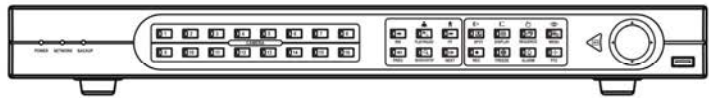




DIGITAL VIDEO RECORDER 9- AND 16-CHANNEL MODELS USER'S MANUAL



ADT9E

ADT16E

	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.		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert 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.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

COMPLIANCE NOTICE OF FCC:

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 USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

WARNING: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. ADT is not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

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. 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.

7. 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.

8. Power Cords

Operator or installer must remove power and TNT connections before handling the equipment.

9. 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.

10. Overloading

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

11. 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.

12. Servicing

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

13. Damage requiring Service

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

- A. When the power-supply cord or the plug has been damaged.
- B. If liquid is spilled, or objects have fallen into the equipment.
- C. If the equipment has been exposed to rain or water.
- D. 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.
- E. If the equipment has been dropped, or the cabinet damaged.
- F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

14. 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.

15. 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.

16. Field Installation

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

17. Correct Batteries

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

18. Tmra

A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.

19. 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 manufacturer's maximum rated ambient temperature (Tmra).

20. 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.

21. Mechanical Loading

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

22. 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.

23. 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 (e.g., use of power strips).

Table of Contents

Chapter 1 — Introduction	1
Features	1
Technical Overview	2
Chapter 2 — Installation	3
Package Contents	3
Required Installation Tools	3
Setting Unit for NTSC or PAL	3
Connecting the Video Source	4
Connecting the Loop Through Video	4
Connecting the Monitor	4
Connecting Audio	5
Connecting Alarms	5
AI 1 to 16 (Alarm In)	5
GND (Ground)	6
AO 1 and 4 (Alarm Out)	6
ARI (Alarm Reset In)	6
Connecting to RS485	6
Connecting to the Network Port	6
Connecting to the USB Port	7
Connecting to the RS232 Port	7
Factory Reset	7
Connecting the Power Cord	8
Chapter 3 — Configuration	9
Front Panel Controls	9
BACKUP LED	9
NETWORK LED	9
POWER LED	9
Camera Buttons (1 to 16)	9
RW (Rewind) Button	9
PLAY/PAUSE Button	10
FF (Fast Forward) Button	10
PREV (Previous) Button	10
SEARCH/STOP Button	10
NEXT Button	10
SPOT Button	10
DISPLAY Button	10
SEQUENCE Button	11
MENU Button	11

REC (Record) Button	11
FREEZE Button	11
ALARM Button	11
PTZ Button.....	11
Enter Button.....	11
Up, Down, Left, Right Arrow Buttons	11
Turning on the Power	12
Initial Unit Setup	12
Normal Setup Screen	12
System Information.....	13
Date/Time Setup.....	16
System Check Screen	19
Storage Screen.....	21
System Log Screen	23
System Shutdown.....	23
Configuring Input Devices.....	24
Camera Setup Screen	24
Alarm In Setup Screen.....	25
Motion Detector	26
Alarm Out Setup Screen.....	28
Audio Setup Screen	29
RS232/RS485 Setup Screen	30
Configuring Recording Settings	30
Record Mode Setup Screen.....	31
Time-Lapse Record Mode Setup Screen.....	32
Time-Lapse Recording Schedule.....	33
Pre-Event Recording Setup Screen.....	34
Event Action Setup	34
Alarm In Event Action (Record) Setup Screen.....	35
Alarm In Event Action (Alarm Out) Setup Screen	36
Alarm In Event Action (Notify) Setup Screen	36
Motion Detector Event Action (Record) Setup Screen.....	37
Motion Detector Event Action (Alarm Out) Setup Screen	38
Motion Detector Event Action (Notify) Setup Screen	38
Video Loss Event Action (Record) Setup Screen	39
Video Loss Event Action (Alarm Out) Setup Screen.....	40
Video Loss Event Action (Notify) Setup Screen.....	40
Display Setup.....	41
OSD (On-Screen Display) Setup	41
Main Monitoring Setup Screen.....	42
Spot Monitoring Setup Screen	43
Network Setup Screen	43

LAN Setup Screen	45
Modem Setup	48
DVRNS (DVR Name Service) Setup	49
Callback Center Setup Screen.....	50
Password Setup Screen	52
Config Screen.....	53
Quick Setup Screen.....	53
Clip Copy	55
Load Default Setup	57
Load / Save Setup	57
Clear All Data.....	58
Chapter 4 — Operation	59
Turning on the Power	59
Live Monitoring.....	59
Active Cameo Mode	60
PIP Mode	60
PTZ Mode.....	60
Recording Video	62
Recording Audio	62
Playing Recorded Video	62
RW (Rewind) Button	63
FF (Fast Forward) Button.....	63
SEARCH/STOP Button.....	63
Camera Buttons (1 to 16).....	63
DISPLAY Button	63
MENU Button.....	63
Searching Video	63
Date/Time Search.....	64
Calendar Search.....	64
Event Search	65
Appendix A — USB Hard Disk Drive Preparation	67
Preparing the USB-IDE hard disk drive in Windows 2000	67
Preparing the USB-IDE hard disk drive in Windows 98	67
Appendix B — Troubleshooting	68
Appendix C — Connector Pin Outs.....	69
Alarm I/O Connector and RS485 Connector Pin Outs.....	69
Appendix D — Map of Screens	70
Appendix E — Specifications	71

List of Illustrations

Figure 1 — Typical DVR installation.	1
Figure 2 — 16-Channel DVR rear panel.	3
Figure 3 — NTSC/PAL switch.	3
Figure 4 — Video input connectors.	4
Figure 5 — Video Loop Through connectors.	4
Figure 6 — Video Out connectors.	4
Figure 7 — Audio In and Out connectors.	5
Figure 8 — Alarm Input/Output and RS485 connector.	5
Figure 9 — Alarm Input/Output board and alarm connector strips.	5
Figure 10 — RS485 connector.	6
Figure 11 — Network connector.	6
Figure 12 — USB connector.	7
Figure 13 — RS232 connector.	7
Figure 14 — Factory reset switch.	7
Figure 15 — Power cord connector.	8
Figure 16 — 16-Channel DVR front panel.	9
Figure 17 — Admin Password screen.	12
Figure 18 — Normal Setup screen.	12
Figure 19 — System Information screen.	13
Figure 20 — System Information Change screen.	13
Figure 21 — Virtual keyboard.	14
Figure 22 — Language drop-down menu.	14
Figure 23 — System Upgrade screen.	15
Figure 24 — Date/Time setup screen.	16
Figure 25 — Holiday Setup screen.	17
Figure 26 — Time Sync screen.	17
Figure 27 — System Check screen.	19
Figure 28 — System Check (Alarm In) screen.	20
Figure 29 — System Check (Alarm Out / Notify) screen.	20
Figure 30 — Storage screen.	21
Figure 31 — S.M.A.R.T. Setup screen.	22
Figure 32 — System Log screen.	23
Figure 33 — Device menu screen.	24
Figure 34 — Camera setup screen.	24
Figure 35 — PTZ Device list.	25
Figure 36 — Alarm In setup screen.	25
Figure 37 — Motion Detector setup screen.	26
Figure 38 — Motion Detection Zone screen.	27
Figure 39 — Motion Detection Zone menu screen.	27
Figure 40 — Alarm Out setup screen.	28
Figure 41 — Alarm Out Schedule screen.	28
Figure 42 — Audio Setup screen.	29
Figure 43 — RS232/RS485 setup screen.	30
Figure 44 — Record Mode Setup screen.	31
Figure 45 — Time-Lapse Record Setup screen.	32
Figure 46 — Time-Lapse Recording Schedule screen.	33
Figure 47 — Pre-Event Record Setup screen.	34
Figure 48 — Alarm In Event Action (Record) setup screen.	35

Figure 49 — Alarm In Event Action (Alarm Out) setup screen.	36
Figure 50 — Alarm In Event Action (Notify) setup screen.	36
Figure 51 — Motion Detector Event Action (Record) setup screen.	37
Figure 52 — Motion Detector Event Action (Alarm Out) setup screen.	38
Figure 53 — Motion Detector Event Action (Notify) setup screen.	38
Figure 54 — Video Loss Event Action (Record) setup screen.	39
Figure 55 — Video Loss Event Action (Alarm Out) setup screen.	40
Figure 56 — Video Loss Event Action (Notify) setup screen.	40
Figure 57 — OSD Setup screen.	41
Figure 58 — Main Monitoring Setup screen.	42
Figure 59 — Spot Monitoring Setup screen.	43
Figure 60 — Network Setup screen.	43
Figure 61 — LAN (Manual) Setup screen.	45
Figure 62 — Port Number Setup screen.	46
Figure 63 — LAN (DHCP) Setup screen.	47
Figure 64 — LAN (ADSL) Setup screen.	47
Figure 65 — Modem Setup screen.	48
Figure 66 — DVRNS Setup screen.	49
Figure 67 — Callback Center (LAN) Setup screen.	50
Figure 68 — Callback Center (Modem) Setup screen.	51
Figure 69 — Password setup screen.	52
Figure 70 — Config screen.	53
Figure 71 — Quick Setup screen.	53
Figure 72 — Clip Copy screen.	55
Figure 73 — USB Device Selection screen.	56
Figure 74 — Disk Partition Selection screen.	56
Figure 75 — Load / Save Setup screen.	58
Figure 76 — PTZ Menu screen.	61
Figure 77 — PTZ Preset screen.	61
Figure 78 — Preset view screen.	62
Figure 79 — Search Menu.	63
Figure 80 — Date/Time Search screen.	64
Figure 81 — Calendar Search screen.	64
Figure 82 — Event Log screen.	65
Figure 83 — Event Search (by Camera) screen.	66
Figure 84 — Event Search (by Event) screen.	66

Chapter 1 — Introduction

Features

Your color digital video recorder (DVR) provides recording capabilities for nine or 16 camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 9 or 16 Composite 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 60 NTSC Images per Second (50 PAL Images per Second)
- “Loop-Through” Video Connectors
- Continuous Recording in Disk Overwrite Mode
- Continues Recording while Archiving, Transmitting to Remote Site and during Playback
- User-friendly Graphical User Interface (GUI) Menu System
- Two Record Modes (Time and Event)
- 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

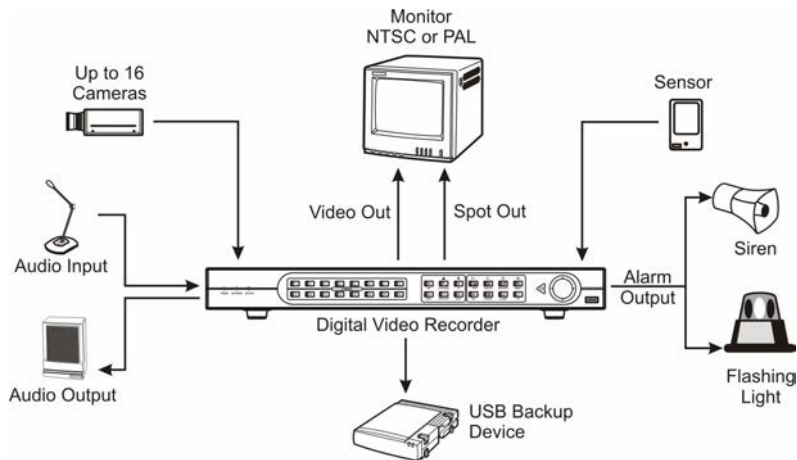


Figure 1 — Typical DVR installation.

Technical Overview

Your DVR can replace both a time-lapse VCR and a multiplexer in a security installation. However, it has many features that make it much more powerful and easier to use than even the most advanced VCR.

The 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 user defined holidays.

The DVR can be set up to alert you when the hard disk drive is full, or it can be set up 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 video and control your DVR remotely by connecting via modem or Ethernet. There are two USB ports that can be used to upgrade the system or copy video clips to external hard disk drives, CD-RW drives or flash drives.

NOTE: This manual covers the 9- and 16-channel digital video recorders. The DVRs are identical except for the number of cameras and alarms that can be connected and the number of cameras that can be displayed. For simplicity, the illustrations and descriptions in this manual refer to the 16-camera model.

Chapter 2 — Installation

Package Contents

The package contains the following:

- Digital Video Recorder
- Adaptor (Including Power Cord)
- User's Manual (This Document)
- RAS Software CD and User's Manual
- Rack-mount Kit

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.

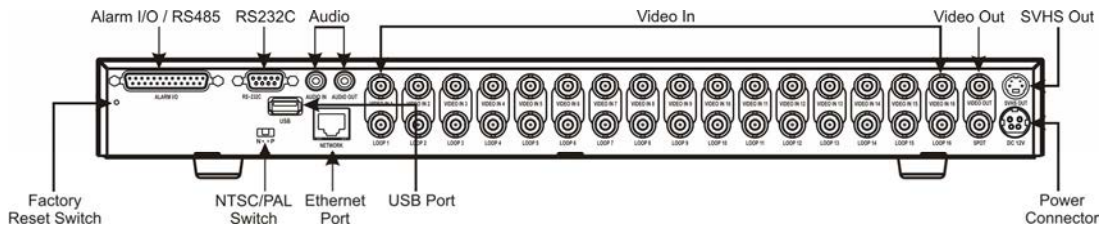


Figure 2 — 16-Channel DVR rear panel.

Setting Unit for NTSC or PAL



N ◀ ▶ P

Figure 3 — NTSC/PAL switch.

Your DVR can be used with either NTSC or PAL equipment. Before turning on the DVR, set the switch to NTSC or PAL to match your equipment.

NOTE: You cannot mix NTSC and PAL equipment. For example you cannot use a PAL camera and an NTSC monitor.

CAUTION: If you set the switch from NTSC (PAL) to PAL (NTSC), please do the *Factory Reset* and *Clear All Data*. If not, it causes the DVR to perform wrong operations.

Connecting the Video Source



Figure 4 — Video input connectors.

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

Connecting the Loop Through Video



Figure 5 — Video Loop Through connectors.

If you would like to connect your video source to another device, you can use the LOOP BNC 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 the Monitor

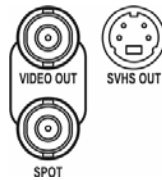


Figure 6 — Video Out connectors.

Connect the monitor to either the Video Out or SVHS Out connector.

Connect the spot monitor to the SPOT connector if required.

NOTE: If your monitor has an SVHS input, use it because it will give you better quality video display.

NOTE: The Video Out (BNC) and the SVHS Out connectors may be connected to individual monitors for simultaneous operation.

Connecting Audio

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



Figure 7 — Audio In and Out connectors.

Your DVR can record audio. Connect the audio source to Audio In. Connect Audio Out to your amplifier.

NOTE: The DVR does not have amplified audio output, so you will need a speaker with an amplifier. The audio input can be from an amplified source or directly from a microphone.

Connecting Alarms

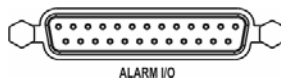


Figure 8 — Alarm Input/Output and RS485 connector.

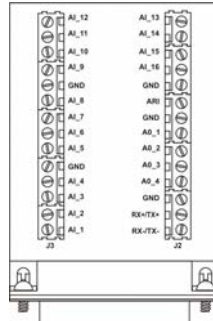


Figure 9 — Alarm Input/Output board and alarm connector strips.

