
	<div style="background-color: black; color: white; padding: 5px;">WARNING</div> <div style="border: 1px solid black; padding: 5px;">RISK OF ELECTRIC SHOCK DO NOT OPEN</div>	
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. ATV® 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	4
Connecting the Video Source	4
Connecting the Loop Through Video	4
Connecting the Monitor	5
Connecting Audio	5
Connecting Alarms	5
AI 1 to 16 (Alarm In)	6
GND (Ground)	6
AO 1 and 2 (Alarm Out)	6
ARI (Alarm Reset In)	7
Connecting to the RS485	7
Connecting to the RS232 Port	7
Connecting to the Network Port	8
Connecting to the USB Port	8
Factory Reset	9
Connecting the Power Cord	9
Chapter 3 — Configuration	11
Front Panel Controls	11
DUPLEX LED	11
NETWORK LED	11
BACKUP LED	11
Camera Buttons (1 to 16)	11
RW (Rewind) Button	12
PLAY/PAUSE Button	12
FF (Fast Forward) Button	12
SEARCH Button	12
DISPLAY Button	12
SEQUENCE Button	12
MENU Button	13
PREV (Previous) Button	13
STOP Button	13

NEXT Button.....	13
REC (Record) Button.....	13
FREEZE Button.....	13
ALARM Button.....	13
PTZ Button.....	13
Enter Button.....	14
Up, Down, Left, Right Arrow Buttons.....	14
Turning on the Power.....	14
Initial Unit Setup.....	14
Quick Setup Screen.....	15
Normal Setup Screen.....	16
System Information.....	17
Date/Time Setup.....	20
System Check Screen.....	23
System Shutdown.....	24
Storage Check Screen.....	24
System Log Screen.....	25
System Shutdown.....	26
Configuring Input Devices.....	26
Camera Setup Screen.....	27
Alarm In Setup Screen.....	28
Motion Detector.....	29
Alarm Out Setup Screen.....	31
Audio Setup Screen.....	32
RS232/RS485 Setup Screen.....	33
Configuring Recording Settings.....	34
Record Mode Setup Screen.....	34
Time-Lapse Record Mode Setup Screen.....	35
Time-Lapse Recording Schedule.....	36
Pre-Event Recording Setup Screen.....	37
Event Action Setup.....	38
Alarm In Event Action (Record) Setup Screen.....	38
Alarm In Event Action (Alarm Out) Setup Screen.....	39
Alarm In Event Action (Notify) Setup Screen.....	40
Motion Detector Event Action (Record) Setup Screen.....	41
Motion Detector Event Action (Alarm Out) Setup Screen.....	42
Motion Detector Event Action (Notify) Setup Screen.....	43
Video Loss Event Action (Record) Setup Screen.....	44
Video Loss Event Action (Alarm Out) Setup Screen.....	45
Video Loss Event Action (Notify) Setup Screen.....	46
OSD (On-Screen Display) Setup Screen.....	47
Main Monitoring Setup Screen.....	48

Network Setup Screen	49
LAN Setup Screen	51
Modem Setup	52
Callback Center (LAN) Setup Screen	53
Callback Center (Modem) Setup Screen	54
Password Setup Screen	55
Config Screen	56
Backup	57
Load Default Setup	57
Clear All Data	57
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	63
Camera Buttons (1 to 16)	63
DISPLAY Button	63
RW (Rewind) Button	63
PREV (Previous) Button	63
STOP Button	63
NEXT Button	64
FF (Fast Forward) Button	64
Searching Video	64
Date/Time Search	65
Calendar Search	65
Event Search	66
Archiving	68
Appendix A — USB Hard Disk Drive Preparation	71
Preparing the USB-IDE hard disk drive in Windows 2000	71
Preparing USB-IDE hard disk drive in Windows 98	71
Appendix B — Reviewing Backup Images	73
Appendix C — Troubleshooting	75

