The unit uses a fixed bit rate to compress the image and save HDD space. The bit rate size is defined in the Max Bit Rate menu option. A fixed bit rate allows the recorded file size and network bandwidth to be calculated.

- The maximum level of bit rate

  If the bit rate selected is Variable, the maximum bit rate used needs to be restricted when there is high video movement. However, if the image resolution is high, then the bit rate selected must also be high. Table 1 shows the recommended bit rate ranges for the resolution option. The actual maximum bit rate must be calculated from your camera, background, and image quality requirements. The default value is 320 Kbps.

Table 1: Bit rate ranges by resolution

Resolution		Recommended bit rate	Recording speed
Highest	4CIF	768 Kbps to 1.5 Mbps	25 fps
High	2CIF / DCIF	512 Kbps to 1.0 Mbps	25 fps
Low	CIF	384 to 768 Kbps	25 fps
Lowest	QCIF	< 384 Kbps	25 fps

If the bit rate selected is Fixed select the maximum bit rate from the list.

- The camera image quality

  You can select from six different levels of image quality: Highest, Higher, High (default), Average, Low and Lowest. If you select a high image quality, you must also select a high bit rate.

- The frame rate per second

  You can select from a several frame rates: Full 20, 16, 12, 10, 8, 6, 4, 2, 1, 1/2, 1/4, 1/8, 1/16. PAL is 25 FPS and NTSC is 30FPS. The default value is 6 fps.

  You can select a low bit rate can when the frame rate is low.

- The prerecording and post recording times for alarm recording

  When you activate the Enabled Recording option enabled, you can then set the prerecording and post recording times. However, you must also enable the unit to respond to motion detection alarms (see page 44) or to external alarms (see page 60),

  The system is recording all the time at a defined rate. The prerecording time is the time before a motion or external alarm is triggered and which is included in the alarm data. It is related to the bit rate. The lower the selected bit rate, the longer the prerecording time can be. The prerecording options available are:

  - No prerecord
  - 5 seconds (default)
  - 10 seconds
  - 15 seconds
  - 20 seconds
  - 25 seconds
  - 30 seconds
  - Max prerecord (all data is saved in the prerecord buffer)

  The post recording time is the time after a motion or external alarm is triggered that is included in the alarm information. The post recording options are:

  - 5 seconds (default)
  - 10 seconds
  - 30 seconds
  - I minute
  - 2 minutes

- 5 minutes
- 10 minutes

- The recording schedule — You can setup a recording schedule for selected camera(s). You need to reboot the DVSR after changing this option.

Configuring the recording parameters

The following procedure shows how to change the recording parameters of a selected camera in the Recording menu. They can be changed in any order.

To select the Recording menu option

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Recording icon and press **Enter**. The Recording Channel Configuration screen appears.

Once you are in the Recording menu, you can change the following parameters. When you have made all the changes required, save the changes (see page 54.)

To setup how the unit will respond to full HDDs

Use the < and > buttons to navigate the action frame to **If HD Full** list box. Use the ^ and v buttons to select one of the two options:

Option	Description
Overwrite	When all the HDDs in the unit are full, the DVSR will overwrite the earliest written recorded files and continue recording.
Stop recording	When all the HDDs in the unit are full, the DVSR will handle the event as a "Hard Disk Full" condition and respond according to how this condition has been programmed under the Notification menu. For more information, refer to page 64.

To select when the autodelete occurs

1. Navigate the action frame to the **Duration** edit box. Enter the number of days at which autodelete occurs. The default value is 30 days. To correct or change an entry, place the cursor just after the number to be deleted and press **EDIT**. Press **EDIT** for each character to be deleted.
2. Press **Enter** to confirm entry.

To select the camera whose parameters you want to modify

Navigate the action frame to the **Select Camera** list box. Use the ^ and v buttons to select from the list displayed the camera whose parameters you want to change. The name of the camera selected automatically appears under **Camera Name**.

All the recording parameters that you change in this menu will apply to this camera.

To change the record parameters

To select whether audio and/or video will be recorded

Navigate the action frame to the **Stream Type** list box. Use the ∧ and ∨ buttons to select one of the two options:

Option	Description
Audio&Video	Records both audio and video.
Video	Recodes video only.

✍ If you change this option you must reboot the DVSR to implement the change.

To change the camera resolution

Navigate the action frame to the **Resolution** list box. Use the ∧ and ∨ buttons to select one of the options listed. The options are listed from lowest to highest resolution: QCIF, CIF, 2CIF, DCIF, 4CIF.

For the DVSR-XXRT series, only the first, fifth, ninth, and thirteenth channels can support all five resolutions. The other channels can only support the QCIF and CIF resolutions.

✍ If you change this option you must reboot the DVSR to implement the change.

To select the bit rate

Navigate the action frame to the **Bit Rate Type** list box. Use the ∧ and ∨ buttons to select one of the two options listed: Variable or Fixed.

To select the maximum bit rate

Navigate the action frame to the **Max Bit Rate** list box. Use the ∧ and ∨ buttons to select one of the options listed (bps):

32K, 48K, 64K, 80K, 96K, 128K, 160K, 192K, 224K, 256K, 320K, 384K, 448K, 512K, 640K, 768K, 896K, 1M, 1.25M, 1.5M, 1.75M, 2M, and "User defined".

To define the image quality

Navigate the action frame to the **Image Quality** list box. Use the ∧ and ∨ buttons to select one six options listed: Highest, Higher, High, Average, Low and Lowest.

✍ Select a high bit rate to obtain a high image quality.

To select the frame rate

Navigate the action frame to the **Frame Rate** list box. Use the ∧ and ∨ buttons to select one of the options listed: Full (PAL is 25 FPS and NTSC is 30FPS), 20, 16, 12, 10, 8, 6, 4, 2, 1, 1/2, 1/4, 1/8, 1/16.

✍ A low bit rate can be selected when the frame rate is low.

To enable recording

Use the < and > buttons to navigate the action frame to the **Enable Rec** edit box and press **Enter** or **EDIT** to enable (✓) the record function. The Schedule option is activated. Press **Enter** or **EDIT** again to disable (×) the function.

To setup the recording schedule

To set the prerecording time for motion detection alarm and external alarm recordings

1. Enable the unit for motion detection alarms (see page 44) and/or the external alarms (see page 60.)
2. In the Recording menu enable (✓) the **Enable Rec** option. Schedule is activated.
3. In the Recording menu navigate the action frame to the **Rec Time** list box, and select one of the options listed.
4. When you have made all the changes required to the recording menu, save the changes (see page 54.)

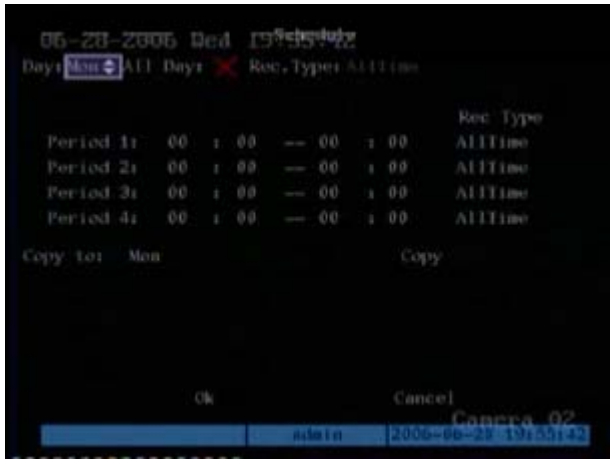
To set the post recording time for motion detection alarm and external alarm recordings

1. Enable the unit for motion detection alarms (see page 44) and/or the external alarms (see page 60.)
2. In the Recording menu enable (✓) the **Enable Rec** option. Schedule is activated.
3. In the Recording menu avigate the action frame to the **PostRec Time** list box, select one of the options listed.
4. When you have made all the changes required to the recording menu, save the changes (see page 54.)

To setup an all-day recording schedule

1. Use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ∧ and ∨ buttons to select the camera you want. The name of the camera selected automatically appears under **Camera Name**.
2. Navigate the action frame to **Enable Rec** and press **Enter** or **EDIT** to enable (✓) or to disable (×) the option. When the option is enabled, **Schedule** is activated.
3. Navigate the action frame to **Schedule** and press **Enter** to select. The Schedule submenu appears.

Figure 29: The Camera recording schedule screen



4. Navigate the action frame to the **Day** list box. Use the ∧ and ∨ buttons to select the day of the week required.
5. Navigate the action frame to the **All Day** edit box and press **Enter** or **EDIT** to enable (✓) the option.

6. Navigate the action frame to **Rec Type** list box. Use the ∧ and ∨ buttons to select one of the options: All Time, Motion Detect, Alarm, Motion or Alarm, and Motion & Alarm. Only one option can be selected.
7. To copy this setup selection to the other days of the week use the < and > buttons to navigate the action frame to **Copy To**. Use the ∧ and ∨ buttons to select the day of the week to which you want to copy the settings. Navigate the action frame to **Copy** and press **Enter**. All settings will be copied to the selected day.
8. Navigate the action frame to **OK** and press **Enter** to return to the Recording menu. To cancel changes, select **Cancel** and press **Enter**.
9. When you have made all the changes required to the menu, save the changes (see page 54.)

To setup a recording schedule that is not all-day

1. Use the < and > buttons to navigate the action frame to the **Select Camera** list box. Use the ∧ and ∨ buttons to select the camera you want. The name of the camera selected automatically appears under **Camera Name**.
2. Navigate the action frame to **Enable Rec** and press **Enter** or **EDIT** to enable (✓) or to disable (×) the option. When the option is enabled, **Schedule** is activated.
3. Navigate the action frame to **Schedule** and press **Enter** to select. The Schedule submenu appears.
4. Navigate the action frame to **Day**. Use the ∧ and ∨ buttons to select the day of the week required.
5. Navigate the action frame to **All Day** and press **Enter** or **EDIT** to disable (×) the option. The **Rec. Type** button beside it is deactivated.
6. Navigate the action frame to **Period 1** and enter the start and end time periods and the record type. The record type options are: All Time, Motion Detect, Alarm, Motion & Alarm and Motion | Alarm.

Options for record type	Requirements
Motion Detect, Motion & Alarm, or Motion | Alarm	You must set up the unit for motion detection in order to be able to trigger motion detection recording. See page 44.
Alarm, Motion & Alarm, or Motion | Alarm	You must set up the unit for alarm detection in order to be able to trigger alarm recording. See page 60.

Up to four time periods can be programmed for each day. Time is entered in the 24-hour format.

✍ The time periods within a day cannot be repeated.

7. To copy this setup selection to the other days of the week navigate the action frame to **Copy To**. Use the ∧ and ∨ buttons to select the day of the week to which you want to copy the settings. Navigate the action frame to **Copy** and press **Enter**. All settings will be copied to selected day.
8. Navigate the action frame to **OK** and press **Enter** to return to the Recording menu. To cancel changes, select **Cancel** and press **Enter**.

9. When you have made all the changes required to the menu, save the changes (see page 54.)

To save the changes made

When you have finished changing all the menu items required navigate the action frame in the Recording menu to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

Network configuration

The Network menu icon 

is located in the main menu. The following screen appears when you select the Network icon:

Figure 30: The Network screen

Menu description

Use this menu to specify:

- The NIC type
- The IP address
- The port access number
- The mask
- The gateway IP
- DNS address

  If DVSR uses a PPPoE function, the DVSR can get a dynamic IP address. If you set DNS IP with a fixed Internet IP, DVSR will send information such as DVSR name, DVSR serial number, and DVSR current IP to that fixed IP address. When seeking the DVSR name of a unit, the DVSR will automatically provide you with the dynamic IP address of the DVSR.
- The multicast IP address
- The remote host IP and port

  Setting up the remote host IP and port allows the information on any alarms and exceptions that occur to be sent by the DVSR to the center with this remote host IP.
- The network access storage (NAS)

  For future use.
- The HTTP port

  This port is used by the IE browser. The default value is 80.
- PPPoE

  DVSR supports a PPPoE dial-up function.
- User name and password

  This internet service provider (ISP) information is needed if you are connecting to a modem.

Configuring the network parameters

The following procedures show how to modify the network parameters from the Network menu. They can be changed in any order.

CAUTION: The DVSR will reboot automatically when any network parameter is changed and saved.

To access the Network menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Network menu icon and press **Enter**. The Network screen appears.

Once you are in the Network menu, you can change the following parameters. When you have finished making all the changes required, save the changes (see page 58.)

To select the NIC type

Use the < and > buttons to navigate the action frame to **NIC Type** list box. Use the ^ and v buttons to select one of the five options listed:

- 10M/100M Auto (default)
- 10M Half-Duplex
- 10M Full-Duplex
- 100M Half-Duplex
- 100M Full-Duplex

To select the IP address

1. Use the < and > buttons to navigate the action frame to **IP**.

   If there is a DHCP server on the network, set the IP address as 0.0.0.0. and navigate the action frame to select **OK**, and press **Enter** to save the option. Reboot the unit.

2. Press **EDIT**. The edit box turns green. Using the number buttons enter the address and press **Enter**.

   The DVSR will search the DHCP server and find a dynamic IP address, which will then be displayed.

   If the DVSR uses a PPPoE function, the DVSR dials-up the internet and displays the dynamic Internet IP address.

   The IP address must not conflict with other IP addresses in use.

To select the port access number

1. Navigate the action frame to **Port**.
2. Press **EDIT**. Using the number buttons enter the address and press **Enter**. The number must be greater than 2000.

To set the mask

1. Navigate the action frame to **Mask**
2. Press **EDIT**. Using the number buttons enter the sub net mask number and press **Enter**.

To set the gateway IP

1. Navigate the action frame to **Gateway**.
2. Press **EDIT**. Using the number buttons enter the gateway IP number to communicate with different network segments. Press **Enter**.

To set the DNS address

1. Navigate the action frame to **DNS**
2. Press **EDIT**. Using the number buttons enter the DNS number and press **Enter**.

To set the multicast IP address

1. Navigate the action frame to **MCAst IP**.
2. Press **EDIT**. Using the number buttons enter a D-class IP address between 224.0.0.0 - 239.255.255.255, and press **Enter**. This function is optional as not all systems use it.

   ✍ Some routers do not allow the multicast function.

To set the remote host IP and port

1. Navigate the action frame to **Remote Host IP**.
2. Press **EDIT**. Using the number buttons enter the remote host IP address, and press **Enter**.
3. Navigate the action frame to the remote host **Port** and press **EDIT**. Using the number buttons enter its value, and press **Enter**.

To set the http port

1. Navigate the action frame to **httpPort**.
2. Press **EDIT**. Using the number buttons enter the IE browser port value, and press **Enter**.