An Alarm I/O port (DB-25 male connector) is provided to connect the alarm inputs and alarm outputs. Connect the wires to connectors on the Alarm I/O board (supplied with the unit), and then connect the board to the Alarm I/O port.

CAUTION: Do not attempt to wire directly to the DB-25 male connector.

NOTE: The Alarm I/O Board consists of alarm connector strips and RS485 connector.

AI 1 to 16 (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 is 4.3V and should be stable at least 0.5 seconds to be detected. See *Chapter 3 — Configuration* for configuring alarm input.

GND (Ground)

NOTE: All the connectors marked GND are common.

Connect the ground side of the Alarm input and/or alarm output to the GND connector.

AO 1 and 4 (Alarm Out)

The DVR can activate external devices such as buzzers or lights. Connect the device to the AO (Alarm Out) and GND (Ground) connectors. AO is an active low open collector output which sinks 5mA@12V and 30 mA@5V. See *Chapter 3 — Configuration* for configuring alarm output.

ARI (Alarm Reset In)

An external signal to the Alarm Reset In can be used to reset both the Alarm Out signal and the DVR's internal buzzer. 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.

Connecting to RS485

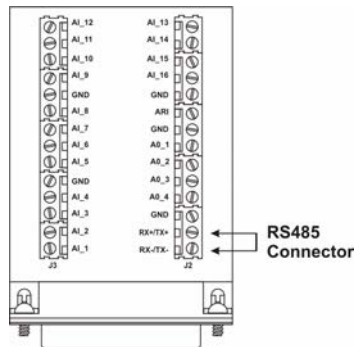


Figure 10 — RS485 connector.

The DVR can be controlled remotely by an external device or control system, such as a control keyboard, using RS485 half-duplex serial communications signals. The RS485 connector can also be used to control PTZ (pan, tilt, zoom) cameras. Connect RX+ and TX+ of the control system to the RX+/TX+ of the DVR, and RX- and TX- to the RX-/TX-. See *Chapter 3 — Configuration* and the PTZ camera manufacture's manual for configuring the RS485 connection.

Connecting to the Network Port

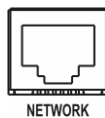


Figure 11 — Network connector.

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.

Connecting to the USB Port

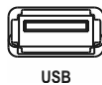


Figure 12 — USB connector.

Two USB ports are provided to connect external hard disk drives, CD-RW or flash drive for clip copy or system upgrade. 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 to connect it to the DVR.

Connecting to the RS232 Port

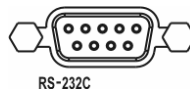


Figure 13 — RS232 connector.

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.

NOTE: The DVR is not supplied with a modem cable, and many modems are not supplied with cables. Make certain you have the correct cable when purchasing the modem.

Factory Reset

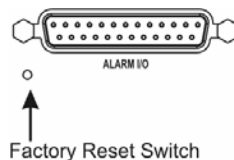


Figure 14 — Factory reset switch.

The DVR has a Factory Reset switch to the right of the USB port. This switch will only be used on the rare occasions that you want to return all the settings to the original factory settings.

CAUTION: When using the *Factory Reset*, you will 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 will need a straightened paperclip:

1. Turn the DVR off.
2. Turn it on again.
3. While the DVR is initializing, poke the straightened paperclip in the unlabeled hole to the right of the USB port.
4. 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.

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

Connecting the Power Cord

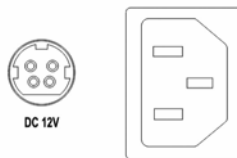


Figure 15 — Power cord connector.

Connect the DC power cord of the adaptor to the DVR, and connect the AC power cord to the adaptor and then to the wall outlet.

NOTE: The power cord connector locks into position to prevent accidental power loss. Be sure to slide the release away from the socket before removing the plug.

WARNING: ROUTE POWER CORDS SO THAT THEY ARE NOT A TRIPPING HAZARD. MAKE CERTAIN 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.

Your DVR is now ready to operate. Refer to *Chapter 3 — Configuration* and *Chapter 4 — Operation*.

Chapter 3 — Configuration

NOTE: Your DVR should be completely installed before proceeding. Refer to *Chapter 2 — Installation*.

Front Panel Controls

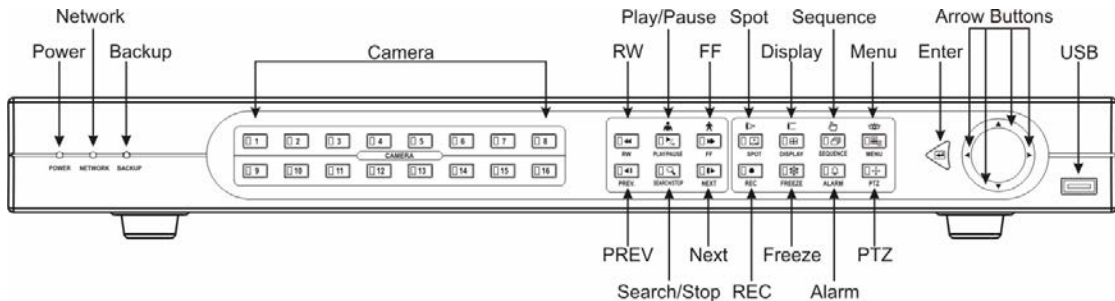


Figure 16 — 16-Channel DVR front panel.

The front panel looks and operates much like a VCR combined with a multiplexer. Many of the buttons have multiple functions. The following describes each button and control. Take a few minutes to review the descriptions. You will use these to initially set up your DVR and for daily operations.

BACKUP LED

The BACKUP LED is lit when data is being backed up using the USB port.

NETWORK LED

The NETWORK LED is lit when the unit is connected with RAS (Remote Administration System) either via Ethernet or modem.

POWER LED

The POWER LED is lit when the unit is On.

Camera Buttons (1 to 16)

Pressing the individual camera buttons will cause the selected camera to display full screen. They are also used to enter passwords.

RW (Rewind) Button

Pressing the **RW** button plays video backward at high speed. Pressing the button again toggles the playback speed from **◀◀**, **◀◀◀** and **◀◀◀◀**. The screen displays **◀◀**, **◀◀◀** and **◀◀◀◀** respectively.

Entering Fast Backward Playback mode from Live Monitoring mode can be password protected.

PLAY/PAUSE Button

Pressing the **PLAY/PAUSE** button plays back images at regular speed. Pressing the button while in the playback mode will pause the video. The screen displays ► when the DVR is playing back video. The screen displays || when in the Pause mode. Zooms In in PTZ mode.

Entering Playback mode from Live Monitoring mode can be user password protected.

FF (Fast Forward) Button

Pressing the **FF** button plays video forward at high speed. Pressing the button again toggles the playback speed from ►►, ►►► and ►►►►. The screen displays ►►, ►►► and ►►►► respectively. Zooms Out in PTZ mode.

Entering Fast Playback mode from Live Monitoring mode can be password protected.

PREV (Previous) Button

The **PREV** button only functions when playback video has been paused. Pressing the **PREV** button plays video backward image-by-image.

SEARCH/STOP Button

Pressing the **SEARCH/STOP** button displays the Search menu. Pressing the button again will exit the Search menu. This operation can be user password protected. Pressing the **SEARCH/STOP** button while in the Playback mode returns the DVR to the Live Monitoring mode.

NEXT Button

The **NEXT** button only functions when playback video has been paused. Pressing the **NEXT** button plays video forward image-by-image.

SPOT Button

Pressing the **SPOT** button and pressing the individual camera buttons displays the selected camera on the spot monitor. For the sequence display on the spot monitor, press the **SPOT** button and then **SEQUENCE** button. Used for near Focus in the PTZ mode.

DISPLAY Button

Pressing the **DISPLAY** button toggles between different display formats. The available formats are: full, 4x4, 3x3, 2x2 and PIP. Used for far Focus in PTZ mode.

SEQUENCE Button

When in the live mode, pressing the **SEQUENCE** button displays another full live channel sequentially. When in one of the multi-view formats, pressing this button will cause the DVR to sequence cameras in two sequence modes: “Page” and “Cameo”. In the Page mode, the DVR sequences through user-defined screen layouts (pages). In the Cameo mode, the bottom, right screen to display live cameras sequentially. Pressing the **SEQUENCE** button while in the Sequence mode will exit the Sequence mode. Saves Presets and controls pan and tilt speed in PTZ mode.

MENU Button

Pressing the **MENU** button enters the Quick Setup screen. You will need to enter the administrator password to access the Quick Setup. Pressing the **MENU** button displays the Search menu while in the Playback mode. This is also used to access the Clip Copy menu. Pressing and holding the button while in the Playback mode enters the Clip Copy screen. Pressing the button also closes the current menu or setup dialog box. Loads a Preset View in PTZ mode.

REC (Record) Button

Press the **REC** button to set the DVR so that it is ready to record video, and NOTHING will stop the recording, except an end of disk condition when the unit is set to stop recording at the end of disk. A red dot appears on the screen when the DVR is recording video. Press the button again to stop recording video. This operation can be user password protected.

FREEZE Button

Pressing the **FREEZE** button freezes the current live screen.

ALARM Button

The **ALARM** button has two functions. First, it will reset the DVR’s outputs including the internal buzzer during an alarm. Second, it will display the event log when you are in the live monitoring mode unless there is an active alarm. This operation can be user password protected.

PTZ Button

Pressing the **PTZ** button opens a Pan/Tilt/Zoom screen which allows you to control properly configured cameras.

Enter Button

The **Enter** button selects a highlighted item or completes an entry that you have made during system setup. This is also used to enter or exit the active cameo mode during live monitoring and playback.

Up, Down, Left, Right Arrow Buttons

These buttons are used to navigate through menus and Graphical User Interface (GUI). They are also used to control Pan and Tilt when in the PTZ mode. The arrow buttons can be used to move the position of the active cameo screen, and also move through screen pages.

Turning on the Power

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

Initial Unit Setup

Before using your DVR for the first time, you will want to establish the initial settings. This includes items such as time and date, display language, camera, audio, remote control, record mode, network and password. Your DVR can be set up using various screens and dialog boxes.

Press the **MENU** button to enter the setup screens. The Admin Password screen appears.

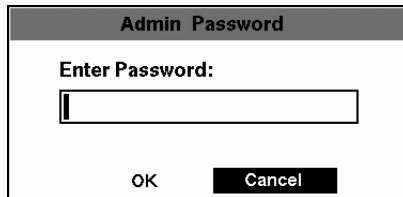


Figure 17 — Admin Password screen.

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

NOTE: The setup screens can also be accessed by entering the User password if the User password is turned on. However, only access to the *Clip Copy* and *Password* setup screens is permitted.

Normal Setup Screen

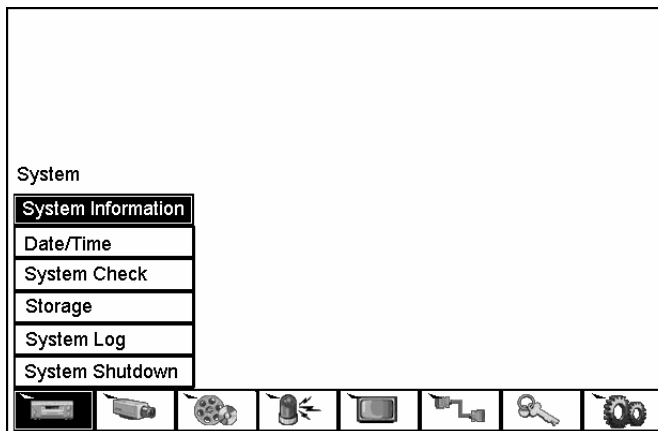


Figure 18 — Normal Setup screen.

Press the **MENU** button to enter the setup screen. The Normal Setup screen gives you access to all the DVR's setup screens.

System Information

Highlight System Information and press the **←** button. The System Information screen appears.

System Information - 1.0.0

Site Description

Unit ID

Language

Disk Usage

Recorded From

To

Figure 19 — System Information screen.

In the System Information screen, you can name the site location, assign a unit ID number, select the language the screens are displayed in, and upgrade the software. Highlight **Change** and press the **←** button. The System Information Change screen appears.

System Information Change

Site Description

Unit ID

Language

Version

Figure 20 — System Information Change screen.

Highlight the box beside Site Description and press the **←** button. A virtual keyboard displays.

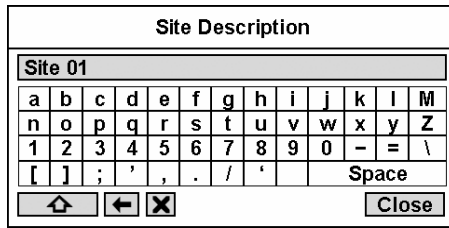


Figure 21 — Virtual keyboard.

Use the arrow keys to highlight the first character you want in the Site Title and press the button. That character appears in the title bar and the cursor moves to the next position. Pressing toggles between the upper and lower case keyboards, backspaces, and deletes entered characters. You can use up to 20 characters including spaces in your title.

Once you have entered your title, highlight Close and press the button.

Highlight the box beside Unit ID and press the button. Change the number by highlighting it and using the Up and Down arrow buttons to increase and decrease the number. 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.

Highlight the box beside Language and press button. A drop-down menu displays the available languages. Highlight the desired language and press the button.

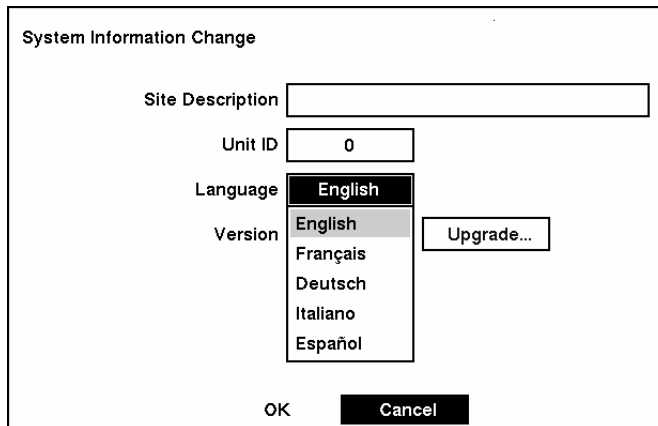



Figure 22 — Language drop-down menu.

After you have created a title, assigned a unit ID number and selected a language, you can save your changes by highlighting OK and pressing the button. Selecting Cancel exits the screen without saving the changes.

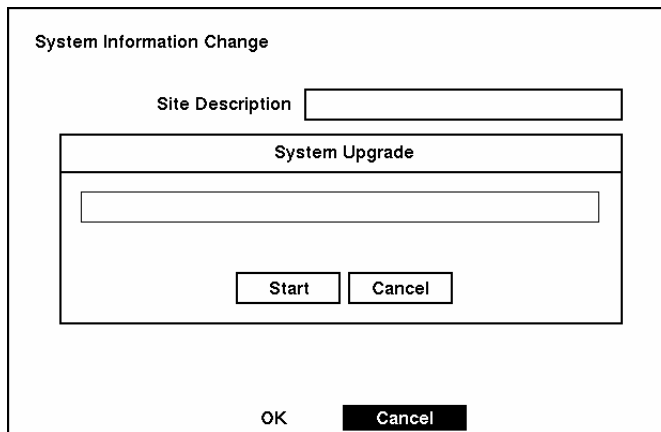
The box beside Version displays the software version of the DVR.