Appendix D — Connector Pin Outs..... 76

 Alarm I/O Connector and RS485 Connector Pin Outs..... 76

Appendix E — Map of Screens 77

Appendix F — Specifications 78

List of Illustrations

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

Figure 49 — Motion Detector Event Action (Record) setup screen.....	41
Figure 50 — Motion Detector Event Action (Alarm Out) setup screen.	42
Figure 51 — Motion Detector Event Action (Notify) setup screen.	43
Figure 52 — Video Loss Event Action (Record) setup screen.	44
Figure 53 — Video Loss Event Action (Alarm Out) setup screen.....	45
Figure 54 — Video Loss Event Action (Notify) setup screen.....	46
Figure 55 — OSD Setup screen.	47
Figure 56 — Main Monitoring Setup screen.	48
Figure 57 — Network Setup screen.....	49
Figure 58 — LAN Setup screen.	51
Figure 59 — RS232/RS485 setup screen.....	52
Figure 60 — Callback Center (LAN) Setup screen.....	53
Figure 61 — Callback Center (Modem) Setup screen.....	54
Figure 62 — Password setup screen.....	55
Figure 63 — Config screen.	56
Figure 64 — Backup screen.....	57
Figure 65 — PTZ Preset screen.	61
Figure 66 — Preset View screen.	61
Figure 67 — Search Menu.	64
Figure 68 — Date/Time Search screen.....	65
Figure 69 — Calendar Search screen.....	65
Figure 70 — Event Log screen.	66
Figure 71 — Event Search (by Camera) screen.....	67
Figure 72 — Event Search (by Event) screen.	67
Figure 73 — Backup screen.....	68
Figure 74 — Player screen.	73

Chapter 1 — Introduction

Features

Your color digital video recorder (DVR) provides recording capabilities for 4, 9 or 16 camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 4, 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
- Video Archiving via USB Interface
- Continues Recording while Archiving, Transmitting to Remote Site and during Playback
- User-friendly Graphical User Interface (GUI) Menu System in Multiple Languages
- 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 External Modem

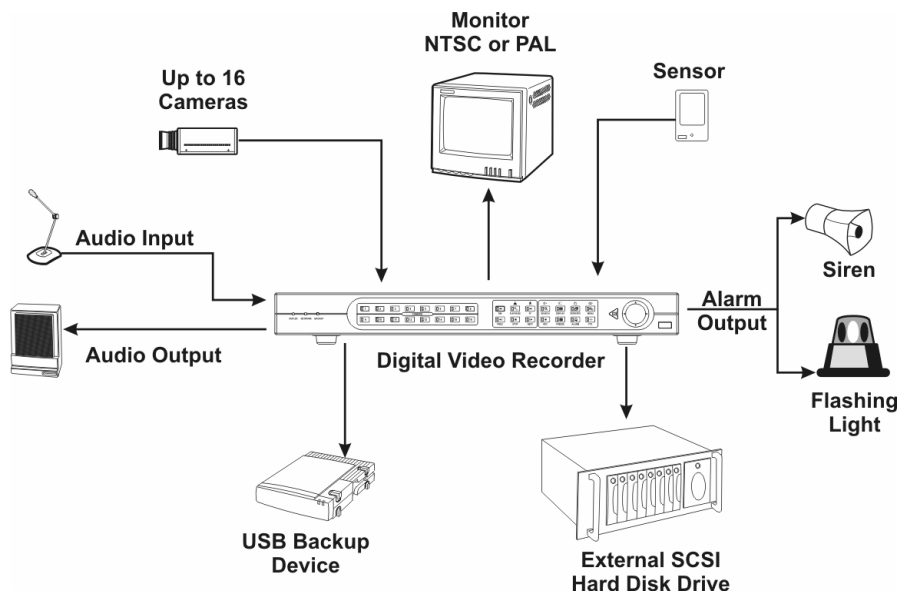


Figure 1 — Typical DVR installation.

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. A standard PostScript™ computer printer can be connected to the DVR to print frame captures. There is a USB port that can be used to archive video to external hard disk drives or CD-RW drives. (Network model only.)

NOTE: This manual covers the 4-, 9- 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)
- Alarm I/O Board
- User's Manual (This Document)
- RAS Software Diskettes 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.

