

Honeywell

HRSD4

Four-Channel Digital Video Recorder

User Guide

User Guide

Revisions

Issue	Date	Revisions
Rev A	11/07	New document
Rev B	11/07	Minor text changes
Rev C	11/07	More text changes; deleted "DVR" from product name variable; added FCC certificate, RoHS, explanation of Graphical Symbols, WEEE; changed figure 3-32
Rev D	12/07	Changes to Appendix F: Specifications
Rev E	12/07	Added CE Compliance section to the front matter (p.5)
Rev F	02/08	Added a Caution to the "Connecting the Power Cord" section of the Installation chapter.

FCC Compliance Statement

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

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

CE Compliance

This equipment has been tested in accordance with the following directives:

- 2006/95/EC The Low Voltage Directive
- 2004/108/EC The Electromagnetic Compatibility Directive

WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Explanation of Graphical Symbols



This symbol alerts the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



This symbol alerts the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

	WARNING RISK OF ELECTRIC SHOCK DO NOT OPEN	
WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

WEEE Compliance

WEEE (Waste Electrical and Electronic Equipment)

Correct Disposal of this Product (Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

RoHS



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About This Document

This document introduces the HRSD Series Digital Video Recorder and describes how to install, configure, and operate the DVR.

Overview of Contents

This document contains the following chapters and appendixes:

- *Chapter 1, Introduction*, introduces the HRSD4 DVR, lists the features, and gives a functional overview of its components.
- *Chapter 2, Installation*, describes how to install the DVR and connect the system components.
- *Chapter 3, Configuration*, provides an overview of the front panel controls and LCD displays, and provides instructions for configuring the DVR. It also describes how to configure the infrared remote control.
- *Chapter 4, Operation*, describes live monitoring, recording video and audio, playing recorded video, and searching for recorded video.
- *Appendix A, USB Hard Disk Drive Preparation*, describes how to use Microsoft® Windows 2000/98/XP/Vista operating systems to prepare the USB hard disk drive for computers.
- *Appendix B, Text-In Query Examples*, gives examples how to search for text-in data.
- *Appendix C, Troubleshooting*, provides answers for common technical questions.
- *Appendix D, Connector Pinouts*, describes I/O and RS485 connector pinouts.
- *Appendix E, Map of Screens*, provides a graphical illustration of the menu screens.
- *Appendix F, Specifications*, lists the DVR specifications.

About Cautions and Warnings

Caution A caution advises users that failure to take or avoid a specified action could result in loss of data or damage to the equipment.

WARNING! A warning advises users that failure to take or avoid a specified action could result in physical injury to a person or irreversible damage to the equipment.

Important Safeguards

1. Read Instructions
All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions
The safety and operating instructions should be retained for future reference.
3. Cleaning
Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.
4. Attachments
Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock, or other personal injury.
5. Water and/or Moisture
Do not use this equipment near water or in contact with water.
6. Ventilation
Place this equipment only in an upright position. The equipment has an open-frame Switching Mode Power Supply (SMPS), which can cause a fire or electric shock if anything is inserted through the ventilation holes on the side of the equipment.
7. Accessories

Do not place this equipment on an unstable cart, stand, or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.



This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

8. Power Sources

This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.

9. Power Cords

Operator or installer must remove power, BNC, alarm, and other connections before moving the equipment.

10. Lightning

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

11. Overloading

Do not overload wall outlets and extension cords to avoid the risk of fire or electric shock.

12. Objects and Liquids

Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

13. Servicing

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

14. Damage Requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or the plug has been damaged
- If liquid is spilled or objects have fallen into the equipment
- If the equipment has been exposed to rain or water
- If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
- If the equipment has been dropped or the cabinet damaged
- When the equipment exhibits a distinct change in performance—this indicates a need for service.

15. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

16. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

17. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

18. Correct Batteries

WARNING! Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

19. Operating Temperature

An operating temperature range is specified (see *Appendix F, Specifications*) so that the customer and installer may determine a suitable operating environment for the equipment.

20. Elevated Operating Ambient Temperature

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the specified operating temperature range.

21. Reduced Air Flow

Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

22. Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

23. Circuit Overloading

Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

24. Reliable Earthing (Grounding)

Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Typographical Conventions

[you can delete the conventions that don't apply to your document]

This document uses the following typographical conventions:

Font	What it represents	Example
Swiss721 Lt BT	Keys on the keyboard	Press Ctrl+C
Lucida	Values of editable fields that are mentioned in the body text of the document for reference purposes, but do not need to be entered as part of a procedure	The Time field can be set to Hours:Minutes:Seconds.
	Text strings displayed on the screen	The message Password Updated displays.
Lucida Bold	Words or characters that you must type. The word "enter" is used if you must type text and then press the Enter or Return key.	Enter the vehicle ID number: Goldwing
	Values of editable fields that appear in tables (on first mention)	The Background Recording field can be set to one of the following values: Enabled Disabled
Swiss721 BT bold	Menu titles and other items you select	Double-click FVC Tool icon.
	Buttons you click to perform actions	Click Exit to close the program.
<i>Italic</i> (any font)	Placeholders: words that vary depending on the situation	<i>vehicle ID</i>
<i>Palatino italic</i>	Cross-reference to external source	Refer to the <i>FareView Player - Image Viewing/Archiving Tool Application Note</i> .
	Cross-reference within document	See <i>Introduction</i> .

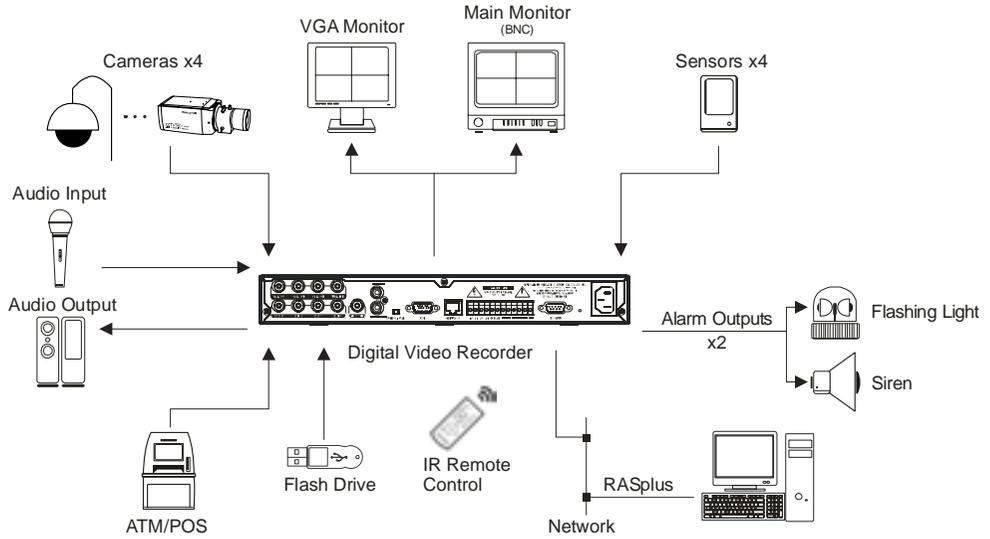
Introduction

Features

Your color digital video recorder (DVR) provides recording capabilities for four camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 4 Composite Video Input Connectors
- Compatible with Color (NTSC or PAL) and B&W (CCIR and EIA-170) Video Sources
- Multiple Search Engines (Date/Time, Calendar, Event)
- Records up to 120/100 Images per Second (NTSC/PAL)
- "Loop-Through" Video Connectors
- Continuous Recording in Disk Overwrite Mode
- 1 USB 1.1 Port
- Continues Recording while Transmitting to Remote Site, and during Playback
- User-friendly Graphical User Interface (GUI) Menu System
- Various Recording Modes (Time, Pre-event, Alarm, Motion, Text, and Panic)
- Audio Recording and Playback
- Alarm Connections Include: Input, Output, and Reset Input
- Built-in Alarm Buzzer
- Live or Recorded Video Access via Ethernet or Modem
- Infrared Remote Control
- Time Synchronization using industry standard protocol
- Self-diagnostics with automatic notification including hard disk drive S.M.A.R.T. protocols

Figure 1-1 Typical DVR installation



Technical Overview

In addition to replacing both a time-lapse VCR and a multiplexer in a security installation, your DVR has many features that make it much more powerful and easier to use than even the most advanced VCR.

This DVR converts analog NTSC or PAL video to digital images and records them on a hard disk drive. Using a hard disk drive allows you to access recorded video almost instantaneously; there is no need to rewind tape. The technology also allows you to view recorded video while the DVR continues recording video.

Digitally recorded video has several advantages over analog video recorded on tape. There is no need to adjust tracking. You can freeze frames, fast forward, fast reverse, slow forward, and slow reverse without image streaking or tearing. Digital video can be indexed by time or events, and you can instantly view video after selecting the time or event.

Your DVR can be set up for event or time-lapse recording. You can define times to record, and the schedule can change for different days of the week and for user-defined holidays.

The DVR can be set to alert you when the hard disk drive is full, or it can be set to record over the oldest video once the disk is full.

Your DVR uses a proprietary encryption scheme making it nearly impossible to alter video.

You can view live video, search for images, and control your DVR remotely by connecting via external modem or Ethernet. There is a USB port you can use to upgrade the system or copy video clips to USB-IDE hard disk drives, USB CD-RW drives, or flash drives.

Installation

Package Contents

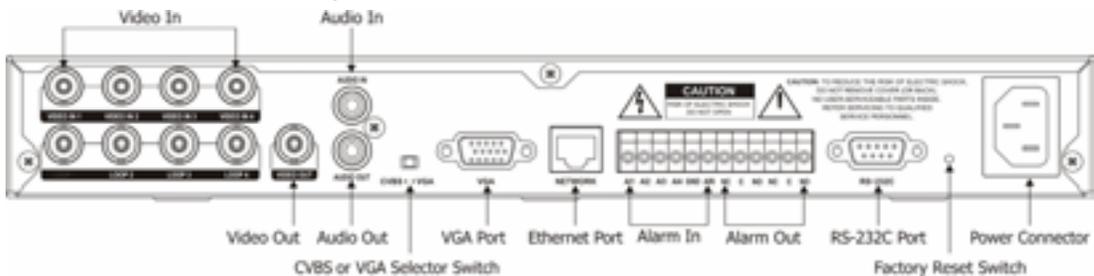
The package contains the following:

- Digital Video Recorder
- Power Cord
- User Guide (This Document)
- Multilingual User Guide (RASplus CD-ROM)
- RASplus User Guide
- Multilingual RASplus Software and User Guide (RASplus CD-ROM)
- DVRNS Server Software and User Guide (RASplus CD-ROM)
- Infrared Remote Control

Required Installation Tools

No special tools are required to install the DVR. Refer to the installation manuals for the other items that make up part of your system.

Figure 2-1 4-Channel DVR Rear Panel



Connecting the Video Source

Connect the coaxial cables from the video sources to the BNC Video In connectors.

Figure 2-2 Video Input Connectors



Connecting the Loop Through Video

If you would like to connect your video source to another device, you can use the Loop BNC connectors.

Figure 2-3 Video Loop Through Connectors



Note The Loop BNC connectors are auto terminated. Do NOT connect a cable to the Loop BNC unless it is connected to another terminated device because it will cause poor quality video.

Connecting Audio

Note It is the user's responsibility to determine if local laws and regulations permit recording audio.

Your DVR can record audio. Connect the audio source to Audio In as needed using an RCA jack. Connect Audio Out to your amplifier.

Figure 2-4 Audio In and Out Connectors

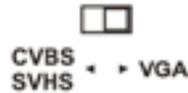


Note The audio input is from an amplified source. The DVR does not have amplified audio output, so you will need a speaker with an amplifier.

Setting Unit for CVBS or VGA Output

Set the switch to **CVBS** or **VGA** for monitor output. Select **CVBS** for spot monitor, and select **VGA** for RGB monitor.

Figure 2-5 CVBS/VGA Switch



Note The DVR might not support some LCD monitors or some monitors don't support Multi Sync.

Note You cannot use spot monitor output and VGA output at the same time.

Note Set the **CVBS** or **VGA** selector switch before turning on the DVR. You cannot change the setting while the unit is running.

Connecting the Monitor

Connecting the Spot Monitor

Connect the SPOT monitor to the Video Out connector.

Figure 2-6 Video Out Connectors



Note For SPOT monitor Output, set the CVBS/VGA selector switch to **CVBS**.

Connecting the RGB Monitor

A VGA port is provided for RGB monitor output. Connect the RGB monitor to the VGA connector if required. Connect an RGB cable with a DB-15 (male) connector, which is usually less than 10 feet, to the DVR connector.

Figure 2-7 VGA Connector



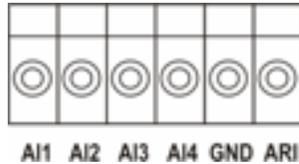
Note For RGB monitor output, set the CVBS/VGA selector switch to **VGA**.

Connecting Alarm Inputs

Note To make connections on the Alarm Connector Strip, press and hold the button and insert the wire in the hole below the button. After releasing the button, tug gently on the wire to make certain it is connected.

To disconnect a wire, press and hold the button above the wire and pull out the wire.

Figure 2-8 Alarm Input Connector Strips



AI 1 to 4 (Alarm In)

You can use external devices to signal the DVR to react to events. Mechanical or electrical switches can be wired to the AI (Alarm In) and GND (Ground) connectors. The threshold voltage for NC (Normally Closed) is above 4.3V and should be stable at least 0.5 seconds to be detected. The threshold voltage for NO (Normally Open) is below 0.3V. See *Chapter 3, Configuration* for configuring alarm input.

GND (Ground)

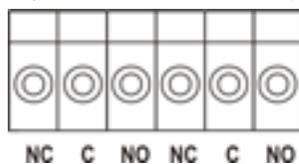
Connect the ground side of the Alarm input to the GND connector.

ARI (Alarm Reset In)

An external signal to the Alarm Reset In can be used to reset both the Alarm Out signal and the internal buzzer of the DVR. Mechanical or electrical switches can be wired to the ARI (Alarm Reset In) and GND (Ground) connectors. The threshold voltage is below 0.3V and should be stable at least 0.5 seconds to be detected. Connect the wires to the ARI (Alarm Reset In) and GND (Ground) connectors.

Alarm Out

Figure 2-9 Alarm Output Connector Strips



The DVR can activate external devices such as buzzers or lights. Mechanical or electrical switches can be wired to the NC (Normally Closed) and C (Common) connectors or NO (Normally Open) and C (Common) connectors. The amount of current permitted is up to 0.5 A for 125 VAC, 1 A for 30 VDC. See *Chapter 3, Configuration* for configuring alarm output.

Connecting to the Network Port

The DVR can be networked using the 10/100Mb Ethernet connector. Connect a Cat5 cable with an RJ-45 jack to the DVR connector. The DVR can be networked with a computer for remote monitoring, searching, configuration and software upgrades. See [Chapter 3, Configuration](#) for configuring the Ethernet connections.

Figure 2-10 Network Connector

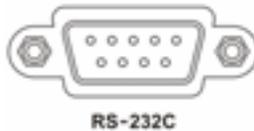


Caution This Network Port is not designed to be connected with cables or wires that are intended for outdoor use.

Connecting to the RS-232C Port

An RS232 port is provided to connect an external modem for remote monitoring, configuration, and software upgrades, and to connect a remote control keyboard. Use a modem cable with a DB-9S (female) connector to connect to the DVR. See [Chapter 3, Configuration](#) for configuring the modem.

Figure 2-11 RS-232C Connector

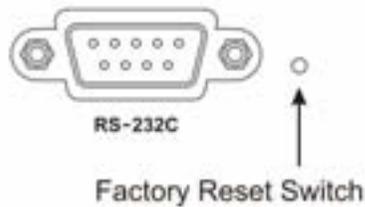


Note The DVR is not supplied with a modem cable, and many modems are not supplied with cables. Ensure that you have the correct cable when purchasing the modem.

Factory Reset

The DVR has a Factory Reset switch to the right of the RS-232C connector. Use this switch only on the rare occasions that you want to return all the settings to the original factory settings.

Figure 2-12 Factory Reset Switch



Caution When using the Factory Reset, you lose any setting you have made. If you want to use the same DVR name registered on the DVRNS server after initializing the system using the factory reset, you need to contact the DVRNS server manager. Please record and save the help desk information before factory reset.

To reset the unit, you need a straightened paperclip.

25. Turn off the DVR.
26. Turn on the DVR again.
27. While the DVR is initializing, poke the straightened paperclip into the unlabeled hole to the right of the RS-232C connector.
28. Hold the switch until all the LEDs on the Front Panel are lit.

Note When the DVR successfully resets to factory defaults, all the LEDs on the Front Panel flash three times.

29. Release the reset switch. All of the settings are now at the original settings it had when the DVR left the factory.

Connecting the USB Port

A USB port on the front panel is provided to connect external hard disk drives, CD-RW drives or flash drives for archiving video. Position the external hard disk drive close enough to the DVR so that you can make the cable connections, usually less than 6 feet. Use the USB cable provided with the hard disk drive or CD-RW to connect it to the DVR.

Figure 2-13 USB Connector

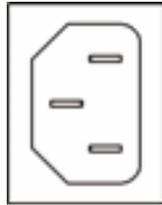


See *Chapter 4, Operation* for how to archive video to an external USB-IDE hard disk drive, USB CD-RW drive, or USB flash drive. You also can upgrade the software via USB port.

Connecting the Power Cord

Connect the power cord to the DVR and then to the wall outlet.

Figure 2-14 Power Cord Connector



WARNING! ROUTE POWER CORDS SO THAT THEY ARE NOT A TRIPPING HAZARD. ENSURE THAT THE POWER CORD WILL NOT BE PINCHED OR ABRADED BY FURNITURE. DO NOT INSTALL POWER CORDS UNDER RUGS OR CARPET.

THE POWER CORD HAS A GROUNDING PIN. IF YOUR POWER OUTLET DOES NOT HAVE A GROUNDING PIN RECEPTACLE, DO NOT MODIFY THE PLUG.

DO NOT OVERLOAD THE CIRCUIT BY PLUGGING TOO MANY DEVICES IN TO ONE CIRCUIT.

Caution In noisy electrical environments, use an Uninterruptible Power Supply (UPS) to minimize the potential of damage to the DVR from undesired power related hazards. Connect the UPS between the DVR and the AC voltage supply.

Your DVR is now ready to operate. Please continue to *Chapter 3, Configuration* and *Chapter 4, Operation*.

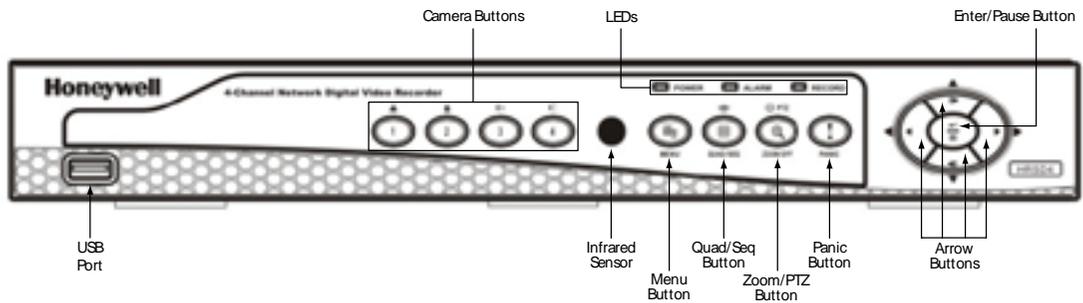
3

Configuration

Note Your DVR should be completely installed (see *Chapter 2, Installation*) before proceeding.

Front Panel Controls

Figure 3-1 DVR Front Panel



Many of the buttons on the front panel have multiple functions. The table *DVR Front Panel Controls* on page 32 describes each button and control. Take a few minutes to review the descriptions. Use these buttons to initially set up your DVR and for daily operations.