NOTE: You can upgrade the software only in the *System Information Change* screen.

To upgrade the software, connect the USB device containing the upgrade package file to the DVR. Highlight Upgrade... and press the  button. The System Upgrade screen appears. The screen displays the upgrade package file name.

CAUTION: System upgrade via USB port might NOT be completed properly if a USB device has been connected to the other USB port. Please remove any other USB device before system upgrade is attempted.

NOTE: If the file system on the USB-IDE hard disk drive or USB flash drive is NOT FAT16 or FAT32 format, format the drive using FAT16 or FAT32 format.



The image shows a screenshot of the 'System Upgrade' screen. The screen is titled 'System Information Change' at the top. Below the title is a text input field labeled 'Site Description'. Underneath this is a larger box titled 'System Upgrade'. Inside this box is another text input field. At the bottom of the 'System Upgrade' box are two buttons: 'Start' and 'Cancel'. Below the 'System Upgrade' box, outside the main input area, are two more buttons: 'OK' and 'Cancel'.


Figure 23 — System Upgrade screen.

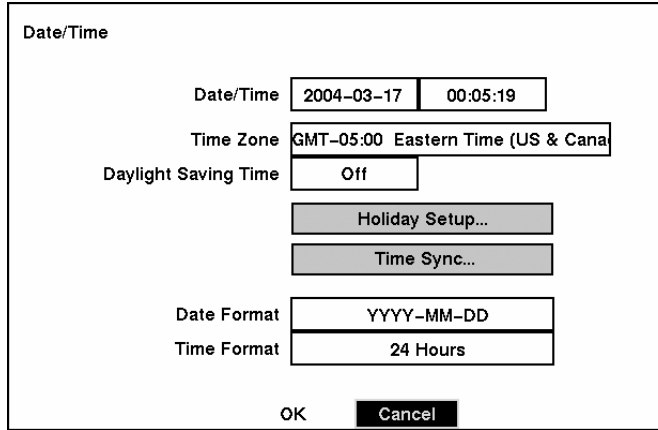
Select **Start**, and enter the Admin password to start the upgrade. The system restarts automatically after completing the upgrade.

NOTE: Only the system administrator can upgrade the software.

NOTE: You cannot upgrade software during clip copy.

Date/Time Setup



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





Date/Time	2004-03-17	00:05:19
Time Zone	GMT-05:00 Eastern Time (US & Cana)	
Daylight Saving Time	Off	
	Holiday Setup...	
	Time Sync...	
Date Format	YYYY-MM-DD	
Time Format	24 Hours	
	OK	Cancel



Figure 24 — Date/Time setup screen.



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



Highlight the first box beside Date/Time and press the  button. The individual sections of the date highlight. Use the Up and Down arrow buttons to change the number. Use the Left and Right arrow buttons to move between month, date and year. Once you have the correct date, press the  button.



Highlight the second box beside Date/Time and press the  button. The individual sections of the time will highlight. Use the Up and Down arrow buttons to change the number. Use the Left and Right arrow buttons to move between hour, minutes and seconds. Once you have the correct time, press the  button.

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

Highlight the box beside Time Zone and press the  button. Select the time zone you are in from the list and press the  button.

Highlight the box beside Daylight Saving Time and press the  button. Pressing the  button toggles between On and Off.

Highlight the Holiday Setup... box and press the  button. You can set up holidays by highlighting Add: and pressing the  button. The current date appears.

Highlight the month and day and change them by using the Up and Down arrow buttons. Press the  button to add the date. Dates can be deleted by highlighting the X beside the date and pressing the  button.

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

No.	Date	
1	07-04-yyyy	X
2	12-25-yyyy	X
		X
		X
		X
		X

2 ▲ ▼ Add...

OK Cancel

Figure 25 — Holiday Setup screen.

You can save your changes by highlighting OK and pressing the button. Selecting Cancel exits the screen without saving the changes.

Highlight the Time Sync... box and press the button. 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.

Time Sync

Automatic Time Sync

SNTP Server

Interval

System Clock

Server Clock

Next Synchronization

Run as Server

OK Cancel

Figure 26 — Time Sync screen.

Highlight the box beside Automatic Time Sync and press the button. This toggles between On and Off.

Highlight the box beside SNTP Server and press the button. Change the numbers by highlighting them and using the Up and Down arrow buttons to increase or decrease the number value.

Highlight the box beside Interval and press the button. Set the time interval for synchronization from 30 to 300 minutes.

The box beside System Clock displays the DVR's time setting.

The box beside **Server Clock** displays the time setting of the time server. Highlighting the **Update** button and pressing the button updates the server clock.

NOTE: The *Server Clock* will display “ – ” when the DVR cannot load the time information from the time server.

The box beside **Next Synchronization** displays the time when the next synchronization is scheduled. If you want to synchronize the time instantly, highlight the **Now...** button and press the button.

CAUTION: When selecting *Now...*, any video with a later time and date will be lost if the time and date of a time server is earlier than the last recorded image of the DVR.

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...*

Highlight the **Run as Server** box and press the button. Pressing the button toggles between **On** and **Off**. When it is **On**, the DVR you are setting up will run as a time server.

You can save your changes by highlighting **OK** and pressing the button. Selecting **Cancel** exits the screen without saving the changes.


Highlight the box beside **Date Format** and press the button. A list of date formats appears. Highlight the format you wish to use and press the button. The choices are:

MM-DD-YYYY
DD-MM-YYYY
YYYY-MM-DD
MM/DD/YYYY
DD/MM/YYYY
YYYY/MM/DD

To change the time format, highlight the box beside **Time Format** and press the button. The DVR toggles between **12 Hours (AM/PM)** and **24 Hours (military time)**.

You can save your changes by highlighting **OK** and pressing the button. Selecting **Cancel** exits the screen without saving the changes.


System Check Screen


Highlight System Check in the Main menu and press the  button. The System Check – System setup screen appears.

System Check

System	Alarm In	Alarm Out / Notify	
Check Point	On/Off	Interval	Status
System	Off	1 Hour	
Record	Off	1 Hour	

Figure 27 — System Check screen.

Highlight the box under the On/Off heading and press the  button. This toggles between On and Off. When it is On, the DVR reports a fault condition if it does not detect any recording during the designated time.

Highlight the box under the Interval heading and press the  button. A slide bar appears allowing you to set the check interval from 1 Hour to 30 Days by using the Left and Right arrow buttons.

The Status field displays the fault conditions. When it is Good, there was recording or an alarm occurred during the designated time. When it is Bad, there was no recording or no alarm occurred during the designated time.

The Status field displays System – Good when the DVR continues operating according to user's settings without any problems or displays Record – Good when there was recording during the designated time. The Status field displays Record – Bad when there was no recording during the designated time.

Highlight the Alarm In tab, and the System Check – Alarm In screen displays.

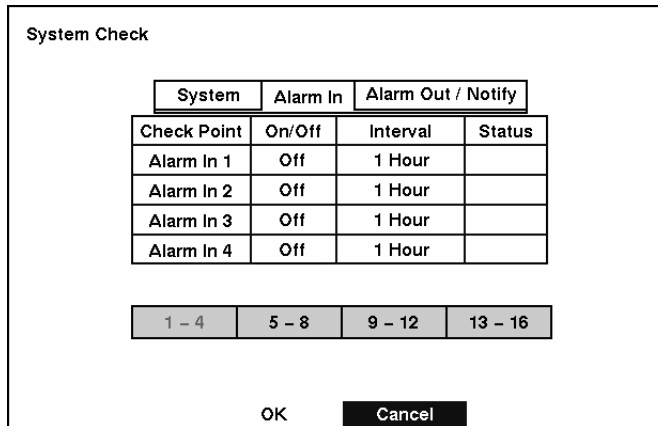


Figure 28 — System Check (Alarm In) screen

Highlight the box under the On/Off heading and press the button. This toggles between On and Off. When it is On, the DVR reports a fault condition if there is no alarm input during the designated time.

Highlight the box under the Interval heading and press the button. A slide bar appears allowing you to set the check interval from 1 Hour to 30 Days by using the Left and Right arrow buttons.

The Status field displays the fault conditions. When it is Good, there was alarm input during the designated time. When it is Bad, there was no alarm input during the designated time.

Highlight the Alarm Out / Notify tab, and the System Check – Alarm Out / Notify screen displays.

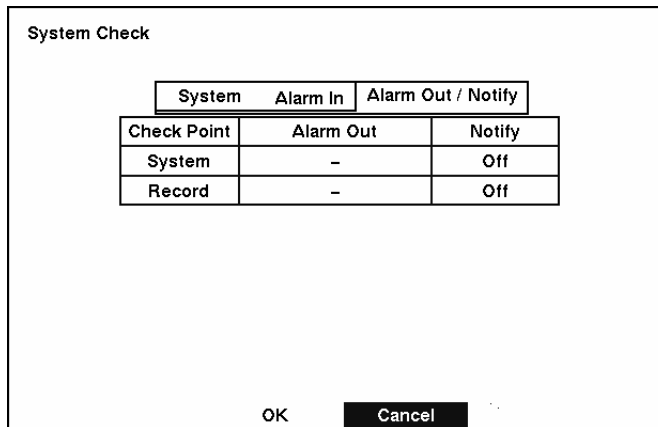



Figure 29 — System Check (Alarm Out / Notify) screen

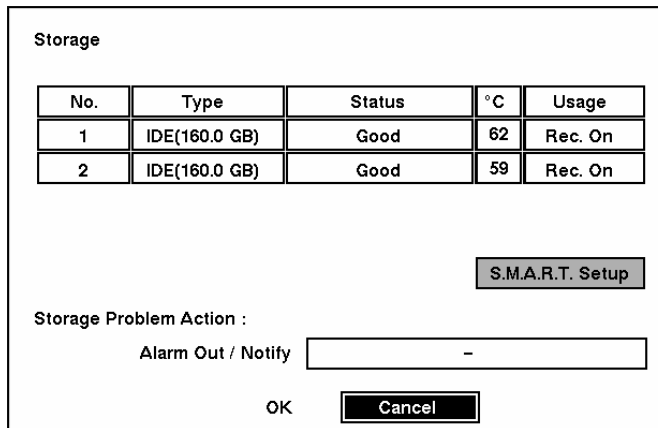
Highlight the box under the Alarm Out heading and press the button. A drop menu displays available alarm outputs for the recording problem. Highlight the desired alarm output from the external alarm out terminal or internal buzzer, and press the button.

NOTE: Alarm Out cannot be set to Check Point – System.

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

Storage Screen

Highlight **Storage** in the Main menu and press the  button. The **Storage** setup screen appears. The DVR displays the storage status when the installed IDE hard disk drives support the S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) monitoring program.



No.	Type	Status	°C	Usage
1	IDE(160.0 GB)	Good	62	Rec. On
2	IDE(160.0 GB)	Good	59	Rec. On

S.M.A.R.T. Setup

Storage Problem Action :

Alarm Out / Notify

OK **Cancel**

Figure 30 — Storage screen.

NOTE: When the DVR has more than four storage devices, you can scroll through the list by selecting the *Up* and *Down* arrow buttons under the list.

The **Type** field displays the type and capacity of storage devices.

The **Status** field displays “Good”, “Bad”, “S.M.A.R.T. Inop.”, “S.M.A.R.T. Alert”, “High Temperature” or “Not installed, depending on storage conditions.

- **Good** — The storage condition is normal.
- **Bad** — Data cannot be written on or read from the storage device.
- **S.M.A.R.T. Inop.**— Storage conditions are normal, however, the S.M.A.R.T. monitoring is not working or supported
- **S.M.A.R.T. Alert** — S.M.A.R.T. monitoring has detected a fault condition.
- **High Temperature** — S.M.A.R.T. monitoring has detected that the temperature of storage device exceeded the preset temperature threshold
- **Not installed** — The storage device is not installed.

NOTE: Once the “S.M.A.R.T. Alert” message displays, replacing the hard disk drive is recommended, usually within 24 hours.

The **°C** field displays the temperature of the storage device.

The **Usage** field displays the device usage.

NOTE: When the device is an IDE hard disk drive, you can change its usage to either *Rec. On* or *Rec. Off*.

The DVR can be set to react to storage problems by activating an internal buzzer or external alarms, and/or notifying a remote site. Highlight the box beside **Storage Problem Action: Alarm Out / Notify** and press the button to select from Beep, the alarm output terminal that you want to associate with the storage problem event, and/or Notify.

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

S.M.A.R.T. Setup	
Use	On
Last-check	05-19-2004 23:48:10
Period	Daily
Check Time	21:47:48
Temperature Threshold	63
Sensor Unit	Celsius
OK	Cancel

Figure 31 — S.M.A.R.T. Setup screen.

Your DVR shows the condition of the hard disk drives if the installed IDE hard disk drives support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) program. Highlight the box beside **Use**. Press the button to toggle between **On** and **Off**.

The **Last-check** field displays the date and time information of the last storage check.

Highlight the box beside **Period**, and select from **Daily**, **Weekly** or **Monthly** for the check interval.

NOTE: When selecting *Weekly* or *Monthly*, the *Day of Week* or *Day of Month* field will display under the *Period* field. Select the check day or date.


Highlight the box beside **Check Time**, and adjust the numbers using arrow buttons.

Highlight the box beside **Temperature Threshold** and adjust the numbers using arrow buttons. Set the temperature number to the hard disk drive manufacturer's specifications. If this temperature is ever exceeded, the S.M.A.R.T. Alert message will display.



Highlight the box beside **Sensor Unit** and select from **Celsius** or **Fahrenheit**.

You can save your changes by highlighting **OK** and pressing the button. Selecting **Cancel** exits the screen without saving the changes.

System Log Screen

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

System Log		
No.	Event	Date/Time
1283	Setup Begin (Local)	2003-03-03 10:27:14
1282	System Started	2003-03-03 10:27:12
1281	Shutdown	2003-03-03 10:27:02
1280	System Time Changed	2003-03-03 10:27:00
1279	Setup Begin (Local)	2003-03-03 10:26:08
1278	System Started	2003-03-03 10:26:02
1277	System Reboot	2003-03-03 10:26:02

1283  

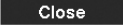






Figure 32 — System Log screen.

The **System Log** screen displays a record of various events logged by the DVR. The list shows the dates and times the system was turned ON and OFF, power failed, recording was started or stopped, playback was started or stopped, setup changes were made, and data banks were cleared.

The events are listed from the most recent to the oldest. You can scroll through the list a page at a time by selecting the **Up** and **Down** arrow buttons and pressing the  button. You can go directly to an event number by highlighting the event number box (left of the UP arrow), pressing the  button, using the arrow buttons to change the number, and pressing the  button.

System Shutdown

Highlight **System Shutdown** in the Main menu and press the  button. This shuts the DVR down. When shutting down the DVR, you need to confirm that you want to shut down the unit, and you will be asked for an administrator password.