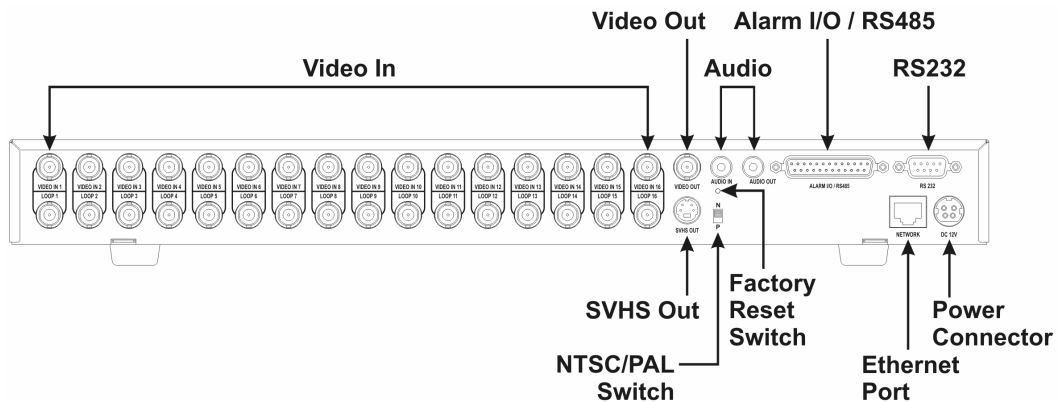


Figure 2 — 16-Channel DVR rear panel. (Others are similar.)

Setting Unit for NTSC or PAL



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 N (NTSC) or P (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

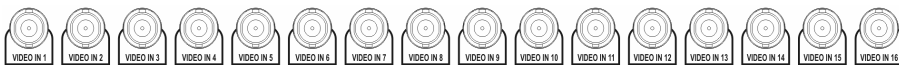


Figure 4 — Video input connectors.

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

Connecting the Loop Through Video

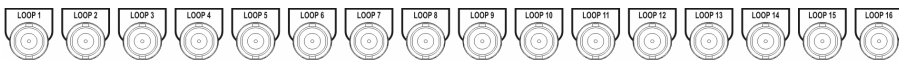


Figure 5 — Video Loop Through connectors.

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.

NOTE: If your monitor has an SVHS input, use it for 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

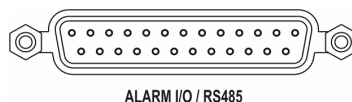


Figure 8 — Alarm Input/Output and RS485 connector

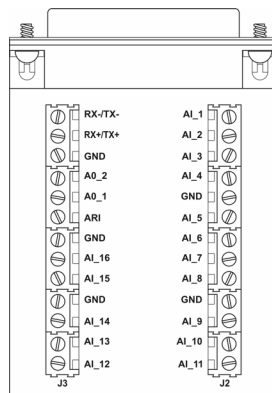


Figure 9 — Alarm Input/Output board and alarm connector strips

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 2 (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 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. Connect the wires to the **ARI** (Alarm Reset In) and **GND** (Ground) connectors.

Connecting to the RS485

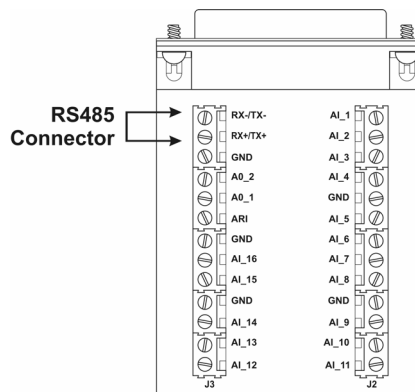


Figure 10 — RS485 connector.

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 RS232 Port

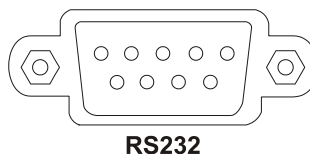


Figure 11 — RS232 connector.

An RS232 port is provided to connect a remote control keyboard, or connect an external modem for remote monitoring, configuration and software upgrades. Use a modem cable with a DB-9 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.

Connecting to the Network Port

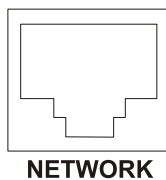


Figure 12 — Network connector.