Note A separate **ALARM** button is not provided. Press any key on the front panel or remote control to reset alarm output, including the internal buzzer, when the alarm is activated. However, when you are in the menu or PTZ mode, you have to exit the menu or PTZ mode first to reset alarm output.

Note The sensor for the infrared remote control is to the left of the **MENU** button on the front of the VCR. Ensure that nothing blocks the sensor, or the remote control will not function properly.

Table 3-1 DVR Front Panel Controls

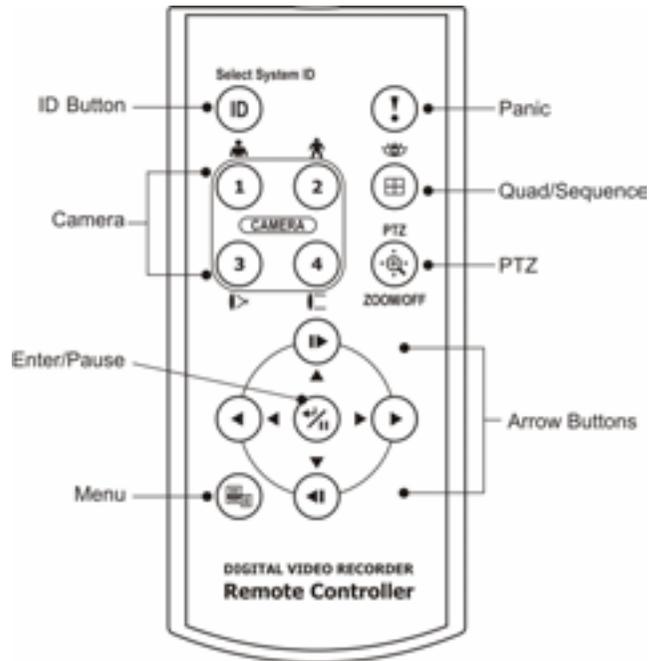
Control	Function
Camera Buttons (1 to 4)	<p>Press an individual camera button to display a selected camera full screen.</p> <p>Use the camera buttons to enter passwords (which contain only numbers).</p> <p>Use the camera buttons in the PTZ mode in the following ways:</p> <ul style="list-style-type: none"> • Camera 1 zooms in • Camera 2 zooms out • Camera 3 controls near focus • Camera 4 controls far focus
Power LED	The POWER LED lights when the unit is On .
ALARM LED	The ALARM LED lights when alarm output or internal buzzer is activated.
RECORD LED	The RECORD LED lights when the DVR is recording. When the DVR is in the panic recording mode, the RECORD LED flickers.
MENU Button	<p>Press Menu to enter the Main Menu. You need to enter the administrator password to access the Main Menu.</p> <p>Press Menu again to close the current menu or setup dialog box.</p> <p>You can also use Menu to display the Search Menu in the playback mode, and load the PTZ Menu in the PTZ mode.</p>
QUAD/SEQUENCE Button	<p>Press Quad/Sequence to toggle between quad (2x2) display mode and sequence mode.</p> <p>Quad/Sequence also loads a Preset when the DVR is in PTZ mode.</p>

Table 3-1 DVR Front Panel Controls

Control	Function
ZOOM/PTZ Button	<p>Press Zoom/PTZ to open the Pan/Tilt/Zoom screen, where you can control properly configured cameras.</p> <p>In the PTZ mode, press PTZ to enter the digital zoom mode. While in the digital Zoom mode, press PTZ again to return to the live monitoring mode.</p> <p>If a PTZ device is not installed, you can press PTZ to directly enter the digital zoom mode.</p> <p>In the playback mode, press PTZ to enter the digital zoom playback mode.</p>
Note	<p>When the DVR is in the PTZ mode, a white line appears around the image.</p> <p>In the digital zoom mode and digital zoom playback mode, a small bright box lays over the image. The box indicates the area to be enlarged.</p>
PANIC Button	<p>Press Panic to activate panic recording. The DVR records video regardless of the time-lapse or event recording schedules.</p> <p>Press Panic again to release the panic recording.</p>
Note	<p>When the DVR is in the Panic recording mode, the RECORD LED flickers and  displays on each camera screen.</p>
ENTER/PAUSE Button	<p>Use Enter/Pause to select a highlighted item or complete an entry that you have made.</p> <p>In Live Monitoring mode, press Enter/Pause to freeze the current live screen. The screen displays *. Press Enter/Pause again to return to the live monitoring mode.</p> <p>In the Playback mode, press Enter/Pause to pause the video. The screen displays . Press Enter/Pause again in the pause mode to return to the live monitoring mode.</p> <p>In the Digital Zoom mode, press Enter/Pause to enlarge a specific area of the screen. A  displays on the enlarged screen.</p>
Arrow Buttons	<p>Use the arrows to navigate through menus and GUI. You can also use them to control Pan and Tilt in the PTZ mode, and to move the specific area of screen that you want to enlarge in the digital zoom mode.</p> <p>In the playback mode, the up arrow to select the next image, and the down arrow to select the previous image.</p> <p>In the playback mode, press  to play video backward at high speed. Press  again to toggle the playback speed from , , and . The screen displays , , and  respectively. Press  to play video forward at high speed. Press  again to toggle the playback speed from , , and . The screen displays , , and  respectively.</p> <p>Entering Playback mode from Live Monitoring mode can be protected by a user password.</p>

Connecting the Infrared Remote Control

Figure 3-2 Infrared Remote Control



If the Unit ID for the DVR is set to **0**, you can control that DVR with the infrared remote control without any additional changes. (See [Figure 3-7](#), the System Information Change Screen, in this chapter for further information on setting the Unit ID.)

If the Unit ID is set from **1** to **4**, you must to press **ID** on the remote control and number button (1 to 4) in order to control that DVR. The  icon displays when the DVR can be controlled by the infrared remote control.

If you set the Unit ID of two or more DVRs to **0**, you can control those DVRs with the infrared remote control at the same time.

Note The functions of the infrared remote control buttons are identical to the functions of the front panel buttons.

Turning on the Power

Connecting the power cord to the DVR turns on the unit. The unit takes approximately 60 seconds to initialize.

Initial Unit Setup

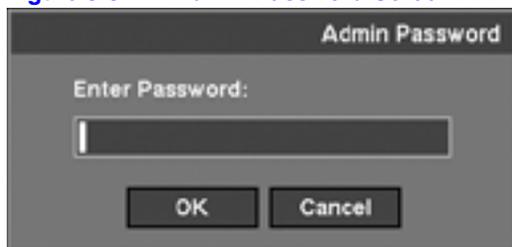
Before using your DVR for the first time, you need to establish the initial settings. This includes items such as:

- time and date (see *Setting up the Date and Time* on page 41)
- display language (see *Changing the Language Setting* on page 39)
- camera (see *Configuring Input Devices* on page 50)
- audio (see *Setting the DVR to Record Audio* on page 59)
- remote control (see *Communicating with External Devices Using the RS-232C Port* on page 60)
- record mode (see *Configuring Recording Settings* on page 61)
- network (see *Setting Up the DVR Network Connections* on page 82)
- password (see *Changing Network Passwords* on page 83 and *Changing the Administrator Password* on page 95)

You can set up these items using various screens and dialog boxes.

1. Press the **Menu** button on the front panel or remote control to enter the setup screens. The Admin Password screen appears.

Figure 3-3 Admin Password Screen



2. Enter the password by pressing the appropriate combination of camera number buttons and then . The factory default password is 4321. There are two Setup screens: Quick Setup and Normal Setup. The factory default is the Quick Setup screen.

Setting Up Your DVR Using the Quick Setup Screen

Figure 3-4 Quick Setup Screen



The Quick Setup screen allows you to set up the most commonly used features of your DVR. Use the arrows to move through the options. Press  to make your selections.

Table 3-2 Quick Setup Screen Options

Option	Action
Quick Setup On/Off	Highlight the field beside Quick Setup and press  to toggle between On and Off . If you select Off , use the Normal Setup screen to change the settings.
Recording Speed/Quality	Highlight the first field beside Recording Speed/Quality , and select recording speeds from as few as 0.5 ips (images per second) to as many as 30 ips (25 ips for PAL). Highlight the second field beside Recording Speed/Quality , and select from Very High , High , Standard , and Low .
Note	The DVR has a maximum recording speed of 30 ips per camera. However, the recording speed may not be achieved when averaged over all cameras.
Audio	Highlight the field beside Audio Recording and select either On or Off . When it is set to On , Camera 1 is automatically associated with the audio input.
Note	It is the user's responsibility to determine if local laws and regulations permit recording audio.
Sequence Dwell Time	Highlight the field beside Sequence Dwell Time and select from 3 to 60 seconds for the camera sequence dwell time.

Table 3-3 Quick Setup Screen Options

If you select...	A screen opens where you can...
System Information	Set up system information
Storage	Check the storage status
Camera	Set up camera information
Network Setup	Set up network information
Password	Change passwords
Date/Time	Set the time and date
System Shutdown	Shut down the DVR. When shutting down the DVR, you need to confirm that you want to shut down the unit by entering an administrator password.

Note Quick Setup mode is released automatically when the user changes the DVR settings remotely using the RASplus (Remote Administration Software) program.

Setting Up Your DVR Using the Normal Setup Screen

Press **MENU** to enter the setup screen. If the Quick Setup screen appears, turn it off as described above (see *Quick Setup On/Off* on page 36). The Normal Setup screen gives you access to all the HRSD4 DVR setup screens.

Figure 3-5 Normal Setup Screen

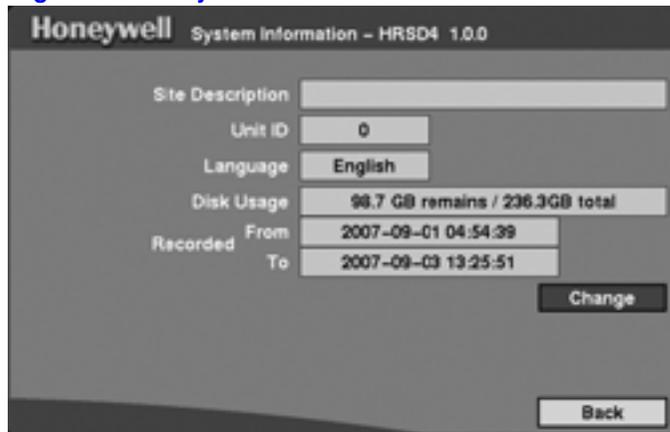


Changing the System Information

In the System Information Change screen, you can:

- name the site location
 - assign a unit ID number
 - select the language to use
 - upgrade the software
1. Highlight **System Information** in the Normal Setup screen and press . The System Information screen appears.

Figure 3-6 System Information Screen



2. Highlight **Change** and press . The System Information Change screen appears.

Figure 3-7 System Information Change Screen



Changing the Site Description

1. Highlight the field beside **Site Description** and press . A virtual keyboard appears.

Figure 3-8 Virtual Keyboard



2. Use the arrows on the front of the DVR to highlight the first character you want in the Site Title and press . That character appears in the title bar and the cursor moves to the next position. You can use up to 20 characters, including spaces, in your title.
 - Press to toggle between the upper and lower case keyboards.
 - Press to backspace.
 - Press to delete entered characters.
3. Highlight **Close** and press the button once you have entered your title.

Changing the Unit ID

The Unit ID number is used to identify the unit when it is networked with other DVRs. You cannot use the same number for two or more DVRs that are within the same network.

1. Highlight the field beside **Unit ID** in the System Information Change screen, then press .
2. Change the number by highlighting it and using the **Up** and **Down** arrows to increase and decrease the number.

Note

When the Unit ID is set to **0**, the infrared remote control can control that DVR without any additional operations.

When the Unit ID is set from **1 to 4**, you must press **ID** on the remote control (1 to 4) to control that DVR.

When the Unit ID is set to **5** or higher, the infrared remote control can not control any DVRs.

Changing the Language Setting

1. Highlight the field beside **Language** in the System Information Change Screen and press . A drop-down menu appears listing the available languages.
2. Highlight the desired language and press .

Upgrading the Software

Note Only the system administrator can upgrade the software.

The boxes beside the H/W Version and S/W Version fields display the hardware and software version of the DVR.

Note You can upgrade the software only in the System Information Change screen.

1. To upgrade the software, connect to the DVR the USB device containing the upgrade package file.
2. Highlight **Upgrade...** and press . The System Upgrade screen appears (see *System Upgrade Screen* on page 40). The screen displays the upgrade package file name.

Note If no hard disk drives are installed in the DVR, the **Upgrade...** button is disabled.

Note If the file system on the USB-IDE hard disk drive or USB flash drive is *NOT* FAT16 or FAT32 format, you need to format device using FAT16 or FAT32 format.

Figure 3-9 System Upgrade Screen



3. Select **Start**, and enter the Admin password to start the upgrade.
The system restarts automatically after completing the upgrade. The software starts running after restarting the unit.

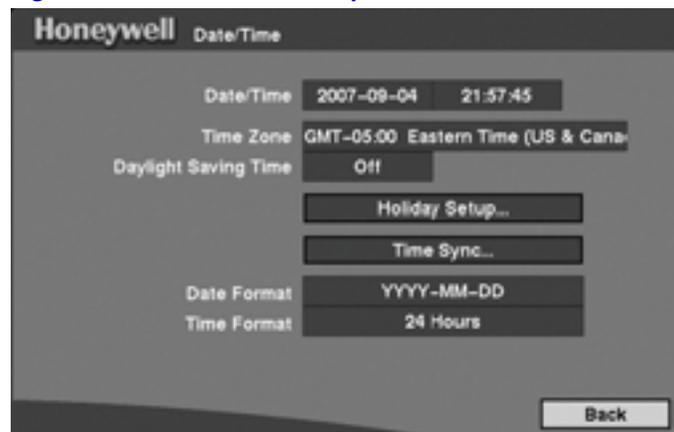
Note You cannot upgrade the software during clip copy.

4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting up the Date and Time

Highlight **Date/Time** in the Main menu and press . The Date/Time setup screen appears.

Figure 3-10 Date/Time Setup Screen



Caution If you set a date and time that is older than some of your recorded images, then any images with dates and times later than the new setting will be deleted.

Changing the Date

1. Highlight the first field beside **Date/Time** in the Date/Time setup screen and press . The individual sections of the date highlight.
2. Adjust the date using the **Up** and **Down** arrows.
3. Press  when you have the correct date.

Changing the Time

1. Highlight the second field beside **Date/Time** in the Date/Time setup screen and press the  button. The individual sections of the time highlight.
2. Adjust the numbers using the arrow buttons.
3. Press  when you have the correct time.

Note The clock does not start running until you have restarted the unit, so you may wish to set the time last.

Changing the Time Zone

Highlight the field beside **Time Zone** in the Date/Time setup screen and press . From the list that appears, select the time zone you are in and press .

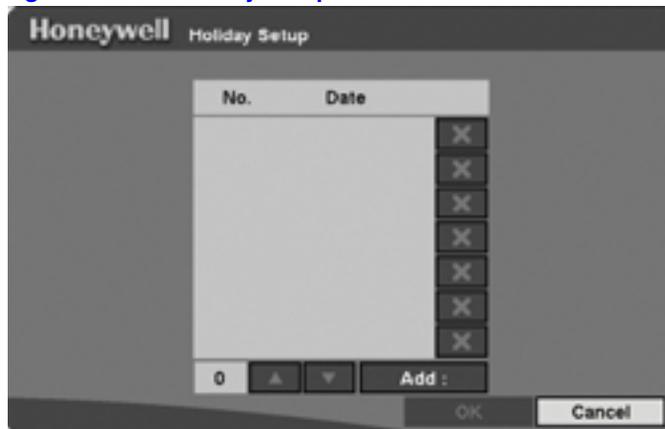
Turning Daylight Saving Time On and Off

Highlight the field beside **Daylight Saving Time** in the Date/Time setup screen and press . Press  again to toggle between **On** and **Off**.

Adding Holidays

1. Highlight the **Holiday Setup...** field in the Date/Time setup screen and press . The Holiday Setup screen appears.

Figure 3-11 Holiday Setup Screen



You can set up holidays by highlighting **Add:** and pressing . The current date appears as a default entry.

2. Highlight the month and day and change them by using the arrows.
3. Press  to add the date to the holiday list.

4. Delete dates by highlighting the **X** beside the date and pressing .

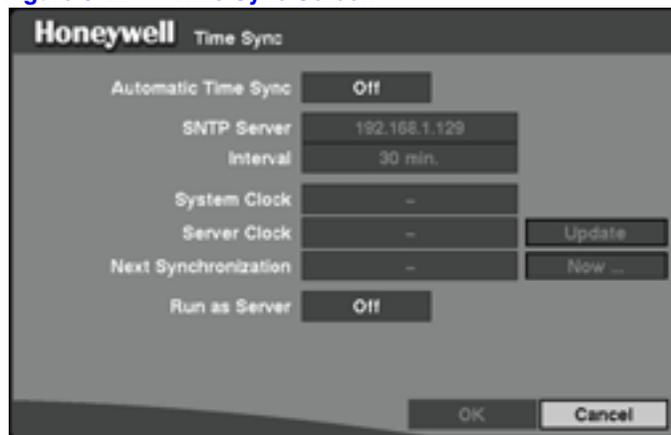
Note Holidays that do not fall on the same date each year should be updated once the current year's holiday has passed.

Synchronizing with a Standard Time Server

You can set up time synchronization between the DVR and standard time servers that are available in most time zones and countries, or between the DVR and another DVR.

1. Highlight the **Time Sync...** field in the Date/Time Setup screen, and press . The Time Sync screen appears.

Figure 3-12 Time Sync Screen



2. Highlight the field beside **Automatic Time Sync** and press  to toggle the Automatic Time Sync **On** and **Off**.
3. Highlight the field beside **SNTP Server** and press . Change the numbers by highlighting them and using the **Up** and **Down** arrows to increase or decrease the number value.
4. Highlight the field beside **Interval** and press . Set the time interval for synchronization from **30** to **300** minutes.

The field beside **System Clock** displays the time setting of the DVR.

The field beside **Server Clock** displays the time setting of the time server.

5. Highlight **Update** and press  to update the server clock.

Note The **Server Clock** displays " - " when the DVR cannot load the time information from the time server.

The field beside **Next Synchronization** displays the time when the next synchronization is scheduled.

6. Highlight **Now...** and press  if you want to synchronize the time instantly.

Caution If you select **Now...** and the time and date of the time server is earlier than the last recorded image of the DVR, you will lose any video with a later time and date.

Note When the time difference between the DVR and the time server is more than one minute, the DVR might not synchronize the time to prevent any unexpected loss of recorded video data. If you want to synchronize the time manually, select **Now....**

A screen appears that allows you confirm this action. Select **Yes** and press  to continue.

7. Highlight the **Run as Server** field and press  to toggle between **On** and **Off**. When turned **On**, the DVR you are setting up runs as a time server.
8. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

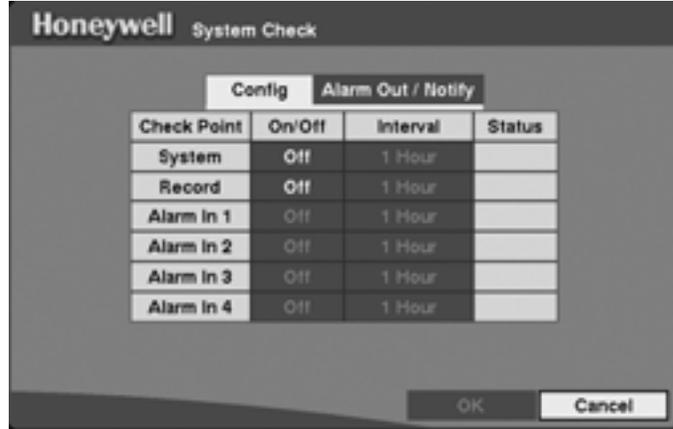
Setting the Date and Time Formats

1. Highlight the field beside **Date Format** in the Date/Time Setup screen, and press . A list of date formats appears.
2. Highlight the format you wish to use and press . The choices are:
MM-DD-YYYY
DD-MM-YYYY
YYYY-MM-DD
MM/DD/YYYY
DD/MM/YYYY
YYYY/MM/DD
3. Highlight the field beside **Time Format** in the Date/Time Setup screen, and press  to change the time format. The DVR toggles between **12 Hours (AM/PM)** and **24 Hours** (military time).
4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Checking the System

1. Highlight **System Check** in the Main menu and press . The System Check (Config.) screen appears.

Figure 3-13 System Check (Config.) Screen



2. Highlight the field under the **On/Off** heading for the desired category and press  to toggle between **On** and **Off**. When turned **On**, the DVR reports a fault condition if it does not detect any recording or if there is no alarm during the designated time.
3. Highlight the field under the **Interval** heading and press . A slide bar appears allowing you to set the check interval from **1** hour to **30** days.