Configuring Input Devices

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

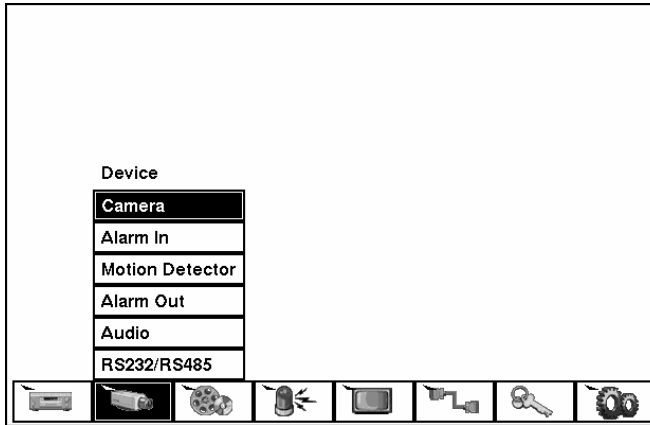


Figure 33 — Device menu screen.

Camera Setup Screen

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

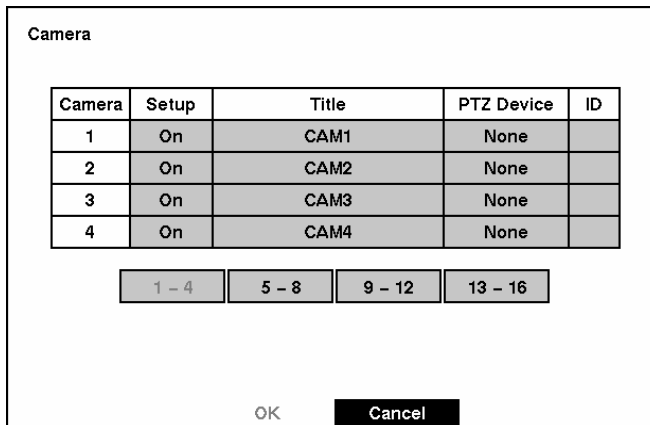




Figure 34 — Camera setup screen.

The Camera setup screen displays the camera inputs in groups of four: 1-4, 5-8, 9-12 and 13-16.

You can turn on or off the camera number, and also hide the video of the camera number by highlighting the camera Setup heading and pressing the button. Select the On, Off, Covert 1 or Covert 2 from a drop-down list.

NOTE: When selecting the *Covert 1*, the DVR displays the camera title and status icons on the covert video. When selecting the *Covert 2*, the DVR displays only camera title on the covert video.

You can assign titles to each camera by highlighting the Title heading and pressing the  button. A virtual keyboard allows you to enter camera names.

Selecting the PTZ Device box causes a list of controllable cameras to display. Select your camera from the list and press the  button. You will need to connect the camera to the RS485 terminal on the back of the DVR following the camera manufacturer's instructions.

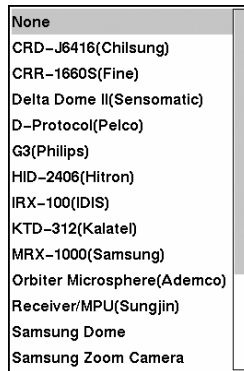




Figure 35 — PTZ Device list.

You can assign IDs to each camera by highlighting the ID heading and pressing the  button. 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.

Alarm In Setup Screen

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

Alarm In

Alarm In	On/Off	Title	NC/NO
1	Off		NC
2	Off		NC
3	Off		NC
4	Off		NC

1 - 4

5 - 8

9 - 12

13 - 16

OK
Cancel

Figure 36 — Alarm In setup screen.

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. The inputs are displayed in groups of four. You can turn each input On or Off. Each input can be given a title, and the inputs can be set as NO (normally open) or NC (normally closed) independently.

Motion Detector

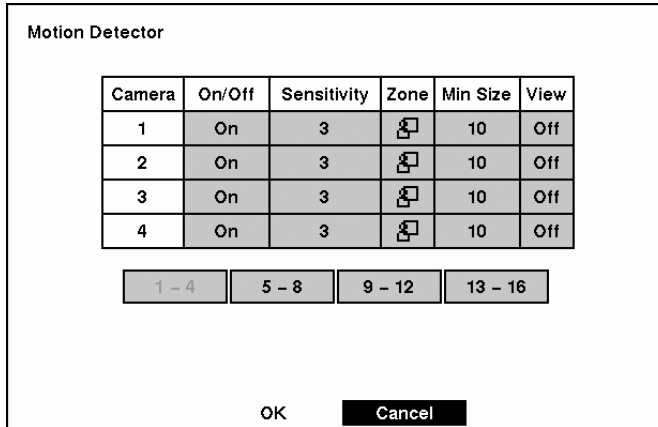


Figure 37 — Motion Detector setup screen.

Your DVR has built-in video motion detector. Video motion detector can be turned On or Off for each camera.

Highlighting the box under the **Sensitivity** heading allows you to adjust the DVR's sensitivity to motion. There are five settings with 1 being the least sensitive and 5 being the most sensitive.

You can adjust the minimum number of detection blocks that must be activated to trigger a motion alarm. Highlight a box under the **Min Size** heading and adjust the number. The smaller the number, fewer detection blocks must be activated and therefore more sensitive.

Turning the **View** setting On will allow you to observe how the DVR is reacting to motion. When in the motion viewing mode, the detection zone of video will be displayed in green. Any detected motion within the zone will be displayed in red.

You can define the area of the image where you want to detect motion; e.g., a doorway. Highlight the icon under the **Zone** heading, and press the button. The Motion Detection Zone screen will display.

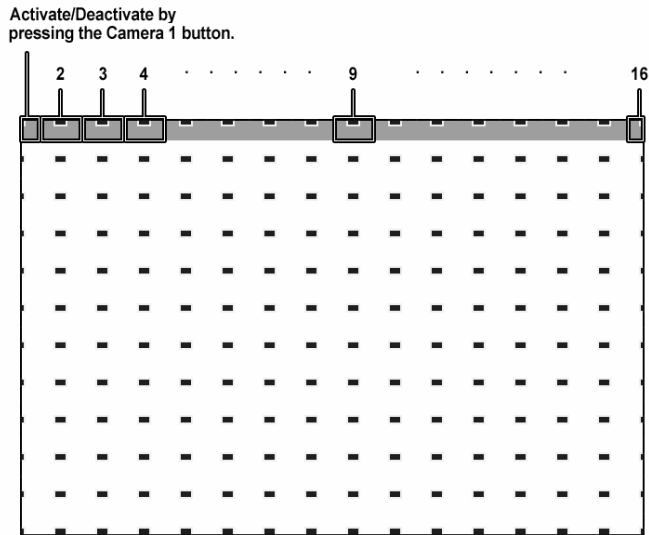



Figure 38 — Motion Detection Zone screen.

The Motion Detection Zone screen is laid over the video for the selected camera. You can set up motion detection zones by selecting or clearing blocks.

NOTE: You can set up motion zones one block at a time in groups of 9 or 16 individual block groups (9- and 16-channel DVR respectively). A block group is positioned within the image area using the Up and Down arrow buttons, and individual blocks within the block groups are selected or cleared using the camera buttons.

Press the  button to display the menu screen. The menu on the setup screen has the following functions:

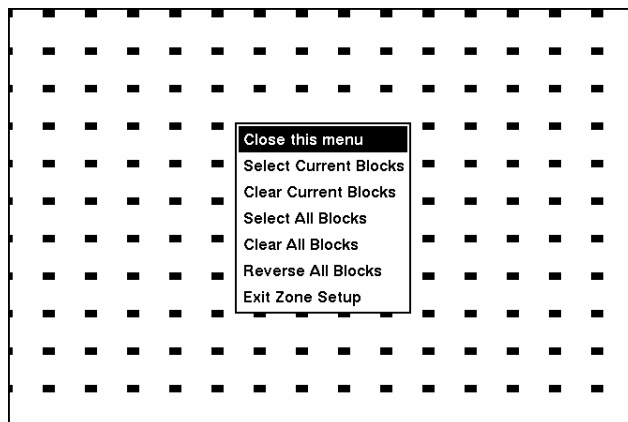


Figure 39 — Motion Detection Zone menu screen.

- Close this menu — Closes the menu so that you can see the entire screen.
- Select Current Blocks — Activates highlighted blocks to detect motion.
- Clear Current Blocks — Deactivates highlighted blocks so that they will not detect motion.
- Select All Blocks — Activates all blocks to detect motion.
- Clear All Blocks — Deactivates all blocks so that they will not detect motion.
- Reverse All Blocks — Activates inactive blocks and deactivates active blocks.
- Exit Zone Setup — Asks you to confirm changes and then returns to the previous screen.

Alarm Out Setup Screen

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

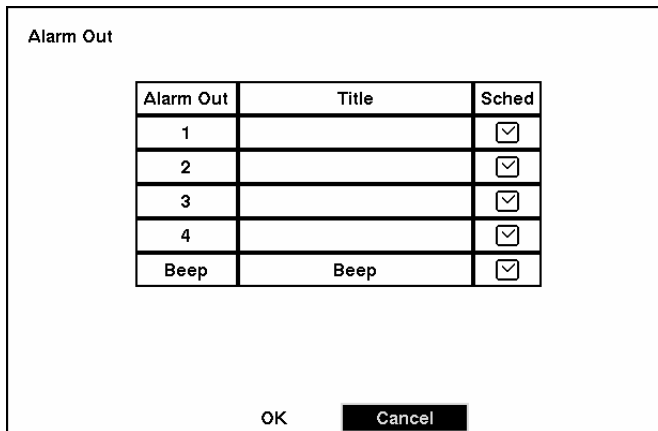


Figure 40 — Alarm Out setup screen.

Each alarm output can be given its own title by highlighting the box under the Title heading and pressing the button. A virtual keyboard appears allowing you to enter the title.

Highlighting the Sched field and pressing the button opens a schedule screen. You can schedule alarm output in 30-minute increments from 0:00 to 24:00.

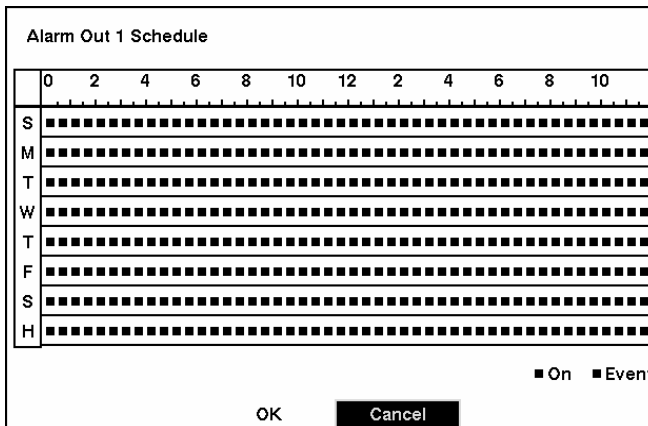




Figure 41 — Alarm Out Schedule screen.

You can select individual blocks of time, entire days of the week, entire blocks of time or the entire schedule. 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. Press the  button from No Arming (no block) to On (blue block) to Event (yellow block).

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.

Audio Setup Screen

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

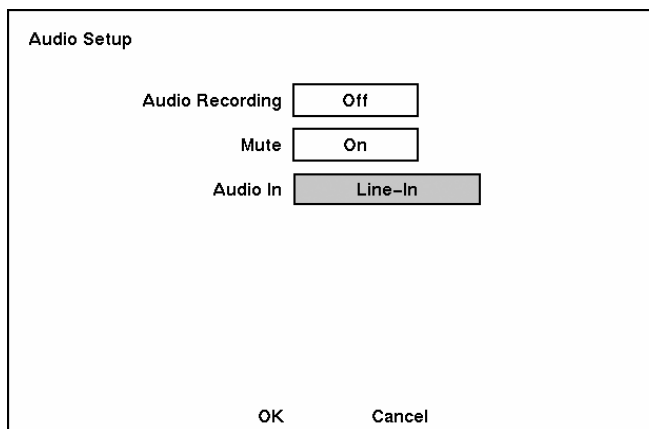






Figure 42 — Audio Setup screen.

Highlight the box beside Audio Recording and press the  button. This toggles between On and Off. When it is On, the DVR also records audio when it is recording video.

Highlight the box beside Mute and press the  button. This toggles between On and Off. When it is On, the DVR will NOT play live or recorded audio.

Highlight the box beside Audio In and press the  button. This toggles between Mic In and Line In. Mic In is for an unamplified source while Line In is for an amplified source.

You can save your changes by highlighting OK and pressing the  button. Selecting Cancel exits the screen without saving the changes.

NOTE: If you set up the recording speed at less than 1 ips, the DVR will NOT guarantee the standard quality audio playback.

RS232/RS485 Setup Screen

The RS232/RS485 setup screen allows you to set up the RS232 and RS485 ports to communicate with external devices such as modems, remote controls and dome cameras.

RS232/RS485

RS232/RS485	RS232	RS485
Baud Rate	57600	57600
Parity	None	None
Data Bit	8	8
Stop Bit	1	1
Usage	External Modem	Remote Control

Figure 43 — RS232/RS485 setup screen.

Highlight the field for the settings you wish to make. Select the correct Baud Rate, Parity, Data Bits and Stop Bits for the device you are connecting to the DVR.

For RS232, it is possible to select either Remote Control or External Modem in the Usage field. For RS485, it is possible to select either Remote Control or PTZ Control in the Usage field.

NOTE: Both the RS232 and RS 485 ports cannot be configured to communicate with remote controls at the same time.

NOTE: If networking is configured by the external modem, the RS232 port cannot be set up for the remote control. In the *Network Setup* menu, set up the DVR for LAN connections first.

Configuring Recording Settings

NOTE: Pressing the REC button on the front of the DVR will cause the red LED to light and indicates the DVR is ready to record. However, this does not mean the DVR is recording. The DVR records video based on the parameters such as schedule and events defined during configuration.

Your DVR offers a variety of flexible recording modes. You can set it up to record all the time or to only record events. It can be set up to continue recording once the hard disk drive is full by recording over the oldest video, or you can set it up to alert you when the hard disk is full and stop recording.

Record Mode Setup Screen

The image shows a 'Record Mode Setup' screen with the following settings:

- Record Resolution: Standard
- End Of Disk: Stop
- On Disk Full :
 - Beep: Off
 - Alarm Out: Off
- Field Detect: On
- Auto Deletion: Off, 1 Day

At the bottom, there are 'OK' and 'Cancel' buttons.

Figure 44 — Record Mode Setup screen.

Highlight the Record Resolution box and select from High and Standard. All other variables being equal; Selecting High will decrease the recording and playback speed by half than Standard.

Highlight the box beside End Of Disk and press the button. This toggles between Overwrite and Stop. When in the Overwrite mode, the DVR continues recording when the hard disk drive is full by overwriting the oldest video. When in the Stop mode, the DVR stops recording when the hard disk drive is full.

If the DVR is set to the Stop mode, you can set it to beep or activate the Alarm Out AO1 port when the hard disk drive is full. Highlight the box beside On Disk Full: Beep and press the button to toggle between On and Off. Highlight the box beside On Disk Full: Alarm Out and press the button to toggle between On and Off.

Highlight the box beside Field Detect. Pressing the button toggles between On and Off. When set to On, the Field Detection helps prevent shaking. It does this by recording odd numbered fields from odd numbered cameras and even numbered fields from even numbered cameras.

Highlight the first box beside Auto Deletion. Pressing the button toggles between On and Off. When set to On, the DVR will delete video recorded earlier than user-defined period. Highlight the second box beside Auto Deletion, and press the button to select the length of time recorded data will be kept from 1 to 99 Days.