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 for remote monitoring, searching, configuration and software upgrades. See *Chapter 3 — Configuration* for configuring the Ethernet connections.

Connecting to the USB Port



Figure 13 — USB connector.

A USB port is provided to connect external hard disk drives or CD-RW drives for archiving video. Position the external 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 drive to connect it to the DVR. See *Chapter 4 — Operation* for information on archiving video to an external USB hard disk drive or USB CD-RW drive.

NOTE: For a list of compatible USB storage devices, contact ATV or visit us on the web www.atvideo.com/support.

Factory Reset

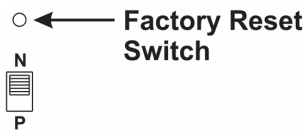


Figure 14 — Factory reset switch.

The DVR has a **Factory Reset** switch right above the NTSC/PAL switch. 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.

To reset the unit, you will need a straightened paperclip:

1. Unplug the power to turn the DVR off.
2. Plug the power to turn it on again.
3. While the DVR is initializing, poke the straightened paperclip in the unlabeled hole above the NTSC/PAL switch.
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

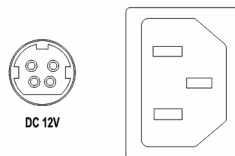


Figure 15 — Power cord connector.

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

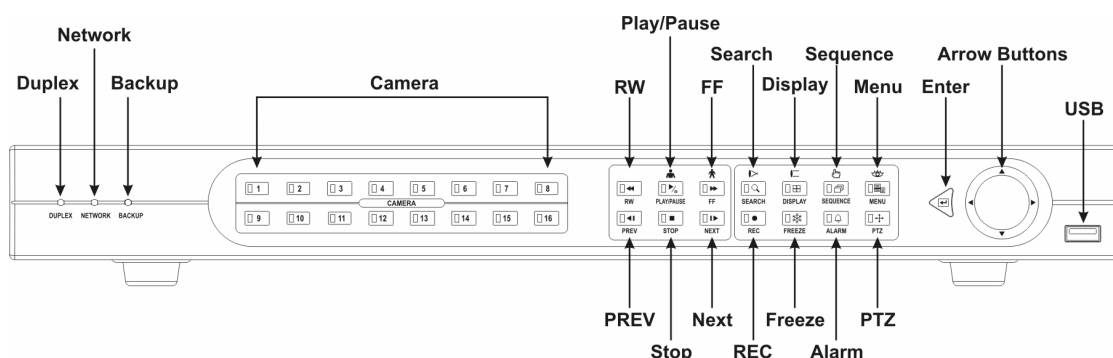


Figure 16 — 16-Channel DVR front panel. (Others are similar.)

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.

DUPLEX LED

The DUPLEX LED is lit when the DVR is operating in the Duplex mode.

NETWORK LED

The NETWORK LED is lit when the unit is networked either via Ethernet or modem.

BACKUP LED

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

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.

SEARCH Button

Pressing the **SEARCH** button displays the Search menu. Pressing the button again will exit the Search menu. This operation can be user password protected. 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 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 button also closes the current menu or setup dialog box. Loads a Preset View in PTZ mode.

PREV (Previous) Button

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

STOP Button

Pressing the **STOP** button during 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.

REC (Record) Button

Press the **REC** button to set the DVR so that it is ready to record video, and in Duplex mode (default) 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. It also sets or releases active cameo mode in the live or playback modes.

Up, Down, Left, Right Arrow Buttons


These buttons are used to navigate through menus and Graphic 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  button to enter the setup screens. The Admin Password screen appears.

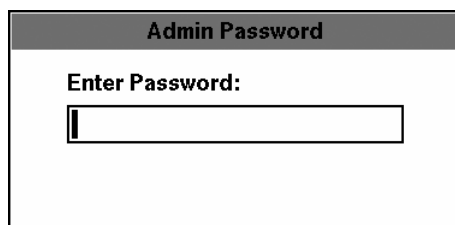


Figure 17 — Admin Password screen.

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: Quick Setup and Normal Setup. The factory default is the Quick 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 Backup and Password setup screens is permitted.