The Status field displays Good if:

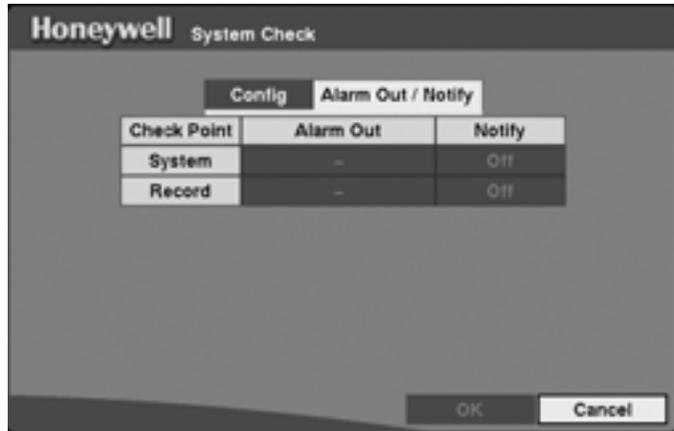
- the DVR is operating according to the user's settings without any problems
 - there was recording
- OR
- any alarm occurred during the designated time

The Status field displays Bad if there was no recording during the designated time, or no alarm occurred during the designated time.

Setting Up Alarm Out/Notify

1. Highlight the **Alarm Out/Notify** tab and press . The System Check Alarm Out/Notify screen appears.

Figure 3-14 System Check (Alarm Out / Notify) Screen



2. Highlight the field under the **Alarm Out** heading and press . A drop-down menu displays available alarm outputs for the recording problem.
3. Highlight the desired alarm output from the external alarm out terminal or internal buzzer, and press .

Note **Alarm Out** cannot be set to **Check Point - System**.

4. Highlight the field under **Notify** and press . This toggles between **On** and **Off**. When it is **On**, the DVR notifies the remote site of its System (Good) and Record (Bad).

Setting Up the DVR for Storage

Highlight **Storage** in the Main menu and press . The Storage setup screen appears.

Figure 3-15 Storage Setup Screen



Table 3-4 Storage Screen Setup Fields

Field	Information
Type	The Type field displays the type and capacity of the storage device.
Status	The Status field displays the device status or default conditions. (Good, Disk Bad, S.M.A.R.T. Alert, High Temperature, or Not installed).
Note	If the DVR senses S.M.A.R.T. Alert or High Temperature , the S.M.A.R.T. Monitoring Information screen appears. If the S.M.A.R.T. Monitoring Information screen appears, replace the hard disk drive, preferably within 24 hours.
Note	The S.M.A.R.T. Monitoring Information screen appears only in the monitoring mode.
°C	The °C field displays the temperature of the storage device.
Usage	The Usage field displays the device usage.

Setting Up for Notification of Storage Problems

The DVR can be set to react to storage problems by:

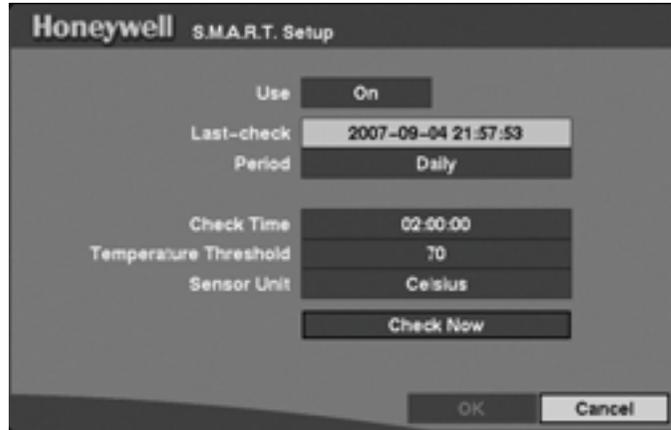
- activating an internal buzzer or external alarms
 - displaying a warning message
 - and/or notifying a PC that is running RASplus (Remote Administration System)
1. Highlight the field beside **Storage Problem Action: Alarm Out/Notify** and press . A window appears from which you choose the Alarm Out/Notify action(s).
 2. Highlight the box beside the desired Alarm Out/Notify action and press  to select the Alarm Out/Notify action you want triggered if there is a storage problem event. You can choose to activate the alarm output terminals, **Beep**, and/or **Notify**.
 3. Select **Close** and press  to save the settings.

Setting the Self-Monitoring, Analysis and Reporting Technology (S.M.A.R.T)

Highlight the **S.M.A.R.T. Setup...** and press . The S.M.A.R.T. Setup screen appears.

Note If no hard disk drives are installed in the DVR, the **S.M.A.R.T. Setup...** button is disabled.

Figure 3-16 S.M.A.R.T. Setup Screen



Your DVR shows the conditions of Hard Disk Drives if the installed IDE hard disk drives support the S.M.A.R.T. Monitoring program.

Table 3-5 S.M.A.R.T. Setup Screen Options

Option	Function
Use	Highlight the field beside Use . Press to toggle the S.M.A.R.T. Monitoring program On and Off .
Last-check	The Last-check field shows the date and time information of the last storage check.
Period	Highlight the field beside Period , and select from Daily , Weekly , or Monthly for the checking period.
Note	When selecting Weekly , the Day of Week field becomes active under the Period field, with choices of Sunday to Saturday. When selecting Monthly , the Day of Month fields become active under the Period field, with choices of the 1 st to the 28 th day of the month.
Check Time	Highlight the field beside Check Time , and adjust the numbers using the Up and Down arrows.
Temperature Threshold	Highlight the field beside Temperature Threshold and adjust the numbers using the Up and Down arrows.
Sensor Unit	Highlight the field beside Sensor Unit and select from Celsius or Fahrenheit .
Note	To check the storage status instantly, highlight Check Now and press .

Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Viewing Events Using the System Log Screen

The System Log screen displays a record of various events logged by the DVR. The list shows the dates and times when:

- the system was turned **On** and **Off**
- the system was restarted
- recording was started or stopped
- playback was started or stopped
- setup changes were made
- data banks were cleared

Highlight **System Log** in the Main menu and press . The System Log screen appears.

Figure 3-17 System Log Screen



No.	Event	Date/Time
283	Setup Begin (Local)	2007-09-04 10:27:14
282	System Started	2007-09-04 10:27:12
281	Shutdown	2007-09-04 10:27:02
280	System Time Changed	2007-09-04 10:27:00
279	Setup Begin (Local)	2007-09-04 10:26:08
278	System Started	2007-09-04 10:26:02
277	System Reboot	2007-09-04 10:26:02

The events are listed from the most recent to the oldest. You can scroll through the list one page at a time by selecting the **Up** and **Down** arrows and pressing .

You can go directly to an event number by:

1. Highlighting the event number field (left of the **Up** arrow)
2. Pressing 
3. Enter the number of the event using arrows
4. Pressing  again

System Shutdown

To shut down the DVR, highlight **System Shutdown** in the Main menu and press . When shutting down the DVR, you need to confirm that you want to shut down the unit by providing an administrator password.

Configuring Input Devices

You can configure the video, audio, and remote control devices connected to the DVR.

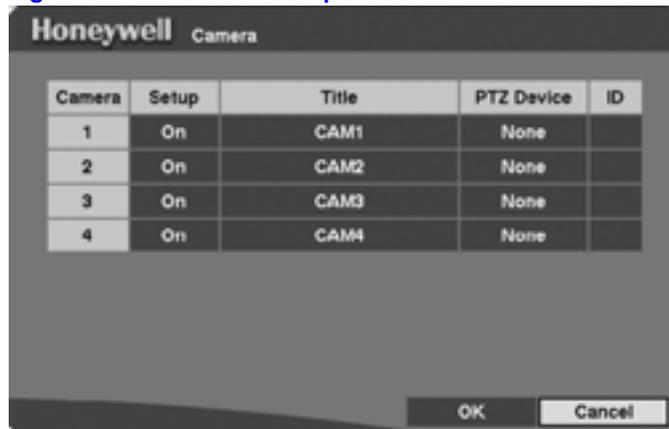
Figure 3-18 Device Menu Screen



Choosing Camera Input Using the Camera Setup Screen

1. Highlight **Camera** in the Main menu and press . The Camera setup screen appears.

Figure 3-19 Camera Setup Screen



2. To turn **On** or **Off** each camera, and also to hide the video from a camera, highlight the camera's setup cell under the **Setup** heading and press . A drop-down list appears. Select from **On**, **Off**, **Covert 1**, or **Covert 2**.

Note When selecting **Covert 1**, the DVR displays the camera title and status icons on the covert video. When selecting **Covert 2**, the DVR displays only the camera title, which appears in gray on the covert video.

Assigning a Title to a Camera

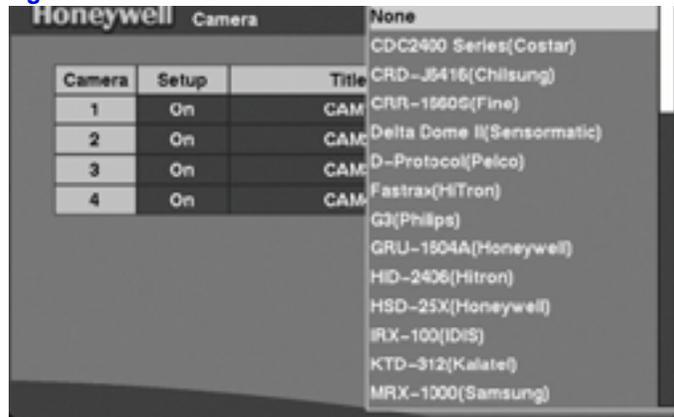
You can assign a name or title to each camera.

Highlight **Title** heading and press . A virtual keyboard appears with which you can enter camera names.

Selecting a PTZ (Pan, Tilt, Zoom) Device

1. Select the **PTZ Device** field. A list of controllable cameras appears.

Figure 3-20 PTZ Device List



2. Select from the list the type of camera you have and press . You need to connect the camera to the RS-232C terminal on the back of the DVR using the camera manufacturer's instructions.

Note After you have selected from the menu the PTZ device you want to control, the  icon displays on the PTZ camera screen.

Assigning an ID Number to a Camera

You can assign an ID number to each camera.

1. Highlight the **ID** heading and press .

2. Change the number by highlighting it and using the **Up** and **Down** arrow buttons to increase and decrease the number. The PTZ ID number can be set from **0** to **256**.

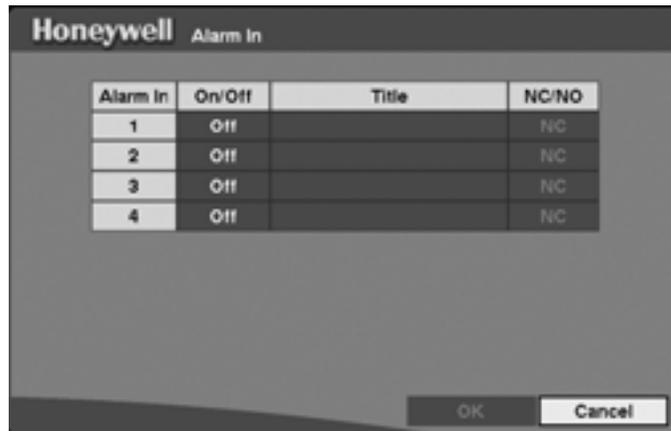
Setting the Alarm In Settings

The alarm terminal strip on the back of the DVR has inputs associated with each alarm. You can:

- set up each input on the Alarm In Setup screen
- turn each input **On** (via Alarm I/O or Camera Alarm) or **Off**
- give each input a title
- independently set the inputs as NO (normally open) or NC (normally closed)

Highlight **Alarm In** in the Main menu and press . The Alarm In setup screen appears.

Figure 3-21 Alarm In Setup Screen



To turn the Alarm In **On** or **Off**, and to change the setting from **NC** to **NO**,

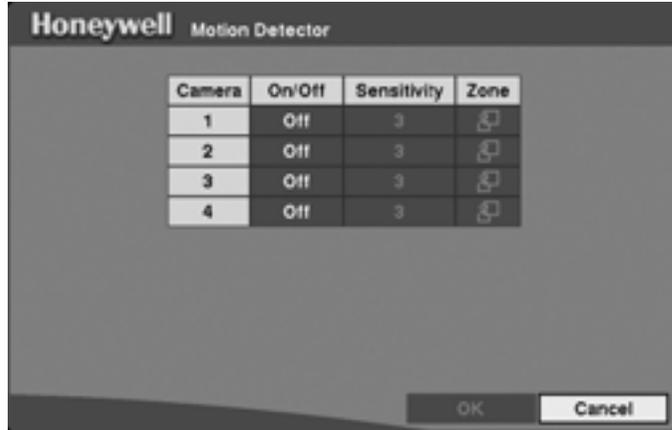
Setting the Motion Detector

Your DVR has a built-in video motion detector. For each camera, you can:

- turn motion detection **On** and **Off**
- set the sensitivity level from **1** to **5**
- select the image area to be monitored for motion detection

Highlight **Motion Detector** in the Main menu and press . The Motion Detector setup screen appears.

Figure 3-22 Motion Detector Setup Screen



Turning Motion Detection On or Off

To turn motion detection **On** or **Off** for each camera, highlight the On/Off field next to the camera, and press . When you turn motion detection **On**, the Sensitivity and Zone fields become active.

Selecting the Sensitivity Level of the Motion Detector

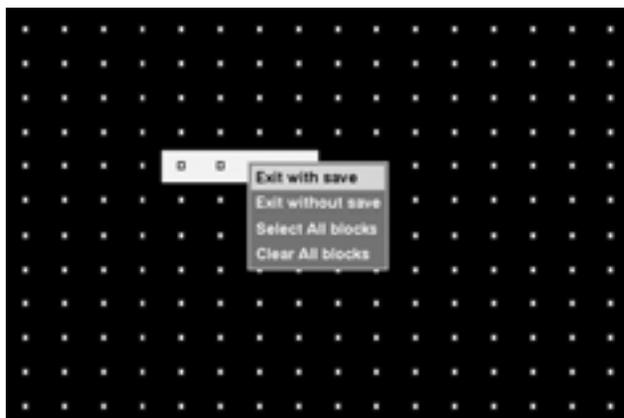
To adjust the sensitivity of the DVR to motion, highlight the field under **Sensitivity**. There are five settings, with 1 being the least sensitive and 5 being the most sensitive.

Defining the Motion Detection Area

You can define the area of the image where you want to detect motion. For example, you can choose a doorway.

1. Highlight the icon under the **Zone** heading and press . The Motion Detection Zone screen appears.

Figure 3-23 Motion Detection Zone Screen



The Motion Detection Zone screen lays over the video for the selected camera. A bright box appears around groups of four cells. Use the arrows to navigate the box around the screen.

You can activate or deactivate four cells at a time by pressing . You can activate or deactivate individual cells by using the camera buttons.

2. Press **Menu** when you have finished activating and deactivating the motion detection cells. The Motion Detection Zone setup menu appears. It has the following functions:

Table 3-6 Motion Detection Zone Screen Options

Option	Function
Exit with save	Closes the menu after saving the changes
Exit without save	Closes the menu without saving the changes
Select All blocks	Activates all blocks to detect motion
Clear All blocks	Deactivates all blocks so that they do not detect motion

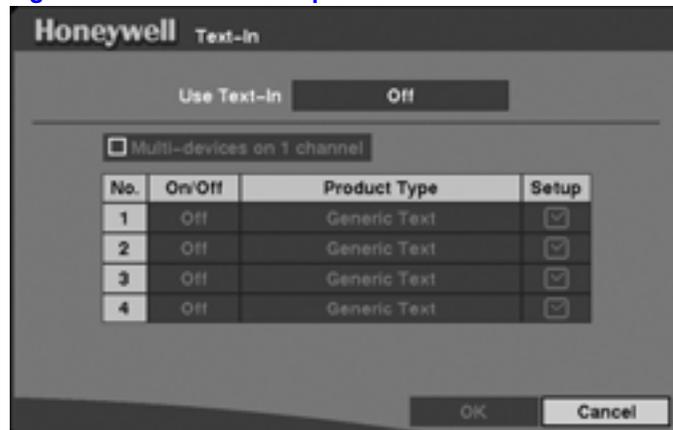
3. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting Up the Text-In Feature

You can set the DVR to display the text-in information.

1. Highlight **Text-In** in the Main menu and press . The Text-In setup screen appears.

Figure 3-24 Text-In Setup Screen



Note If networking is configured by the external modem, the text-in cannot be set up. Set the DVR for LAN connections (see *Setting the Connection Type* on page 83) and set up text-in for RS-232C port (see *Communicating with External Devices Using the RS-232C Port* on page 60).

Note Text-in data can not be recorded during clip copy.

2. Highlight the field beside **Use Text-In** and press  to toggle between **On** and **Off**.

3. Highlight the box next to **Multi-devices on 1 channel** and press  to toggle between **On** and **Off**. When turned **On**, the DVR supports up to 4 text inputs.

If you turn On **Multi-devices on 1 channel**, then you can select only **VP Filter** from the **Product Type** list.

If you turn Off **Multi-devices on 1 channel**, then you can select **Generic Text**, **EPSON-POS**, or **VP Filter** from the **Product Type** list.

4. Highlight the field beside **Product Type**, and press .

5. Select your device from the list. Your choices are:

- **Generic Text**
- **EPSON-POS**
- **VP Filter**

Settings for Generic Text, EPSON-POS, and VP Filter

Note VP Filter, Generic Text, and EPSON-POS devices are currently supported.

The following description is for VP Filter, Generic Text, and EPSON-POS devices. The screen changes for different types of text input devices, and there are different parameter boxes for you to enter information.