NOTE: When the *End Of Disk* is set to Stop, the DVR will NOT restart recording even after the video recorded earlier than user-defined period is deleted.

You can save your changes by highlighting OK and pressing the button. Selecting Cancel exits the screen without saving the changes.

Time-Lapse Record Mode Setup Screen

Time-Lapse Record Setup

Camera	Sched	Mode 1		Mode 2	
		Speed	Quality	Speed	Quality
1	<input checked="" type="checkbox"/>	1 ips	Standard	1 ips	Standard
2	<input checked="" type="checkbox"/>	1 ips	Standard	1 ips	Standard
3	<input checked="" type="checkbox"/>	1 ips	Standard	1 ips	Standard
4	<input checked="" type="checkbox"/>	1 ips	Standard	1 ips	Standard

Keep the continuous pictures

Figure 45 — Time-Lapse Record Setup screen.

Highlight the box under the **Speed** heading and press the button. A drop-down list of record speeds appears. You can select from 1 image per 10 seconds to 60 images per second for NTSC (to 50 images per second PAL).

NOTE: If you have set the *Record Resolution* for *High*, you will not be able to select 60 ips NTSC (50 ips PAL).

Highlight the box under the **Quality** heading and press the button. A drop-down list appears. You can select from Very High, High, Standard and Low image quality. All other variables being equal; Very High will require 600% more hard disk space than Standard, High will require 250% more, and Low 30% less.

NOTE: Higher quality images require more storage space and will reduce the recording capacity of the hard disk drive.

You can set the maximum amount of time-lapse video to be stored. Once the DVR reaches this amount, it will start recording over the oldest time-lapse video. The time lapse video is stored separate from Event video. When **Keep the continuous pictures** is set to On, you can set the time from 1 Hour to the maximum allowed by the storage capacity of your hard disk drive.

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.

Time-Lapse Recording Schedule

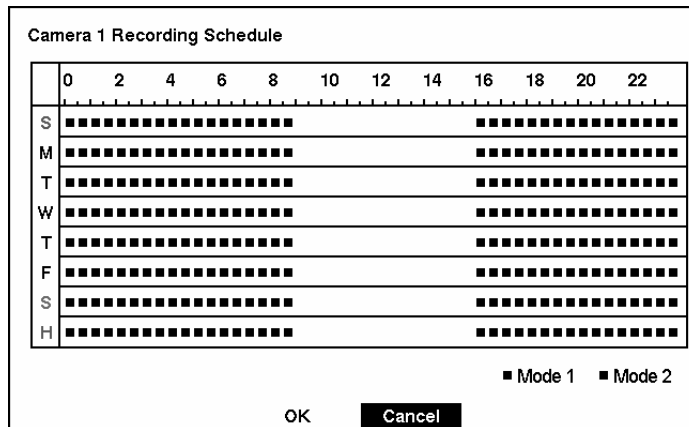


Figure 46 — Time-Lapse Recording Schedule screen.

You can program the DVR to record only during certain times based on time, day of the week, and holidays. The smallest time segment you can use is 30 minutes. A blue rectangle indicates the DVR is set to record during those 30 minutes. When there is no rectangle, the DVR will not record during those 30 minutes.

There are several ways to set recording times:

- You can highlight an individual block and toggle it On or Off by pressing the button.
- You can change a 30-minute segment for all days by placing the cursor on the time line and pressing the button to toggle the segment On or Off.
- You can change an entire day by placing the cursor on the day of the week and pressing the button to toggle the day On or Off.
- You can change the entire calendar by placing the cursor in the upper left-hand box (above “S” and to the left of the time line) and pressing the button to toggle the entire calendar On and Off.

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

You can save your changes by highlighting OK and pressing the button. Selecting Cancel exits the screen without saving the changes.

Pre-Event Recording Setup Screen

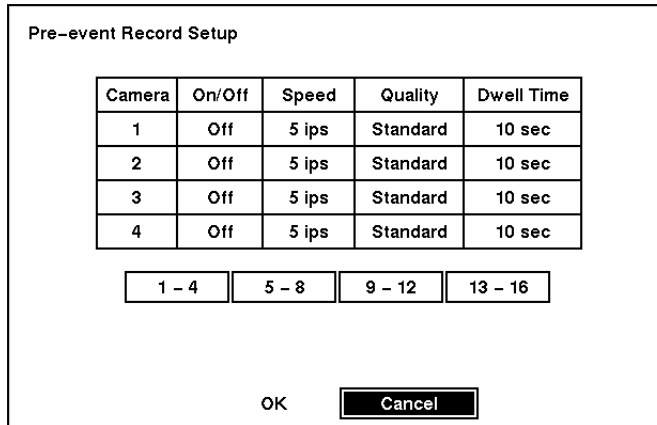


Figure 47 — Pre-Event Record Setup screen.

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.

You can turn individual cameras On or Off for pre-event recording. The image speed can be set from 0.1 to 60 ips (50 ips PAL), and image quality can be selectable from High, Standard and Low.

You can set the amount of time to record prior to the event by adjusting the Dwell. You can set the Dwell 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.

Event Action Setup

You can program the DVR to record, activate the alarm output and/or notify the remote site whenever sensor, motion or video loss events are detected. Highlight the Alarm In Event Action, Motion Detector Event Action, or Video Loss Event Action in the Main menu. The following Event Action setup screens will appear.

Alarm In Event Action (Record) Setup Screen

The DVR can be set to react to events differently. Each sensor can be assigned a schedule, camera, recording speed, video quality and dwell time.


Alarm In Event Action


		Mode 1	Mode 2			
		Record	Alarm Out	Notify		
Sensor	Sched	Camera	Speed	Quality	Dwell	
1	<input checked="" type="checkbox"/>	1	60 ips	Standard	10 sec	
2	<input checked="" type="checkbox"/>	2	60 ips	Standard	10 sec	
3	<input checked="" type="checkbox"/>	3	60 ips	Standard	10 sec	
4	<input checked="" type="checkbox"/>	4	60 ips	Standard	10 sec	

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 48 — Alarm In Event Action (Record) setup screen.

Highlight the Sched box and press the  button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Camera box and press the  button. A camera selection screen appears. Select the camera number you would like to associate with the sensor.

NOTE: You can associate multiple cameras with a sensor.

Highlight the Speed box and select number of images per second you would like to record from the drop-down menu.

Highlight the Quality box and select the image quality you want to record from the drop-down menu.

Highlight the Dwell box and set the length of time you would like to record for the associated event.

Alarm In Event Action (Alarm Out) Setup Screen

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

		Mode 1	Mode 2
		Record	Alarm Out
		Notify	
Sensor	Sched	Alarm Out	Dwell
1	<input checked="" type="checkbox"/>	-	10 sec
2	<input checked="" type="checkbox"/>	-	10 sec
3	<input checked="" type="checkbox"/>	-	10 sec
4	<input checked="" type="checkbox"/>	-	10 sec

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 49 — Alarm In Event Action (Alarm Out) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Alarm-Out box and select either Beep or the alarm output terminal that you want to associate with the sensor.

Highlight the Dwell box and set the length of time you want the output activated.

NOTE: When setting the *Dwell* to “0 sec”, the alarm output will be activated throughout the sensor activation period, and inactive while the sensor is inactive.

Alarm In Event Action (Notify) Setup Screen

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

		Mode 1	Mode 2
		Record	Alarm Out
		Notify	
Sensor	Sched	Notify	
1	<input checked="" type="checkbox"/>	Off	
2	<input checked="" type="checkbox"/>	Off	
3	<input checked="" type="checkbox"/>	Off	
4	<input checked="" type="checkbox"/>	Off	

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 50 — Alarm In Event Action (Notify) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Notify box and press the button. This toggles between On and Off. When it is On, the DVR notifies the remote site when certain events occur based on a defined schedule.

NOTE: For the Notify action to work, the DVR should be registered in the RAS (Remote Administration System).

Motion Detector Event Action (Record) Setup Screen

The DVR can be set to react to motion detector differently. Each camera can be assigned a schedule, associated camera, recording speed, video quality and dwell time.

Motion Detector Event Action

		Mode 1	Mode 2			
		Record	Alarm Out		Notify	
Camera	Sched	Camera	Speed	Quality	Dwell	
1	<input checked="" type="checkbox"/>	1	60 ips	Standard	10 sec	
2	<input checked="" type="checkbox"/>	2	60 ips	Standard	10 sec	
3	<input checked="" type="checkbox"/>	3	60 ips	Standard	10 sec	
4	<input checked="" type="checkbox"/>	4	60 ips	Standard	10 sec	

1 - 4

5 - 8

9 - 12

13 - 16

OK
Cancel

Figure 51 — Motion Detector Event Action (Record) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Camera box and press the button. A camera selection screen appears. Select the camera number you would like to associate with the camera.

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

Highlight the Speed box and select number of images per second you would like to record from the drop-down menu.

Highlight the Quality box and select the image quality you want to record from the drop-down menu.

Highlight the Dwell box and set the length of time you would like to record for the associated motion event.

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.

Motion Detector Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Camera	Sched	Alarm Out	Dwell
1	<input checked="" type="checkbox"/>	-	10 sec
2	<input checked="" type="checkbox"/>	-	10 sec
3	<input checked="" type="checkbox"/>	-	10 sec
4	<input checked="" type="checkbox"/>	-	10 sec

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 52 — Motion Detector Event Action (Alarm Out) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Alarm-Out box and select either Beep or the alarm output terminal that you want to associate with the motion event.

Highlight the Dwell box and set the length of time you want the output activated.

NOTE: When setting the *Dwell* to “0 sec”, the alarm output will be activated throughout the sensor activation period, and inactive while the sensor is inactive.

Motion Detector Event Action (Notify) Setup Screen

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

Motion Detector Event Action		
		Mode 1
		Mode 2
		Record
		Alarm Out
		Notify
Camera	Sched	Notify
1	<input checked="" type="checkbox"/>	Off
2	<input checked="" type="checkbox"/>	Off
3	<input checked="" type="checkbox"/>	Off
4	<input checked="" type="checkbox"/>	Off

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 53 — Motion Detector Event Action (Notify) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Notify box and press the button. This toggles between On and Off. When it is On, the DVR notifies the remote site when certain events occur based on a defined schedule.

NOTE: For the Notify action to work, the DVR should be registered in the RAS (Remote Administration System).

Video Loss Event Action (Record) Setup Screen

The DVR can be set to react to video loss from a camera differently. Each camera can be assigned a schedule, associated camera, recording speed, video quality and dwell time.

Video Loss Event Action

		Mode 1				Mode 2
		Record	Alarm Out	Notify		

Camera	Sched	Camera	Speed	Quality	Dwell
1	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec
2	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec
3	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec
4	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec

1 - 4	5 - 8	9 - 12	13 - 16
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Figure 54 — Video Loss Event Action (Record) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Camera box and press the button. A camera selection screen appears. Select the camera number you would like to associate with the camera that has lost video.

NOTE: You can associate multiple cameras with a camera.

Highlight the Speed box and select number of images per second you would like to record from the drop-down menu.

Highlight the Quality box and select the image quality you want to record from the drop-down menu.

Highlight the Dwell box and set the length of time you would like to record for the associated video loss.

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.

Video Loss Event Action				
		Mode 1	Mode 2	
		Record	Alarm Out	Notify
Camera	Sched	Alarm Out		
1	<input checked="" type="checkbox"/>	Beep		
2	<input checked="" type="checkbox"/>	Beep		
3	<input checked="" type="checkbox"/>	Beep		
4	<input checked="" type="checkbox"/>	Beep		

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 55 — Video Loss Event Action (Alarm Out) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Alarm-Out box and select either Beep or the alarm output terminal that you want to associate with the camera that has lost video.

Video Loss Event Action (Notify) Setup Screen

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

Video Loss Event Action				
		Mode 1	Mode 2	
		Record	Alarm Out	Notify
Camera	Sched	Notify		
1	<input checked="" type="checkbox"/>	Off		
2	<input checked="" type="checkbox"/>	Off		
3	<input checked="" type="checkbox"/>	Off		
4	<input checked="" type="checkbox"/>	Off		

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

Figure 56 — Video Loss Event Action (Notify) setup screen.

Highlight the Sched box and press the button. A schedule screen appears. Set the schedule as described earlier.

Highlight the Notify box and press the button. This toggles between On and Off. When it is On, the DVR notifies the remote site when it loses video input from a camera based on a defined schedule.

NOTE: For the Notify action to work, the DVR should be registered in the RAS (Remote Administration System).

Display Setup

Highlight the OSD, Main Monitoring, or Spot Monitoring in the Main menu, and press the button to set up the on-screen display, or camera display on the main monitor or spot monitor.

OSD (On-Screen Display) Setup

The DVR can be set up to display Date, Time, Title, Status and Logo on screen. Each feature can be turned on or off, and you can adjust the margins.

The screenshot shows a window titled "OSD Setup" with the following settings:

Date	<input type="checkbox"/> On
Time	<input type="checkbox"/> On
Title	<input type="checkbox"/> On
Status	<input type="checkbox"/> On
Logo	<input type="checkbox"/> On
Left/Right Margin	<input type="text" value="24"/>
Top/Bottom Margin	<input type="text" value="10"/>

At the bottom of the window, there are two buttons: "OK" and "Cancel".

Figure 57 — OSD Setup screen.

Highlight the box beside Date and press the button to toggle the date display On and Off.

Highlight the box beside Time and press the button to toggle the time display On and Off.

Highlight the box beside Title and press the button to toggle the camera title display On and Off.

Highlight the box beside Status and press the button to toggle status display On and Off.

Highlight the box beside Logo and press the button to toggle the logo display On and Off during playback.

Highlight the box beside Left/Right Margin and press the button to adjust the left and right margins. The margins can be set from 1 to 24.

Highlight the box beside Top/Bottom Margin and press the button to adjust the top and bottom margins. The margins can be set from 1 to 24.

Main Monitoring Setup Screen

You can adjust the display dwell time for each camera displayed on the main monitor. You can also turn camera sequence and event monitoring on and off.

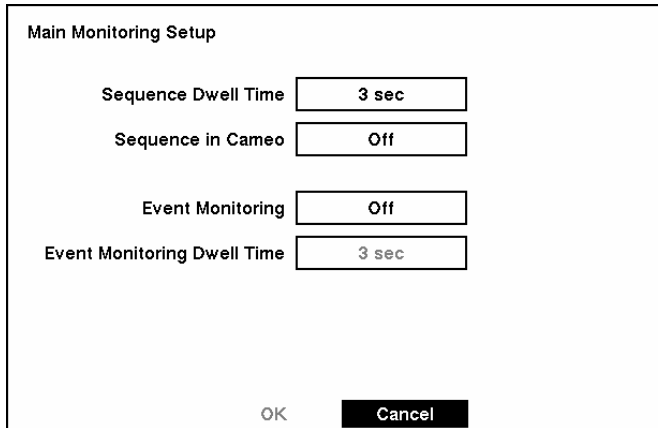


Figure 58 — Main Monitoring Setup screen.

Highlight the box beside **Sequence Dwell Time** and press the button. You can adjust the sequence dwell time from 3 to 60 seconds.

Highlight the box beside **Sequence in Cameo** and press the button to toggle between On and Off.