To set the PPPoE

1. Navigate the action frame to **PPPoE**.
2. Press **EDIT** or **Enter** to enable (✓) the option or to disable (×) the option.

To set the user name and password

1. Use the < and > buttons to navigate the action frame to **User**.
2. Press **EDIT**. Using the number buttons enter the ISP user name, and press **Enter**.
3. Navigate the action frame to **Pass**.
4. Press **EDIT**. Using the number buttons enter the ISP password, and press **Enter**.
5. Navigate the action frame to **Ver**.
6. Press **EDIT**. Using the number buttons enter the ISP user name again, and press **Enter**.

To save the changes made

When you have finished changing all the menu items required use the < and > buttons in the Network menu to navigate the action frame to **OK** and press **Enter** to save all the changes. The system automatically reboots.

To abort the changes, select **Cancel** and press **Enter**. You will return to the main menu.

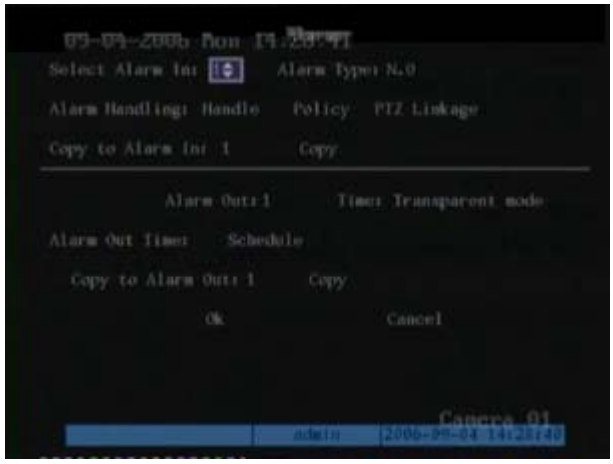
Example: Setting up the PPPoE parameter

1. In the main menu use the < and > buttons to navigate the action frame to the Network icon and press **Enter** to access the Network menu.
2. Navigate the action frame to **NIC Type**. Use the ^ and v buttons to select an option from the list.
3. Navigate the action frame to **Port** and enter the port number, which must be greater than 2000.
4. Navigate the action frame to **DNS** and enter a fixed Internet IP address from where the IP analyst software (IPServer) is run.
5. Navigate the action frame to **PPPoE** edit box. Press **EDIT** or **Enter** to enable (✓) the PPPoE function. Enter the PPPoE username and password, and verify the password provided by your ISP.
6. Navigate the action frame to **OK** and press **Enter** to save the parameter changes.
7. Reboot the DVSR to implement the parameter changes. During the rebooting the DVSR will dialup using the PPPoE function. If the dialup to the internet is successful, the DVSR will display the dynamic internet IP address in the Network menu.

Alarm configuration

The Alarms menu icon  is located in the main menu. The following screen appears when you select the Alarms icon:

Figure 31: The Alarms menu screen



Menu description

Use this menu to configure the alarm handling features of the unit.

- The 4-channel DVSR has 4 external alarm inputs and 4 alarm relay outputs.
- The 8-channel DVSR has 8 external alarm inputs and 4 alarm relay outputs.
- The 16-channel DVSR has 16 external alarm inputs and 4 alarm relay outputs.

When setting up the alarm relay output, you need to set the alarm output time delay. This delay is the time that the alarm output continues after the alarm itself has been deactivated. Consequently the actual alarm output time consists of the alarm input time and alarm output time delay.

Configuring the alarm parameters

The following procedure shows how to change the Alarm menu parameters. They can be changed in any order.

To access the Alarm menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Alarm menu icon and press **Enter**. The Alarm menu screen appears.

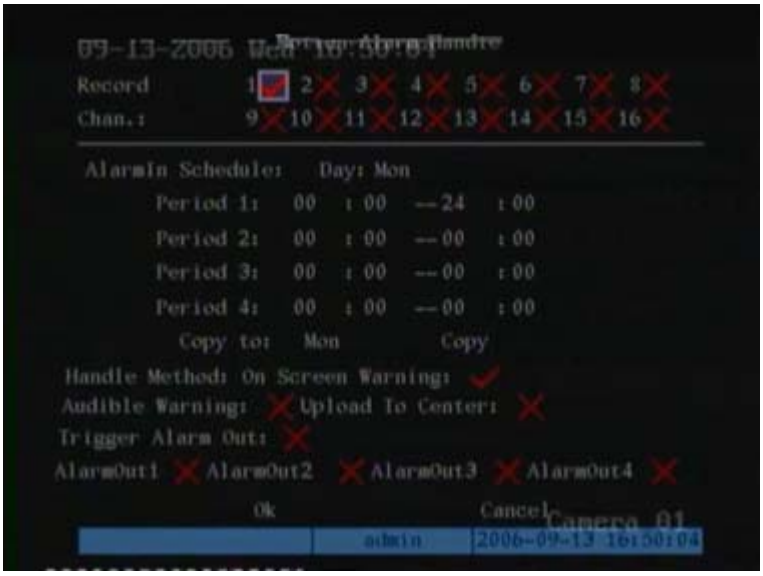
Once you are in the Alarm menu, you can change the following parameters. When you have finished making all the changes required, save them.

To setup the external alarm input

1. In the Alarm menu use the < and > buttons to navigate the action frame to the **Select Alarm In** edit box. Use the ^ and v buttons to select one of the alarm inputs listed.
2. Navigate the action frame to **Alarm Type**. Use the ^ and v buttons to select one of the two options, **NO** or **NC**, depending on the sensor type. Default is NO.
3. Navigate the action frame to **Alarm Handling**. Use the ^ and v buttons to select one of the two options, **Ignore** or **Handle**. Default is Handle.
4. **To set the alarm handling schedule**

   a. If Handle is selected, the **Policy** and **PTZ Linkage** options are activated. Navigate the action frame to **Policy** and press **Enter**. The Alarm In Handling submenu appears.

Figure 32: Alarm In Handling menu screen



   b. Navigate the action frame to select the cameras you want to record an alarm input. Press **Enter** or **EDIT** to enable (✓) or to disable (×) the camera channel.

> ✍ For the channel to be able to record, the recording option and the record type parameter must first be enabled in the Recording menu, such as Alarm or one of the other options available. Refer to section *To setup an all-day recording schedule* on page 52 for further information.

   c. Navigate the action frame to **Alarmin Schedule** to select the schedule for when the DVSR will respond to an external alarm. With the action frame, select the day of the week

   d. Navigate the action frame to **Period 1** and enter the start and end time periods for the day. Each day can have up to four time periods.

> ✍ The time format is 24-hour.

   d. Navigate the action frame to **Handle Method** and enable or disable each option by pressing **Enter** or **EDIT**:

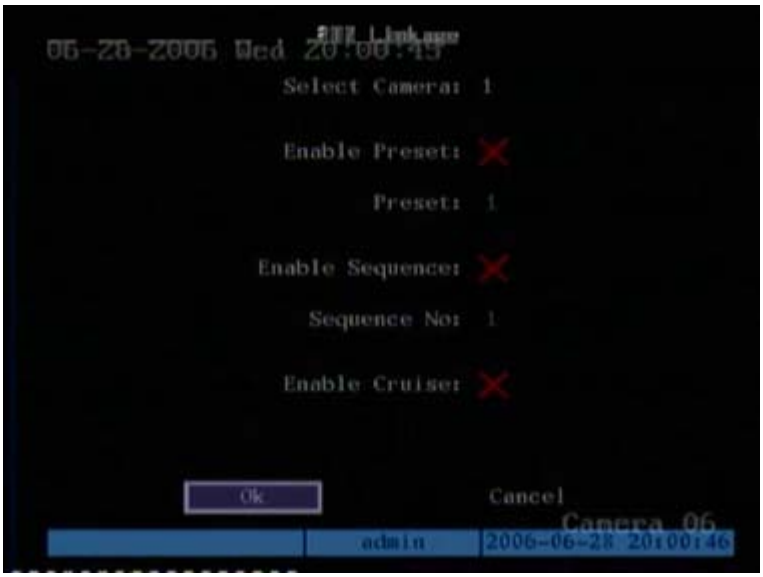
• On-screen Warning	If an external alarm is triggered and DVSR is in live viewing mode, the image from the camera triggered pops up on screen. If more than one camera is triggered, an image from each camera will pop up in turn every 10 seconds. When the triggered external alarm is de-activated, the DVSR returns to live viewing mode.
• Audible Warning	When an alarm is triggered, the DVSR beeps a warning.
• Upload to Center	Alarm information is sent by the DVSR to the remote IP (see *Network* section.)
• Trigger Alarm Out	When enabled, the AlarmOut is activated. Up to four alarm outputs can be enabled.

e. Navigate the action frame to select **OK** and press **Enter** to return to the Alarms menu, or press **CANCEL** or **ESC** to abort and return to the Alarm menu.

5. **To set the PTZ linkage**

a. In the Alarms menu use the < and > buttons to navigate the action frame to the activated **PTZ Linkage** and press **Enter**. The PTZ Linkage submenu appears.

Figure 33: PTZ linkage submenu screen



b. Navigate the action frame to **Select Camera**. Use the ∧ and ∨ buttons to select one of the cameras listed.

c. Select one or more of the PTZ linkage options by pressing Enter or EDIT to enable (✓) or to disable (×).

Enable each option and enter a preset number already pre-programmed. See section *PTZ* on page 66 for further information.

✍ Ensure that the PTZ you are using can support preset, sequence and cruise (Tour) functions. An external alarm input can trigger several camera PTZ linkages.

d. Navigate the action frame to select **OK** and press **Enter** to return to the Alarms menu, or press **CANCEL** or **ESC** to abort and return to the Alarms menu.

6. **To copy parameters to another external alarm input**

   a. Navigate the action frame to **Copy to Alarm In**. Use the ∧ and ∨ buttons to select one of the inputs listed.

   b. Navigate the action frame to **Copy** and press **Enter**.

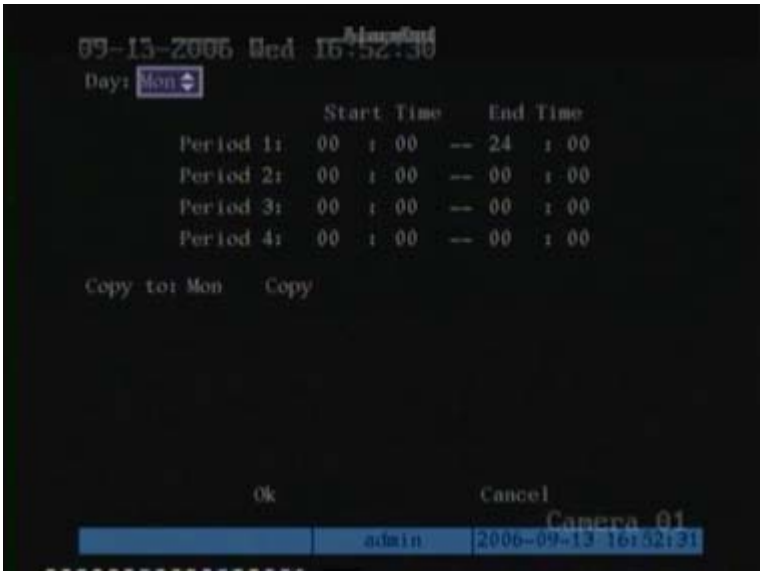
7. **To save changes**

   When you have finished changing all the menu items required, navigate the action frame to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

To setup the external alarm output

1. In the Alarm menu use the < and > buttons to navigate the action frame to the **Select Alarm In** list box. Use the ∧ and ∨ buttons to select one of the alarm inputs listed.
2. Navigate the action frame to the **Alarm Out** list box. Use the ∧ and ∨ buttons to select one of the alarm outputs listed.
3. Navigate the action frame to **Time**. Use the ∧ and ∨ buttons to select the time delay for the alarm output from the list shown. The time delay options are:
   - Transparent mode (default): As long as there is an alarm input, there will be an alarm output
   - Acknowledge: The alarm output will not stop until you press the **Stop Alarm Out** button in the Utilities menu
   - 5 seconds
   - 10 seconds
   - 30 seconds
   - 1 minute
   - 2 minutes
   - 5 minutes
   - 10 minutes
   - 15 minutes
4. Navigate the action frame to **Alarm Out Time: Schedule** to set the schedule for the alarm output, and press **Enter**. The AlarmOut schedule submenu appears.

Figure 34:The Alarm output schedule submenu screen



5. Navigate the action frame to the **Day** list box. Use the ^ and v buttons to select a day of the week. Select the desired schedule for that day.

   ✍ The time format is 24-hour.

6. Repeat step 5 for each day of the week.

   If the desired times for this alarm output are identical between days, navigate the action frame to **Copy to** and select the day of the week to which you want to copy this schedule. Select **All** if the same schedule is used all week. Select **Copy** and press **Enter** twice.

7. When you have completed entering all the schedule information, navigate the action frame to **OK** and press **Enter** to return to the Alarms menu to save the changes, or press **CANCEL** or **ESC** to abort and return to the Alarms menu.

8. **To copy parameters to another external alarm input**

   a. Navigate the action frame to **Copy to Alarm Out**. Use the ^ and v buttons to select one of the outputs listed.

   b. Navigate the action frame to **Copy** and press **Enter**.

To save the changes

When you have finished changing all the menu items required in the Alarms menu, navigate the action frame to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

✍ The system reboots automatically if any modified schedule is saved.

Notification configuration

The Notification menu icon  is located in the main menu. The following screen appears when you select the Notification icon:

Figure 35: The Notification screen

Menu description

Use this menu to specify how the following exceptional events should be notified:

- Hard disk full
- Hard disk error
- Illegal access
- IP address conflict
- Network failure
- NTSC/PAL differ

Configuring the notification parameters

For each notification type you can specify up to three different ways to handle an event.

To access the Notification menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Notification menu icon and press **Enter**. The Notification menu screen appears.

To setup how to handle event notifications

1. In the Notification menu use the < and > buttons to navigate the action frame to **Exception** list box. Use the ^ and v buttons to select one of the exceptions listed.
2. Navigate the action frame to each of the handling methods required and press **Enter** or **EDIT** to enable (✓) or to disable (×) the option.

   - Audible Warning — When an alarm is triggered, the DVSR beeps a warning.
   - Upload to Center — Alarm information is sent by the DVSR to the remote IP (see *Network* section.)
   - Trigger Alarm Out — A local relay output is triggered.

3. When you have finished changing all the menu items required in the Notification menu, use the < and > buttons to navigate the action frame to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

PTZ configuration

The PTZ menu icon 

is located in the main menu. The following screen appears when you select the PTZ icon:

Figure 36: The PTZ menu screen

Menu description

Use this menu to setup the RS-485 and PTZ parameters to match your PTZ protocol. There is a RS-485 port located on the DVSR rear panel that is used for PTZ control.