Figure 3-25 Text-In (VP Filter) Setup Screen

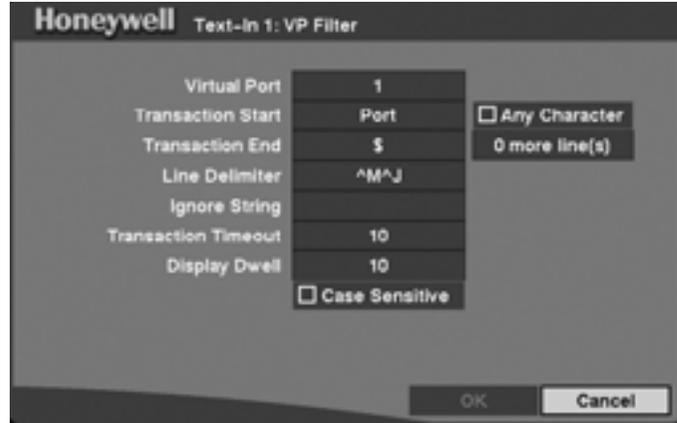


Figure 3-26 Text-In (Generic Text) Setup Screen

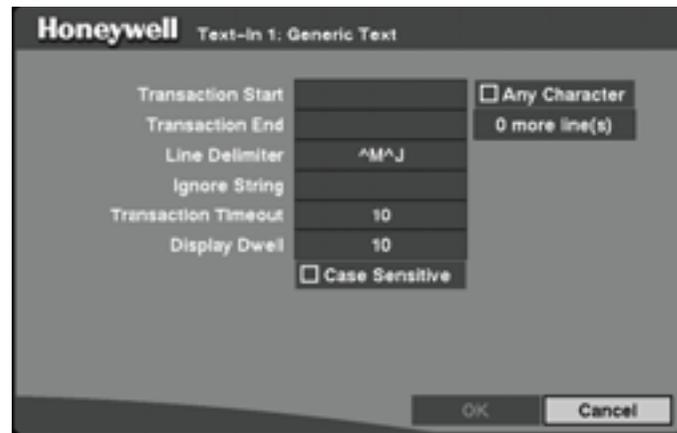


Figure 3-27 Text-In (EPSON-POS) Setup Screen

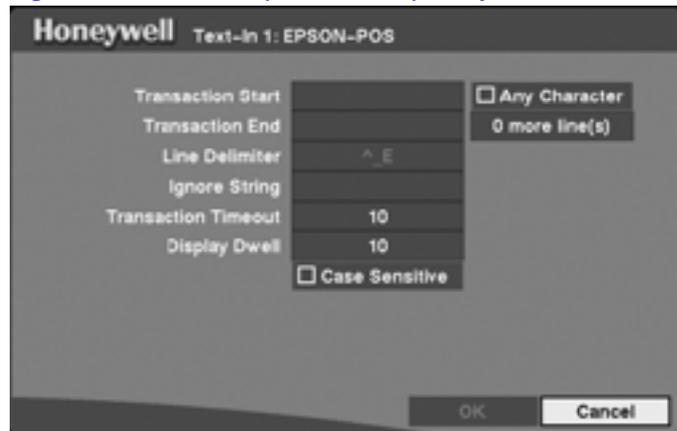


Table 3-7 Text-In Setup Screen Options

Option	Function
Virtual Port	Highlight the field beside Virtual Port , and enter the port number to use. You can choose from 1 to 4 . This field is activated only when setting up the VP Filter device.
Transaction Start	<p>Highlight the field beside Transaction Start, and press . Use the virtual keyboard to enter the Transaction Start string.</p> <p>Refer to the device manufacturer's documentation for the text string that the device first sends when a transaction starts.</p>
Any Character	<p>If you want the DVR to react to any character sent from the text-in device, turn on Any Character.</p> <p>Highlight Any Character, and press  to toggle between On and Off.</p> <p>If you choose this option, then you can not enter a Transaction Start text string.</p>
Note	If Any Character is turned On , you can not enter any text in the Start String field.
Transaction End	<p>Highlight the field beside Transaction End, and press . Use the virtual keyboard that appears to enter the Transaction End string.</p> <p>Refer to the device manufacturer's documentation for the text string that the device sends when a transaction ends.</p>
X more line(s)	Highlight the X more line(s) field and press  . Select the number of additional lines of text that you want the DVR to record. You can choose from 0 to 10 .
Line Delimiter	<p>Highlight the field beside Line Delimiter, and press . Use the virtual keyboard to enter the character(s) that the device uses to indicate the end of a line.</p> <p>Control characters can be created using ^ and a capital letter. For example, you can use ^J for NL (New Line), and ^M for CR (Carriage Return).</p> <p>Refer to the device manufacturer's documentation for Line Delimiter character(s).</p>
Ignore String	<p>Highlight the field beside Ignore String, and press . Use the virtual keyboard that appears to enter the strings of text that you want the DVR to ignore.</p> <p>Refer to the device manufacturer's documentation for text strings that the device sends during transactions. This tells you which text strings you do not want recorded.</p>
Note	When setting up the EPSON-POS device, the user cannot change Line Delimiter and Ignore String parameters.

Table 3-7 Text-In Setup Screen Options

Option	Function
Transaction Timeout	Highlight the field beside Transaction Timeout , and set the length of time to wait for the new text string. The DVR recognizes the end of a transaction if there is no text string input during the timeout dwell time after the last text string input. You can adjust the timeout dwell from 1 to 300 seconds.
Display Dwell	Highlight the field beside Display Dwell , and set the length of time you would like to display text-in data. You can adjust the display dwell time from 1 to 300 seconds.
Case Sensitive	Highlight the Case Sensitive field and press  to toggle between On and Off . Refer to the device manufacturer's documentation to determine if the text strings are Case Sensitive. If the device distinguishes between upper and lower case letters, ensure that the Case Sensitive field is turned On .

Setting Up the Alarm Output

The Alarm Out setup screen allows you to establish a schedule for each alarm output from the DVR.

Highlight **Alarm Out** in the Main menu and press . The Alarm Out setup screen appears.

Figure 3-28 Alarm Out Setup Screen



Titling an Alarm Output

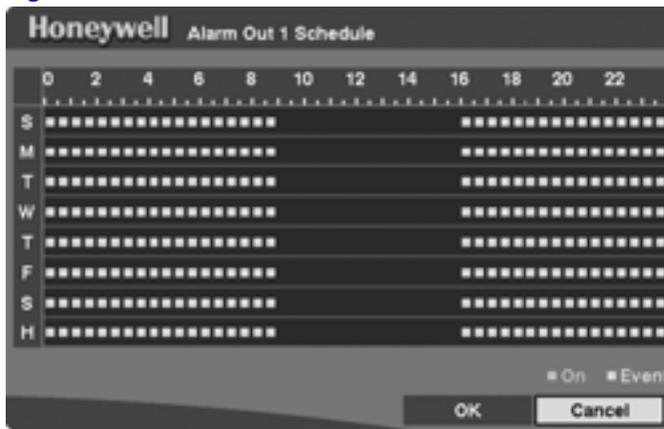
To give each alarm output its own title, highlight the field under the **Title** heading and press the  button. A virtual keyboard appears with which you can enter the title.

Scheduling an Alarm Output

You can schedule alarm output in 30-minute increments from 0:00 to 24:00. Also, you can select:

- individual blocks of time
 - entire days of the week
 - entire blocks of time
 - the entire schedule
1. To schedule each alarm, highlight the **Sched** field and press . An Alarm Out Schedule screen appears.

Figure 3-29 Alarm Out Schedule Screen



2. Select a time by doing one of the following actions:
 - Select a specific block of time by highlighting it.
 - Select an entire day by highlighting the **day of the week** or **Holiday** on the left of the screen.
 - Select an entire block of time by highlighting the time at the top of the screen.
 - Select the entire screen by highlighting the empty box in the upper left corner of the screen.
3. Press  to toggle from **No Arming** (no block) to **On** (blue block) to **Event** (yellow block).
4. Set the **Alarm Out** to one of two settings. When set to **On**, the Alarm Out is active during the scheduled time. When set to **Event**, the Alarm Out is only active when there is an Event during the scheduled time.
5. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting the DVR to Record Audio

1. Highlight **Audio** in the Main menu and press . The Audio Setup screen appears.

Figure 3-30 Audio Setup Screen



2. Highlight the field beside **Audio Recording** and press  to toggle between **On** and **Off**. When turned **On**, the DVR records audio when it is recording video.
3. Highlight the field beside **Mute** and press  to toggle between **On** and **Off**. When turned **On**, the DVR does *NOT* play live audio or recorded audio.
4. Highlight the field beside **Audio In** and press  to toggle through a list of cameras.
5. Select the camera number you would like to associate with audio input. When Audio Recording is turned **On**, the  displays on the associated camera screen.

Note Audio plays through the attached speaker while the DVR is recording audio and the associated camera displays full screen.

6. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

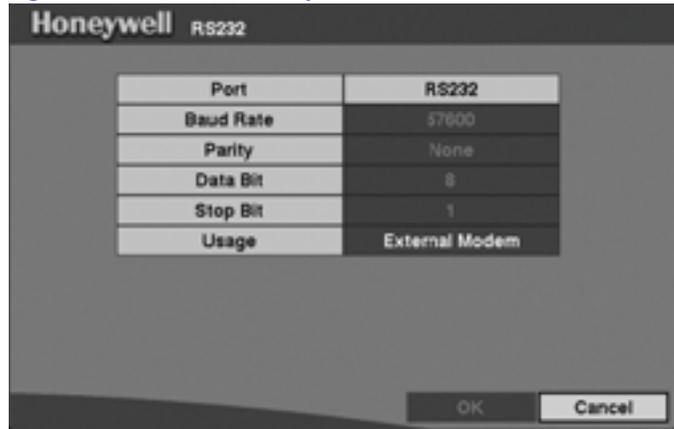
Note The DVR does *NOT* record audio when the recording speed is set to less than 15 ips (12.5 ips for PAL). The DVR may not record audio depending on the Transfer Speed when the RASplus (Remote Administration System) Watch application program is connected.

Communicating with External Devices Using the RS-232C Port

Using the RS232 setup screen, you can set up the RS-232C port to communicate with external devices such as remote controls and dome cameras.

From the Main menu, select **RS232** and press . The RS232 Setup screen appears.

Figure 3-31 RS232 Setup Screen



1. Highlight the field for the settings you wish to change. Select the correct **Baud Rate**, **Parity**, **Data Bit**, and **Stop Bit** for the device you are connecting to the DVR.
2. Highlight the field next to Usage, and press  to toggle through the list: **Remote Control**, **External Modem**, **Text-In**, or **PTZ**.

Note Selecting **External Modem** in the RS232 field only defines the RS-232C port as being used for the external modem connections. See *Modem Setup Screen* on page 89 for how to set up an external modem.

Note Selecting **PTZ** in the RS232 field only defines the RS-232C port as being used for the PTZ camera connections. Select the PTZ device in the Camera Setup screen (see *Camera Setup Screen* on page 50).

Configuring Recording Settings

Note When the DVR is recording video, the RECORD LED on the front panel lights up and  displays on each camera screen.

Your DVR offers a variety of flexible recording modes. You can set it to:

- record all the time
- record only events
- continue recording after the hard disk drive is full by recording over the oldest video
- alert you and stop recording when the hard disk is full

Using the Record Mode Setup Screen

From the Main menu, select **Record**, then highlight **Record Mode** and press . The Record Mode Setup screen appears.

Figure 3-32 Record Mode Setup Screen



Table 3-8 Record Mode Setup Screen Options

Option	Function
Resolution	Highlight the field beside Resolution and press  .
Note	The maximum recording speed is 30 images per second (25 ips for PAL) when the resolution is set to Standard . However, when set to High , the recording speed decreases to 15 images per second (12.5 ips for PAL).
End Of Disk	Highlight the field beside End Of Disk and press  to toggle between Stop and Overwrite . When in the Stop mode, the DVR stops recording when the hard disk drive is full. When in the Overwrite mode, the DVR continues recording when the hard disk drive is full by overwriting the oldest video. If the DVR is set to the Stop mode, you can set it to beep or to activate the Alarm Out port when the hard disk drive is full.
On Disk Full Beep	Highlight the field beside On Disk Full Beep and press  to toggle between On and Off .

Table 3-8 Record Mode Setup Screen Options

Option	Function
On Disk Full Alarm Out	Highlight the field beside On Disk Full Alarm Out and press  to toggle between On and Off .
On Panic Recording Speed	Press Panic on the front panel to open the Panic Recording mode. In the Record Mode Setup screen, you can program the recording speed, quality, and duration for when the DVR is in the Panic Recording mode. Set On Panic Recording Speed from 0.5 to 30 ips (25 ips PAL).
On Panic Recording Quality	Set On Panic Recording Quality from Very High , High , Standard , and Low .
On Panic Recording Duration	Set On Panic Recording Duration from 5 to 60 minutes. The panic recording stops automatically according to the preset duration as long as the Panic button has not been pressed to stop the panic recording. Select No Limit if you want to stop panic recording manually.

Note When the DVR is in the Panic Recording mode, it ignores the time-lapse or event recording settings and follows the panic recording settings.

Note The maximum panic recording speed is 30 images per second (25 ips for PAL) when the resolution is set to **Standard**. However, when set to **High**, the recording speed decreases to 15 images per second (12.5 ips for PAL).

Note When the DVR is in the Panic Recording mode, the RECORD LED on the front panel flickers and the  displays on each camera screen.

Setting the DVR for Auto Deletion

1. Highlight the first field beside **Auto Deletion**.

2. Press  to toggle between **On** and **Off**. When **On**, the DVR deletes video recorded earlier than user-defined period.
3. Highlight the second field beside **Auto Deletion**, and press  to select the length of time recorded data is kept, ranging from **1** to **99** Days.

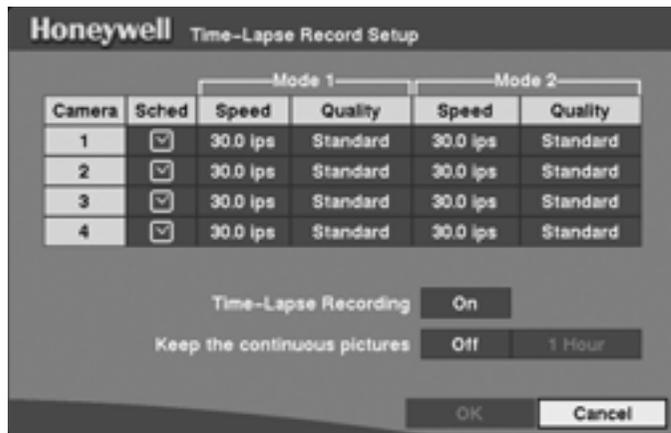
Note When the **End Of Disk** is set to **Stop**, the DVR does *NOT* restart recording even when the video recorded earlier than user-defined period is deleted.

4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting the DVR for Time-Lapse Recording

From the Main menu, select **Record**, then **Time-Lapse Recording** and then press . The Time-Lapse Record Setup screen appears.

Figure 3-33 Time-Lapse Record Setup Screen



You can set two different modes of time-lapse recording for each of the four cameras. For each mode, you can set a schedule, the recording speed, and the recording quality. You can also turn time-lapse recording on and off. Using **Keep the continuous pictures**, you can allocate a portion of the hard disk drive for storing time-lapse recorded video, leaving the remaining hard drive space available for recording event-triggered video (see [Setting the Maximum Amount of Time-Lapse Video Storage](#) on page 66).

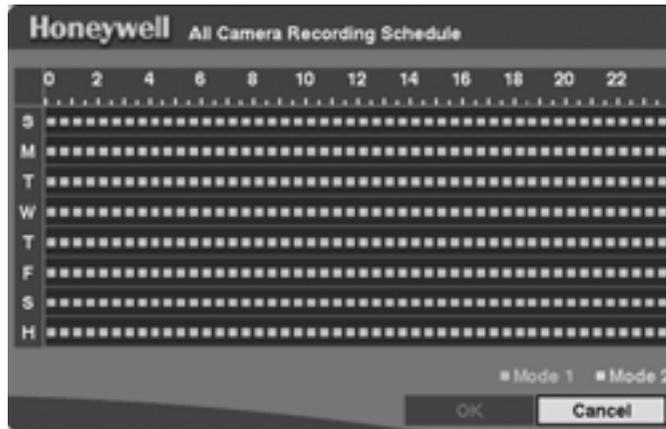
Setting Time-Lapse Recording Using the Recording Schedule

You can program the DVR to record only during certain times based on the time of day, the day of the week, and holidays. The smallest time segment you can use is 30 minutes.

On the recording schedule, a blue rectangle indicates the DVR is set to record during those 30 minutes. When there is no rectangle, the DVR does not record during those 30 minutes.

Highlight the Schedule cell and press . The Time-Lapse Recording schedule screen appears.

Figure 3-34 Time-Lapse Recording Schedule Screen



There are several ways to set recording times using the Time-Lapse Recording Schedule screen. You can select individual blocks of time, specific blocks of time for the whole week, entire days of the week, or the entire calendar.

Note The Holiday (H) schedule applies to the dates you established as holidays when setting Date/Time.

Setting a Schedule for Time-Lapse Recording

1. Highlight the desired field under the Schedule heading, and press . The Camera X Recording Schedule appears ("X" is for the camera number).
2. Select a time by doing one of the following:
 - Select a specific block of time by highlighting it.
 - Select an entire day by highlighting the **day of the week** or **Holiday** on the left of the screen.
 - Select an entire block of time by highlighting the time at the top of the screen.
 - Select the entire screen by highlighting the empty box in the upper left corner of the screen.
3. Press  to toggle from **No Schedule** (no block) to **Mode 1** (blue block) to **Mode 2** (yellow block).
4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting the Speed for Time-Lapse Recording

Highlight the field under the **Speed** heading and press . A drop-down list of recording speeds appears. You can select from **0.5** ips to **30** ips (25 ips for PAL).

Note You cannot select **30** ips (25 ips for PAL) for High Resolution.

Setting the Recording Quality for Time-Lapse Recording

1. Highlight the field under the **Quality** heading and press . A drop-down list appears.
2. Select from **Very High**, **High**, **Standard**, and **Low** image quality.

If all other variables are equal, then a **Very High** setting requires 300% more hard disk space than **Standard**, a **High** setting requires 200% more, and a **Low** setting requires 50% less.

Note Recording higher quality images requires more storage space and reduces the recording capacity of the hard disk drive.

Turning On the Time-Lapse Recording Schedule

You can set the DVR to record video based on the Time-lapse Recording Schedule defined during Time-Lapse Record Setup. Highlight the field beside **Time Lapse Recording** and press  to toggle between **On** and **Off**.

Setting the Maximum Amount of Time-Lapse Video Storage

This feature is useful when you want to keep recorded time-lapse video for a different length of time than you want to keep recorded Event video. The time-lapse video is stored separately from the Event video.

When **Keep the continuous pictures** is set to **On**, you can set the storage amount from **1 hour** up to **490 hours** depending on the hard drive capacity limits. When the DVR time-lapse recording duration reaches the time limit specified in the **Keep the continuous pictures** field, the DVR starts recording over the oldest recorded time-lapse video. For example, if you turn on **Keep the continuous pictures** and set the storage capacity to 40 hours, then the DVR will record 40 hours of time-lapse video before overwriting it. The remaining space on the hard disk drive is allocated to Event recording.

Note You should use this feature only if you enable Event recording during time-lapse recording. If you do not have Event recording enabled, then you will be unnecessarily limiting the storage space for time-lapse recording.

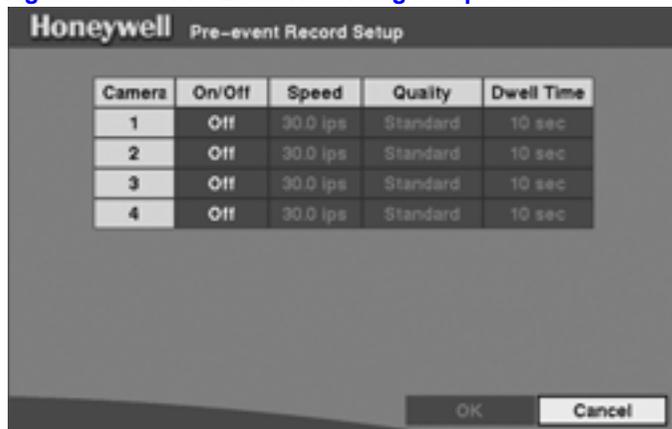
Note The maximum storage time is only an estimate because the amount of space required to store video varies depending on many factors such as motion and image complexity.

Setting the DVR for Pre-Event Recording

When the DVR is in the Event Record mode, it is possible to have it record images before the event occurs. The Pre-Event Record screen allows you to define how to handle pre-event recording.

From the Main menu, select **Record**, then **Pre-Event Record** and press . The Pre-Event Record setup screen appears.

Figure 3-35 Pre-Event Recording Setup Screen



You can turn individual cameras **On** or **Off** for pre-event recording. The image speed can be set from **0.5** to **30** ips (25 ips PAL), and image quality can be set to **High**, **Standard**, and **Low**.

Note When a camera is set to **On**,  displays on each camera screen. However, the DVR records the video only when events are detected.

Note The pre-event recording speed is 30 images per second (25 ips for PAL) when the resolution is set to **Standard**. However, when set to **High**, the recording speed decreases to 15 images per second (12.5 ips for PAL).

You can set the amount of time to record prior to the event by adjusting the Dwell Time. You can set the Dwell Time from **1** to **300** seconds.