Quick Setup Screen

Quick Setup - 2.0.1.102

Quick Setup	On									
Recording Speed/Quality	60 ips	High								
Audio Recording	Off									
Sequence Dwell Time	3 sec									
<table border="1"> <tr> <td>System Information</td> <td>Storage Check</td> </tr> <tr> <td>Camera...</td> <td>Network Setup...</td> </tr> <tr> <td>Password...</td> <td>Date/Time...</td> </tr> <tr> <td colspan="2">System Shutdown</td> </tr> </table>			System Information	Storage Check	Camera...	Network Setup...	Password...	Date/Time...	System Shutdown	
System Information	Storage Check									
Camera...	Network Setup...									
Password...	Date/Time...									
System Shutdown										
<div>OK</div> <div>Cancel</div>										

Figure 18 — 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 Record Speed box and select recording speeds from as few as one image every 10 seconds to as fast as 60 ips.

Highlight the Record 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 Check... 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 shut down the unit, and you will be asked for an administrator password.

Normal Setup Screen

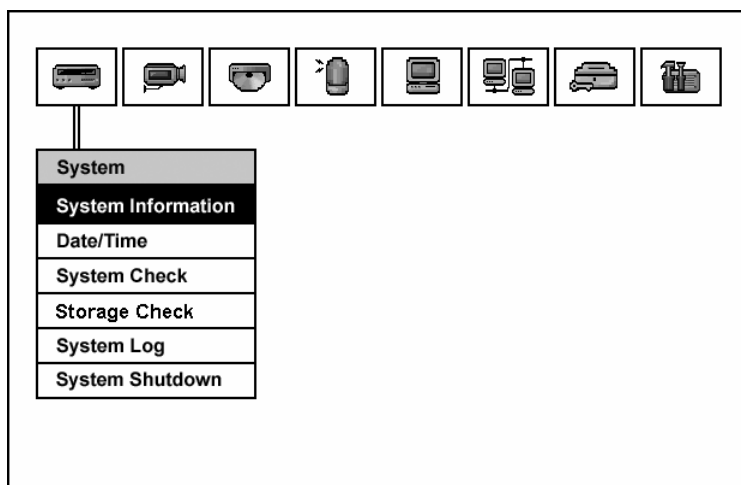

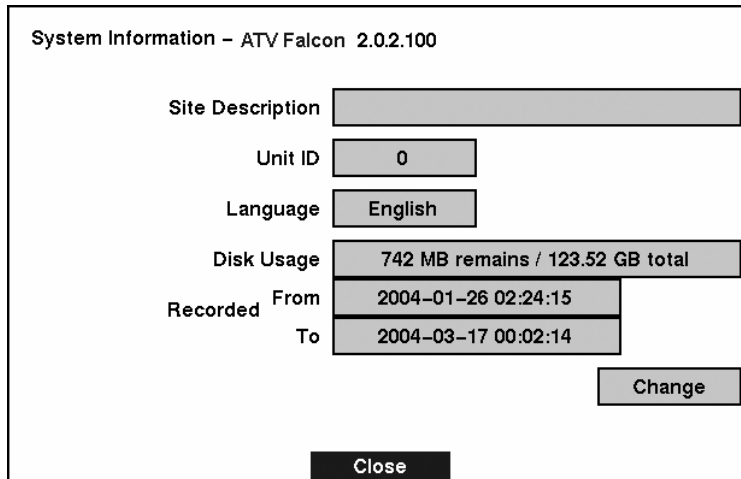


Figure 19 — Normal Setup screen.

Press the **MENU** button to enter the setup screen. If the **Quick Setup** screen appears, turn it off as described above. The **Normal Setup** screen gives you access to all the DVR's setup screens.