The descriptions of the different menu functions are given in Table 2.

Table 2: PTZ menu functions

Task	Menu options	Description
Select channel	Select camera	Select one of the PTZ cameras.
Setup RS-485 parameters	• Baud rate • Data bits • Stop bits • Parity • Flow ctrl	These parameters must be identical to those of the PTZ protocol. • The default values are: • Baud rate: 9600 • Data bits: 8 • Stop bits: 1 • Parity: No • Flow ctrl: None
Setup PTZ protocol	Protocol	DVSR can accept the following PTZ protocols: GE Security (default), Pelco-p, DM DynaColor, Pelco-D, Samsung, Kalatel-312, TLPelco-p, BBV, ACES, DeltaDome, Panasonic, DennarDome, etc.
Setup PTZ address	PTZ addr.	Each PTZ has a different address.
Setup camera preset parameters	Preset	This number represents the camera's position, zoom, focus, and iris. You can save up to 128 preset numbers. ✍ The PTZ used must be able to support a preset function.

Setup the Preset tour function	PresetTour no.	Each preset tour has several cruise points. A cruise point has: • A preset number. • A dwell time. This is the time the PTZ camera stays at the preset number. • A dwell speed. This is the speed at which the PTZ moves to the preset number. You can save up to 16 sequences. ✍ The PTZ used must be able to support a sequence function.
Setup the ShadowTour function	ShadowTour	The ShadowTour function remembers the PTZ movement track. ✍ The PTZ used must be able to support a ShadowTour function.

Configuring the PTZ parameters

The following procedure shows how to change the PTZ menu options. They can be changed in any order.

To access the PTZ menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the PTZ menu icon and press **Enter**. The PTZ menu screen appears.

Once you are in the PTZ menu, you can change the following parameters. When you have finished making all the changes required, save them (see page 70.)

To select the PTZ camera

In the PTZ menu navigate the action frame to the **Select Camera** list box. Use the ∧ and ∨ buttons to select the PTZ camera whose parameters you want to change.

To setup the RS-485 parameters

In the PTZ menu navigate the action frame to each of the options in turn **Baud Rate**, **Data Bits**, **Stop Bits**, **Parity**, **Flow Ctrl**, and press **Enter** or **EDIT** to enable (✓) or to disable (×).

For example, GE Security is: (setup as default)

- Baud rate – 9600
- Data bits – 8
- Stop bit – 1
- Parity – None
- Flow Crtl - None

To setup the PTZ protocol

In the PTZ menu navigate the action frame to the **Protocol** list box. Use the ∧ and ∨ buttons to select one of the PTZ protocols from the list in Table 2.

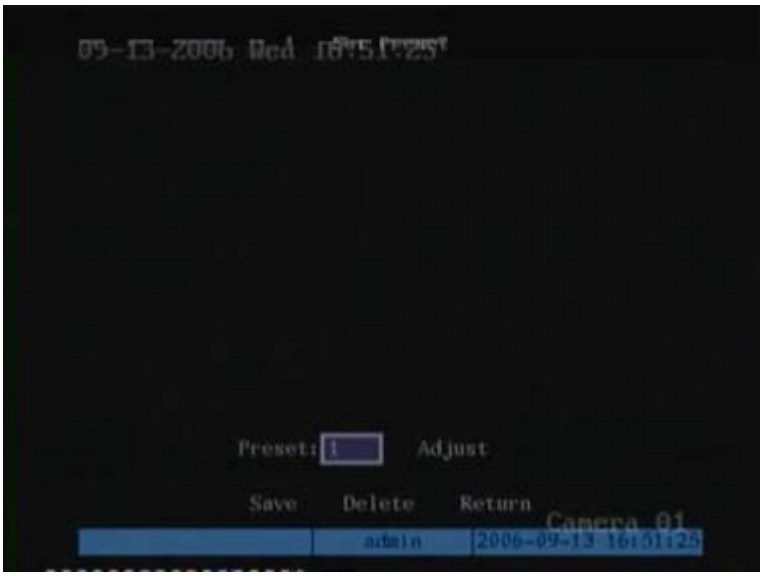
To setup the PTZ address

In the PTZ menu navigate the action frame to **PTZ Addr**. and press **EDIT**. Use the number buttons to enter your PTZ address. Press **EDIT** to delete a preceding number. Press **Enter** to confirm entry.

To setup the camera preset parameters

1. In the PTZ menu navigate the action frame to the **Preset** list box. Use the ∧ and ∨ buttons to select **Setup** and press **Enter**. The Set Preset submenu appears.

Figure 37: The PTZ Set Preset submenu screen



2. Navigate the action frame to the **Preset** edit box and press **EDIT**. Enter your preset number (between 1 and 128) and press **Enter**.

   The PTZ camera used must be able to support a preset function.

3. Navigate the action frame to **Adjust** and press **Enter**. The PTZ control submenu appears.
4. Use the <, >, ∧, ∨, IRIS+, IRIS-, FOCUS+, FOCUS-, and ZOOM+ buttons to adjust the PTZ to the desired position. Press **Enter**.
5. Navigate the action frame to select **Save** and press **Enter** to save the preset number.
6. Repeat steps 2 to 5 for each preset number.
7. When all the preset numbers have been saved, navigate the action frame to **Return**, and press **Enter** to return to the PTZ menu.
8. When you have made all the changes required to the PTZ menu, save the changes (see page 70.)

To delete the camera preset parameters

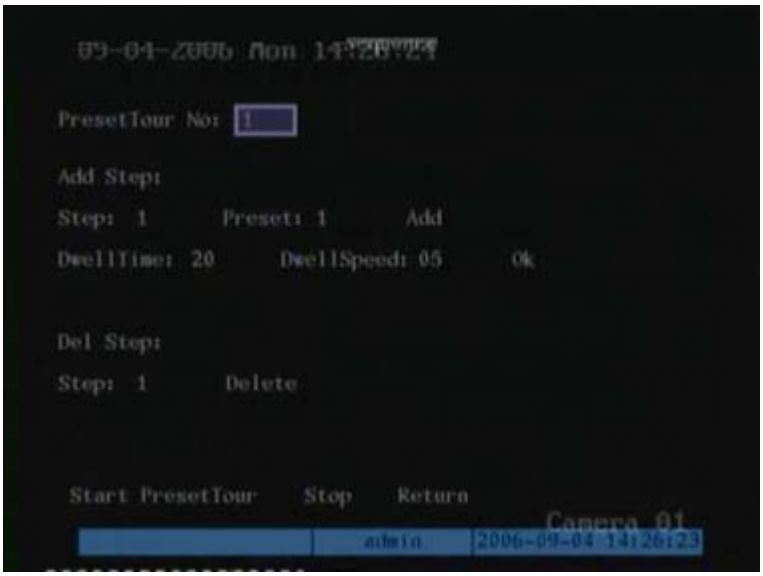
1. In the PTZ menu navigate the action frame to the **Preset** list box. Use the ∧ and ∨ buttons to select **Setup** and press **Enter**. The Set Preset submenu appears.
2. Navigate the action frame to the **Preset** edit box, and press **EDIT**. Enter your preset number (between 1 and 128) and press **Enter**.

3. Navigate the action frame to **Delete** and press **Enter** to delete the number.
4. Navigate the action frame to the **Return** button and press and press **Enter** to return to the PTZ menu.
5. When you have made all the changes required to the PTZ menu, save the changes (see page 70.)

To setup a preset tour

1. In the PTZ menu navigate the action frame to the **PresetTour No.** list box. Select **Setup** and press **Enter**. The Sequence submenu appears.

Figure 38: The PTZ Sequence submenu screen



2. Navigate the action frame to the **PresetTour No.** edit box and enter the sequence number you want to add or delete (between 1 and 16) . Press **Enter**.

   Each preset tour consists of steps. A step consists of a preset number, a dwell time, and a dwell speed.

   ✍ The PTZ camera used must be able to support a preset function.

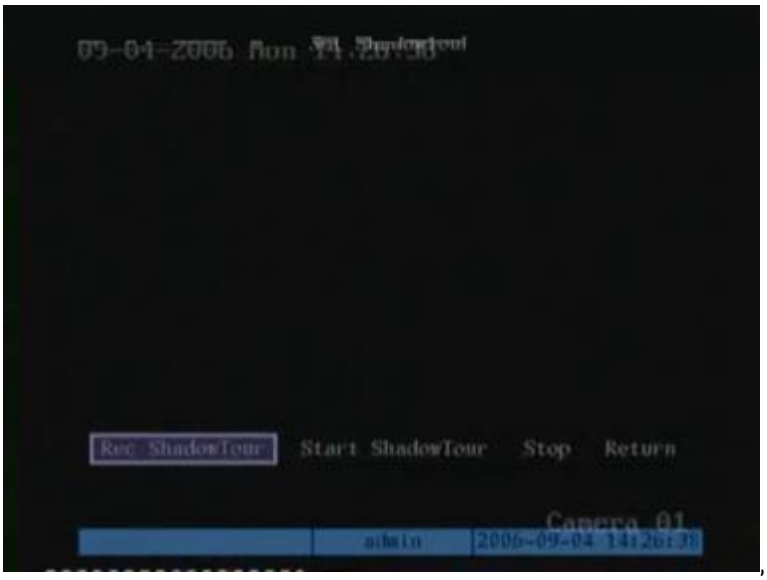
3. To add a step, navigate the action frame to **Add Step**. For each of the step parameters (step number, preset number, dwell time number, and dwell speed number) add the number and press **Enter**. When completed, navigate the action frame to **Add** and press **Enter**.
4. Navigate the action frame to **OK** and press **Enter** to save the step parameters into the selected preset.
5. Check the sequence by moving the action frame to **Start PresetTour** and pressing **Enter**. The preset will then run. To stop the preset running, navigate the action frame to **Stop** and press **Enter**.
6. To delete a step navigate the action frame to **Del Step** and enter the step number you want to delete. Select **Delete** and press **Enter**.
7. Navigate the action frame to **Return** and press **Enter** to return to the PTZ menu.

8. When you have made all the changes required to the PTZ menu, save the changes (see page 70.)

To setup a ShadowTour

1. In the PTZ menu navigate the action frame to the **ShadowTour** list box. Select **Setup** and press **Enter**. The Set ShadowTour submenu appears.

Figure 39: The PTZ Sequence submenu screen



2. Navigate the action frame to **Rec ShadowTour** and press **Enter**. The PTZ control appears on screen.

   ✍ The PTZ camera used must be able to support a ShadowTour function.

3. Navigate the PTZ. When you are satisfied with the PTZ track, press **Enter** to save it and to return to the Set ShadowTour submenu.
4. Using the arrow keys, navigate the action frame to **Start ShadowTour** and press **Enter**. The PTZ track will be repeated until you press **Stop**.
5. Navigate the action frame to **Return** and press **Enter** to return to the PTZ menu.

To save the changes to the PTZ menu

When you have finished changing all the menu items required in the PTZ menu navigate the action frame to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

RS-232 configuration

The RS-232 menu icon 

is located in the main menu. The following screen appears when you select the RS-232 icon:

Figure 40: The RS-232 menu screen

Menu description

Use this menu to setup the RS-232. There is a RS-232 port on the DVSR back panel.

The descriptions of the menu functions are given in Table 3.

Table 3: RS-232 menu functions

Task	Menu options	Description
Setup RS-232 parameters	• Baud rate • Data bits • Stop bits • Parity • Flow control	
Setup work mode	Mode	There are three options: • **Console:** Connected to the PC serial port. HyperTerminal or NetTerm can be used. • **PPP:** Connected to the modem with PSTN to transfer video images. • **Transparent channel:** Connected to serial devices. A remote PC can control these devices through a network.
Setup PPP mode	PPP mode	This is only used when the work mode is PPP. The are two options: • **Active:** The DVSR will dial-up using PSTN. • **Passive**: Reserved function. The DVSR will wait for dial-in.

Setup callback mode	Callback	Only available if the work mode is PPP. There are two options: • By dialer • Preset telephone number. Reserved function.
Setup the remote IP	Remote IP	Only available if the work mode is PPP. It is defined when a remote PC is connected to the DVSR through PSTN.
Setup local IP	Local IP	Only available if the work mode is PPP. It is defined for DVSR.
Setup mask	Mask	Only available if the work mode is PPP. Remote and Local IPs are in the same network.
Setup user name, password, and verifying password	• User • Pass • Ver	Only available if the work mode is PPP. They are used when the remote PC dialup is by PSTN.
Setup phone number for remote PC	Phone	Only available if the work mode is PPP and the PPP mode is active.
Setup callback and data encryption	• Callback • Data Encryption	Only available if the work mode is PPP. Reserved functions.

Configuring the RS-232 parameters

The following procedure shows how to change the RS-232 parameters from the RS-232 menu. They can be changed in any order. When you have finished making all the changes required in this menu, save them by selecting **OK** and pressing **Enter**.

To access the RS-232 menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the RS-232 menu icon and press **Enter**. The RS-232 menu screen appears.

Example: Setting up PPP (modem) passive dialup through PSTN

In this example there are two modems. One is connected to the DVSR RS-232 port using a DCE cable. The other modem is connected to the PC COM port.

To setup the PPP dialup from the DVSR

1. **To setup the RS-232 parameters**

   In the RS-232 menu use the < and > buttons to navigate the action frame to the Baud Rate, Data Bit, Stop Bit, Parity and Flow Control options and enter their respective parameters.

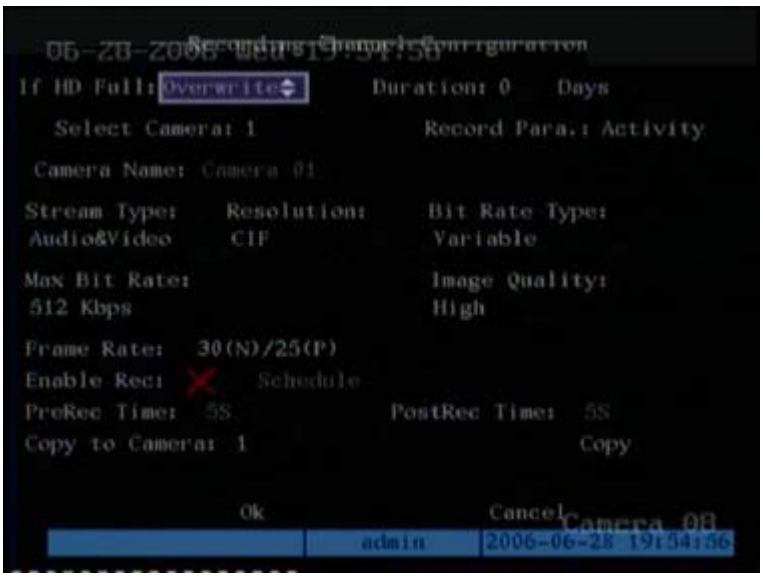
   ✍ The parameters entered must be the same as those of the modem connected to the PC.