Note When the DVR is in the Time-Lapse mode, it ignores the pre-event settings and follows the time-lapse settings.

Setting the DVR to React to Events

You can program the DVR to do the following actions:

- record
- activate the alarm output
- and/or notify the remote site whenever sensor, motion, text-in, or video loss events are detected

Alarm In Event Action (Record) Setup Screen

The DVR can be set to react differently to events. Each sensor can be assigned:

- a schedule
- a camera
- a recording speed
- a video quality
- a dwell time

From the Main menu, select **Event Action**, then **Alarm In Action** and press . The Alarm In Event Action setup screen appears.

Note The following procedures are the same for both Mode 1 and Mode 2.

Highlight **Alarm-In Action** in the Event Action menu and press . The Alarm In Event Action (Record) setup screen appears.

Figure 3-36 Alarm In Event Action (Record) Setup Screen



1. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier (see [Scheduling an Alarm Output](#) on page 59).
2. Highlight the **Camera** field and press . A camera selection screen appears. Select the number(s) of the camera(s) you would like to associate with the sensor.

Note You can associate multiple cameras with a sensor.

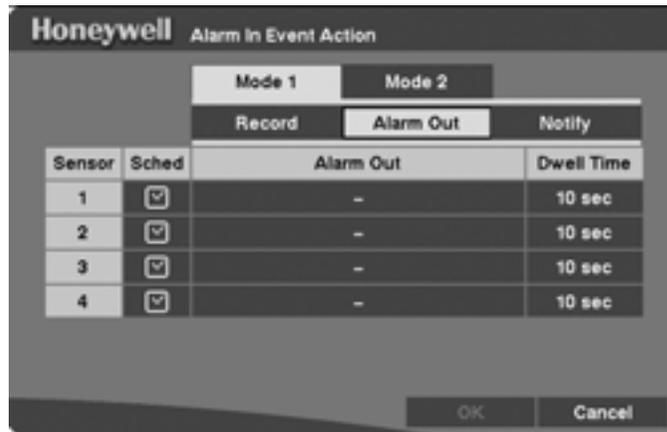
3. Highlight the **Speed** field and select from the drop-down menu the number of images per second you would like to record.
4. Highlight the **Quality** field and select from the drop-down menu the image quality you want for the recording.
5. Highlight the **Dwell Time** field and set the length of time you would like to record for the associated event.
6. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Alarm In Event Action (Alarm Out) Setup Screen

The DVR can be set to react differently to events by activating an internal buzzer or external alarms.

1. Highlight **Alarm-In Event Action (Alarm Out)** in the Event Action menu and press . The Alarm In Event Action (Alarm Out) setup screen appears.

Figure 3-37 Alarm In Event Action (Alarm Out) Setup Screen



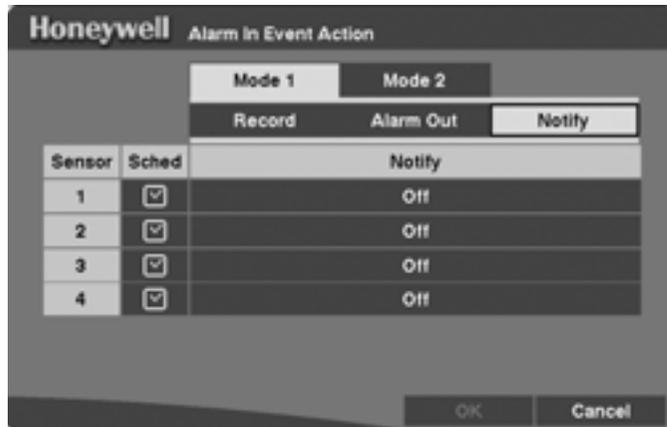
2. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier see [Scheduling an Alarm Output](#) on page 59).
3. Highlight the **Alarm Out** field and select either **Beep** or the alarm output terminal that you want to associate with the sensor.
4. Highlight the **Dwell Time** field and set the length of time you want the output activated. You can select from **1** to **300** seconds.
5. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Alarm In Event Action (Notify) Setup Screen

The DVR can be set to notify the remote site when certain events are activated.

1. Highlight **Alarm-In Event Action (Notify)** in the Event Action menu and press . The Alarm In Event Action (Notify) setup screen appears.

Figure 3-38 Alarm In Event Action (Notify) Setup Screen



2. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier see *Scheduling an Alarm Output* on page 59).
3. Highlight the **Notify** field and press  to toggle between **On** and **Off**. When set to **On**, the DVR notifies the remote site when certain events occur based on a defined schedule.
4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Note For the Notify action to work, the DVR should be registered in the RASplus (Remote Administration System). Refer to the RASplus User's Manual.

When the DVR detects alarm input, the  displays on each associated camera.

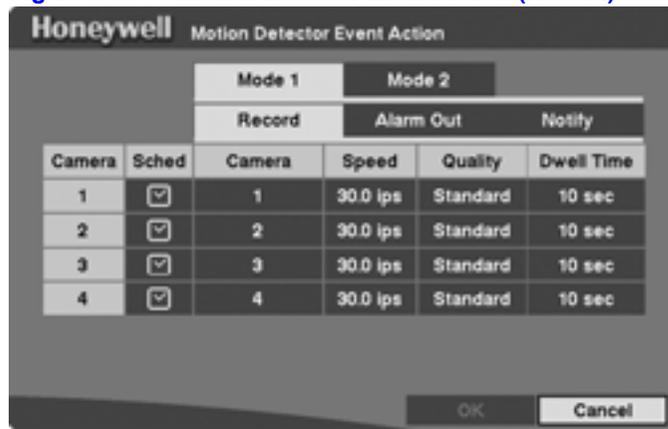
Motion Detector Event Action (Record) Setup Screen

The DVR can be set to react to motion detection differently. Each camera can be assigned:

- a schedule
- an associated camera
- a recording speed
- a video quality
- a dwell time

Highlight **Motion Detector Event Action (Record)** in the Event Action menu and press . The Motion Detector Action (Record) setup screen appears.

Figure 3-39 Motion Detector Event Action (Record) Setup Screen



1. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier (see *Scheduling an Alarm Output* on page 59).

2. Highlight the **Camera** field and press . A camera selection screen appears. Select the number(s) of the camera(s) you would like to associate with the motion detection camera.

Note You can associate multiple cameras with a camera that detects motion.

3. Highlight the **Speed** field and select from the drop-down menu the number of images per second you would like to record.
4. Highlight the **Quality** field and select from the drop-down menu the image quality you want for the recording.
5. Highlight the **Dwell Time** field and set the length of time you would like to record for the associated motion event.
6. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

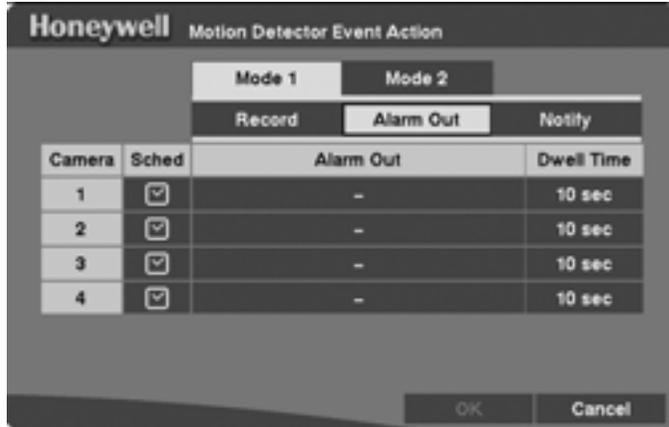
Motion Detector Event Action (Alarm Out) Setup Screen

The DVR can be set to react to motion events differently by activating an internal buzzer or external alarms.

Note You can set the DVR for Motion Detection Event Action (Alarm Out) only if you have turned on the motion detector cameras that are attached to the DVR. See *Setting the Motion Detector* on page 52.

1. Highlight **Motion Detector Event Action (Alarm Out)** in the Event Action menu and press . The Motion Detector Event Action (Alarm Out) setup screen appears.

Figure 3-40 Motion Detector Event Action (Alarm Out) Setup Screen



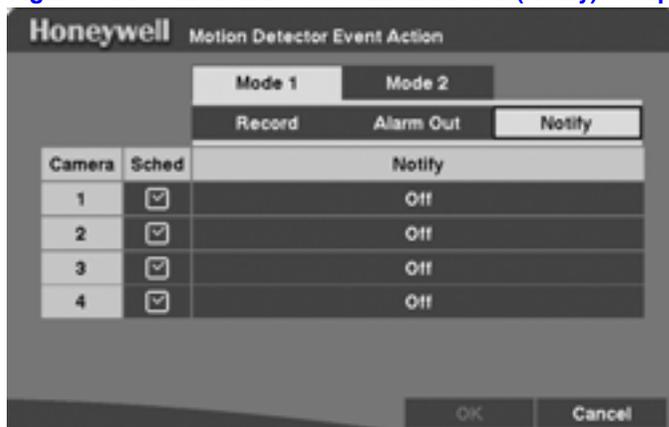
2. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier see *Scheduling an Alarm Output* on page 59).
3. Highlight the **Alarm Out** field and select either **Beep** or the alarm output terminal that you want to associate with the motion event.
4. Highlight the **Dwell Time** field and set the length of time for which you want the output activated.
5. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Motion Detector Event Action (Notify) Setup Screen

The DVR can be set to notify the remote site when certain motion events are activated.

1. Highlight **Motion Detector Event Action (Notify)** in the Event Action menu and press . The Motion Detector Event Action (Notify) setup screen appears.

Figure 3-41 Motion Detector Event Action (Notify) Setup Screen



2. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier (see *Scheduling an Alarm Output* on page 59).

3. Highlight the **Notify** field and press  to toggle between **On** and **Off**. When set to **On**, the DVR notifies the remote site when certain events occur based on a defined schedule.
4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Note For the Notify action to work, the DVR should be registered in the RASplus (Remote Administration System).

When the DVR detects motion, the  displays on each associated camera.

Text-In Event Action (Record) Setup Screen

The DVR can be set to react to text input from the text-in device. The text-in event can be assigned any combination of the following:

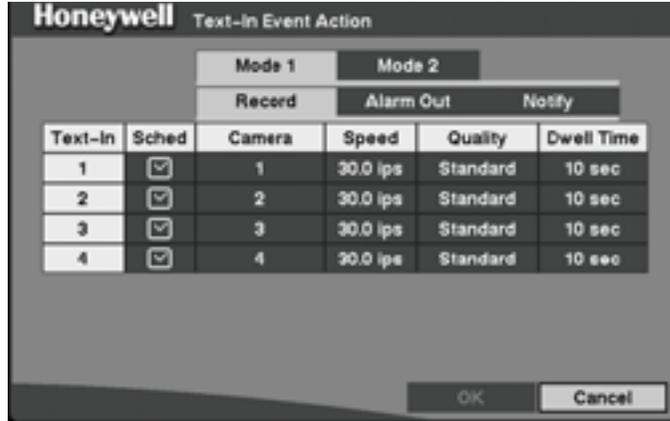
- a schedule
- an associated camera
- a recording speed
- a video quality
- a dwell time

Note These procedures are the same for both Mode 1 and Mode 2.

Note You can only set Text-In Event Actions for devices you set up as text-in devices. See *Setting Up the Text-In Feature* on page 54.

Highlight **Text-In Event Action (Record)** in the Event Action menu and press . The Text-In Event Action (Record) setup screen appears.

Figure 3-42 Text-In Event Action (Record) Setup Screen



1. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier (see *Scheduling an Alarm Output* on page 59).
2. Highlight the **Camera** field and press . A camera selection screen appears. Select the number of the camera you would like to associate with the text-in device. Then select **Close** and press .

Note You cannot associate multiple cameras with a text-in device.

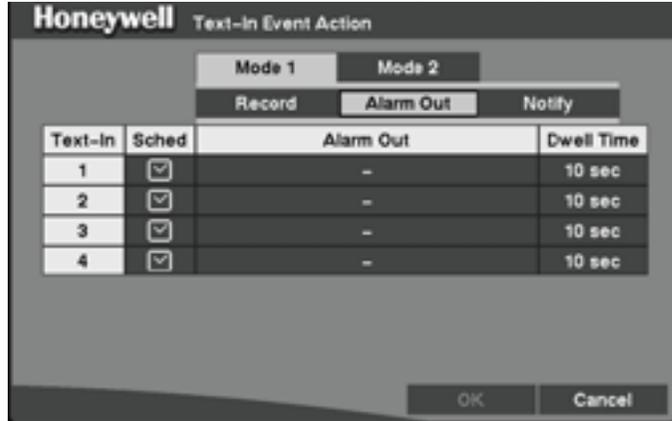
3. Highlight the **Speed** field and select from the drop-down menu the number of images per second you would like to record. You can select from **0.50** ips to **30.0** ips.
4. Highlight the **Quality** field and select from the drop-down menu the image quality you want for the recording. You can select from **Very High**, **High**, **Standard**, and **Low**.
5. Highlight the **Dwell Time** field and set the length of time you would like to record for the text input. You can select from **1** to **300** seconds.
6. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Text-In Event Action (Alarm Out) Setup Screen

The DVR can be set to react to text-in input by activating an internal buzzer or external alarms.

1. Highlight **Text-In Event Action (Alarm Out)** in the Event Action menu and press . The Text-In Event Action (Alarm Out) setup screen appears.

Figure 3-43 Text-In Event Action (Alarm Out) Setup Screen



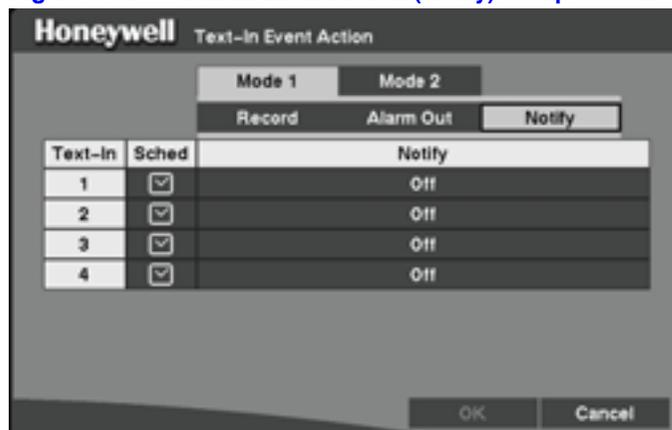
2. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier (see *Scheduling an Alarm Output* on page 59).
3. Highlight the **Alarm Out** field and select either **Beep** or the alarm output terminal that you want to associate with the text-in device.
4. Highlight the **Dwell Time** field and set the length of time you want the output activated. You can select from 1 to 300 seconds.
5. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Text-In Event Action (Notify) Setup Screen

The DVR can be set to notify the remote site in the case of text-in event.

Highlight **Text-In Event Action (Notify)** in the Event Action menu and press . The Text-In Event Action (Notify) setup screen appears.

Figure 3-44 Text-In Event Action (Notify) Setup Screen



1. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier see *Scheduling an Alarm Output* on page 59).

2. Highlight the **Notify** field and press  to toggle between **On** and **Off**. When Notify is **On**, the DVR notifies the remote site when it has text input from a text-in device based on a defined schedule.
3. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Note For the Notify action to work, the DVR should be registered in the RASplus (Remote Administration System).

When the DVR detects text input, the  displays on the associated camera.

Video Loss Event Action (Record) Setup Screen

The DVR can be set to react differently to video loss from each camera. Each camera can be assigned:

- a schedule
- an associated camera
- a recording speed
- a video quality
- a dwell time

Note These procedures are the same for both Mode 1 and Mode 2.

Highlight **Video Loss Event Action (Record)** in the Event Action menu and press . The Video Loss Event Action (Record) setup screen appears.

Figure 3-45 Video Loss Event Action (Record) Setup Screen



1. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier see *Scheduling an Alarm Output* on page 59).
2. Highlight the **Camera** field and press . A screen appears with which you can select cameras you would like to record when another camera loses video input. For example, you can set the DVR to record input from Camera 2 if Camera 1 loses input. Select the number(s) of the camera(s) you would like to associate with the camera that has lost video.

Note You can associate multiple cameras with a camera.

3. Highlight the **Speed** field and select from the drop-down menu the number of images per second you would like to record.
4. Highlight the **Quality** field and select from the drop-down menu the image quality you want to record.
5. Highlight the **Dwell Time** field and set the length of time you would like to record for the associated video loss.
6. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Video Loss Event Action (Alarm Out) Setup Screen

The DVR can be set to react to video loss differently by activating an internal buzzer or external alarms.

Highlight **Video Loss Event Action (Alarm Out)** in the Event Action menu and press . The Video Loss Event Action (Alarm Out) setup screen appears.

Figure 3-46 Video Loss Event Action (Alarm Out) Setup Screen



1. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier (see *Scheduling an Alarm Output* on page 59).
2. Highlight the **Alarm Out** field and select either **Beep** or the alarm output terminal that you want to associate with the camera that has lost video.

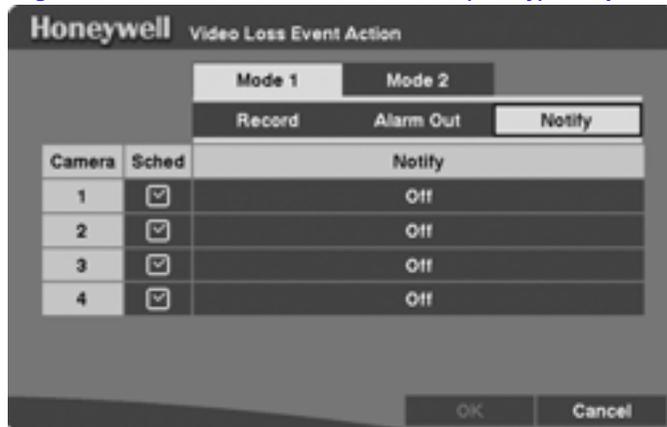
3. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Video Loss Event Action (Notify) Setup Screen

The DVR can be set to notify the remote site in the case of video loss.

1. Highlight **Video Loss Event Action (Notify)** in the Event Action menu and press . The Video Loss Event Action (Notify) setup screen appears.

Figure 3-47 Video Loss Event Action (Notify) Setup Screen



2. Highlight the **Sched** field and press . A schedule screen appears. Set the schedule as described earlier see [Scheduling an Alarm Output](#) on page 59).
3. Highlight the **Notify** field and press  to toggle between **On** and **Off**. When it is **On**, the DVR notifies the remote site when the DVR loses video input from a camera during a scheduled period of time.
4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Note For the Notify action to work, the DVR should be registered in the RASplus (Remote Administration System).

When the DVR detects video loss,  displays on each associated camera.

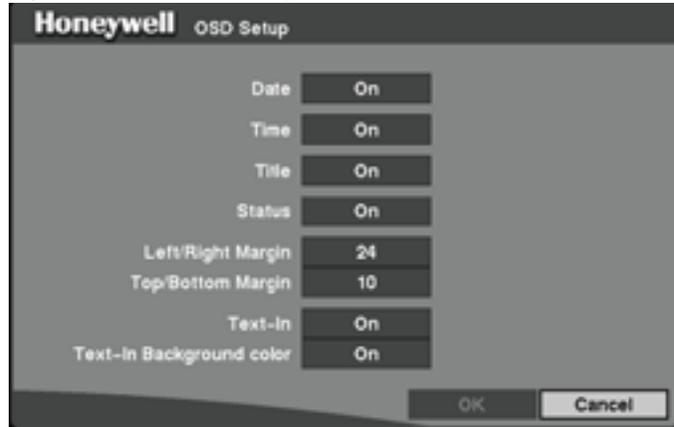
Setting Up the HRSD4 Displays

The DVR can be set up to display Date, Time, Title, and Status on screen. Each feature can be turned **On** or **Off**. You can also adjust the margins.

Setting Up the OSD (On-Screen Display)

Highlight **OSD, Main Monitoring** in the Main menu, and press  to set up the on-screen display on the main monitor.