Pressing the **SEQUENCE** button causes the DVR to sequence cameras, and the DVR can sequence cameras in two modes: “Page” and “Cameo”. In the Page mode, the DVR sequences through user-defined screen layouts (pages). In the Cameo mode, the bottom right window in a multi-screen format sequences through all cameras.

NOTE: The DVR does not sequence the camera having video loss in the Cameo mode.

You can define the screen layout in a variety of formats and set the DVR to sequence through the different screen layouts (pages) so that all the cameras will be displayed. You can also set up the DVR to display one camera or a group of cameras all the time while cycling through the remaining cameras in a “cameo” window. This can be done with one camera displayed full screen while displaying the cameo window as a PIP (picture in picture), or displaying the cameras in a grid pattern with the bottom right window as the cameo.

NOTE: Sequence cannot be used in the 4x4 display mode of the 16-channel and 3x3 mode of the 9-channel DVR.

Highlight the box beside **Event Monitoring** and press the button to toggle between On and Off. When it is On, the video of the lowest camera number among cameras associated with the event-detected sensor will be displayed in full-screen on the main monitor during the preset dwell time.

Highlight the box beside **Event Monitoring Dwell Time** and press the button. You can adjust the event monitoring dwell time from 3 to 60 seconds.

Spot Monitoring Setup Screen

You can adjust the display dwell time for each camera displayed on the spot monitor. You can also turn event monitoring on and off.

The image shows a 'Spot Monitoring Setup' dialog box. It contains three input fields: 'Sequence Dwell Time' set to '3 sec', 'Event Monitoring' set to 'Off', and 'Event Monitoring Dwell Time' set to '3 sec'. At the bottom, there are 'OK' and 'Cancel' buttons.

Figure 59 — Spot Monitoring Setup screen.

Highlight the box beside Sequence Dwell Time and press the button. You can adjust the sequence dwell time from 3 to 60 seconds.

Highlight the box beside Event Monitoring and press the button to toggle between On and Off. When it is On, the video of the lowest camera number among cameras associated with the event-detected sensor will be displayed in full-screen on the spot monitor during the preset dwell time.


Highlight the box beside Event Monitoring Dwell Time and press the button. You can adjust the event monitoring dwell time from 3 to 60 seconds.


Network Setup Screen


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

The image shows a 'Network Setup' dialog box. It contains several input fields: 'Connection' set to 'LAN' with a 'Setup...' button next to it; 'Admin Password' and 'User Password' both set to '*****'; 'Transfer Control' set to 'Off'; 'Transfer Speed' set to '10 ips'; and 'Remote Quality' set to 'Standard'. At the bottom, there are 'OK' and 'Cancel' buttons.

Figure 60 — Network Setup screen.

Highlight the box beside Connection. Press the  button to toggle between LAN and Modem.


Highlight the box beside Admin Password and press the  button. A virtual keyboard appears. You will first be asked to enter the current password. Then you can enter a new password; you will be asked to confirm the new password before it is accepted.


Highlight the box beside User Password and press the  button. A virtual keyboard appears. You will first be asked to enter the current password. Then you can enter a new password; you will be asked to 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.

NOTE: The passwords are case sensitive. The factory default password for both Administrator and User is 12345678.

CAUTION: Write the password down and keep it in a safe place. Once the password has been reset, the default will no longer work. If the password is forgotten, the unit must be reset using the *Factory Reset Button* and all data settings will be lost.

Highlight the box beside Transfer Control. Press the  button to toggle between On and Off. When On, you can set the transfer speed and remote quality of the image transferred to a computer running RAS (Remote Administration System).


Highlight the box beside Transfer Speed and press the  button. Select the transfer speed from 1 to 30 ips.

NOTE: The transfer speed you set is the maximum speed. Depending on the network environment, this speed may not be achieved.

NOTE: The transfer speed indicates the image rate transferred to each RAS. If two remote sites (RAS) are connecting to the DVR, the number of images transferred via network will be 'Transfer Speed x 2'.

NOTE: The Transfer Control option will affect the DVR's recording performance. The number of remote sites (RAS) connected to the DVR does not affect the recording speed. The local recording speed will be affected only by Transfer Speed. The local recording speed will not be affected if the DVR is not connected remotely.

NOTE: If Transfer Control is not used, the speed of data transfer to a remote site will be the same as the local recording speed.

Highlight the box beside Remote Quality and press the  button. Select the image quality from Very High, High, Standard and Low.

LAN Setup Screen

The screenshot shows a window titled "LAN Setup" with the following fields and buttons:

Type	Manual
IP Address	192.168.1.129
Gateway	192.168.1.254
Subnet Mask	255.255.255.0
DNS Server	

Below the fields are three buttons: "Port Number Setup...", "OK", and "Cancel".

Figure 61 — LAN (Manual) Setup screen.

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

Selecting Manual from the Type allows you to set up LAN parameters manually.

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

Change the numbers by highlighting them and using the Up and Down arrow buttons 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

Highlight the box beside **DNS Server** and press the button to enter the IP address of the DNS server. If you set up the DNS Server, the domain name of the DVRNS server instead of the IP address can be used during the DVRNS Server setup. Refer to the *DVRNS Setup* section for details.

Highlight **Port Number Setup...** and the button. The Port Number Setup screen appears.

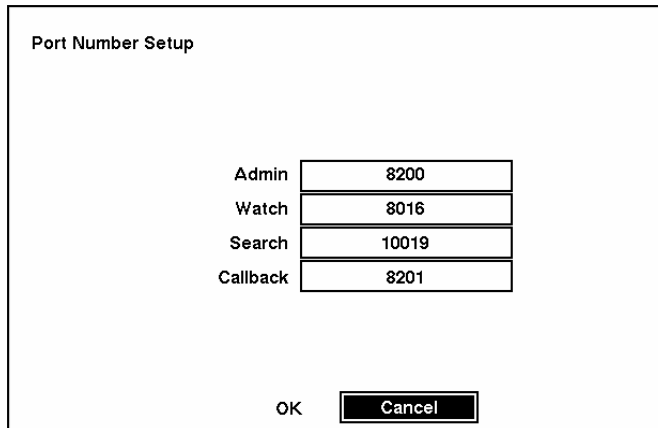


Figure 62 — Port Number Setup screen.

NOTE: You will need to get the appropriate Port Number for each RAS related program (Admin, Watch, Search and Callback) from your network administrator.

Change the numbers by highlighting them and using the Up and Down arrow buttons to increase or decrease the number.

The factory default Port settings are:

Admin:	8200
Watch:	8016
Search:	10019
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 RAS.

CAUTION: When changing the port settings, you must change the port settings on the PC running RAS as well. Refer to the RAS manual for details.

You can save your changes and return to the Network Setup screen by highlighting OK and pressing the button. Selecting Cancel exits the screen without saving the changes.

Selecting DHCP from the Type and highlighting OK reads the current IP Address of the DVR configured by DHCP (Dynamic Host Configuration Protocol) network.

LAN Setup

Type

IP Address

DNS Server

OK

Figure 63 — LAN (DHCP) Setup screen.

Selecting ADSL (PPPoE) allows you to set up the ADSL network.

NOTE: ADSL and modem cannot be configured at the same time. If the DVR is networked via modem, the ADSL (PPPoE) will not be selected.

LAN Setup

Type

IP Address

ID

Password

DNS Server

OK

Figure 64 — LAN (ADSL) Setup screen.

Highlight the box beside ID and press the button. A virtual keyboard appears allowing you to enter the ID for ADSL connection.

Highlight the box beside Password and press the button. A virtual keyboard appears allowing you to 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.

Modem Setup

RS232/RS485

RS232/RS485	RS232	RS485
Baud Rate	57600	57600
Parity	None	None
Data Bit	8	8
Stop Bit	1	1
Usage	External Modem	Remote Control

Figure 65 — Modem Setup screen.

NOTE: Modem setup is done through the *RS232/RS485* screen in the Devices menu which can be accessed from the Main Menu.

NOTE: If the RS232 port is in use for the remote control, the networking cannot be configured by the modem. In the *RS232/485 Setup* menu, set up the RS232 port to communicate with the external modem first.

Highlight the box beside **Baud Rate** of the RS232 field and press the button. A list of baud rates ranging from 300 to 115,200 appears.

Highlight the box beside **Parity** of the RS232 field and press the button. A drop-down list appears. You can select from None, Odd or Even parity.

Highlight the box beside **Data Bit** of the RS232 field. Pressing the button toggles between 7 bit and 8 bit formats.

Highlight the box beside **Stop Bit** of the RS232 field. Pressing the button toggles between 1 and 2 Stop Bits.

You can save your changes by highlighting **OK** and pressing the button. Selecting **Cancel** exits the screen without saving the changes.

DVRNS (DVR Name Service) Setup

DVRNS allows the DVR to use dynamic IP addresses for remote connection. The DVRNS Setup screen allows you to configure the DVRNS server and register the DVR to use DVR name service.

Figure 66 — DVRNS Setup screen.

Highlight the box beside **Use DVR Name Service** and press the button to toggle between On and Off.

Highlight the box beside **DVRNS Server** and enter the IP address or domain name of the DVRNS server.

NOTE: You will 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.

Highlight the box 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.

Highlight the **Use NAT** box and press the button to toggle On and Off. Turn on Use NAT when the DVR is networking using the NAT (Network Address Translation) device.

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

Highlight the box beside **DVR Name** and press the button to name the DVR to be registered on the DVRNS server. A virtual keyboard allows you to enter the DVR name.

Selecting **Name Check** allows you to check whether or not the name you entered can be used.

NOTE: The DVR name you entered should be checked by selecting *Name Check*, otherwise the DVRNS changes will not be saved.

NOTE: When entering no name or a name already registered on the DVRNS server, an error message will be displayed.

Highlighting OK and pressing the button registers the DVR on the DVRNS server. Proper DVRNS settings will display the help desk information of the DVRNS server in the box beside Help Desk.

CAUTION: 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.

CAUTION: The DVRNS registration will be 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.

Callback Center Setup Screen

The DVR can be set up to contact a computer running RAS (Remote Administration System) and send an email on a LAN when an event occurs. Also it can be set up to dial a pager with a numeric message when an event occurs if you have a modem connected to the DVR.

Callback Center Setup by LAN connections

Callback Center Setup	
IP Address	192.168.1.10
Retry	3
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	*****
OK	<input type="button" value="Cancel"/>

Figure 67 — Callback Center (LAN) Setup screen.

Highlight the box beside IP Address and enter the IP address of the computer you want contacted during an event.

Highlight the box 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.

Highlight the box beside E-mail notification and press the button to toggle between On and Off.

Highlight the box beside SMTP Server IP and enter the SMTP server IP address, obtained from your system administrator.

Highlight the box beside E-mail recipient and enter the recipient's e-mail address. Use the virtual keyboard to enter the e-mail address.

Highlight the box beside E-mail sender and enter the sender's e-mail address.

NOTE: The e-mail address must include the character "@" to be a valid address.

Highlight the box beside Authentication and press the button to toggle between On and Off.

Highlight the box beside ID and enter the SMTP ID. A virtual keyboard appears allowing you to enter the ID.

Highlight the box beside Password and enter the SMTP password. A virtual keyboard appears allowing you to enter the password.

NOTE: Authentication should be turned On and ID and Password should be entered when using the SMTP server requiring user authentication.

Callback Center Setup by Modem connections

Callback Center Setup

Pager Number

Mailbox

Site ID

Event

1 : Alarm In	10 : Storage
2 : Motion	12 : S.M.A.R.T.
3 : Video Loss	17 : System
8 : Check Recording	

OK

Figure 68 — Callback Center (Modem) Setup screen.

Highlight the box 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.

Highlight the box beside Mailbox and enter the voice mailbox number if your pager uses a voice mailbox.

Highlight the box beside Site ID and enter a three-digit site ID number.

When an event occurs, the DVR will dial the pager and leave a four- or five-digit number. The first three digits are the site ID number and the last digits are the type of event (1: Alarm In, 2: Motion Detection, 3: Video Loss, 8: Check Recording, 10: Storage is Bad, 12: S.M.A.R.T Alert and 17: System). For example, "0753" means that Site 75 has lost video.

NOTE: The DVR will wait for at least four minutes between pages. If another event occurs less than four minutes after the DVR has notified a pager, it will not dial the pager. It does this so that the telephone line will not be tied up.

You can save your changes by highlighting OK and pressing the button. Selecting Cancel exits the screen without saving the changes.

Password Setup Screen

An Administrator password is required to turn the system off, enter the setup screen, load default setups, clear all data, change system date and time and change the Administrator password. A User password is required to enter playback, fast forward playback and fast backward playback modes from live monitoring mode, enter the search menu screen in live monitoring mode and setup screens (access to only the Clip Copy setup screens). When pressing the ALARM button to display the event log in live monitoring mode unless there is an active alarm. Highlight Password in the Main menu and press to enter the Password screen.

Permission	On/Off	Password
User	On	*****
Admin Setup		*****

Key Lock On

OK **Cancel**

Figure 69 — Password setup screen.


Highlight the box beside User and press the button to toggle between On and Off. If the password is set to On, you will be asked to enter the current password so that you can turn it Off. If the password is set to Off, you will be asked to enter the new password and to confirm it before it will be turned on.


The Administrator password cannot be turned On and Off. You can change the Administrator password by first entering the current password, entering a new password and finally confirming the new password.

To change the password, highlight the Password box and press the button. A window appears asking you to enter the current password. If you enter the correct password, another window appears asking you to enter a new password using the camera buttons. After you press the button, another screen appears asking you to confirm the new password.

NOTE: The Admin and User passwords are composed of up to eight digits using the camera buttons. The default User password is 1234, and Admin password is 4321.

CAUTION: Write down the new password and save it in a secure place. If the password is forgotten, the unit must be reset using the *Factory Reset Button* and all data settings will be lost.

To lock front panel buttons, highlight Key Lock On and press the  button. Once the buttons are locked, pressing any front panel button will cause a password screen to display. You will need to enter the correct password to unlock the keys. The Key Lock password is 4231.

You can save your changes by highlighting OK and pressing  button. Selecting Cancel exits the screen without saving the changes.

Config Screen

The Config menu is used to perform functions such as switching between Quick Setup and Normal Setup, copying video clips, loading default setup and clearing all data.

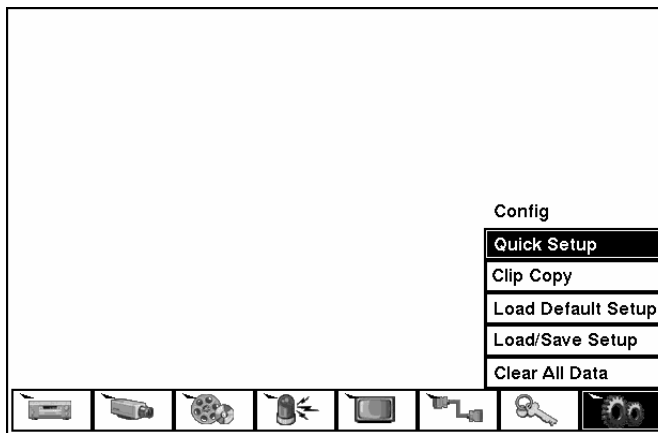


Figure 70 — Config screen.