2. **To setup the video parameters**

   a. In the Recording menu (see page 48) select the camera whose signal will to be transferred by PSTN.

   If the resolution is CIF, the recommended frame rate is 1 FPS. If the resolution is QSIF, the frame rate can be less than 4 FPS. However, the bit rate, resolution, and frame rate parameters should be modified to suit actual conditions.

Figure 41: Recording menu screen



b. Select **OK** and press **Enter** to save the modifications.

3. **To setup the DVSR modem**

a. Connect the modem to the PC serial port using a DCE cable.

b. Setup the modem using either HyperTerminal or NetTerm:

Option	Description
AT&F	Restore default parameters (usually the modem uses hard flow control)
AT&S0=1	Set modem as answer
ATE0	Do not display the input characters
ATQ1	Commit instruction and not display
AT&W&W1	Save parameters

c. Use the DCE cable to connect the modem to the DVSR RS-232 port.

To setup the PPP dialup from the PC

1. **To setup the PC modem**

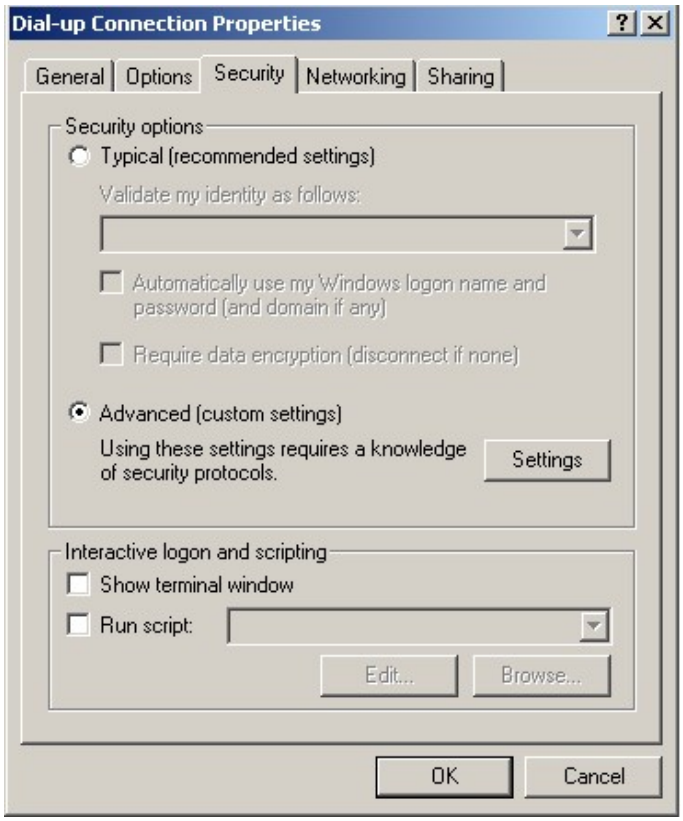
a. Connect the modem to the PC serial port using a DCE cable.

b. Setup the modem using either HyperTerminal or NetTerm:

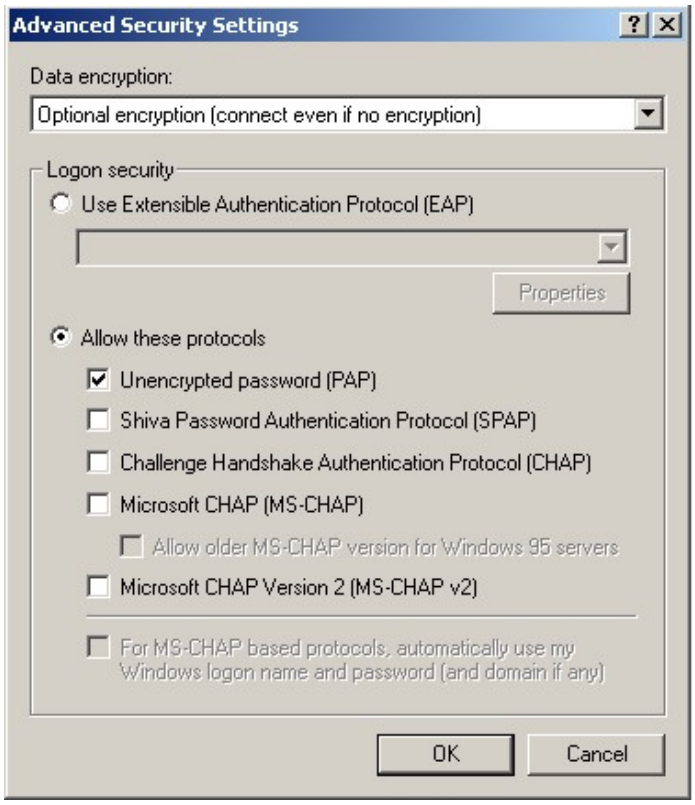
Option	Description
AT&F	Restore default parameters (usually the modem uses hard flow control)
AT&W&W1	Save parameters

2. In the PC control panel open “Network and Dial-up Connections” and click “Make New Connections”. Follow the instructions in “Dial-up to Private Network” to add a new modem (Windows 2000 is shown as an example.)

This setup requires careful attention. Please ensure that the correct security options are selected. Open the Properties window of the new dialup program and under the Security tab select "Advanced (custom settings)". Click Settings.



The "Advanced Security Settings" popup dialogue box appears , as shown below:



3. **To setup the DVSR dialup connection**

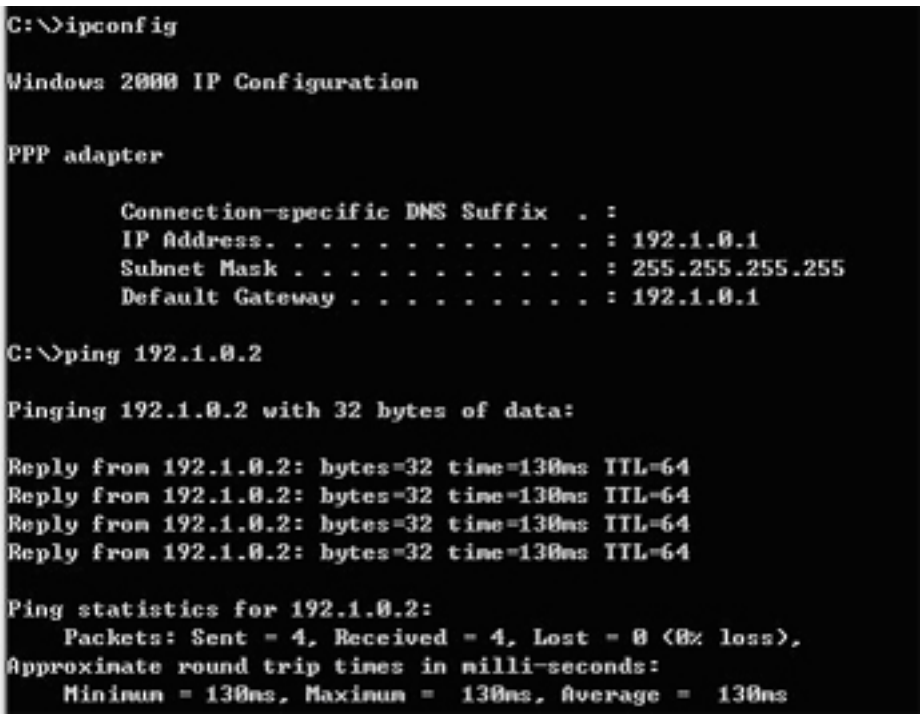
   a. Repeat step 2 but select the modem connected to the DVSR and enter the information requested. The username and password must be the same as that for the DVSR PPP setup.

   b. Start the dialup connection. During the dialup the message “Verification of Username and Password” appears. After the successful verification, the message becomes, “On process of register in PC.” The process is the same as for a common dialup connection.

   c. Following the successful dialup, the network will display the “Remote IP” address to the PC, such as 192.1.1.0.1. You can ping-link the assigned IP address through the Ping command, and can Ping-link the DVSR.

      Figure 42 shows the PC IP address and Ping-link between the PC IP address and the DVSR after a successful dialup.

Figure 42: Successful dialup



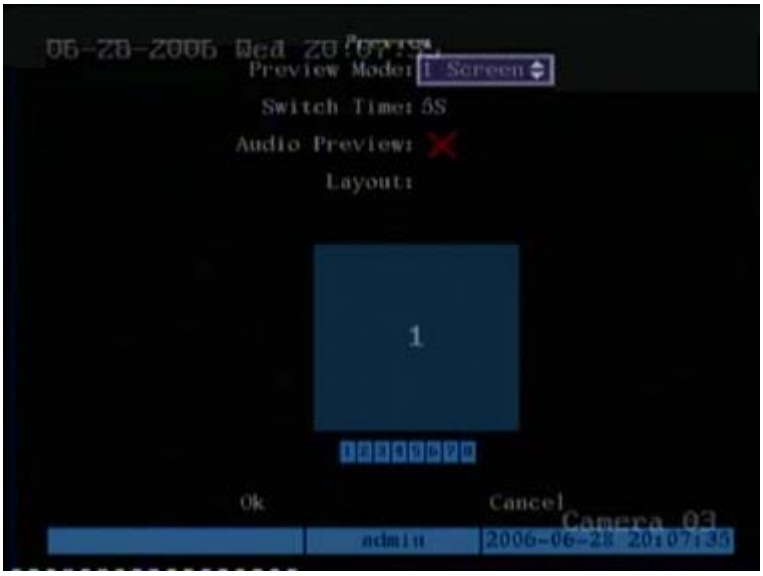
You can preview the image of 192.1.0.2 by using client-end software.

Live viewing configuration

The live viewing (Preview) menu icon 

is located in the main menu. The following screen appears when you select the Preview icon:

Figure 43: The Live menu screen



Menu description

Use this menu to:

Display Setting	You can select how many channels are viewed live at once.
Dwell Time	This is the time the DVSR will switch between channels.
Audio Preview	When a single camera is viewed live, the DVSR will play the audio of that camera.
Display Delay	When an alarm occurs the system switches to a full-screen view from the camera with the alarm, even if you are in multiscreen mode. If there is more than one alarm, the system can be set using this option to sequence between the cameras in alarm. The delay time can be between 1 and 10 seconds.
Layout	You can select the order in which cameras are displayed in live viewing (Preview) mode. The number of squares displayed corresponds with the number of channels to be displayed in live viewing mode. For example, if you have selected that four channels of an eight-channel DVSR will be displayed in live viewing mode, then four squares are displayed under Layout. See Figure 44.

Figure 44: The Layout setup in the Preview menu screen

The bar underneath the layout frame shows the order in which the cameras will be displayed in live viewing mode.

Configuring the live viewing parameters

The following procedure shows how to change the Preview (live viewing) menu options. They can be changed in any order.

To access the Preview menu

1. Press the **MENU** button and enter your user name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Preview menu icon and press **Enter**. The Live Preview menu screen appears.

Once you are in the Live Preview menu, you can change the following parameters.

To configure the live viewing parameters

1. In the Live Preview menu use the < and > buttons to navigate the action frame to the **Display Setting** list box. Use the ∧ and ∨ buttons to select the desired mode from the drop-down list.

Number of DVSR channels	Options available to select
4	I screen 4 screen
6 to 8	I screen 4 screens 6 screens 8 screens
16	I screen 4 screens 6 screens 8 screens 9 screens 12 screens 16 screens

2. Navigate the action frame to the **Dwell Time** list box. Use the ∧ and ∨ buttons to select the desired mode from the drop-down list.

Options	Description
5S	The live display will automatically switch after 5 seconds.
10S	The live display will automatically switch after 10 seconds.
20S	The live display will automatically switch after 20 seconds.
30S	The live display will automatically switch after 30 seconds.
60S	The live display will automatically switch after 1 minute.
120S	The live display will automatically switch after 2 minutes.
300S	The live display will automatically switch after 5 minutes.
Never	The live display will not automatically switch.

For example: For a 16-channel DVSR if the 4-screen live viewing mode and the 20-second switch time mode are selected, the DVSR will cycle four camera displays every 20 seconds.

3. Navigate the action frame to the **Audio Preview** edit box, and press **EDIT** to activate (✓) or deactivate (x).
4. Navigate the action frame to the **Display Delay** edit box and select the time delay required.
5. Navigate the action frame to **Layout**. To select in which order the cameras will be displayed, navigate the action frame to the first square and press the number button(s) that correspond to the number of the camera you want displayed first. Continue for each camera. The order they will be previewed is displayed in the bar underneath.

   ✍ It is recommended that you first select the layout order and then select the live viewing mode.

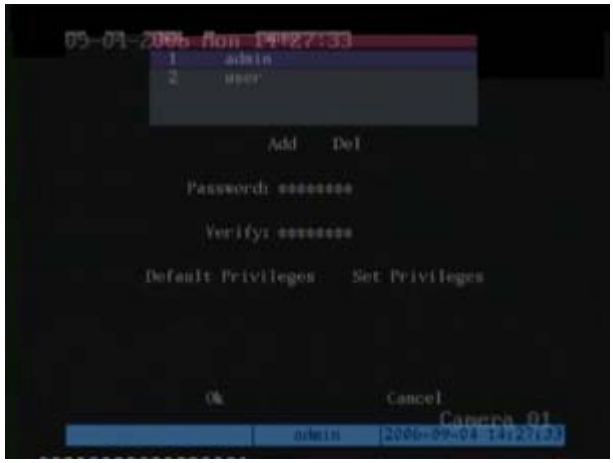
6. When you have finished changing all the menu items required in the Preview menu use the < and > buttons to navigate the action frame to **OK** and press **Enter** to save all the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

User management configuration

The User Management menu icon 

is located in the main menu. The following screen appears when you select the User icon:

Figure 45: The user management menu screen



Menu description

The DVSR is shipped with the default administrator name “admin” and the default password “3477”. The administrator name cannot be changed. Only the administrator can add and delete users and passwords. You can add up to 15 users.

When new users are added to the list, you can give them their own passwords or they can use a default password. All new users must be given user rights as these are not given automatically by the system. Users can be given local rights to do playback, remote playback, and view logs. You can also give them more extensive rights that cover both local and remote rights.

Local rights allow you to do local operations of the DVSR, such as using the front panel, the IR remote control, and the RS-485 keyboard. Remote rights allow you to use the DVSR through the network. See Table 4 for further information.