Figure 3-48 OSD Setup Screen



1. Highlight the field beside **Date** and press  to toggle the date display **On** and **Off**.
2. Highlight the field beside **Time** and press  to toggle the time display **On** and **Off**.
3. Highlight the field beside **Title** and press  to toggle the camera title display **On** and **Off**.
4. Highlight the field beside **Status** and press  to toggle status display **On** and **Off**.

Note Each icon displayed on the screen describes the system status as in [Table 3-9](#).

Table 3-9 Screen Status Icons

Icon	Name	Action
	Freeze	Displays while in Freeze mode
	Sequence	Displays while in Sequence mode
	Zoom	Displays on the enlarged video
	Remote Control	Displays when the DVR can be controlled by the infrared remote control
	Record	Displays on camera screen from which the DVR is recording video
	Panic	Displays while in Panic recording mode

Table 3-9 Screen Status Icons

Icon	Name	Action
	Audio	Displays on a camera screen when the DVR is recording audio from that camera
	Event Detection	Displays when the DVR detects motion, alarm input, or text input event
	Video Loss	Displays when the camera loses video signal
	PTZ	Displays on each PTZ camera

Note When the camera is set to **Covert 1**, status icons are not displayed on the screen.

5. Highlight the field beside **Left/Right Margin** and press  to adjust the left and right margins. The margins can be set from **1** to **24**.
6. Highlight the field beside **Top/Bottom Margin** and press  to adjust the top and bottom margins. The margins can be set from **1** to **24**.
7. Highlight the field beside **Text-In** and press  to toggle the text-in data display **On** and **Off**.
8. Turning **On** the **Text-In Background color** setting helps you to easily and clearly read the text input strings displayed on the screen. Highlight the field beside **Text-In Background color** and press  to toggle between **On** and **Off**.

Setting Up the Main Monitoring Screen

You can adjust the display dwell time for each camera displayed on the main monitor. Also, you can set the DVR so that the video from the event-detected camera is displayed on the main monitor during the preset dwell time.

Figure 3-49 Main Monitoring Setup Screen



Option	Function
Sequence Dwell Time	Highlight the field beside Sequence Dwell Time and press  . You can adjust the sequence dwell time from 3 to 60 seconds.
Note The DVR does not sequence the camera that are experiencing video loss.	
Event Monitoring	Highlight the field beside Event Monitoring and press  to toggle between On and Off . When set to On , video from the lowest numbered camera among those connected with the event-detected sensor displays full-screen on the main monitor for the preset dwell time.
Event Monitoring Dwell Time	Highlight the field beside Event Monitoring Dwell Time and press  . You can adjust the event monitoring dwell time from 3 to 60 seconds.

Setting Up the DVR Network Connections

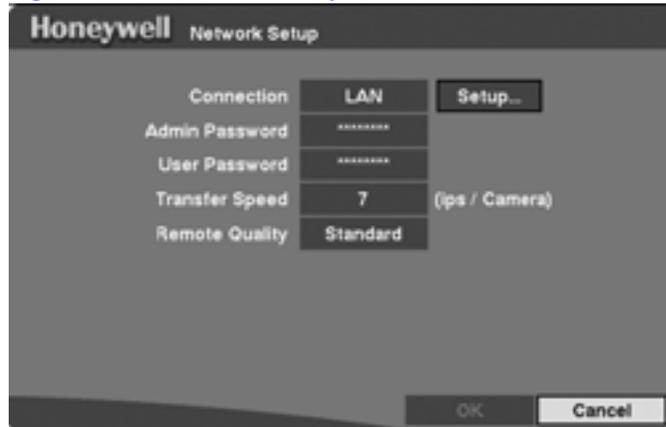
In the Network Setup screen you can set up the DVR for LAN and modem connections.

You can access the Network Setup screen in two ways:

- From the Main menu, select **Network**, and then Network Setup.
OR
- 1. From the Main menu, select **Quick Setup** and press . The Quick Setup screen appears.
- 2. Select the field beside Quick Setup, and press  to toggle **On**. More fields become active.
- 3. Highlight Network Setup and press . The Network Setup screen appears.

Using the Network Setup Screen for Network Connection

Figure 3-50 Network Setup Screen



Setting the Connection Type

Select the field beside **Connection**. Press  to toggle between **LAN** and **Modem**.

Note If the RS-232C port is being used for another device, you can not use it for network setup. You must reset this connection. See [Communicating with External Devices Using the RS-232C Port](#) on page 60.

Changing Network Passwords

Note These network passwords are case sensitive. The factory default password for both the Network Administrator and the Network User is 12345678.

Changing the Admin Password

1. Highlight the field beside **Admin Password** and press . A virtual keyboard appears.
2. Enter the current password.

3. Enter the new password. You must confirm the new password before it is accepted.

Changing a User Password

1. Highlight the field beside **User Password** and press . A virtual keyboard appears.
2. Enter the current password.
3. Enter the new password. You must confirm the new password before it is accepted.

Note These passwords are for network use. They are different from the Admin and User passwords for the DVR itself. See *Setting Up DVR Passwords* on page 94 for more about the DVR passwords.

Caution Write the password down and keep it in a safe place. After resetting the password, the default no longer works. If you forget the password, the unit must be reset using the **Factory Reset** button and you risk losing all data settings.

Setting the Transfer Speed

Transfer Speed is the number of images that can be transferred per second for each camera.

Highlight the field beside **Transfer Speed**, then press  to adjust the number.

Note The maximum transfer speed over a LAN is 30 images per second (25 ips for PAL) when the resolution is set to **Standard**. However, when set to **High**, the transfer speed decreases to 15 images per second (12.5 ips for PAL).

Caution Selecting the maximum transfer speed STOPS the recording of video. You must adjust the transfer speed if you want to continue recording.

Changing the Image Quality for Transfer

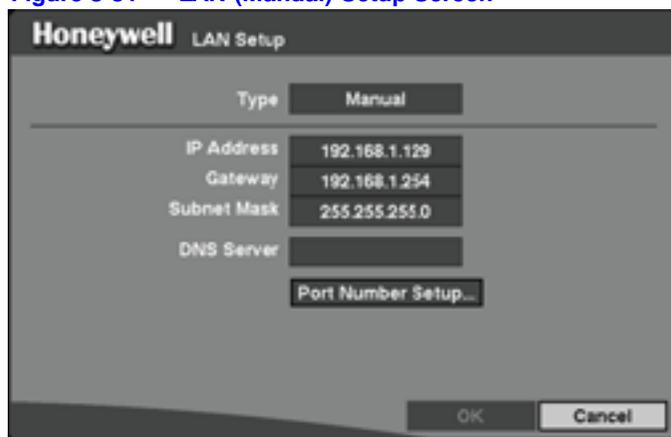
You can program the image quality for transferring images and video to the RASplus (Remote Administration System).

Highlight the field beside **Remote Quality** and press . The image quality ranges from **Very High**, **High**, **Standard**, and **Low**.

Setting Up Connectability Using the Network Setup Screen

In the Network Setup screen, select **Setup....** The LAN (Manual) Setup screen appears.

Figure 3-51 LAN (Manual) Setup Screen



Highlight the field beside **Type** and press  to select from **Manual**, **DHCP**, and **ADSL (PPPoE)**.

Setting LAN Parameters Manually

1. Select **Manual** from the Type field to set up LAN parameters manually.

Note You need to get the appropriate IP Address, Gateway, and Subnet Mask from your network administrator.

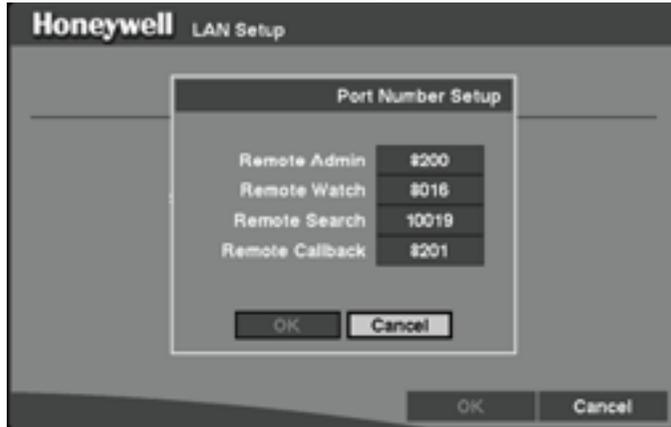
2. Change the numbers by highlighting them and using the **Up** and **Down** arrows to increase or decrease the number.

The factory default LAN settings are:

IP Address:192 . 168 . 1 . 129
 Gateway: 192 . 168 . 1 . 254
 Subnet Mask:255 . 255 . 255 . 0

3. Highlight the field beside **DNS Server** and press  to enter the IP address of the DNS server. If you set up the DNS Server, you can use the domain name of the DVRNS server instead of the IP address during the DVRNS Server setup. See *Registering the Network for DVRNS Service* on page 89 for details.
4. Highlight **Port Number Setup...** and press . The Port Number Setup screen appears.

Figure 3-52 Port Number Setup Screen



Note You need to get the appropriate Port Number for each RASplus-related program (Admin, Watch, Search, and Callback) from your network administrator.

5. Change the number by highlighting it and using the **Up** and **Down** arrows to increase or decrease the number.

The factory default Port settings are:

Remote Admin:	8200
Remote Watch:	8016
Remote Search:	10019
Remote Callback:	8201

Note The system restarts automatically after changing the port settings.

Note Do *NOT* use the same port number for two different programs, otherwise, the DVR cannot be connected with a PC running RASplus.

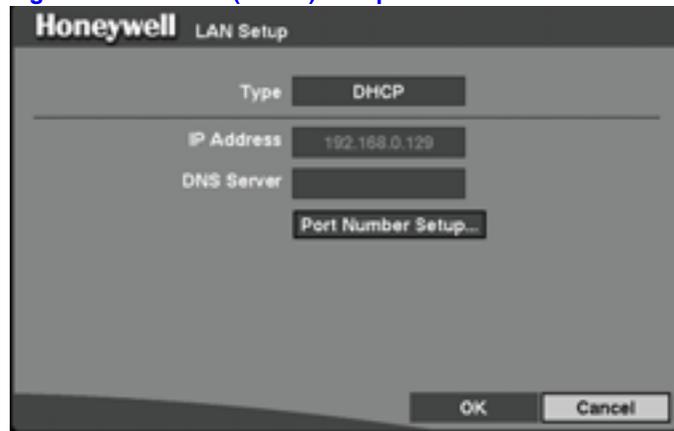
Caution When changing the port settings, you must change the port settings on a PC running RASplus as well. Refer to the RASplus manual for details.

6. Save your changes and return to the Network Setup screen by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting Up LAN Connectivity Using the Current IP Address

Select **DHCP** from the Type field and highlight **OK** to read the current IP Address of the DVR configured by DHCP (Dynamic Host Configuration Protocol) network.

Figure 3-53 LAN (DHCP) Setup Screen

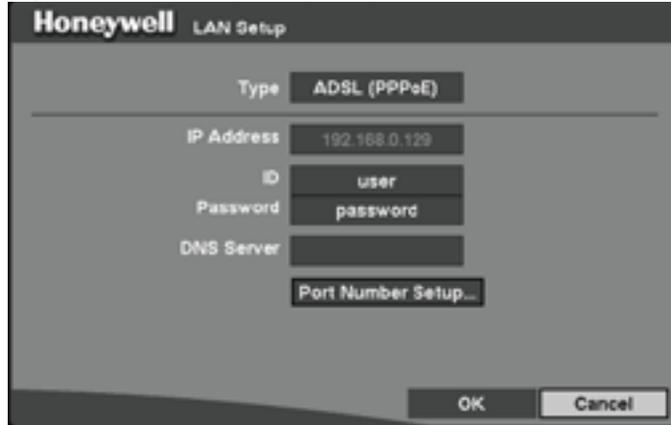


Setting Up LAN Connectivity Using ADSL

1. Select **ADSL (PPPoE)** to set up the ADSL network. The LAN (ADSL) Setup screen appears.

Note ADSL and modem cannot be configured at the same time. If the DVR is networked via modem, the **ADSL (PPPoE)** can not be selected.

Figure 3-54 LAN (ADSL) Setup Screen



2. Highlight the field beside **ID** and press . A virtual keyboard appears with which you can enter the ID for the ADSL connection.
3. Highlight the field beside **Password** and press . A virtual keyboard appears with which you can enter the password for ADSL connection.

Note Entering the **ID** and **Password** and highlighting **OK** reads the current IP Address of the DVR configured by the ADSL network.

Note If the DVR is configured for DHCP or an ADSL network, the IP address of the DVR might change whenever the unit is turned on.

Setting Up the Modem

In the Network Setup screen, highlight the field beside Connection, and press  to toggle between LAN and Modem. After selecting Modem, highlight Setup and press . The Modem Setup screen appears.

Figure 3-55 Modem Setup Screen



1. Highlight the field beside **Baud Rate** and press . A list appears of baud rates ranging from **300** to **115,200**.
2. Highlight the field beside **Data Bit** and press to choose between **7 bit** and **8 bit** formats.
3. Highlight the field beside **Stop Bit** and press to choose between **1** and **2 Stop Bits**.
4. Highlight the field beside **Parity** and press . A drop-down list appears. You can select from **None**, **Odd**, or **Even** parity.
5. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Note If the RS-232C port is in use for Remote Control, Text-In, or PTZ, networking cannot be configured for a modem.

Registering the Network for DVRNS Service

You can register the DVR using the DVRNS (DVR Name Service) server.

Figure 3-56 DVRNS Setup Screen



1. Highlight the box beside **Use DVR Name Service** and press  to toggle between **On** and **Off**. When **On**, the entire setup screen becomes active.
2. Highlight the field beside **DVRNS Server** and use the virtual keyboard to enter the IP address or domain name of the DVRNS server.

Note You need to get the IP Address or domain name of the DVRNS Server from your network administrator.

Note You can use the domain name instead of the IP address if you already set up the DNS Server during the LAN Setup.

3. Highlight the field beside **Port** and enter the port number of the DVRNS server. The port number can be set from **10000** to **12000**.

Note The DVRNS server settings on your DVR should match the settings on the registered DVRNS server. Any changes on the DVRNS server might cause improper operation.

4. Highlight the **Use NAT** field and press  to toggle **On** and **Off**.

Note When using the NAT (Network Address Translation) device, refer to the NAT manufacturer's instructions for the proper network settings.

5. Highlight the field beside **DVR Name** and press  to give a name to the DVR you want to register on the DVRNS server. A virtual keyboard appears with which you can enter the DVR name.
6. Select **Check** to check if you can use the name you have entered.

Note You must check the DVR name you enter by selecting **Check** before you can save the DVRNS changes.

Note If you try to not enter or name, or if you try to enter a name already registered on the DVRNS server, an error message displays.

7. Highlight **OK** and press  to register the DVR on the DVRNS server. If you have proper DVRNS settings, then the DVRNS server help desk information displays in the field beside Help Desk.

Caution If you want to use the same DVR name registered on the DVRNS server after you have initialized the system using the factory reset, you must contact the DVRNS server manager. Please record and keep the help desk information before factory reset.

Caution The DVRNS registration is limited to one DVRNS server. The DVR cannot be registered to multiple DVRNS servers. Please contact your network administrator when you want to register the DVR to another DVRNS server.

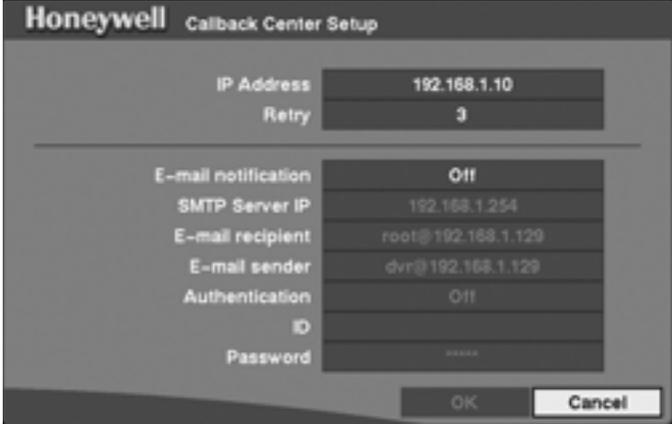
Setting up the Callback Center Feature

You can set up the DVR to either contact your computer or your pager when an event occurs. If you have the LAN set up, then you can set the DVR to contact a computer running RASplus (Remote Administration System). If you have a modem connected to the DVR, then you can set up the DVR to dial a pager with a numeric message when an event occurs.

Setting Up the Callback Center to Contact a Computer

From the Main menu, select **Network**, then highlight **Callback Center** and press . The Callback Center (LAN) setup screen appears because you selected LAN as the network connection type in the Network Setup screen (see *Setting the Connection Type* on page 83).

Figure 3-57 Callback Center (LAN) Setup Screen



Honeywell Callback Center Setup	
IP Address	192.168.1.10
Retry	3
<hr/>	
E-mail notification	Off
SMTP Server IP	192.168.1.254
E-mail recipient	root@192.168.1.129
E-mail sender	dvr@192.168.1.129
Authentication	Off
ID	
Password	
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

1. Highlight the field beside **IP Address** and enter the IP address of the computer you want contacted during an event.
2. Highlight the field beside **Retry** and enter the number of times you would like the DVR to try contacting the computer. You can select from **1** to **10** retries.
3. Highlight the field beside **E-mail notification** and press  to toggle between **On** and **Off**. When **On**, the entire Callback Center Setup screen becomes active.
4. Highlight the field beside **SMTP Server IP** and enter the SMTP server IP address obtained from your system administrator.
5. Highlight the field beside **E-mail recipient** and use the virtual keyboard to enter the recipient's e-mail address.
6. Highlight the field beside **E-mail sender** and use the virtual keyboard to enter the sender's e-mail address.

Note The e-mail address must include the “at” character (@) to be a valid address.

7. Highlight the field beside **Authentication** and press  to toggle between **On** and **Off**. When turned **On**, the Password field becomes active.
8. Highlight the field beside **ID** and enter the **SMTP ID**. A virtual keyboard appears with which you can enter the ID.
9. Highlight the field beside **Password** and enter the SMTP password. A virtual keyboard appears with which you can enter the password.
10. Select **OK** and then press  to save your settings. Select **Cancel** and then press  to close without saving your settings.

Note **Authentication** should be turned **On** and the **ID** and **Password** should be entered when using an SMTP server requiring user authentication.

Setting Up the Callback Center to Contact a Pager

You can set the DVR to dial a pager and leave a four- or five-digit message when an event occurs. This message is a code, as shown in *Table 3-10*. The first three digits of the message are the site ID number. The last digits are the type of event.

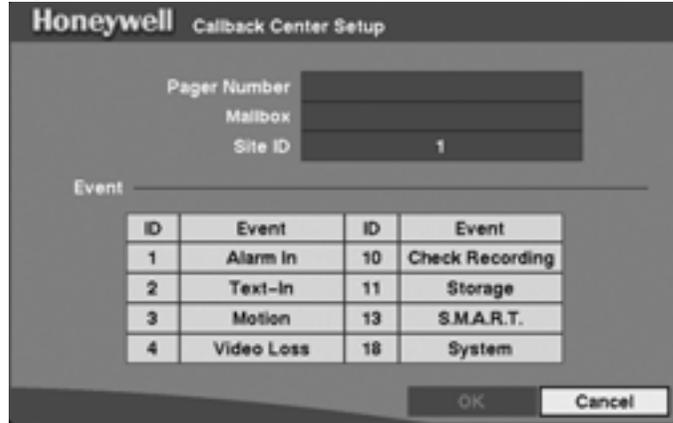
Table 3-10 Callback Center Pager Codes

Code	Translation
1	Alarm In
2	Text-In
3	Motion Detection
4	Video Loss
10	Check Recording
11	Storage
13	S.M.A.R.T.
18	System

For example, 0754 means that Site 75 has lost video.