Quick Setup Screen

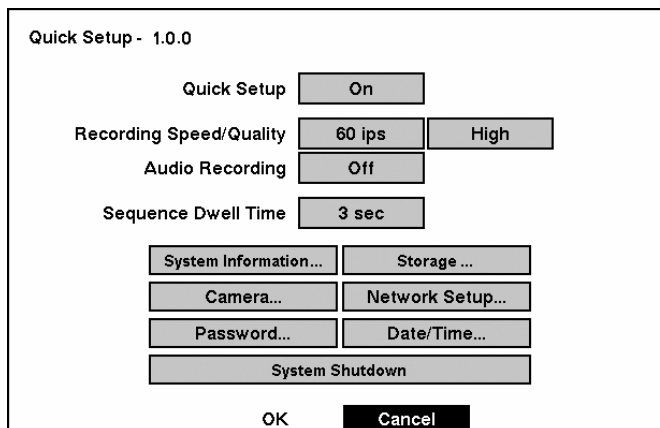


Figure 71 — Quick Setup screen.

The Quick Setup screen allows you to set up the most commonly used features of your DVR. Use the arrow buttons to move through the options. Pressing the button lets you make your selections.

NOTE: If you enter the Quick Setup screen by entering User password, only Password setup will be permitted.

Highlight the box beside Quick Setup and press the button to toggle between On and Off. If you select Off, you will use the Normal Setup screen to change the DVR's settings.

Highlight the Recording Speed box and select recording speeds from as few as one image every 10 seconds to as fast as 60 ips.

NOTE: The DVR has a maximum recording speed of 60 ips per camera, however, the recording speed may not be achieved when averaged over all cameras.

Highlight the Recording Quality box and select from Very High, High, Standard and Low.

Highlight the box beside Audio Recording and select either On or Off.

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

Highlight the box beside Sequence Dwell Time and select from 3 to 60 seconds for the camera sequence dwell time.

Selecting System Information... enters that screen.

Selecting Storage... enters a screen where you can check the storage status.

Selecting Camera... enters a screen where you can set up camera information.

Selecting Network Setup... enters a screen where you can set up network information.

Selecting Password... enters a screen where you will be able to change passwords.

Selecting Date/Time... enters a screen where you will be able to set the DVR's time and date.

Selecting System Shutdown... shuts the DVR down. When shutting down the DVR, you need to confirm that you want to shut down the unit, you will be asked for an administrator password.

NOTE: The Quick Setup mode will be released automatically when the user changes the DVR settings remotely using the RAS(Remote Administration System) program.

Clip Copy

The Clip Copy screen can be used to copy video clips to an external USB hard disk drive, CD-RW drive or flash drive. The copied clips can be viewed on computers running Microsoft Windows 98, ME, 2000 or XP. Refer to the *Appendix A — USB Hard Disk Drive Preparation* for information on preparing the external drive for clip copy.

The screenshot shows the 'Clip Copy' interface with the following elements:

- A drive selection box at the top containing 'USB HDD' and a checked 'Audio' checkbox.
- 'From' and 'To' fields, each with a radio button for 'First' or 'Last', and date/time fields set to '12-26-2005' and '04:40:59'.
- A 'Camera' section with a 4x4 grid of checkboxes numbered 1 through 16, all of which are checked.
- A 'File Name' text input field.
- 'Start' and 'Close' buttons at the bottom.

Figure 72 — Clip Copy screen.

To select the type of the drive to use for clip copy, highlight the box on the top and press the button. A drop-down list of available drives appears. You can select from USB HDD, USB Flash Memory or USB CD-RW. Placing a checkmark in the Audio box archives recorded audio with video.

You can define how much video to copy by changing the start and end times and dates. You can also select which camera you wish to copy.

Highlight the File Name box and press the button. A virtual keyboard appears. Enter a file name for the video you are copying and select Close. The DVR will automatically add 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: "folder/filename"

Once you have given the video a file name, highlight the Start button and press the button to start clip copy.

When you select the USB CD-RW, the DVR will display the drive capacity, the clip size and ask if you want to continue.

When more than two USB hard disk drives are installed on the DVR, the following USB Device Selection screen appears. Select the drive to use for clip copy and press the button. Selecting Return to Clip Copy Menu and pressing the button exits the screen and returns to the Clip Copy screen without saving the changes.

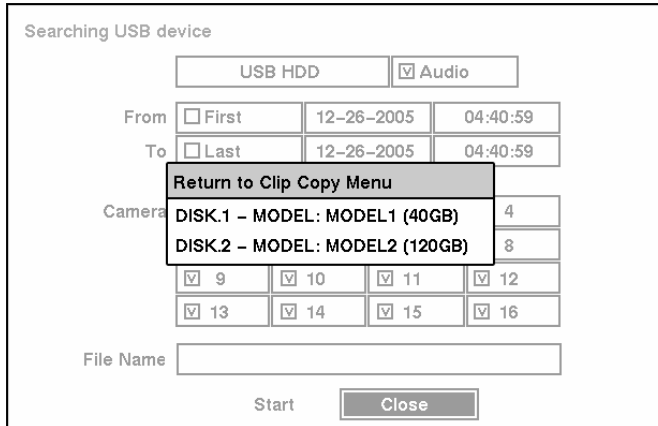


Figure 73 — USB Device Selection screen.

When the selected drive has more than 2 partitions, the following Disk Partition Selection screen appears. If the file system is not FAT16 or FAT32, the TYPE displays NOT Supported.

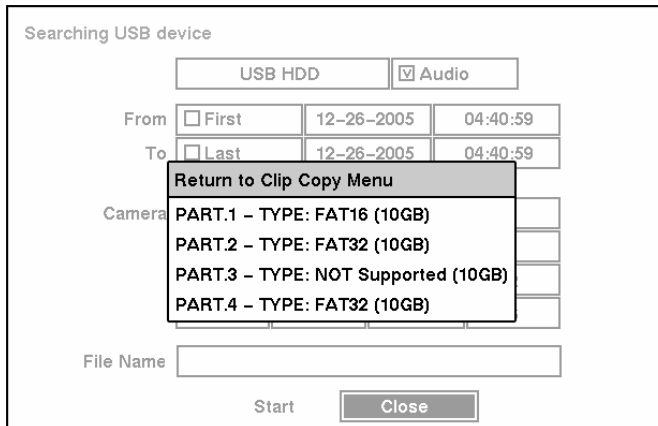


Figure 74 — Disk Partition Selection screen.

Once you select the drive and partition to use for clip copy, the DVR will display the drive capacity, the clip size and ask if you want to continue.

NOTE: Do not copy clips larger than 2GB.

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

NOTE: You can not end the archiving process during CD burning.

Refer to the RAS manual for instructions on how to review video clips.

NOTE: During clip copy, you can neither change the system date and time, shut the system down, switch to the Quick Setup mode, clear all data, nor change the system setup from a remote site.

CAUTION: Do NOT disconnect the USB cable or the power from the external drive while copying clips. If the external drive is shut down or the USB cable is disconnected while copying clips, 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 copy clips. You will need to power down the DVR and restart it to get rid of the error message. Once the file system of the USB-IDE hard disk drive has been corrupted, this error message cannot be dismissed. Even after restarting the DVR it may automatically restart while preparing clip copy. You must recover the file system using the recovery program, or you must reformat the hard disk drive.


Load Default Setup

Highlighting and selecting Load Default Setup will bring up screen asking you if you really want to load default settings and confirm it with a password.

NOTE: Loading the Default Setup will not change the current time, time zone, daylight saving time and network settings.


Load / Save Setup

You can load saved DVR settings or save the current DVR settings.

To load saved DVR settings, connect the USB device containing the setup file (.cfg) to the DVR. Highlight Load – File Name and press the  button. The Load Setup screen appears. The screen displays setup file names that are available. Select the desired setup file and press the OK button. The selected file name is displayed on the File Name field. Selecting Load will load the selected save 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) will NOT be changed.

NOTE: If you want to change the network settings, check *Include network setup*. Otherwise, the network settings will NOT be changed.

To save the current settings, connect the USB device to the DVR. Highlight Save – File Name and press the  button. A virtual keyboard allows you to enter the file name. Selecting Save will save the current DVR settings in .cfg file format on the USB device.

Load/Save Setup

Load

File Name

Include network setup

Save

File Name

Figure 75 — Load / Save Setup screen.

Clear All Data

Highlighting and selecting **Clear All Data** will bring up screen asking you if you really want to clear all data and confirm it with a password.

CAUTION: Selecting *Clear All Data* will erase all recorded video.

Chapter 4 — Operation

NOTE: This chapter assumes your DVR has been installed and configured. If it has not, please refer to Chapters 2 and 3.

The DVR's 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 over recording and playing back video. You can establish recording schedules based on time of day and day of the week. The DVR allows you to search through the recorded video using much more sophisticated tools than those available with VCRs. Additional DVR features that are not available with VCRs are remote control and viewing, recording video at the same time you are watching previously recorded video. The DVR operates even when no hard disk drives are installed. In this case, recording, playback and any processes that access hard disk drives are not supported. You can only view live video and establish system settings that are not related to hard disk drive operation. Also, the unit can be connected with RAS Watch either via Ethernet or modem.

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

Turning on the Power

Once you have installed the DVR following the instructions in *Chapter 2 — Installation*, it is ready to record.

The DVR will recover automatically once the unit is initialized if recorded data on the storage device has been damaged.

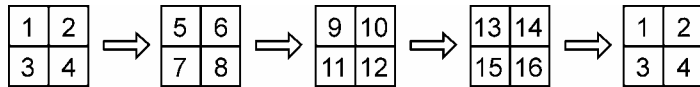
Live Monitoring

As soon as the DVR completes its initialization process, it will begin showing live video on the attached monitor and playing live audio through the attached speaker. The default mode is to display all cameras at once. Pressing any camera button will cause that camera to display full screen. It displays live video and plays live audio until the user enters another mode.

Pressing the **DISPLAY** button cycles the DVR through the different display formats.

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 video of the lowest camera number among cameras associated with the event-detected sensor will be displayed, the DVR will return to the previous screen format after event monitoring dwell time. While the event monitoring is activated, the monitoring for all other subsequent events will be ignored. Pressing the individual camera button or the **DISPLAY** button during event monitoring releases the current event monitoring and displays the selected camera or return to the previous screen format.

Pressing the **SEQUENCE** button will cause the cameras to display sequentially on the monitor. When in one of the multi-view formats, pressing this button will cause the DVR to through user-defined screen layouts (page sequence), or the bottom, right screen to display live cameras sequentially (cameo sequence). Selecting another display mode, or pressing the **SEQUENCE** button again will exit the Sequence mode. When in one of the multi-view formats, pressing the **Left** or **Right** arrow buttons will cause the DVR to go to the previous or the next page. For example, if you press the **Right** arrow button in 4x4 format, the DVR changes the page like that.



For the sequence display on the spot monitor, press the **SPOT** button and then **SEQUENCE** button.

Pressing the **FREEZE** button will freeze the current image on the screen until you press the button again.

Active Cameo Mode

You can enter the Active Cameo mode by pressing the **⇐** button in any multi-view format. The gray-highlight box at the bottom of video indicates the active cameo, and pressing the arrow buttons moves the active cameo. Pressing the **⇐** button while in the Active Cameo mode exits the Active Cameo mode. The active cameo mode will remain in effect for 15 seconds if there is no further action.

In active cameo mode, press the camera button you want to show that video at active cameo. After setting the camera number at active cameo, the DVR moves the active cameo to the next cameo. You can change the screen layout using this process.

The active cameo also can be used to select the camera to control Pan, Tilt and Zoom capabilities.

PIP Mode

You can display a Picture-in-Picture by pressing the **DISPLAY** button. You can change the location of the PIP by pressing the **Up** and **Down** arrow buttons and its size by pressing the **Left** and **Right** arrow buttons.

PTZ Mode

The DVR will control cameras with Pan, Tilt and Zoom capabilities. Press the **PTZ** button to enter the PTZ mode. You can control the camera using front panel control buttons or by setting up presets. To use the front panel buttons, press the **Left** and **Right** arrow buttons to pan left and right. Press the **Up** and **Down** arrow buttons to tilt the camera up and down. Press the **SEARCH/STOP** button to zoom in, and press the **PLAY/PAUSE** button to zoom out. You can use the **RW** and **FF** buttons to focus the image.

Pressing the **SEQUENCE** button in the PTZ mode displays the PTZ menu screen. 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.

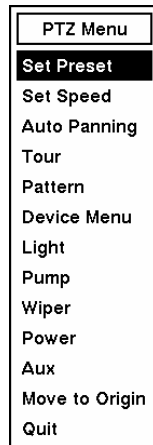


Figure 76 — PTZ Menu screen.

- Set Preset — Sets the presets for PTZ camera
- Quit — Closes the menu

You can save camera position settings as “presets” so that you can go directly to desired views. Once you have the camera at the desired settings, press the **SEQUENCE** button, and select **Set Preset** in the PTZ menu. Select the number you want to assign to the preset and press the **↵** button. Use the virtual keyboard to enter the preset name. Press the **MENU** button to load the PTZ preset and the **Preset View** dialog box will appear. Select the desired preset and press the **↵** button to load the preset.

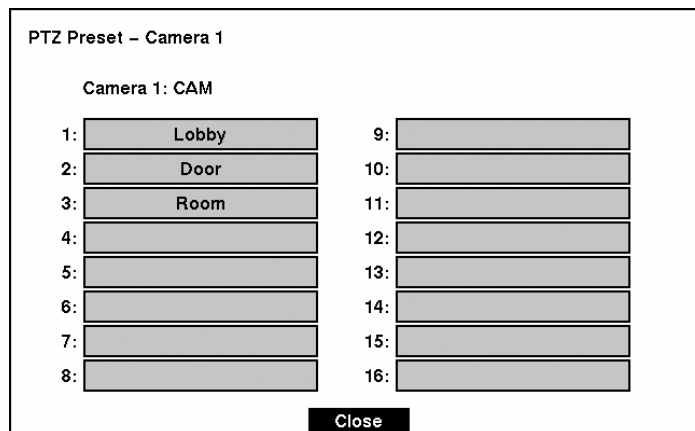


Figure 77 — PTZ Preset screen.

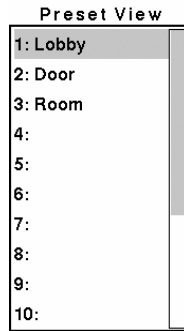


Figure 78 — Preset view screen.

Recording Video

Once you have installed the DVR following the instructions in *Chapter 2 — Installation*, it is ready to record. Unless you change the setup, the DVR will start recording when you press the **REC** button and will continue recording until the hard disk drive is full. The factory default is **Stop** when the hard disk drive is full. The DVR can be set to continue recording (**Overwrite**) once the hard disk drive is full. It does this by recording over the oldest video.

Although you will be able to record without changing the unit from its original factory settings, you will want to take advantages of the DVR's many tools. See *Chapter 3 — Configuration* for detailed descriptions of the recording mode options.

NOTE: The DVR is NOT recording if only the red LED on the REC button is lit. When the DVR is set for *Time-lapse* or *Event* recording, the red LED on the REC button indicates the unit is ready to record. The red dot appears on the monitor when the clock reaches a scheduled recording time and the DVR starts recording video.

Recording Audio

If the DVR was set up to record audio, it will record audio when video is recording.