Table 4: Description of operational rights

Local rights	Description
PTZ control	Locally control PTZ
Record	Manual start/stop recording
Playback	Local playback and backup the recorded files
Parameters Setup	Locally setup the DVSR parameters
Log	Locally view the log on DVSR
Utilities	Locally upgrade firmware, format HDD, reboot DVR and shut down DVSR, etc.

Remote rights	Description
PTZ Control:	Remotely control PTZ
Record	Remote manual start/stop recording
Playback	Remote playback, download the recorded files on DVSR
Parameters Setup	Remote setup the DVSR parameters
Log	Remote views of the log on DVSR
Utilities	Remote upgrade firmware, format HDD, reboot DVSR and shut down DVSR, etc.
Voice	Client can talk with DVSR
Preview	Network live viewing
Alarm	Remote control DVSR alarm output
Local Video Out	Remote control DVSR video output
Com Control:	DVSR RS-232 transparent channel function

Configuring the user management parameters

Only the administrator can create or delete a password.

CAUTION: When you have completed the installation of the DVSR you must change the admin password. Only authorized users should be able to modify menu settings.

To access the user management menu

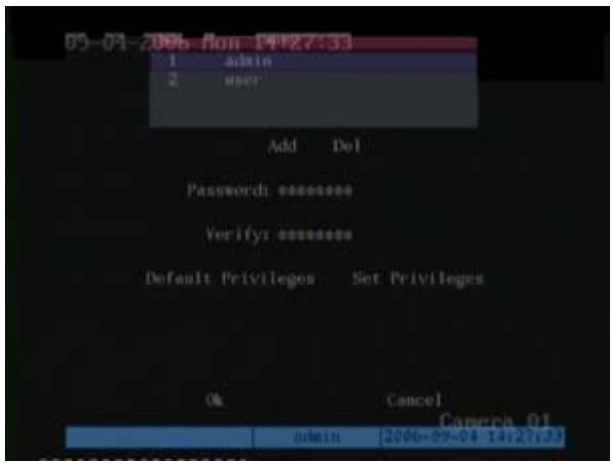
1. Press the **Menu** button and enter the admin name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the User menu icon and press **Enter**. The user management menu screen appears.

To change a user password

1. In the main menu use the < and > buttons to navigate the action frame to **User** and press **Enter**. The user management menu appears.

Only the system administrator can change passwords.

Figure 46: The user management menu screen



2. Use the ∧ and ∨ buttons to select the user whose password you want to change. The user name is highlighted.

   ✍ When a user's name is highlighted the Password and Verify boxes display ********. If there are no symbols displayed in these boxes, the selected user does not have a password.

3. Use the < and > buttons to navigate the action frame to **Password**.
4. Use the number buttons to enter the new password (you automatically enter Edit mode when you enter a number). A password can have up to 16 numbers. When finished entering the new password number, press **Enter** to exit edit mode.
5. Use the < and > buttons to navigate the action frame to **Verify** to verify the password. Enter the new password.
6. Use the < and > buttons to navigate the action frame to **OK** and press **Enter** to return to the user management menu.

   If the two passwords entered are identical, the password is saved and becomes effective immediately. However, a warning message appears if they are different,

Figure 47: The password error message

Press **Enter** to OK. You will return to the password edit box and must enter the new password again.

7. In the user management menu use the < and > buttons to navigate the action frame to **OK** and press **Enter** to save the changes. To abort the changes, select **Cancel** and press **Enter**. You will then return to the main menu.

To add a user

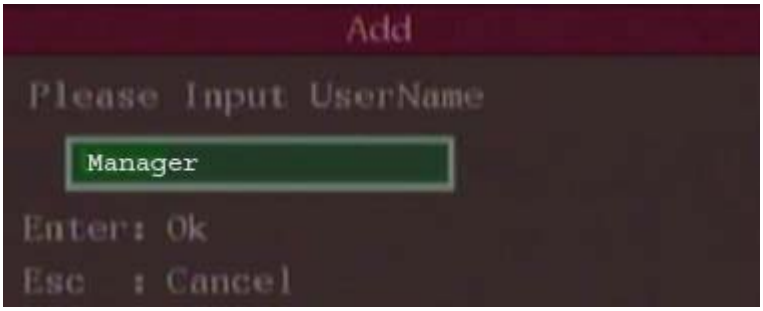
1. **To setup the name for a new user**

   a. In the main menu use the < and > buttons to navigate the action frame to the **User** icon and press **Enter**. The user management menu screen appears.

   ✍ Only the system administrator can add or delete users.

   b. Use the < and > buttons to navigate the action frame to **Add** and press **Enter** to confirm. The Add pop-up dialog box appears. The cursor is in the User Name entry box.

Figure 48: The add user dialog box



   c. Use the alphanumeric buttons to enter the new user name (see page 31 on how to enter characters) and press **Enter** to confirm. The user management menu screen appears with the new name listed.

   ✍ You can add up to 15 users.

2. **To setup the password for a new user**

   ✍ The default password of a new user is "0000". If you want to keep this password for the user, skip step 2 and continue to step 3. The same password can be used by several users.

   a. In the user's management menu use the ^ and v buttons to select the new user's name from the list. Then use the < and > buttons to navigate the action frame to **Password**.

   b. Use the number buttons to type in the password of the new user. A password can have up to 16 numbers.

   c. Use the < and > buttons to navigate the action frame to **Verify** to verify the new password. Enter the new password.

   d. Use the < and > buttons to navigate the action frame to **OK** and press **Enter** to return to the user management menu.

   If the two passwords entered are identical, the password is saved and becomes effective immediately. However, if they are different, a warning message appears. Press **Enter** to confirm. You will return to the password edit box and must enter the new password again.

   e. When finished entering the new password number, press **Enter** to exit edit mode and return to the user management menu.

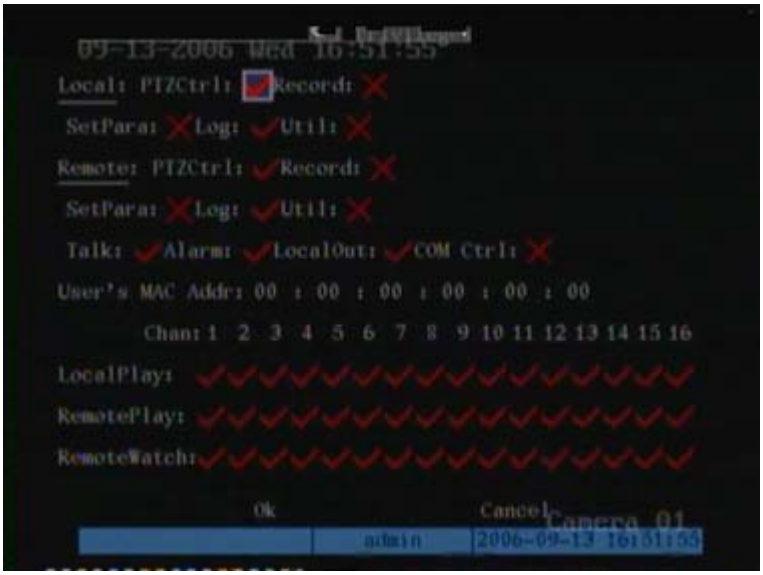
3. **To setup the rights for a new user**

   a. In the user's management menu use the ∧ and ∨ buttons to select the new user's name in the list. Then use the < and > buttons to navigate the action frame to **Default Right** and press **Enter**. The user is then allocated default rights, which allows local playback, remote playback and viewing logs.

   ✍ A new user has no user/operational rights. They must be allocated.

   b. To allocate more detailed user rights, use the < and > buttons to navigate the action frame to **Set Right** and press **Enter**. The Set Right submenu appears.

Figure 49: The Set Right submenu screen



   c. New users can be given local and remote rights. Navigate the action frame to each of the items which you want to assign to the user and press **Enter** or **EDIT** to enable (✓) or disable (×).

4. **To setup a MAC address**

   ✍ The MAC address is not the DVSR address but the PC that will access the DVSR. If you setup a MAC address, only the PC with that MAC address can access the DVSR.

   a. At the PC end, in DOS prompt, use the " ipconfig " command to get the PC MAC address (6 bytes).

   b. Enter the MAC value in the **Set Right** menu and select **OK** and press **Enter** twice to save.

   c. Use the < and > buttons to navigate the action frame to **MAC Addr.** and press **EDIT**. Use the number buttons to enter the numbers of the MAC address. Press **Enter**.

5. When you have finished modifying all the parameters required, use the < and > buttons to navigate the action frame to select **OK** and press **Enter** to save the user's rights, or select **Cancel** and press **Enter**, or press the **ESC** button, to abort. You will return to the user management menu.

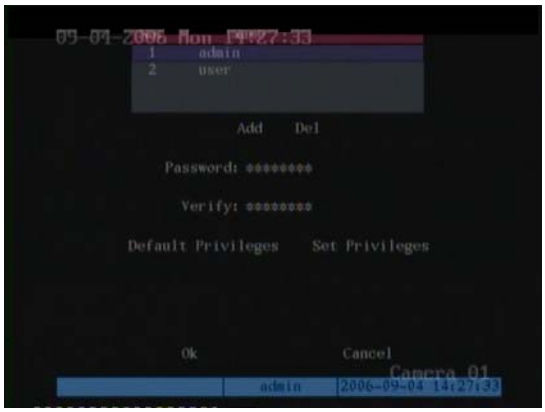
   In the user management menu select **OK** and press **Enter** to save the password and user rights, or select Cancel and press **Enter** or **ESC** to abort.

To delete a user

1. In the main menu use the < and > buttons to navigate the action frame to the **User** icon and press **Enter**. The user management menu appears.

   Only the system administrator can add or delete users.

Figure 50: The user management menu screen



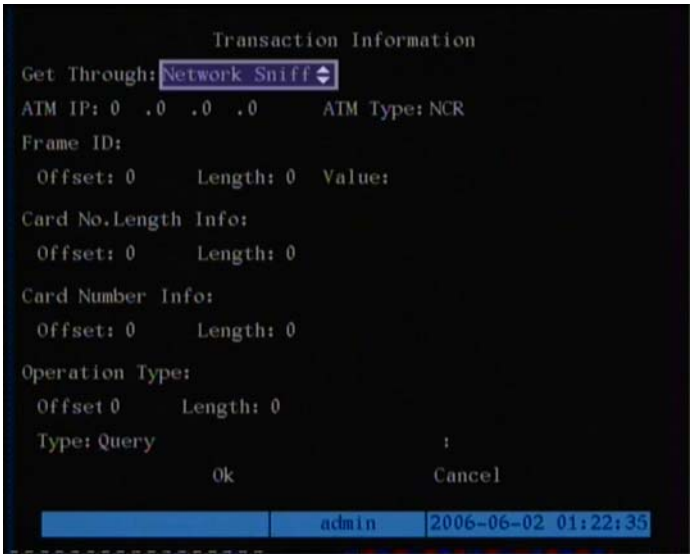
2. Select the user you want to delete.
3. Use the < and > buttons to navigate the action frame to **Del** and press **Enter**. The Delete pop-up dialog box appears.
4. Select **OK** and press **Enter** to delete the user, or select **Cancel** and press **Enter** or **ESC** to abort. You will return to the user management menu.
5. In the user management menu select **OK** and press **Enter** to save the password and user rights, or select Cancel and press **Enter** or **ESC** to abort.

Transaction information configuration

The transaction information menu icon 

is located in the main menu. The following screen appears when you select the transaction icon:

Figure 51: The Transaction Information menu screen



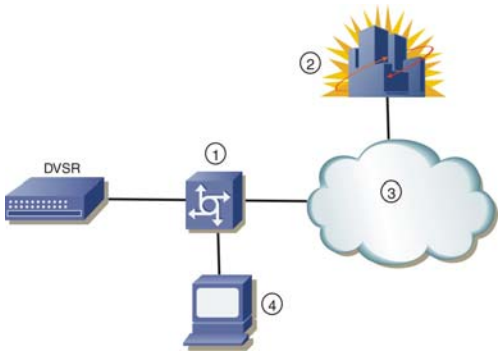
Menu description

The DVSR can actively obtain or passively receive text information from other devices linked through a network or a serial port. This information can then be overlaid on live video, recorded and played back. The function is largely used for ATMs.

The following instructions describe how to setup the parameter for different links to ATMs. ATM includes NCR, DIEBOLD, WINCOR-NIXDORF, Siemens, OVLIVETTI, FUJITSU, Hitachi, etc. The transaction types include query, withdraw, deposit, password modification and money transfer etc.

The DVSR permits four types of ATM text capture (see Table 5.)

Table 5: ATM text capturing options

Option	Description
Network sniff	The transaction information is actively sniffed through the network, such as credit card numbers. To setup the DVSR, you need to enter the following information: • IP address of ATM machine • Type of ATM machine • Start and end position, length and the content of the data message • Start and end position, and length of credit card number • Start and end position, and length of transaction type • Transaction type (for example, modify password, deposit, withdrawal) and code The network connection is:  1. Switch; 2. Bank center; 3. Network; 4. ATM When the ATM machine sends the transaction information to the bank center, the DVSR captures the data package through the network, and analyzes the data format. The DVSR will then overlay the corresponding text onto the live video.
Network receive	For future use.
Data received from ATM through the serial port	To setup the DVSR you need to enter the following information: • Type of ATM machine • Transaction type and code The network connection is:  ATM The DVSR RS-232 must be setup in transparent channel mode (see page 72). Software must be run in the ATM to send the credit card number and transaction code to the DVSR through the RS-232 port.
Command received from the ATM through the serial port	To setup the DVSR, you need to enter the following information: • Type of ATMS machine • Transaction type and code Software must be run in the ATM, to send the command to the DVSR through the RS-232 port.

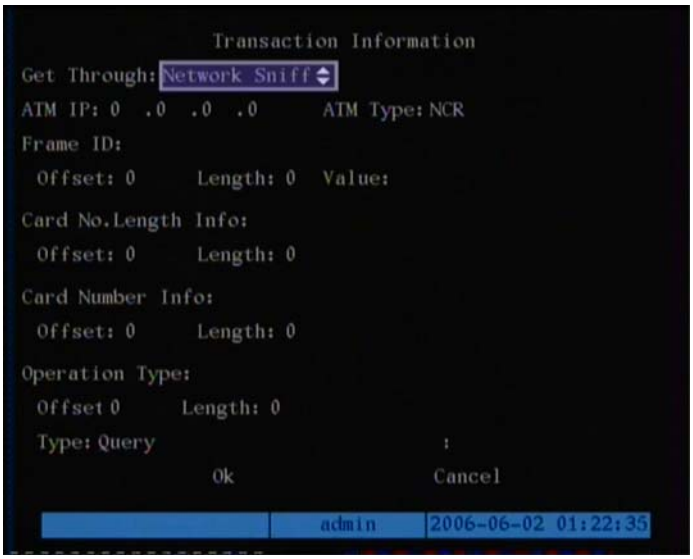
Configuring the transaction information parameters

To setup how to handle transaction information

1. In the transaction information menu use the < and > buttons to navigate the action frame to select **Get Through**. Use the ^ and v buttons to select one of the four text capture types from the drop-down list (see Table 5). Depending on the text capture type selected, the menu options listed will differ.

   a. **Network Sniff**: Use the < and > buttons to navigate the action frame to each of the six parameters (listed in Table 5) and press **EDIT**. Use the number buttons to enter the values. When you have completed entering the parameters, navigate the action frame to **OK** and press **Enter** to save.