From the Main menu, select **Network**, then **Callback Center**, and then press . The Callback Center (Modem) setup screen appears because you selected Modem as the network connection type in the Network Setup screen (see *Setting the Connection Type* on page 83).

Figure 3-58 Callback Center (Modem) Setup Screen



1. Highlight the field beside **Pager Number** and enter the telephone number of the pager. Enter the number as it must be dialed from your telephone system. For example, if you must dial 9 for an outside line, enter 9 before the pager number.
2. Highlight the field beside **Mailbox** and use the virtual keyboard to enter the voice mailbox number if your pager uses a voice mailbox.
3. Highlight the field beside **Site ID** and use the virtual keyboard to enter a three-digit site ID number.

Note The DVR waits for at least four minutes between pages. If another event occurs less than four minutes after the DVR has notified a pager, it does not dial the pager again. The DVR is programmed this way so that the telephone line does not get tied up.

4. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Setting Up DVR Passwords

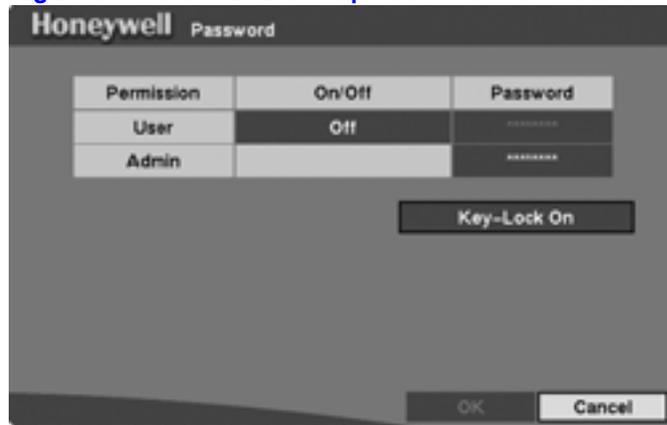
An Administrator password is required for the following actions:

- to turn off the system
- to enter the setup screen
- to load default setups
- to clear all data
- to change system date and time
- to change the Administrator password

A User password is required for the following actions:

- to enter playback
 - to control fast forward playback and fast backward playback modes from live monitoring mode
 - to enter the search menu screen in live monitoring mode
1. Highlight **Password** in the Main menu and press  to enter the Password screen.

Figure 3-59 Password Setup Screen



2. Highlight the field beside **User** and press  to toggle between **On** and **Off**.
 If you set the password to **On**, you are asked to enter the current password so that you can turn the Password function **Off**.
 If you set the password to **Off**, you are asked to enter the new password and to confirm it before the Password function is turned **On**.

Note The Administrator password cannot be turned **On** and **Off**.

Changing the Administrator Password

You can change the Administrator password by first entering the current password, entering a new password, and then confirming the new password.

1. Highlight the **Password** field and press  to change the password. A screen appears asking you to enter the current password.
2. Enter the current password. If you enter the correct password, another screen appears.
3. Use the camera buttons to enter the new password, and then press . Another screen appears asking you to confirm the new password.
4. Confirm the new password.

Note The Admin and User passwords can have up to eight digits using the camera buttons. The default Admin password is 4321.

Caution Write down the new password and save it in a secure place. If you forget the password, you must reset the DVR using the **Factory Reset** button. If you reset the DVR, you will lose all of your data settings.

5. Save your changes by highlighting **OK** and pressing . Select **Cancel** to exit the screen without saving the changes.

Locking the Buttons on the Front Panel or Remote Control

Highlight **Key Lock On** and press . Once the buttons are locked, you can press any button on the front panel or remote control to display a password screen with which you can unlock the buttons.

Unlocking the Buttons on the Front Panel or Remote Control

Press any button on the front panel or remote control to display a password screen. Enter the correct password to unlock the keys. The Key Lock password is 4321. You can also use the Administrator password to unlock the keys.

Using the Config Screen

Use the Config menu to perform functions such as:

- switching between Quick Setup and Normal Setup
- copying/backing up video clips
- loading or saving a setup
- loading default setup
- clearing all data

Figure 3-60 Config Screen



To learn about setting up the DVR using the Quick Setup screen, see *Setting Up Your DVR Using the Quick Setup Screen* on page 36.

Backing Up Video Clips Using Clip Copy

Use the Clip Copy screen to back up video to an external USB hard disk drive, USB CD-RW drive, or USB flash drive. The backup clip images can be viewed on computers running Microsoft® Windows 98, ME, 2000, XP, or Vista. See *Appendix A, USB Hard Disk Drive Preparation* for information on preparing the external drive for back up.

Select **Clip Copy** from the Config screen and press . The Clip Copy screen appears.

Figure 3-61 Clip Copy Screen



1. Connect the USB device to DVR if it is not already connected.
2. Highlight the field at the top and press  to select the type of the drive to use for back up. A drop-down list of available drives appears. You can select **USB HDD, USB CD-RW, or USB Flash Memory**.

If you want to archive audio with video, place a checkmark in the Audio box.

If you want to archive Text-In text, place a checkmark in the Text-In box.

3. Define how much video to back up by either changing the start and end times and dates or by checking the First and Last boxes.
4. Select which camera(s) you want to back up.
5. Highlight the **File Name** field and press . A virtual keyboard appears.
6. Enter a file name for the video you are backing up and select **Close**. The DVR automatically adds the camera number (for example 01) and .exe to the file name.

If you want to save the file in a specific folder, enter the folder name followed by a "/". For example, you would enter: foLder/fiLename.

7. Highlight **Start** and press  after you have given the video a file name. The DVR displays the drive capacity and the clip file size. Then it asks if you want to continue.

When the selected drive has more than 2 partitions, the Disk Partition Selection screen appears (*Disk Partition Selection Screen* on page 98). If the file system is not FAT32, the TYPE displays NOT Supported.

Figure 3-62 Disk Partition Selection Screen



When clip copying is complete, the message **Clip copy is complete** appears in the top dark margin next to Honeywell. You can disconnect the USB device after this message appears.

After you have selected the drive and partition to use for clip copy, the DVR displays the drive capacity and the clip size, and then asks if you want to continue.

Note Do not back up files larger than 2GB.

Using the DVR While Backing Up Video

You can use other functions on the DVR while video is being backed up. To do this, highlight **Close** and press . You can return to the **Clip Copy** screen at any time to check the progress.

Note You cannot end the archiving process during CD burning.

Refer to the *RASplus User's Manual* for instructions on how to review the images you have backed up.

Note During clip copy, you cannot change the system date and time, shut the system down, switch to the Quick Setup mode, clear all data, or change the system setup from a remote site.

Note The recording speed decreases to 1 ips per camera during CD burning or while the DVR is preparing clip copy data on a hard disk drive.

Caution Do *NOT* use poor quality CD-R or CD-RW discs or ones that have been scratched or damaged in any way.

Caution Do *NOT* disconnect the USB cable or the power from the external drive while backing up video. If the external drive is shut down or the USB cable is disconnected while backing up, THE DVR SYSTEM MAY NOT WORK NORMALLY OR THE EXTERNAL DRIVE COULD BE DAMAGED, and you will get an error message the next time you try to back up.

If the external drive is shut down or the USB cable is disconnected while backing up, you need to power down the DVR and restart it to delete/bypass the error message.

If the file system of the USB-IDE hard disk drive has been corrupted, this error message cannot be dismissed. Even after restarting, the DVR may automatically restart while preparing a backup. You must recover the file system using the recovery program, or you must reformat the hard disk drive.

Loading Default Settings

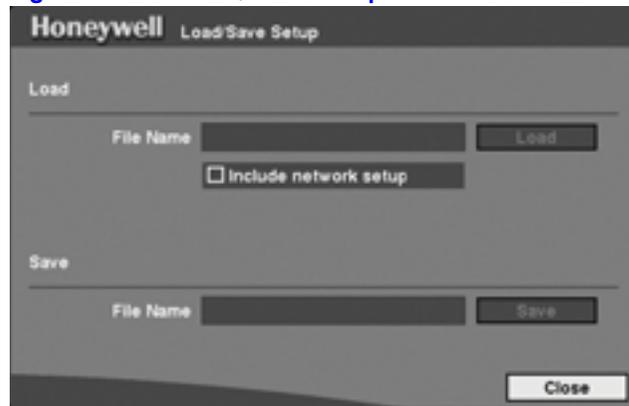
1. Highlight and select **Load Default Setup** from the Config menu. A screen appears that asks you if you really want to load default settings.
2. Confirm with a password that you want to load default settings.

Note Loading the Default Setup does not change the current time, time zone, daylight saving time, and network settings.

Loading and Saving DVR Settings

The Load/Save screen allows you to load saved DVR settings or save the current DVR settings.

Figure 3-63 Load / Save Setup Screen



Loading Saved DVR Settings

1. Connect to the DVR the USB device containing the setup file (.cfg).
2. Highlight **Load - File Name** and press **⏏**. The Load Setup screen appears and displays the setup file names that are available.
3. Select the desired setup file and press **OK**. The selected file name displays in the **File Name** field.
4. Select **Load** to load the selected saved settings and change the DVR settings accordingly.

Note Even after changing the DVR settings by loading saved settings, the time-related settings (Date/Time, Time Zone, and Daylight Saving Time) do *NOT* change.

Note If you want to change the network settings, check **Include network setup**. Otherwise, the network settings do *NOT* change.

Saving Current DVR Settings

1. Connect the USB device to the DVR.
2. Highlight **Save - File Name** and press . A virtual keyboard appears with which you can enter a file name.
3. Select **Save** to save the current DVR settings in .cfg file format on the USB device.

Clearing All Data

Caution Selecting **Clear All Data** erases all recorded video.

1. Select **Config** from the Main menu, and then highlight and select **Clear All Data**. A screen appears that asks you if you really want to clear all data.
2. Confirm with a password that you want to clear all data.

Operation

Note This chapter assumes your DVR has been installed and configured. If it has not, please see *Chapter 2, Installation* and *Chapter 3, Configuration*.

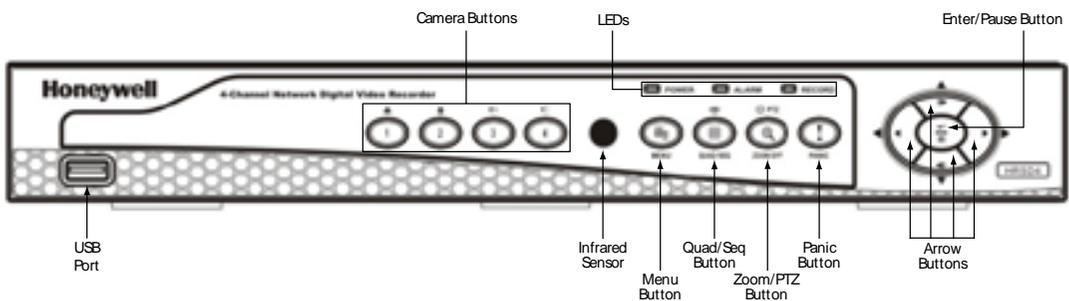
The HRSD4 DVR controls are similar to a VCR. As with a VCR, the main functions are recording and playing back video. However, you have much greater control. You can:

- Establish recording schedules based on the time of day and the day of the week
- Search through the recorded video using much more sophisticated tools than those available with VCRs
- Control and view images remotely
- Record video at the same time you are watching previously recorded video

The DVR can be connected remotely using RASplus software for live viewing, searching, playback, and copying video evidence clips using a computer.

The front panel controls are fully described in *Chapter 3, Configuration*.

Figure 4-1 HRSD 4 Front Panel Controls



Turning On the Power

After installing the DVR (See *Chapter 2, Installation*), it is ready to record.

Press **POWER**. The unit takes approximately 60 seconds to initialize.

Live Monitoring

As soon as the DVR completes its initialization process, live action video shows on the attached monitor. The default mode is to display four cameras at the same time.

Changing Live Monitoring Views

Full Screen Display

Press any camera button to display that camera's image full screen.

Multi-View Displays

Press **QUAD/SEQUENCE** on the front of the DVR to toggle between quad (2x2) display mode and sequence mode.

Freezing the Live Monitoring Image

Press  in the Live Monitoring mode to freeze the current image until you press  again. The screen displays * when the DVR is in Freeze mode.

Monitoring Event-Detected Video

The DVR can be set to display the event-detected video in full-screen on the monitor during the preset dwell time when there is an event. The monitor displays video from the lowest numbered camera of the cameras associated with the event-detected sensor.

After the event monitoring dwell time passes, the DVR returns to the previous screen format. When event monitoring is activated, the monitoring for all other subsequent events is ignored.

Overriding the Event-Detected Video Setting

Press the individual camera button during event monitoring to release the DVR from displaying the current event and to display the selected camera.

OR

Press **QUAD/SEQUENCE** during event monitoring to return to the previous screen format.

Displaying Text-In Data

The DVR displays text-in data if there is any text input during live monitoring. The text-in information superimposes over the monitor's image.

Note The text-in displays only in full screen.

Figure 4-2 Live Monitoring (Text-In) Screen



Using Pan, Tilt, and Zoom During Live Monitoring

The DVR controls cameras with Pan, Tilt, and Zoom (PTZ) capabilities. To enter the PTZ mode while in the full-screen mode of the desired camera, press **PTZ**. You can control the camera using the buttons on the front panel or remote control, or by setting up presets.

Controlling PTZ Using the Remote Control

- Press the arrow buttons to pan left and right, and to tilt the camera up and down.
- Use **CAMERA 1** and **CAMERA 2** to zoom in or zoom out.
- Use **CAMERA 3** and **CAMERA 4** to focus the image.

Note You can only enter the PTZ mode if the RS-232C port is set to **PTZ**, and the PTZ device is selected during the Camera setup. The PTZ icon () displays on the camera screen.

Note When the DVR is in the PTZ mode, a white line displays around the image.

Note You cannot enter the PTZ mode when the selected camera is **Off**, has lost or is set to **Covert**.

Setting Camera Preset Positions

Using the PTZ Menu

1. Press the **MENU** button in the PTZ mode. The PTZ menu appears.

Figure 4-3 PTZ Menu



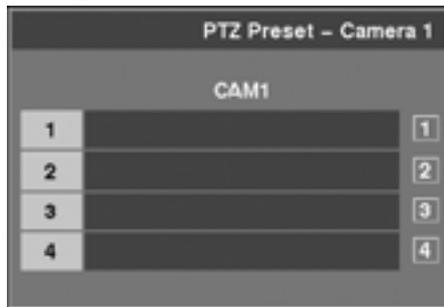
2. Set the feature you wish to control by selecting it from the menu. Refer to the camera manufacturer's instructions for the proper settings. Depending on the camera specifications, some features may not be supported.
3. Exit the PTZ Menu by either:
 Clicking **Set Preset** to save the settings.
 Or
 Clicking **Quit** to close the menu without saving the settings.

Saving a Preset Camera Position

After you have the camera at the desired settings, you can save camera position settings as presets so that you can go directly to desired views.

1. Select **Set Preset** in the PTZ Menu. The PTZ Preset screen appears.

Figure 4-4 PTZ Preset Screen



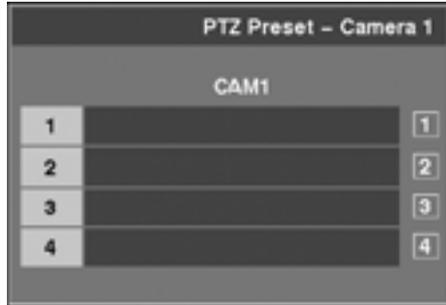
2. Select the number you want to assign to the preset and press .
3. Enter the preset name using the virtual keyboard and press  again to save as preset.

Applying a Preset Camera Position

After you have set the camera presets, you can go directly to desired views.

1. Press **QUAD/SEQUENCE** to load the Preset Apply screen.

Figure 4-5 Preset Apply Screen



2. Select the desired preset number to load the preset.

Using Digital Zoom

Note You cannot enter the Digital Zoom mode when the selected camera is **Off**, has lost video, or is set to **Covert**.

1. Press **PTZ** in the PTZ mode to enter the Digital Zoom Mode. If a PTZ device is not installed, then press **PTZ** in the live monitoring mode to enter the Digital Zoom Mode directly. A small, bright box appears over the image when you are in the Digital Zoom mode. This box indicates the area to be enlarged.
2. Move the position of that box using the arrow buttons, and press  to enlarge that area. A  displays on the enlarged screen.
3. Press **PTZ** again to return the DVR to the Live Monitoring mode.

Recording

Recording Video

After installing the DVR (see *Chapter 2, Installation*), you are ready to record. Unless you change the setup, the DVR immediately begins to record video and continues to record until the hard disk drive is full.

The factory default is set to **Overwrite** when the hard disk drive is full. When in the **Overwrite** mode, the DVR continues recording when the hard disk drive is full by overwriting the oldest recorded video. The DVR can be set to stop recording (**Stop**) when the hard disk drive is full.

Although you can record without changing the unit from its original factory settings, you can use the many tools to set the DVR for your recording needs. See *Chapter 3, Configuration* for detailed descriptions of the recording mode options.

Note When the DVR is recording video, the RECORD LED lights up on the front panel and the  icon displays on each camera screen.

Panic Recording

If you have set time-lapse or event recording, you can override these settings by using the **PANIC** button to start recording immediately.

To activate Panic recording, press **PANIC**. When Panic recording, the DVR records video regardless of the time-lapse or event recording schedule.

To release the Panic recording, press **PANIC** again.

Note When the DVR is in the Panic recording mode, the RECORD LED flickers and  displays on each camera screen.

Recording Audio

If you set the DVR to record audio, it records audio when video is recording.

Note The DVR does *NOT* record audio when the recording speed is set to less than 15 ips. If you are monitoring the DVR remotely using the RASplus program, audio recording may be affected by network bandwidth conditions. Any activity in addition to recording, such as monitoring or playback, may drop the recording speed below 15 ips.

Note Ensure that you comply with all local and federal laws and regulations when recording audio.

Playing Recorded Video

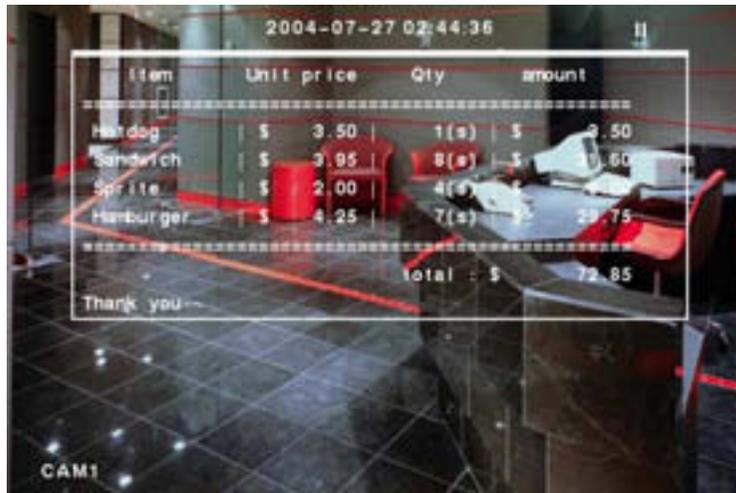
You can use the arrow buttons to view recorded video. After searching for video, the DVR begins playback with the most recent image. When playing recorded video after initial playback, the DVR starts playing video from the last recalled image.

If there was any text input during recording, then the DVR displays the text-in data over the image during playback.

Note The text-in displays only in the full screen.

Note Ensure that **Text-In** is turned **On** during OSD setup if you want to display the text-in information on the playback image.