NOTE: Make certain you comply with all local and federal laws and regulations when recording audio.

Playing Recorded Video

Once video has been recorded, you can view it by pressing the **PLAY/PAUSE** button. When playing video for the first time, the DVR will display the most recent image. When playing video subsequent times, the DVR will start playing video from the last recalled image.

NOTE: Only the administrator level user can view the covert cameras. The covert cameras in the playback mode are determined by the current camera setting.

Pressing the **PLAY/PAUSE** button again will freeze the video on the screen.

RW (Rewind) Button

Pressing the **RW** button plays video backward at high speed. Pressing the button again toggles the playback speed from **◀◀**, **◀◀◀** and **◀◀◀◀**. The screen displays **◀◀**, **◀◀◀** and **◀◀◀◀** respectively.

Entering Fast Backward Playback mode from Live Monitoring mode can be password protected.

FF (Fast Forward) Button

Pressing the **FF** button plays video forward at high speed. Pressing the button again toggles the playback speed from **▶▶**, **▶▶▶** and **▶▶▶▶**. The screen displays **▶▶**, **▶▶▶** and **▶▶▶▶** respectively.

Entering Fast Playback mode from Live Monitoring mode can be password protected.

SEARCH/STOP Button

Pressing the **SEARCH/STOP** button during Playback mode returns the DVR to the Live Monitoring mode.

Camera Buttons (1 to 16)

Pressing a camera button will display that camera full screen.

DISPLAY Button

Pressing the **DISPLAY** button will cycle the display through the different screen layouts. The display modes are: full, 4x4, 3x3, and 2x2.

MENU Button

Pressing and holding the **MENU** button while in the Playback mode enters the Clip Copy screen.

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.

Searching Video

Pressing the **SEARCH/STOP** button displays the Search Menu. When the DVR is in the Playback mode, pressing the **MENU** button displays the Search Menu.

Go to the First
Go to the Last
Date/Time Search...
Calendar Search...
Event Search...
Clip Copy...

Figure 79 — Search Menu.

- Go to First — Displays the first recorded image
- Go to Last — Displays the last recorded image
- Date/Time Search... — Searches by date and time (see below for more details)
- Calendar Search... — Searches using a calendar (see below for more details)
- Event Search... — Selects video from the event log (see below for more details)
- Clip Copy... — Clips a video segment and saves it.

NOTE: The searching speed might decrease when all camera channels are in the pre-alarm recording mode.

Date/Time Search

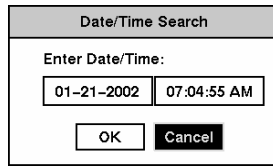


Figure 80 — Date/Time Search screen.

Move the cursor over the date and press the **←** button. You can use the Left and Right arrow buttons to highlight the year, month and day. Use the Up and Down arrow buttons to change to the date you want to search for video. Once you have set the date you want, press the **←** button.

Move the cursor over the time and press the **←** button. You can use the Left and Right arrow buttons to highlight the hour, minutes and seconds. Use the Up and Down arrow buttons to change to the time you want to search for video. Once you have entered the time you want, press the **←** button.

Once you have set the date and time you want to search, highlight the OK button and press the **←** button. The selected date and time will display. (If no video was recorded at the selected time, a blank screen will display.) The **PLAY/PAUSE**, **RW**, **FF** can now be used to review the surrounding video.

Calendar Search

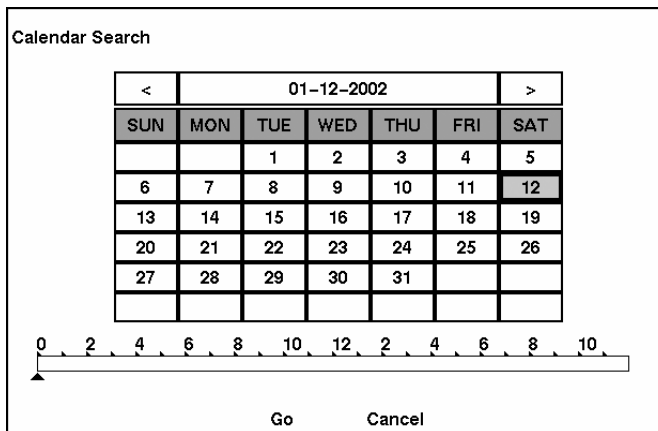







Figure 81 — Calendar Search screen.

Days with recorded video display on the calendar with white numbers. You can highlight the days with recorded video by using the arrow buttons. Once you have highlighted a day, press the  button to select it.

A time bar will display at the bottom of the calendar. Hours in which video was recorded will be highlighted with blue. You can use Up and Down arrow buttons to highlight the time bar. Once the time bar is highlighted, you can select the time by using the Left and Right arrow buttons.

NOTE: The time bar is in 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.

Once you have set the date and time you want to search, highlight the GO button and press the  button. The selected date and time will display. The , ,  can now be used to review the surrounding video.

Event Search

Event Log			
No.	Type	Title	Date/Time
4	Alarm In 1		12-04-2001 09:48:05 AM
3	Alarm In 1		12-04-2001 09:47:55 AM
2	Alarm In 1		12-04-2001 09:47:45 AM
1	Alarm In 1		12-04-2001 09:47:35 AM







4   Query...
Close

Figure 82 — Event Log screen.

The DVR maintains a log of each time the Alarm Input port is activated. The Event Log screen displays this list. Use the arrow buttons to highlight the event for which you would like to see video.

Pressing the  button will extract the event video and display the first image of the event. Pressing the  button will start playing the “event” video segment. Pressing  returns to live monitoring. Pressing  returns to the Event Log.

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

Event Search

Search By

From	<input checked="" type="checkbox"/> First	01-24-2002	01:56:57 AM
To	<input checked="" type="checkbox"/> Last	01-24-2002	01:56:57 AM

Camera				Event		
<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> Alarm-In		
<input checked="" type="checkbox"/> 5	<input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 7	<input checked="" type="checkbox"/> 8	<input checked="" type="checkbox"/> Motion		
<input checked="" type="checkbox"/> 9	<input checked="" type="checkbox"/> 10	<input checked="" type="checkbox"/> 11	<input checked="" type="checkbox"/> 12	<input checked="" type="checkbox"/> Video Loss		
<input checked="" type="checkbox"/> 13	<input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 15	<input checked="" type="checkbox"/> 16			

Figure 83 — Event Search (by Camera) screen.

Event Search

Search by

From	<input checked="" type="checkbox"/> First	04-08-2002	11:28:37 PM
To	<input checked="" type="checkbox"/> Last	04-08-2002	11:28:37 PM

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Alarm In	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Video Loss	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 84 — Event Search (by Event) screen.

Highlight the box beside **Search by** and press the button to toggle between **Camera** and **Event**.

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

When you select the **Search by Camera**, select the target cameras and event options. When you select the **Search by Event**, select event options for each device.

Once you set your desired search conditions, highlight **Search** and press the button to display the search results in the **Event Log** screen. Selecting **Cancel** exits the screen without saving the changes.

Appendix 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.

1. Connect the USB-IDE hard disk drive to your computer using the USB Cable.
2. Turn on your computer.
3. The USB device icon should display on the Taskbar.
4. If the USB-IDE hard disk drive is partitioned or has data, it will show 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 FAT32 format, format the USB-IDE hard disk drive using the FAT32 format.
5. If the USB-IDE hard disk drive is not partitioned, go to *Administrative Tools* in *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, click *Create Partition*.
6. In the *Create Partition wizard*, click *Next* then *Primary Partition*, and follow the instructions on the screen. Make sure that the FAT32 is selected for the file system.

NOTE: The partition size should be less than 32GB because of Microsoft limitations.

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

7. 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.

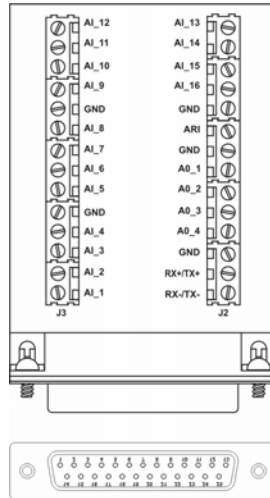
1. Connect the USB-IDE hard disk drive to your computer using the USB Cable.
2. Turn on your computer. The *Add New Hardware wizard* window will appear.
3. Install the device driver for the USB backup device following the instructions provided with your USB hard disk drive.
4. If the USB-IDE hard disk 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 hit the enter key.
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.” And Type “Y” to use all available space and hit the enter key. Hit 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 click “Start”.
14. After formatting is complete, connect the USB-IDE hard disk drive to the DVR.

Appendix B — 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.
Live Video Very Bright	If a cable is attached to the “Loop” connector, make certain it is connected to a properly terminated device.
REC LED is Lit but DVR is not recording	Unit will only record video based on the parameters such as schedule and events defined during configuration. Red REC LED indicates the DVR is ready to record.
DVR has stopped recording	If hard disk drive is full, you will either need to 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.	The DVR will automatically reset the time and date of the unit, according to the time and date of the last recorded image. If this is not the correct time and date, reset the time and date manually. If the correct time and date is earlier than the last recorded image, any video with a later time and date will be lost when resetting the correct time and date.

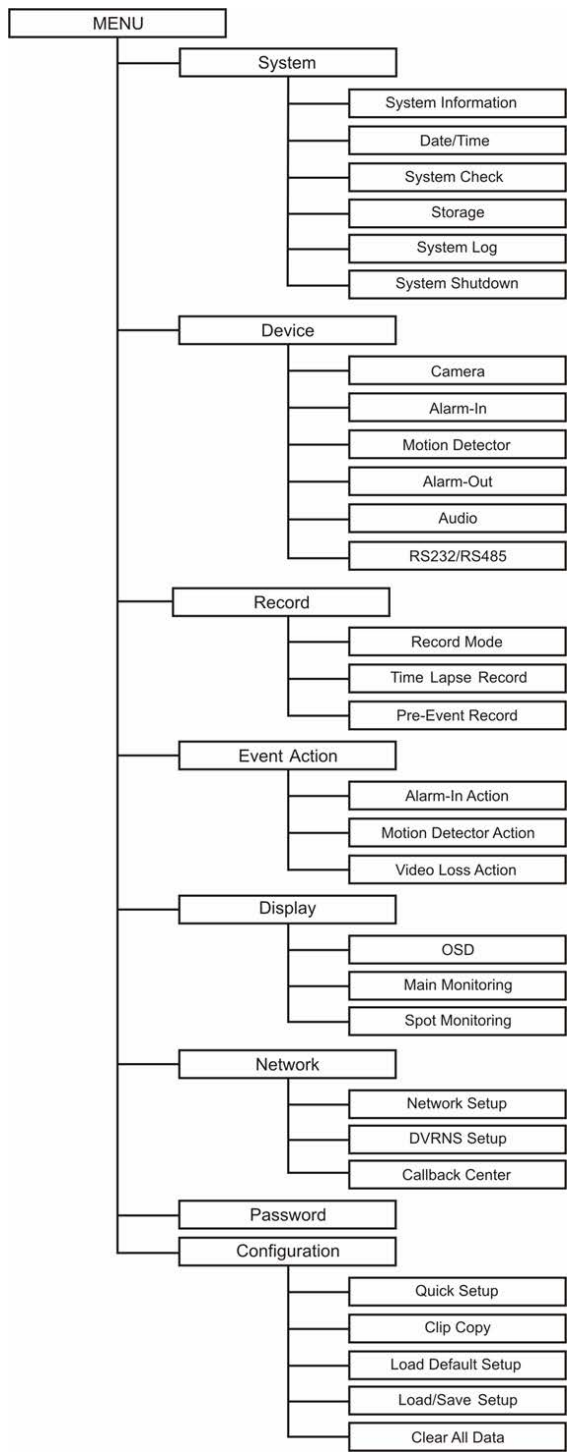
Appendix C — Connector Pin Outs

Alarm I/O Connector and RS485 Connector Pin Outs



Pin Number	Pin Assignment	Pin Number	Pin Assignment
1	RS485 RX-/TX-	14	RS485 RX+/TX+
2	Alarm Output 3	15	Alarm Output 2
3	Alarm Output 1	16	Alarm Output 4
4	Alarm Reset	17	Ground
5	Alarm Input 16	18	Alarm Input 15
6	Alarm Input 14	19	Alarm Input 13
7	Alarm Input 12	20	Alarm Input 11
8	Alarm Input 10	21	Alarm Input 9
9	Ground	22	Alarm Input 8
10	Alarm Input 7	23	Alarm Input 6
11	Alarm Input 5	24	Alarm Input 4
12	Alarm Input 3	25	Alarm Input 2
13	Alarm Input 1		

Appendix D — Map of Screens



Appendix E — Specifications

VIDEO	
Signal Format	NTSC or PAL (selector switch)
Video Input	Composite: 9 or 16 looping inputs, 1 Vp-p, auto-terminating, 75 Ohms
Monitor Outputs	Composite: One, 1 Vp-p, 75 Ohms SVHS: One SPOT: 1 BNC
Video Resolution	720x480 (NTSC), 720x576 (PAL)
Playback/Record Speed (images per second)	Standard Resolution: 60/60ips (NTSC), 50/50ips (PAL) High Resolution: 30/30ips (NTSC), 25/25ips (PAL)

INPUTS/OUTPUTS	
Alarm Input	9 or 16 TTL, NC/NO programmable, 4.3V threshold, using supplied Alarm I/O Board
Alarm Output	4 TTL open collector, 5mA@12V, 30mA@5V
Alarm Reset Input	1 TTL, 4.3V threshold, using supplied Alarm I/O Board
Network Connectivity	10/100 Mbps Ethernet RS-232C for external modem
Audio Input	RCA Input: One “line in” or “mic” programmable
Audio Output	One, “line”

CONNECTORS	
Video Input	Composite: 9 or 16 BNC
Video Loop	Composite: 9 or 16 BNC
Monitor Output	Composite: 1 BNC SVHS: 1 Y/C SPOT: 1 BNC
Audio In	RCA connector
Audio Out	RCA connector
Alarms / RS485	DB-25 male connector (with alarm I/O board)
Ethernet Port	RJ-45
RS232C Serial Port	DB9 (P)
USB Port	Two (2.0)

STORAGE	
Primary Storage	EIDE hard disk drive (up to 2)
Backup Storage	USB hard disk drive, CD-RW drive or flash drive

Specifications are subject to change without notice.

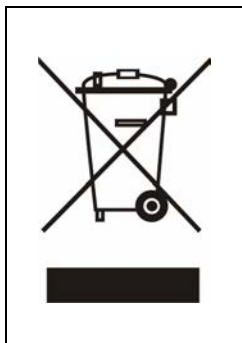
GENERAL	
Dimensions (W x H x D)	16.9" x 1.7" x 15.7" (430mm x 44mm x 399mm)
Unit Weight	14.3 lbs. (6.5kg)
Shipping Weight	21.1 lbs. (9.6kg)
Shipping Dimensions (W x H x D)	21.3" x 12.1" x 20.1" (540mm x 175mm x 510mm)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Operating Humidity	0% to 90%
Power	100 to 240 VAC, 1/2 A, 60/50Hz, Auto ranging adapter included.
Input Voltage	12 VDC
Power Consumption	70 Watts Max.
Approval	FCC, CE

Specifications are subject to change without notice.

WEEE (Waste Electrical & 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.