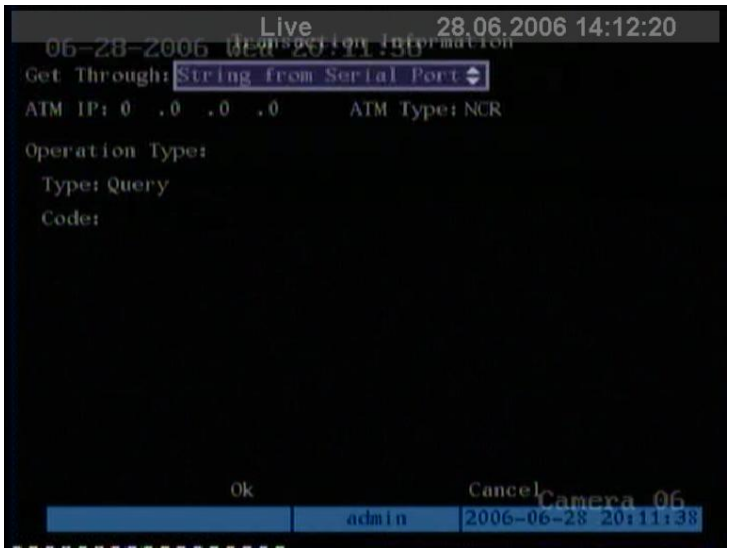
Figure 52: The ATM text capturing options – Network Sniff



   b. **Network Receive:** For future use.

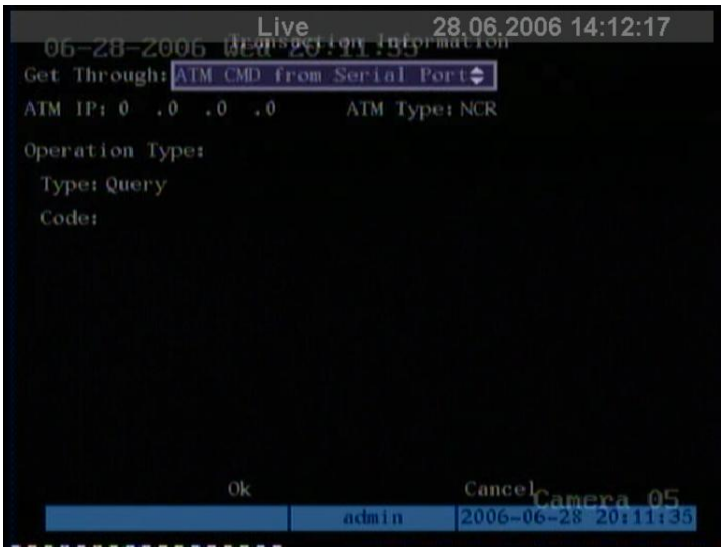
   c. **Receive data sent by ATM through serial port**: Use the < and > buttons to navigate the action frame to each parameter (listed in Table 5) and press **EDIT**. Use the number buttons to enter the value. When you have completed entering the parameters, navigate the action frame to **OK** and press **Enter** to save.

Figure 53: The ATM text capturing options – Receive data sent by ATM/POS through serial port



d. **Receive the command sent by ATM through serial port**: Use the < and > buttons to navigate the action frame to navigate the action frame to each parameters (listed in Table 5) and press **EDIT**. Use the number buttons to enter the value.

Figure 54: The ATM text capturing options – Receive the command sent by ATM/POS through serial port



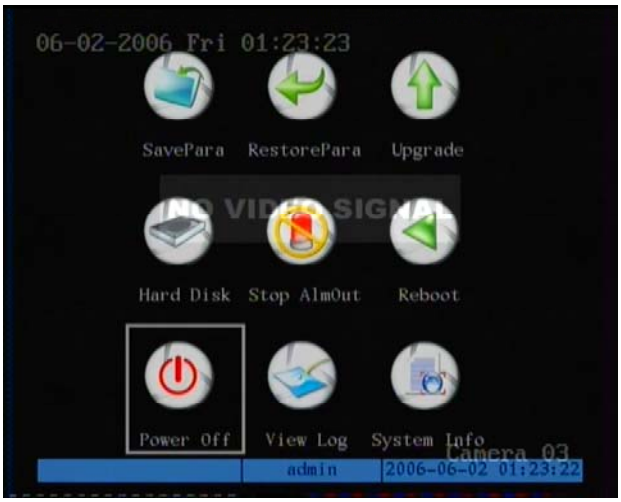
2. Navigate the action frame to **OK** and press **Enter** to save.

Utilities configuration

The utilities menu icon 

is located in the main menu. The following screen appears when you select the Utilities icon:

Figure 55: The Utilities menu screen



Menu description

Use it to:

- Save and restore parameters

  The Save Parameters option saves the factory default parameters into the FLASH memory.

  This menu item restores the factory parameters of the DVSR. However, the IP address, mask IP, Gateway and port number will not be restored.

- Upgrade firmware

  Upgrade the firmware. When you upgrade the firmware, you keep all your existing settings. Only the new features are added with their default settings.

  Please confirm that the language versions match.

- Manage the hard disk drive (HHD)

  Check the status and to format of the HDD.

- Clear alarms

  Manually clear the alarm output.

- Reboot

  Reboot the DVSR

- Power off

  Turn off the DVSR

- View the log

  View the log recorded in the DVSR . The DVSR log can be searched by:

  - Default options
  - Type
  - Date
  - Type of information and date.

  There are two types of information: major and minor.

  Major information: Operation, Alarm, Exception, All

  Minor information: There are four types.

  1. **Operation:** Power On, Shut Down, Abnormal Shut, Panel Login, Panel Logout, Panel Config, Panel File Play, Panel Time Play, Local Start Record, Local Stop Record, Panel PTZ, Panel Preview, Panel Set Time, Local Upgrade, Net Login, Net Logout, Net Start Record, Net

Stop Record, Net Start Transparent Channel, Net Stop Transparent Channel, Net Get Parameter, Net Config, Net get Status, Net Alert On, Net Alert Off, Net Reboot, BiComStart (Start Voice Talk), BiComStop (Stop Voice Talk), Net Upgrade, Net File Play, Net Time Play, Net PTZ

2. **Alarm**: External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, View Tamper Start, View Tamper Stop
3. **Exception**: Video Signal Loss, Illegal Access, Hard Disk Error, Hard Disk Full, IP Conflict, DCD Lost.
4. **All**: Includes all the minor level information types.

Information can also be searched by the start or end time of the log.

- View system information — View the DVSR system information

Configuring the utilities parameters

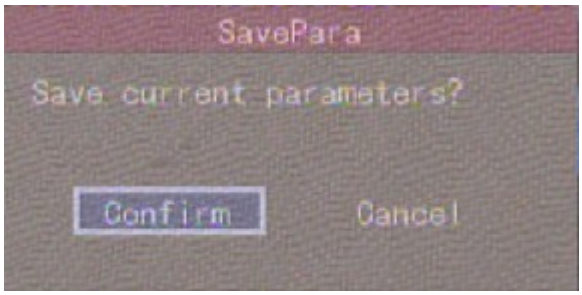
To access the utilities menu

1. Press the **Menu** button and enter the admin name and password. Press **Enter** twice. The main menu screen appears.
2. Use the < and > buttons to navigate the action frame to the Utilities menu icon and press **Enter**. The Utilities menu appears.

To save current parameters

1. In the Utilities submenu use the < and > buttons to navigate the action frame to the **SavePara** icon and press **Enter**. The SavePara pop-up dialog box appears.

Figure 56: The SavePara dialog box

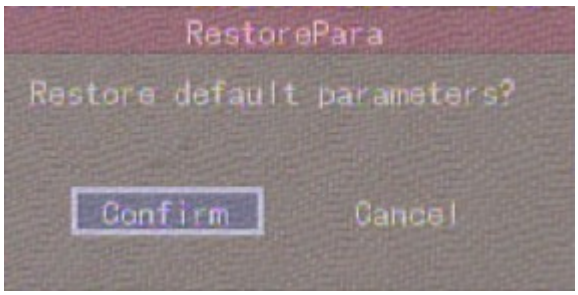


2. Select **OK** and press **Enter** to save, or select **Cancel** and press **Enter** or **ESC** to abort. You will return to the utilities menu.
3. Press **ESC** to return to the main menu.
4. Reboot the DVSR.

To restore factory default parameters

1. In the Utilities submenu use the < and > buttons to navigate the action frame to the **RestorePara** icon and press **Enter**. The RestorePara pop-up dialog box appears.

Figure 57: RestorePara dialog box



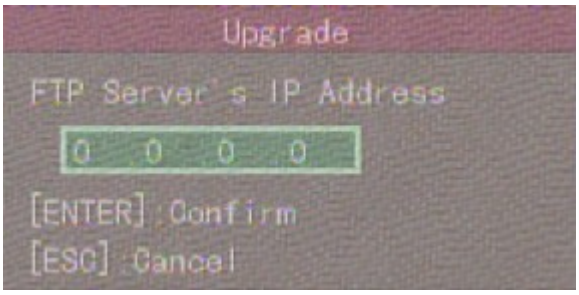
2. Select **OK** and press **Enter**. The system will automatically reboot.

CAUTION: If during rebooting the DVSR makes a lot of noise, check that the video standard is correctly set to PAL in the Display menu.

To upgrade the firmware

1. In the Utilities submenu use the < and > buttons to navigate the action frame to the **Upgrade** icon and press **Enter**.
2. In the submenu use the < and > buttons to select either **FTP** or **USB** upgrade mode.
3. If you select **FTP** mode, the FTP Upgrade dialog box appears. Press **Enter** to confirm. The DVSR will connect with the FTP server via network and download the firmware file.

Figure 58: Firmware upgrade dialog box



If you select the **USB** mode, you must connect a USB flash memory to the DVSR and confirm that the firmware file is in the root directory. Press **Enter** to start the upgrade.

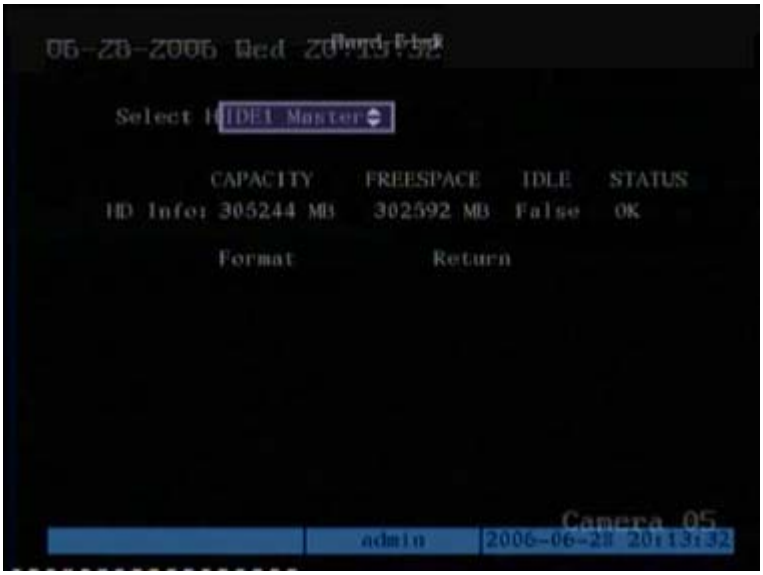
The firmware must be downloaded to the USB main directory, and the file named “digicap”.

4. After successfully upgrading the firmware, press **ESC** to return to the main menu.
5. Press **OK** to reboot the DVSR.

To manage the HDD

1. In the Utilities menu use the < and > buttons to navigate the action frame to **Hard Disk** icon and press **Enter**. The Hard Disk screen appears.

Figure 59: HHD menu screen



2. **To check the HDD status**
   a. Use the < and > buttons to navigate the action frame to the **Select HD** list box**.** Use the ^ and v buttons to select the HDD. The following information on the HDD appears:
      - The capacity
      - The free space available
      - Standby or idle
      - The status
   b. Press **Enter** to return to the Hard Disk menu.
3. **To format the HDD**

CAUTION: Before formatting the HDD, stop all recording. Once formatting is completed, you must reboot DVSR as otherwise the DVSR will not function correctly.

   a. In the Hard Disk menu use the < and > buttons to navigate the action frame to the **Select HD** list box. Use the ^ and v buttons to select the HDD.
   b. Navigate the action frame to **Format** and press **Enter**. A dialog box appears showing that formatting is in progress.
   c. When formatting is completed navigate the action frame to **Return** and press **Enter**. The Hard Disk menu appears.
4. Press **ESC** to return to the main menu.

To manually clear the alarm output

1. In the Utilities menu use the < and > buttons to navigate the action frame to the **Stop AlmOut** icon and press **Enter**.

✍ This option applies only when AlarmOut has been set to manual (see page 59.)

2. Press **ESC** to return to the main menu.

To reboot the DVSR

In the Utilities menu use the < and > buttons to navigate the action frame to the **Reboot** icon and press **Enter**.

To power off

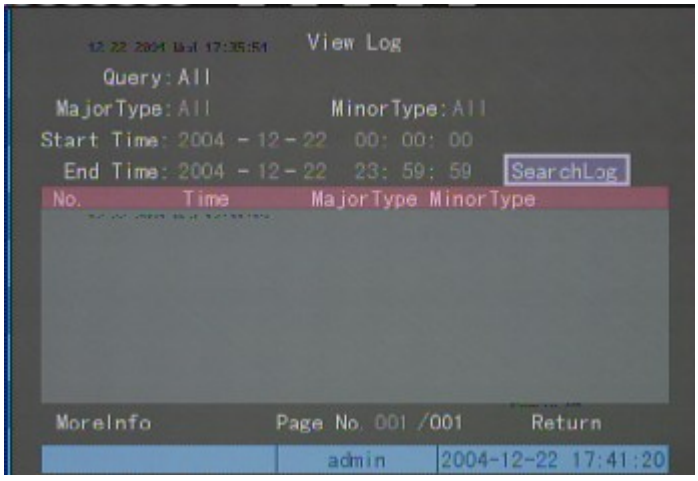
Use the < and > buttons to navigate the action frame to the **Power Off** icon and press **Enter**. Press **OK** to confirm. The unit will turn off.