Figure 4-6 Playback (Text-In) Screen



Playback Arrow Buttons

Table 4-1 Playback Arrow Buttons

Button	Actions
	Press to play video backward at high speed. Press again to toggle the playback speed from , , and respectively.
	Press to play video forward at high speed. Press to toggle the playback speed from , , and respectively.
	After selecting , press the up-arrow button to advance to the next image.
	After selecting , press the down-arrow button to review to the previous image.
Note	Entering Fast/Backward Playback mode from Live Monitoring mode can be password protected.
Enter/Pause Button	Press to pause the video on the screen. The screen displays .
Camera Buttons (1 to 4)	Press a camera button to display the image of that camera full screen.
Quad/Sequence Button	Press QUAD/SEQUENCE to change the display format from full screen to quad (2x2) mode when playing back video. To return the display to full screen, press a camera button during quad (2x2) display mode.
Note	When playing recorded video at maximum speed with very high image quality, playback of recorded audio may be interrupted occasionally.
Note	The user cannot change the system setup from a remote site during Playback mode.

Using Digital Zoom in Playback Mode

You can use Digital Zoom during playback to enlarge an area of the recorded image.

1. Press **PTZ** while in Playback mode to enter the Digital Zoom Playback mode. The image pauses and the pause icon (||) appears. A small, bright box lays over the image indicating the enlarged area.

Figure 4-7 Digital Zoom Screen



2. Move the position of the box using the arrow buttons to select the enlarged area, and press (⏏) to enlarge that area. A (⏏) displays on the enlarged screen.

Figure 4-8 Enlarged Digital Zoom Screen



3. Press **PTZ** again to release the Digital Zoom Playback mode and return to regular playback mode.

Note You cannot enter the Digital Zoom Playback mode when the selected camera is set to **Covert** and not played back.

Searching Recorded Video

Press **MENU** in the playback mode to display the Search Menu.

Figure 4-9 Search Menu

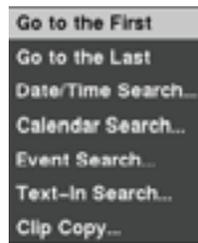


Table 4-2 Search Menu Functions

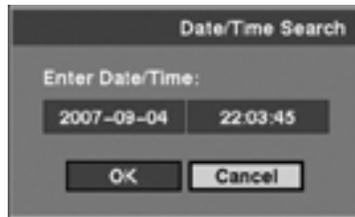
Search Menu Choice	Function
Go to the First	Displays the first recorded image
Go to the Last	Displays the last recorded image
Date/Time Search...	Searches by date and time (see <i>Date/Time Search</i> on page 113 for more details)
Calendar Search...	Searches for a date using a calendar (see <i>Calendar Search</i> on page 114 for more details)
Event Search...	Selects video from the event log (see <i>Event Search</i> on page 115 for more details)
Text-In Search...	Searches text input strings (see <i>Text-In Search</i> on page 116 for more details)
Clip Copy...	Clips a video segment and saves it (see <i>Backing Up Video Clips Using Clip Copy</i> on page 97)

Date/Time Search

You can search for video based on the date and time when the video was recorded.

1. Select **Date/Time Search...** from the Search menu. The Date/Time Search screen appears.

Figure 4-10 Date/Time Search Screen

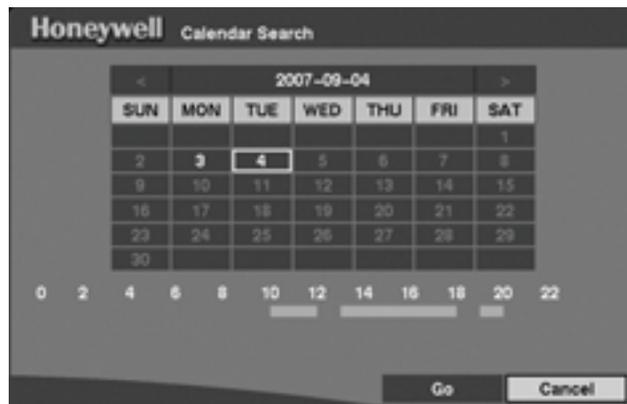


2. Move the cursor over the date and press . Adjust the numbers using the arrows. When you have set the date for which you want to search for video, press .
3. Move the cursor over the time and press . Adjust the numbers using the arrows. When you have entered the time for which you want to search for video, press .
4. Highlight **OK** and press  when you have set the date and time you want to search. The video for the selected date and time displays. (If no video was recorded at the selected time, a blank screen appears.)
5. Use the arrows to review the video that was recorded before and after the specified date and time.

Calendar Search

1. Select **Calendar Search...** from the Search menu. The Calendar Search screen appears.

Figure 4-11 Calendar Search Screen



Days with recorded video display on the calendar with white numbers.

2. Highlight a day using the arrows and press  to select it. A time bar displays at the bottom of the calendar. Hours in which video was recorded are highlighted with blue.
3. Highlight the time bar and select the time using the arrows.

Note The time bar is divided into one-hour segments. If a segment is highlighted, it means that some video was recorded during that hour. However, it does *NOT* mean video was recorded for the entire hour.

4. Highlight **GO** and press  after you have set the date and time for which you want to search for video. The video for the selected date and time displays. Use the arrows to review the surrounding video.

Event Search

The DVR records a log entry of each time the Alarm Input port is activated, and compiles these log entries in a list. The Event Log screen displays this list. You can search the Event Log for specific events.

1. From the Search menu, select **Event Search...** The Event Search screen appears.

Figure 4-12 Event Log Screen



2. Highlight the event for which you would like to see video.
3. Press  to extract the event video and display the first image of the event.
4. Press  or  to start playing the event video segment.
5. Press  again to pause the video.
6. Press  again to return to live monitoring.

Query Search

You can also narrow your event search by selecting **Query...** and setting up the new search condition. You can search by event or by camera.

1. Select **Query Search...** from the Event Log screen. The Event Search (by Event) screen appears.

Figure 4-13 Event Search (by Event) Screen



2. Highlight the field beside **Search by** and press  to toggle between **Search by (Event)** and **Search by (Camera)**.

Figure 4-14 Event Search (by Camera) Screen



In Event Search, you can search video from the first to last recorded images, or you can set the start and stop times and dates.

If you deselect the boxes beside First and Last, you can specify dates and times for your search.

In Event Search (by Camera), you can select the target cameras and event options.

In Event Search (by Event), you can select event options for each device.

3. After selecting your Search by conditions, highlight **Find** and press  to display the search results in the Event Log screen.
4. Select **Cancel** to exit the screen without saving the changes.

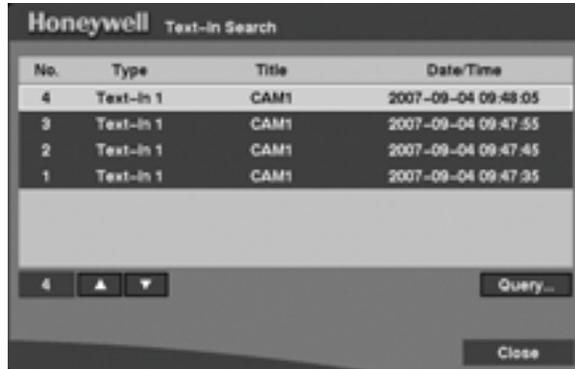
Text-In Search

The DVR maintains a log of each time there is text input. You can use either the Text-In Log screen or the Text-In Search screen to search for text input on the recorded video.

Searching with the Text-In Log screen

1. Select **Text-In Search...** from the Search menu. The Text-In Log screen appears.

Figure 4-15 Text-In Log Screen



2. Highlight the event for which you would like to see video.
3. Press  to extract the event video and display the first image of the event.
4. Press  to start playing the text-in video segment with the text-in data on the image.
5. Press  to pause the video.
6. Press  again to return to live monitoring.

Setting up Search Conditions for a Text-In Search

You can also narrow your event search by selecting **Query...** and setting up the new search condition.

Figure 4-16 Text-In Search Screen



You can search video from the first to last recorded images, or you can set the start and search times and dates.

1. Select the target cameras to search for text-in data.

2. Highlight the **Case Sensitive** field and press  to toggle between **On** and **Off**. If the Case Sensitive field is turned **On**, the DVR distinguishes between upper and lower case letters.
3. Highlight the **Load Query** field and press  to load the saved Query settings.
4. Highlight the **Save Query** field and press  to save the current Query settings. Enter the title for the current Query option using the virtual keyboard.
5. Highlight the **Clear Query** field and press  to delete the current Query settings.
6. Highlight the **Name** field and enter the text to search using the virtual keyboard.
7. Highlight the **Comp.** field and enter the comparison operator using the virtual keyboard.
8. Highlight the **Value** field and enter the comparison value using the virtual keyboard.

Note The **Column** and **Line** fields can be used for more specific searches of the text-in data. **Column** indicates the location of each individual category, and **Line** indicates the line where the category is located. Change the **Column** and **Line** values by highlighting them and using the **UP** and **DOWN** arrows to increase and decrease the value.

Note Select AND or OR in the “-” field for a more specific text-in data search.

9. Highlight **Start** and press  to display the search results in the Text-In Log screen after you have set your desired search conditions.
10. Select **Close** to exit the screen and return to the previous screen.

A

USB Hard Disk Drive Preparation

Preparing the USB-IDE hard disk drive in Windows 2000

Note Preparing a USB-IDE hard disk drive under Windows XP is almost identical to Windows 2000.

11. Connect the USB-IDE hard disk drive to your computer using the USB Cable.
12. Turn on your computer.
13. The USB device icon should display on the Taskbar.
14. If the USB-IDE hard disk drive is partitioned or has data, it shows up in My Computer as a hard disk drive icon. Check the file system by right-clicking on the icon and checking under **Properties** > **General** > **File System**. If the file system is *NOT* the FAT32 format, then format the USB-IDE hard disk drive using the FAT32 format.
15. If the USB-IDE hard disk drive is not partitioned, go to **Administrative Tools** in the Control Panel and launch **Computer Management**. Open **Disk Management** in Storage and right-click an unallocated region of the USB-IDE hard disk drive. Then, select **Create Partition**.
16. In the Create Partition wizard, select **Next** then **Primary Partition**, and follow the instructions on the screen. Ensure that **FAT32** is selected for the file system.

Note The partition size should be less than 32GB because of Windows OS limitations.

After formatting is complete, the USB-IDE hard disk drive is added to My Computer.

17. Connect the USB-IDE hard disk drive to the DVR.

Preparing the USB-IDE hard disk drive in Windows 98

Note Preparing a USB-IDE hard disk drive under Windows ME is almost identical to Windows 98.

1. Connect the USB-IDE hard disk drive to your computer using the USB Cable.
2. Turn on your computer. The Add New Hardware wizard screen appears.
3. Install the device driver for the USB backup device following the instructions provided with your USB hard disk drive.
4. If the USB-IDE hard disk drive is partitioned or contains data, it will show up in My Computer as a hard disk drive icon. Check the file system in **Properties > General > File System**. If the file system is *NOT* FAT32 format, format the USB-IDE hard disk drive with FAT32 format.
5. Run the FDISK utility by clicking **Start** then **RUN**. Type `fdisk` and click **OK**.
6. When the MS-DOS command prompt appears, type `Y` and press **ENTER**.
7. In the FDISK Option menu, choose **5. Change current fixed disk drive**.
8. Choose the appropriate letter corresponding to the USB-IDE hard disk drive.
9. In the FDISK Option menu, choose **1. Create DOS partition or Logical DOS Drive**.
10. In the Create DOS Partition or Logical DOS Drive menu, choose **1. Create Primary DOS Partition**. Then type `Y` to use all available space, and then press **ENTER**. Press **ESC** to exit the screen after the USB-IDE hard disk drive partition is created.
11. Restart your computer and verify the newly created drive is in My Computer.
12. Right-click the newly created hard disk drive icon and select **Format**.
13. In the Format Screen, select **Full** as the Format type and press **Start**.
14. After formatting is complete, connect the USB-IDE hard disk drive to the DVR.

B

Text-In Query Examples

Query Example I

```

          1          2          3          4          5          6
123456789012345678901234567890123456789012345678901234567890

      Item          Unit price          Qty          amount

=====

Coke          | $    2.20 | 1(s) | $    2.20
Fanta          | $    2.20 | 1(s) | $    2.20
Hotdog          | $    3.50 | 3(s) | $   10.50
Pepsi          | $    1.95 | 1(s) | $    1.95

=====

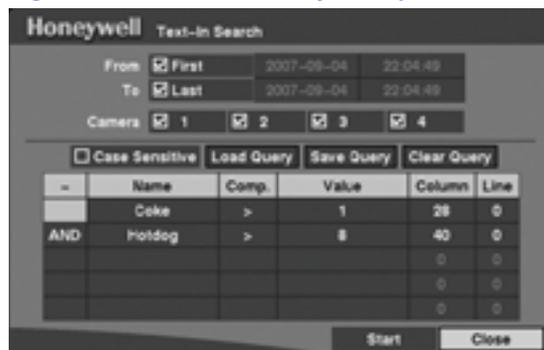
                                total : $    16.85

Thank you~~
    
```

In the above text-in data, you can find that the comparison value is located at 17th (Unit price, \$ mark will be ignored automatically), 28th (Qty) and 40th (amount) characters (including spaces) from the left. In this case, you can enter 17, 28, and 40 in each Column field.

For example, if you want to search for Coke with a **Qty** (Quantity) of more than 1 and Hotdog with an **amount** totaling over \$8, the following search condition can be set.

Figure B-1 Text-In Query Example 1



Query Example II

1 2 3 4 5 6
 123456789012345678901234567890123456789012345678901234567890

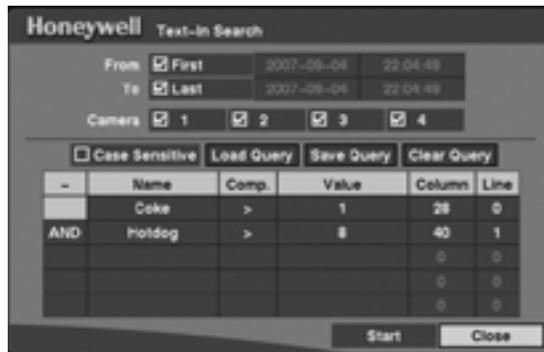
Item	Unit price	Qty	amount
Coke	\$ 2.20	1(s)	\$ 2.20
Fanta	\$ 2.20	1(s)	\$ 2.20
Hotdog	\$ 3.50	3(s)	\$ 10.50
Pepsi	\$ 1.95	1(s)	\$ 1.95
total : \$			16.85

Thank you~~

In the above text-in data, you can find that the comparison value is located at 17th (Unit price, \$ mark will be ignored automatically), 28th (Qty) and 40th (amount) characters (including spaces) from the left, but the value of amount category is located on a different line from Item. In this case, you can enter 17, 28, and 40 in each Column field and enter 1 in the Line field for the next line.

For example, if you want to search for Coke with a **Qty** (Quantity) of more than 1 and Hotdog with an **amount** totaling over \$8, the following search condition can be set.

Figure B-2 Text-In Query Example 2



C

Troubleshooting

Problem	Possible Solution
No Power	<ul style="list-style-type: none"> • Check power cord connections • Confirm that there is power at the outlet
No Live Video	<ul style="list-style-type: none"> • Check camera video cable and connections • Check monitor video cable and connections • Confirm that the camera has power • Check camera lens settings • Check CVBS/VGA switch settings
Live Video Very Bright	If a cable is attached to the "Loop" connector, ensure that it is connected to a properly terminated device.
DVR has stopped recording	If hard disk drive is full, you need to either delete video or set the DVR to the Overwrite Mode .
DVR displays an error message stating that the last recorded image date and time is later than the current date and time setting of the DVR.	<p>The DVR automatically resets the time and date of the unit, according to the time and date of the last recorded image.</p> <p>If this is not the correct time and date, reset the time and date manually.</p> <p>If the correct time and date is earlier than the last recorded image, any video with a later time and date is lost when resetting the correct time and date.</p>

D

Connector Pinouts

Figure D-1 Input Connector Pinout

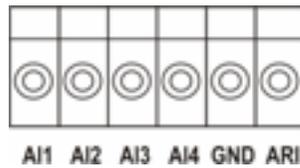
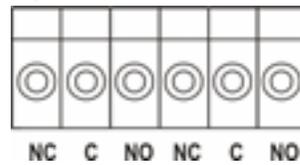
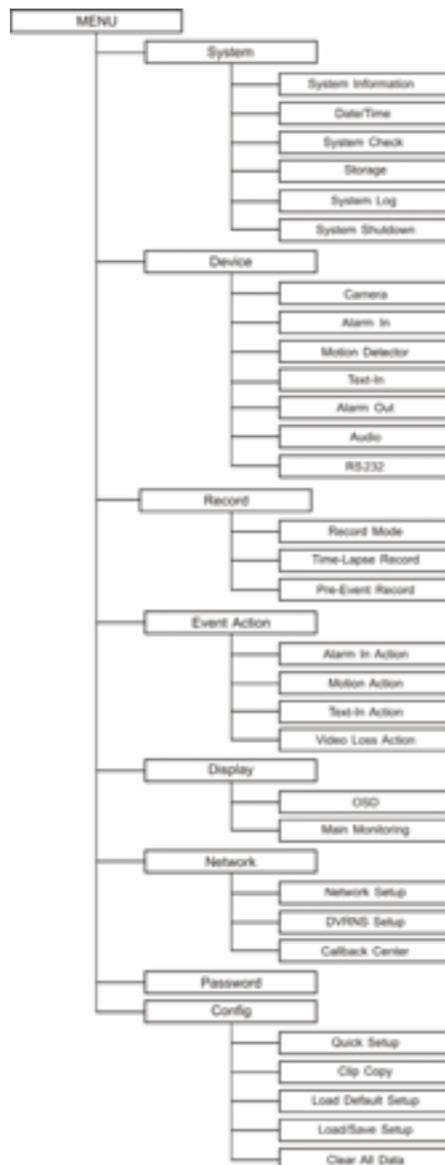


Figure D-2 Output Connector Pinout



AI (1 to 4)	Alarm Inputs 1 to 4
GND	Chassis Ground
ARI	Alarm Reset In
NC	Normally Closed
C	Common
NO	Normally Open

Map of Screens



Map of Screens

Specifications

Video Specifications

Signal Format	NTSC or PAL (auto detect)
Video Input	Composite: 4 looping inputs, 1 Vp-p, auto-terminating, 75 Ohms
Monitor Outputs	Composite: One (BNC), 1 Vp-p, 75 Ohms Analog RGB: One (VGA) <ul style="list-style-type: none"> • NTSC: 30.8kHz (horizontal frequency) / 60Hz (vertical frequency) • PAL: 30.8kHz (horizontal frequency) / 50Hz (vertical frequency)
Video Resolution	720x480 (NTSC), 720x576 (PAL)
Playback/Record Speed (images per second)	Standard: 120ips (NTSC), 100ips (PAL) High: 60ips (NTSC), 50ips (PAL)

Inputs/Outputs

Alarm Input	4 TTL, NC/NO programmable, 4.3V threshold
Alarm Output	2 relay out, terminal block, NC & NO, 0.5A @ 125VAC, 1A @ 30VDC
Alarm Reset Input	1 TTL, terminal block
Internal Buzzer	80dB at 10cm
Network Connectivity	10/100 Base Ethernet, RS-232C for external modem
Audio Input	1 line in
Audio Output	1 line

Connectors	
Video Input	Composite: 4 BNC
Video Loop	Composite: 4 BNC
Monitor Output	Composite: 1 BNC Analog RGB: 1 (VGA)
Audio In	1 RCA connector
Audio Out	1 RCA connector
Alarms	Terminal block
Alarm Reset In	Terminal block
Ethernet Port	RJ-45
RS-232C Serial Port	DB9 (P)
USB Port	1 on front panel (1.1)
IR Port	1 Remote Control

Storage	
Primary Storage	EIDE hard disk drive (1)
Clip Copy	USB hard disk drive, CD-RW drive or Flash Memory

General	
Dimensions (W x H x D) (including BNC plug)	13.4" x 1.8" x 12.2" (340mm x 46.5mm x 310mm)
Unit Weight	7.1 lbs. (3.2kg)
Shipping Weight	9.7 lbs. (4.4kg)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Operating Humidity	0% to 90%
Power	100-240V~, 50/60Hz, 0.6A
Approval	FCC, CE, UL

Specifications are subject to change without notice.

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