✍ If you turn off the power by pressing the **POWER** button on the front panel, and the password enable option has been enabled in the Display menu (page 34), you will need to enter your password before the unit will turn off.

To view the log recorded in the DVSR

1. In the Utilities menu use the < and > buttons to navigate the action frame to the **ViewLog** icon and press **Enter**. The View Log screen appears.

Figure 60: The View Log menu screen



2. **To view the default log options**

   In the View Log menu press **Enter**. The DVSR will then list all the matched log information.

3. **To search the log information by type**

   a. In the View Log menu use the < and > buttons to navigate the action frame to the **Query** list box and select the option **By Type** to activate the **Major Type** and **Minor Type** options.

   b. Navigate the action frame to the **Major Type** list box. Use the ∧ and ∨ buttons to select the information type.

   c. Navigate the action frame to the **Minor Type** list box. Use the ∧ and ∨ buttons to select the information type.

   d. Navigate the action frame to the **Search Log** button and press **Enter** to start the search.

When the search is completed, the DVSR will list all matched log information.

e. Navigate the action frame to the **Return** button and press **Enter** to return to the Utilities menu.

4. **To search the log information by time**

a. In the View Log menu use the < and > buttons to navigate the action frame to the **Query** list box and select the option **By Time** to activate the **Start Time** and **End Time** options.

b. Navigate the action frame to the **Start Time** edit box and press **EDIT**. Use the number buttons to enter the start time. Press **Enter**.

Time is written in the 24-hour format.

c. Navigate the action frame to the **End Time** edit box and press **EDIT**. Use the number buttons to enter the end time. Press **Enter**.

d. Navigate the action frame to the **Search Log** button and press **Enter** to start the search.

When the search is completed, the DVSR will list all matched log information.

e. Navigate the action frame to the **Return** button and press **Enter** to return to the Utilities menu.

5. **To search the log information by type and date**

a. In the View Log menu use the < and > buttons to navigate the action frame to the **Query** list box and select the option **By Type&Time** to activate the type and time options.

b. Navigate the action frame to the **Major Type** list box. Use the ^ and v buttons to select the information type.

c. Navigate the action frame to the **Minor Type** list box. Use the ^ and v buttons to select the information type.

d. Navigate the action frame to the **Start Time** edit box and press **EDIT**. Use the number buttons to enter the start time. Press **Enter**.

e. Navigate the action frame to the **End Time** edit box and press **EDIT**. Use the number buttons to enter the end time. Press **Enter**.

f. Navigate the action frame to the **Search Log** button and press **Enter** to start the search.

When the search is completed, the DVSR will list all matched log information.

g. Navigate the action frame to the **Return** button and press **Enter** to return to the Utilities menu.

For example: To view an alarm log

1. In the View Log menu use the < and > buttons to navigate the action frame to the **Query** list box and select the option **By Type** to activate the **Major Type** and **Minor Type** options.
2. Navigate the action frame to the **Major Type** list box. Use the ^ and v buttons to select **Alarm**.
3. Navigate the action frame to the **Minor Type** list box. Use the ^ and v buttons to select one of the following information types: All, External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, View Tamper Start, View Tamper Stop
4. Navigate the action frame to the **Search Log** button and press **Enter** to start the search.

5. When the search is completed, the DVSR will list all matched alarm information. In the list box on screen, the information includes: Index, Occur Time, Major Type, Minor Type, Panel User, Net User, Host Address, Para. Type, Channel No, HDD No, Alarm In and Alarm Out.

   Press the “More Info“ button for more information.

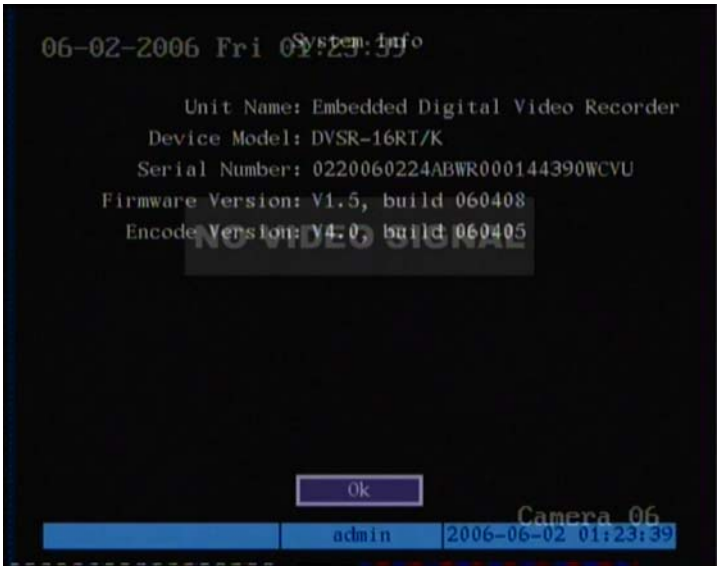
   Press the “Page No.” button to select a page number and view more information.

6. Navigate the action frame to the **Return** button and press **Enter** to return to the Utilities menu.

To view DVSR system information

1. In the Utilities menu, navigate the action frame to the **System Info** icon and press **Enter**. The System Info dialog box appears. See Figure 61.

Figure 61: The System Info dialog box



2. Use the < and > buttons to navigate the action frame to the **OK** button and press **Enter** to 2eturn to the Utilities menu.

3. Press **ESC** to return to the main menu.

Viewing live and recorded files over the web

You can watch both live images as well as playback images over the web. You can also talk to operators on site where the DVSR is located to discuss what is seen onscreen.

To view live images over the web

1. Launch Internet Explorer (version 5.5 or later) on any local Internet connected PC or laptop. Enter the IP address of the DVSR unit. The default value is 192.168.1.10

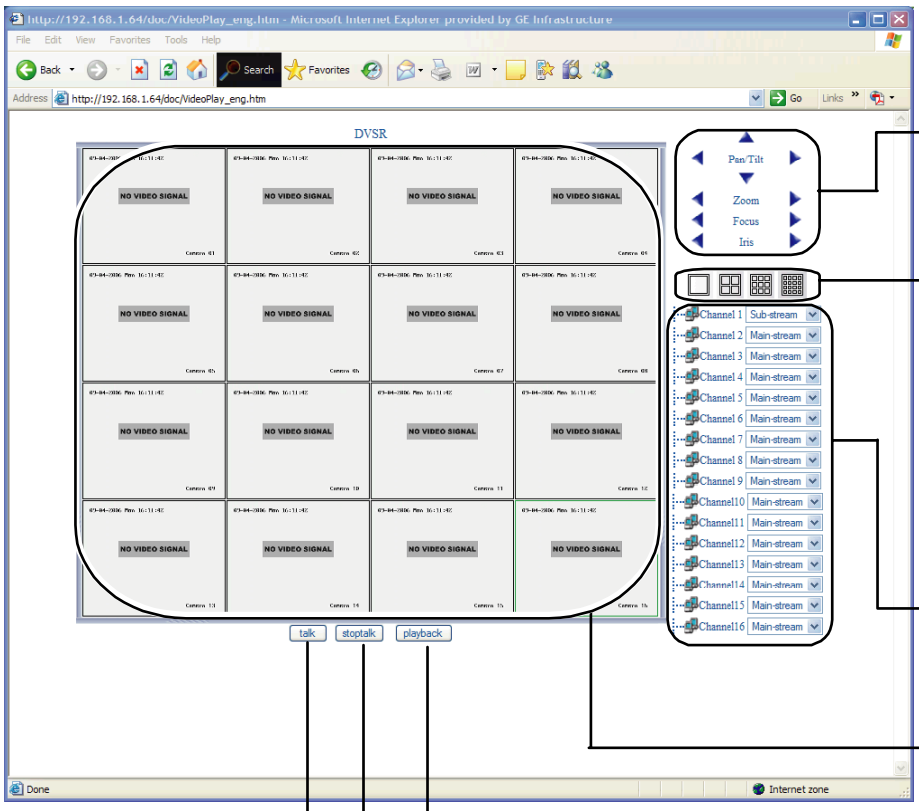
   The Login dialog box appears. See Figure 62.

   Your user settings must be setup to allow you to access the DVSR by the web. See *Configuring the user management parameters* on page 81.

Figure 62: Login screen

2. Enter the admin name and password. The default admin name is “admin” and password “3477”. Also enter the DVSR port number. The default value is 8000. Click **Login**. The default live view window appears. See Figure 63.

Figure 63: Default live view window



If the selected camera has PTZ control, these buttons can be used to control PTZ.

Click one of these multiscreen buttons to display up to 16 cameras onscreen.

Select the stream quality.

- **Main stream**: Image seen has the same quality as that of the recording unit.
- **Sub stream**: A lower quality image to accomodate for smaller bandwidth.

Camera windows. The cameras can be organized in any order.

(In this example there are no cameras connected to the DVSR so the message "No video Signal" is displayed)

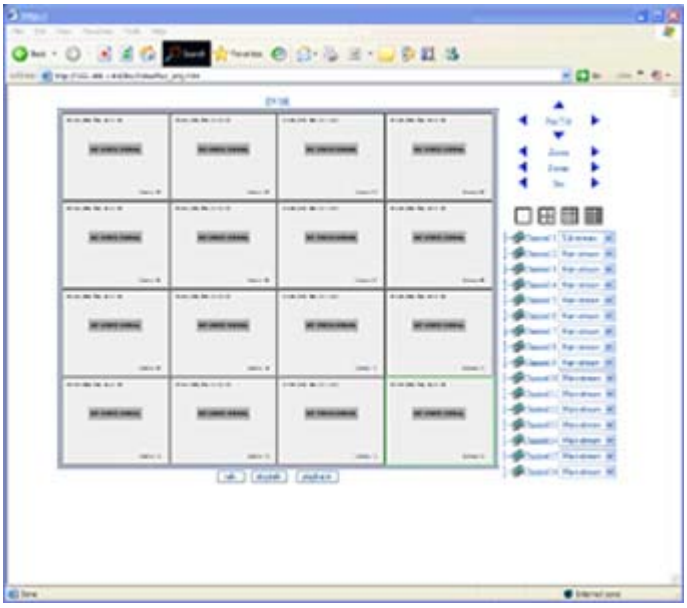
talk: Start conversation with the DVSR operator by VOIP.

stoptalk: Stop conversation with the DVSR operator.

playback: Select playback option

3. Click one of the multiscreen buttons to select how many camera windows you want to see onscreen.
4. Click the camera windows to select where you want a specific camera to appear. The window frame becomes green.
5. In the right-hand column select the camera you want displayed in that window and the stream type.
6. Repeat steps 4 and 5 for each camera. You will see each camera image displayed onscreen. See Figure 64.

Figure 64: 16-camera multiscreen



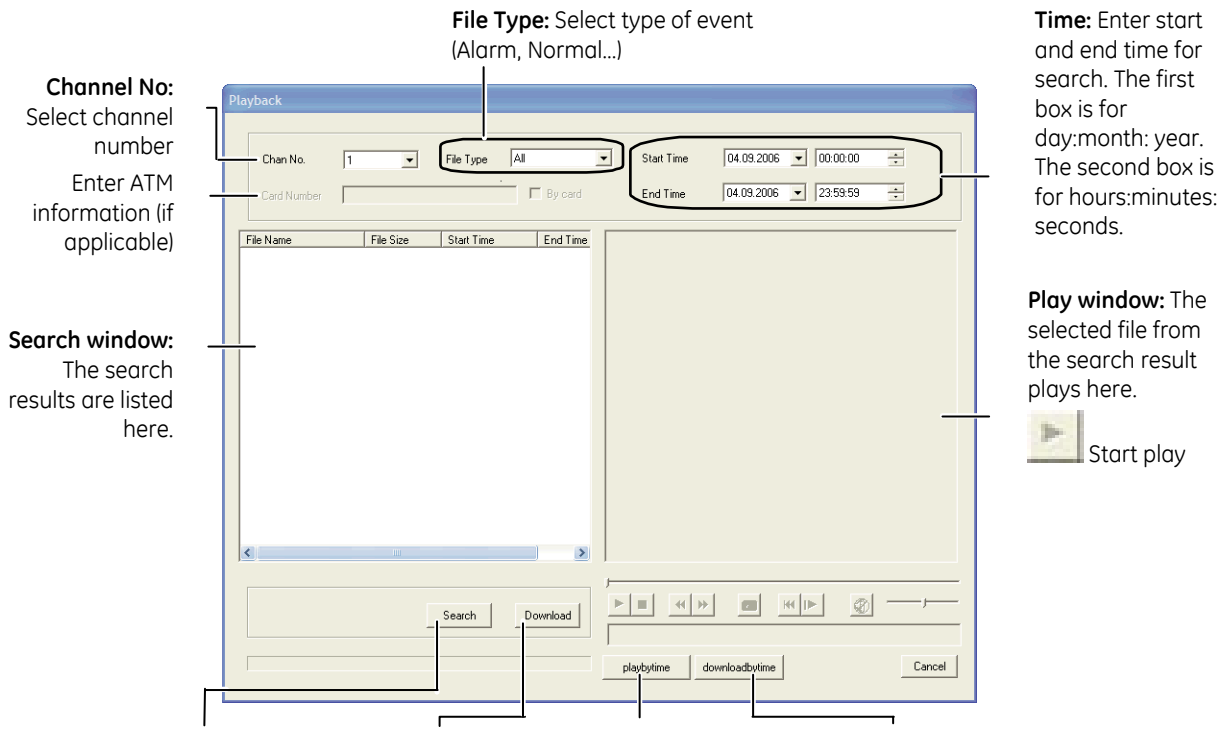
None of the cameras in the example shown in are connected to the DVSR. As a result the message "No Video Signal" is displayed.

7. To talk to an operator at the DVSR, click the **talk** button. When you are finished talking, click the **stoptalk** button. Both parties need to have microphones and loudspeakers installed.
8. To exit, click the "×" in the top right corner of the window.

To playback a recorded file over the web

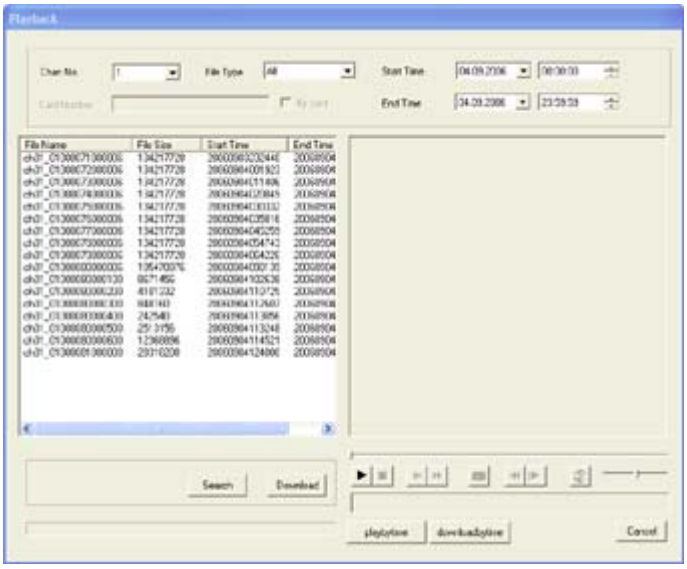
1. Setup the web live view on your PC screen for all the cameras you want to see. See the preceding section for instructions.
2. Click the **playback** button on the bottom of the live view window. The Playback window appears. See Figure 65.

Figure 65: Playback window



3. Select the channel, file type, and time you want to search.
4. Click **Search**. The results of the search are listed in the search window. See Figure 66.

Figure 66: Results of a search



5. With your mouse, select the file you want to playback by clicking it. The recording plays in the play window.
6. To exit playback, click **Cancel**.

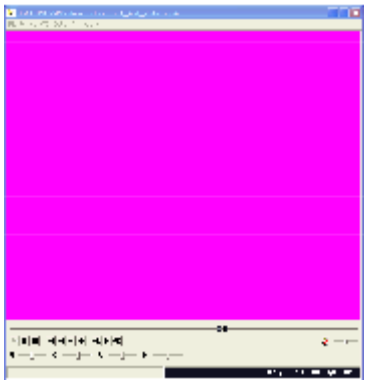
Using FilePlayer

On the CD provided with the DVSR is a software tool, FilePlayer, which allows the simple playback of recorded files as well as the confirmation of the files' watermarks. The watermark allows you to confirm that a file has not been tampered with. You can provide your suppliers or the police with this tool so that they can easily playback and check recorded files. For files that must be verified, you will also need to provide the DVSR MAC and device number to your supplier or the police if a detailed verification of the file is required.

To playback a file using FilePlayer

1. Open FilePlayer on your PC by double-clicking the tool icon. The FilePlayer window opens. See Figure 67.

Figure 67: FilePlayer window



2. Choose File > Open and select the file you want to open from the list shown.
3. Open the file. A dialog box appears asking if you want to verify this file. See Figure 68.

Figure 68: Confirming verification request

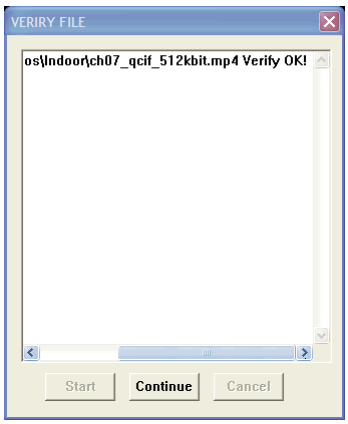
4. If you do not need to verify the file, click **Cancel**. Playback starts immediately.

   or

   If you do want carry out a simple verification of the file, click **OK**. The verification window appears.
5. To verify the file, click **Start**. The verification information appears in the window. Click **Continue** to start playback. See Figure 69.

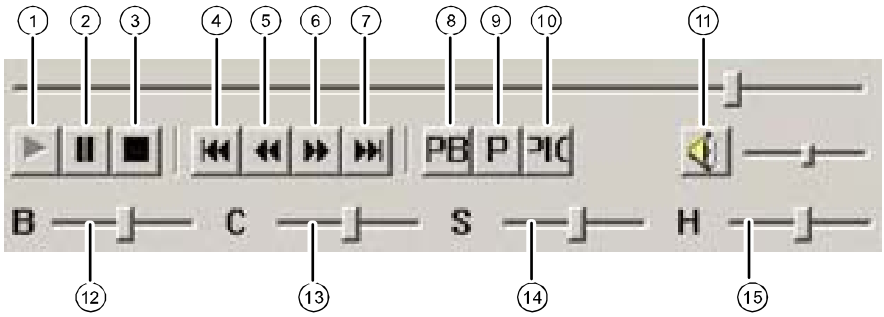
   If you do not need to verify the file, click **Cancel**. Playback starts immediately.

Figure 69: FilePlayer verification window



6. Click the buttons underneath the playback image to control playback. See Figure 70.

Figure 70: File playback



1	Start play	8	Move one frame back
2	Pause play	9	Move one frame forwards
3	Stop play	10	Capture picture
4	Return to beginning	11	Audio
5	Slow play	12	Brightness control
6	Fast play	13	Contrast control
7	Go to end	14	Saturation control
		15	Hue control

7. To exit, click the "×" in the top right corner of the window.

To check the watermark of a recorded file

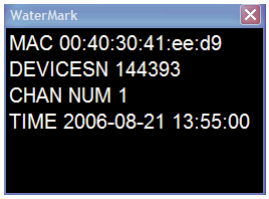
1. Open the file using FilePlayer.
2. Choose Verify > GetWaterMark. See Figure 71.

Figure 71: Request file verification dialog box

A dialog box appears with the details about the file. See Figure 72.

If there is no MAC or device number information shown, or if it is incorrect, this indicates that the file has been tampered with.

Figure 72: Watermark information



Troubleshooting and support

This section provides information to help you diagnose and solve various problems that may arise while configuring or using your GE Security product and offers technical support contacts in case you need assistance.

Troubleshooting your system

Problem	Possible reasons
POWER LED on front panel does not light up when the unit is turned on, and the fan does not work.	• Unit is not connected to the power supply. Check that the power cable is plugged into the unit. • Unit is not switched on. Check that the power switch on the back panel is switched on.
The power cable is plugged in and power is switched on. The POWER LED on front panel is green but fan does not work.	• Front panel on/off power button is not working. • The fan is broken. The unit must be sent in for repair. Please contact your local supplier.
The DVSR continuously reboots after start up, and makes an audible alarm every 10 seconds.	• The wrong firmware has been used in the upgrade. • Unit has hardware problems and must be sent in for repair. Please contact your local supplier.
When using V_{OUT} no images appear on the monitor when DVSR is turned on.	• The cable connected to the monitor is damaged. Check the cable. • Unit has hardware problems. Please contact your local supplier.
The system cannot find the hard disk in reboot process.	• The HDD cable is damaged. • The power cable of the hard disk is not connected. • The HDD is damaged. Please contact your local supplier.
No response from the HyperTerminal interface.	• The Baud rates of the unit and PC are different. • RS-232 cable is damaged. • The serial port of the PC is damaged. • RS-232 port of the DVSR is damaged. Please contact your local supplier.
DVSR cannot control the PTZ through the RS-485 port.	• RS-485 cable is incorrectly connected or is damaged. Check the cable. • PTZ parameter error. PTZ settings are incorrect and should be checked. • RS-485 port of DVSR is damaged. Please contact your local supplier.
Client software cannot view the DVSR live image.	• Network error. Please contact your IT manager. • DVSR incorrectly configured (for example, incorrect IP, port number, username or password, etc). • Old version of client software. Please contact your local supplier.

Contacting technical support

For assistance installing, operating, maintaining, and troubleshooting this product, please contact your local supplier.

Our web address is: www.gesecurity.net

Be ready at the equipment before calling for technical support.

Appendix 1: Specifications

Video compression	MPEG-4AVC
Live resolution	PAL: 704*576, NTSC: 704*480
Playback resolution	QCIF/CIF/2CIF/DCIF/4CIF
Video input	4/8/12/16
Video input interface	BNC (Electrical Level: 1.0 Vp-p, resistance: 75 Ω)
Video output	1 channel, BNC (Electrical level: 1.0 Vp-p, resistance: 75 Ω)
Frame rate	PAL: 1/16—25FPS, NTSC: 1/16—30FPS
Stream type	Video/Video&Audio
Max bit rate	32 Kbps-2Mbps, self-defined
Audio input	4/8/12/16
Audio input interface	BNC (Linear Electrical Level, Resistance: 1 KΩ)
Audio output	1 channel, BNC (Linear Electrical Level, Resistance: 600 Ω)
Audio compression	OggVorbis
Audio compression rate	16 Kbps
Voice talk	1 channel, BNC (Linear electrical level, resistance: 1 kΩ)
Communication interface	1 RJ-45 10M/100M self-adaptive Ethernet interface 1 RS-232 interface 1 RS-485 interface
Keyboard interface	2 RJ-45
HDD IDE interface	4 IDE interface, can support 8 IDE HDD and each HDD can support 2000GB
USB interface	1 USB interface, USB1.1
VGA interface	1 VGA interface
External alarm in	8/16
Relay output	4
Power supply	90 to 135 VAC or 180 to 265 VAC, 47 to 63 Hz
Power consumption	20 to 42 W (without HDD)
Operating temperature	-10 to +50°C
Relative humidity	10 to 90%
Size	Standard 450 x 450 x 95mm
Weight	≤8.5 kg (without HDD)

For DVSR-XXRT, only 1st, 5th, 9th and 13th channels can support 2CIF/DCIF/4CIF, other channels can only support QCIF/CIF.

PAL: 176 x 144(QCIF), 352 x 288(CIF), 704 x 288(2CIF), 528 x 384(DCIF), 704 x 576(4CIF);

NTSC: 176 x 120(QCIF), 352 x 240(CIF), 704 x 240(2CIF), 528 x 320(DCIF), 704 x 480(4CIF).

Appendix 2: HDD capacity calculation

This section explains how to calculate the total capacity needed by each DVSR according to video recording type and video file storage time.

To calculate the total capacity needed by a DVSR

1. To calculate the storage capacity/channel in Mbyte per hour

   $$\text{Video time requirement} = \frac{\text{bit rate in Kbit/s} \times 3600}{8 \times 1024}$$

2. To calculate the storage capacity/channel in Mbyte per channel

   Storage capacity = video time requirement x recording time per day x number of days video will be kept.

Appendix 3: DVSR default menu settings

Menu	Setting	Sub Setting	Value
Display			
	Language		English
	Video Standard		PAL
	Menu Transparency		3:1
	Unit Name		DVSR
	Device ID		01
	Require Password		Yes
	Screen Saver		5 minutes
	VGA		1024 x 768 at 60 Hz
	DST		Off
	Date		dd-mm-yyyy
Camera			
	Pre Selected Camera		#1
	Name		Always: Camera & #
	Brightness		Mid (128)
	Contrast		Mid (128)
	Hue		Mid (128)
	Saturation		Mid (128)
	OSD		Opaque&Steady
	Privacy Mask		Off
		Area	None
	Camera Tampering		Normal
		Area	All
		Policy	All day (24-hr) and all days of the week
		Handle Method	Screen Warning On (other warnings listed are all Off)
	Video Loss	Handle	
		Policy	All day (24-hr) and all days of the week
		Handle Method	Screen warning on (other warnings listed are all off)
	Motion Detection		Level 1
		Area	All
		Policy	All day (24-hr) and all days of the week
		Handle Method	Screen Warning On (other warnings listed are all Off)
Recording			
	If HD Full		Overwrite
	ADM		30 days
	Pre Selected Camera		#1
	Record Parameter		Normal
		Stream type	Video
		Resolution	CIF
		But Rate	Variable

Menu	Setting	Sub Setting	Value
		Max Bit Rate	320 Kbps
		Quality	High
		Frame Rate	6fps
		Event	
		Stream Type	Video&Audio
		Resolution	CIF
		But rate	Fixed
		Max Bit Rate	1Mbps
		Frame Rate	25fps
	Enable Rec.		Yes
	Schedule		All day
		Rec Type	AllTime
		PreRec Time	5 seconds
		PostRec Time	5 seconds
Network			
	NIC Type		10/100Mbit Auto
	IP Address		192.168.1.10
	Subnet Mask		255.255.255.0
	Port		8000
	DNS		0.0.0.0
	Gateway		0.0.0.0
	MCastIP		0.0.0.0
	Remote Host IP		0.0.0.0
	Port		0
	httpPort		80
	PPoE		Off
	User		blank
	Password		blank
Alarms			
	Pre Selected Alarm In		#1
	Alarm Type		N.O.
	Alarm Handling		Handle
		Policy	
		Alarm #1 Alarm #2	Camera #1 Camera #2
		Schedule	All day and all days
		Handle Method	Screen warning on (other warnings listed are all off)
		PTZ Linkage	Pre-selected camera = #1
			All other Subs = Off
	Pre Eelected Alarm Out		#1
		Delay Time	5 seconds
		Alarm Out Time	Transparent mode
Notifications			
	HardDiskFull		No warning
	NTSC/PAL		Yes

Menu	Setting	Sub Setting	Value
	IllegalAccess		No warning
Notifications (cont.)	IPAddrConflict		No warning
	Network Failure		No warning
	HardDiskError		Yes
PTZ			
	Pre Selected Camera		#1
	Baud Rate		9600
	Data Bit		8
	Stop Bit		1
	Parity		None
	FlowCrtl		None
	Protocol		GE Security
	PTZ Address	Camera #1 Camera #2	Address #0 Address #1
	Dome Menu Setup		Able to click
RS-232			
	Baud Rate		115.2
	Data Bit		8
	Stop Bit		1
	Parity		None
	FlowCrtl		None
	Mode		Console
	PPP Mode		Active
	Callback		By dialer
	Remor IP		0.0.0.0
	Local IP		0.0.0.0
	Mask		0.0.0.0
	User		Blank
	Password		Blank
	Phone		Blank
	Callback		Off
	Data Encryption		Off
Preview (Live)			
	Display Settings		4 on 4ch. 8 on 8ch. 16 on 16ch.
	Dwell time		Never
	Audio Preview		Off
User			
	admin		Password: 3477
	Local	PTZCtrl	Yes
		Record	Yes
		SetPara	Yes
		Log	Yes
		Util	Yes

Menu	Setting	Sub Setting	Value
	Remote	PTZCtrl	Yes
User (cont.)		Record	Yes
		SetPara	Yes
		Log	Yes
		Util	Yes
		Talk	Yes
		Alarm	Yes
		LocalOut	Yes
		ComCtrl	Yes
		User's Mac Address	00.00.00.00.00.00
		Local Play	All cameras
		RemotePlay	All cameras
		RemoteView	All cameras
	user	Password: 0000	
	Local	PTZCtrl	Yes
		Record	No
		SetPara	No
		Log	Yes
		Util	No
	Remote	PTZCtrl	Yes
		Record	No
		SetPara	No
		Log	Yes
		Util	No
		Talk	Yes
		Alarm	Yes
		LocalOut	Yes
		ComCtrl	No
		User's Mac Address	00.00.00.00.00.00
		Local Play	All cameras
		RemotePlay	All cameras
		RemoteView	All cameras
Transact			
	Get Through		String from serial port
	ATM Type		Kalatel
Utilities			
	Upgrade		USB

Index