System Information

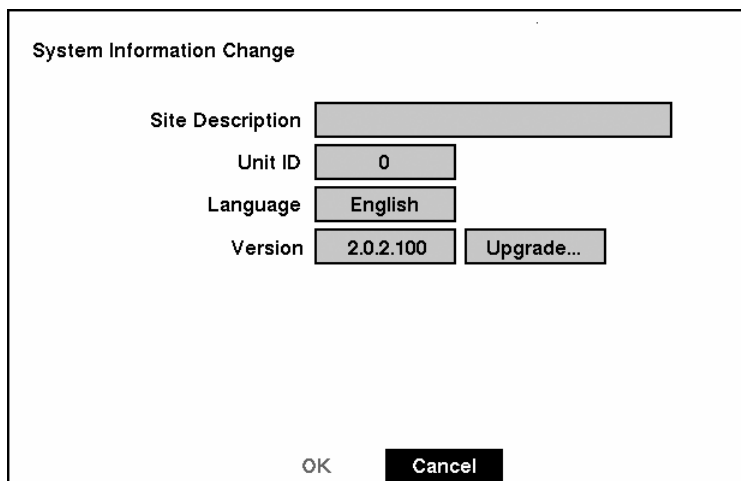
Highlight **System Information** and press the  button. The **System Information** screen appears.



The screenshot shows the 'System Information - ATV Falcon 2.0.2.100' screen. It contains several fields: 'Site Description' with a text input box, 'Unit ID' with a box containing '0', 'Language' with a box containing 'English', and 'Disk Usage' with a box showing '742 MB remains / 123.52 GB total'. Below these is a 'Recorded' section with 'From' and 'To' dates/times: '2004-01-26 02:24:15' and '2004-03-17 00:02:14'. At the bottom right is a 'Change' button, and at the bottom center is a 'Close' button.


Figure 20 — System Information screen.



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

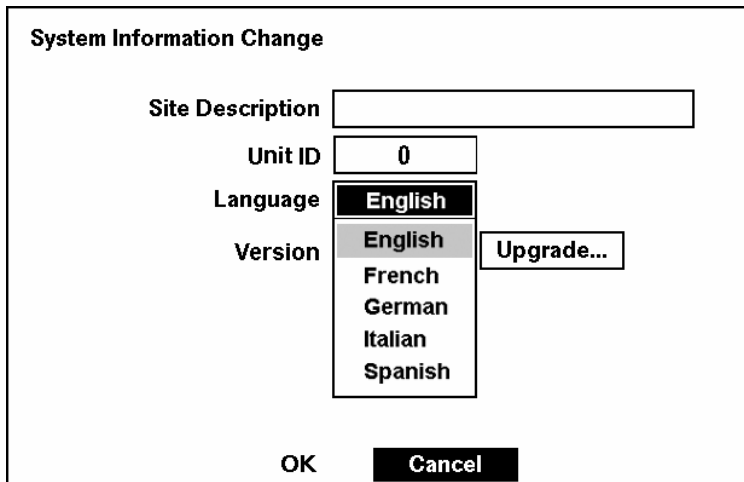


The screenshot shows the 'System Information Change' screen. It contains fields for 'Site Description' (text input), 'Unit ID' (box with '0'), 'Language' (box with 'English'), and 'Version' (box with '2.0.2.100'). Next to the version box is an 'Upgrade...' button. At the bottom are 'OK' and 'Cancel' buttons.

Figure 21 — System Information Change screen.

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 dropdown menu displays the available languages. Highlight the desired language and press the  button.



System Information Change

Site Description

Unit ID

Language **English**

Version **English**


French

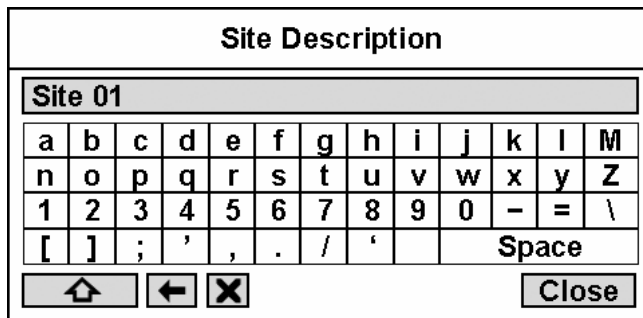
German

Italian

Spanish

Figure 22 — Language dropdown menu.

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







Site Description


Site 01

a	b	c	d	e	f	g	h	i	j	k	l	M
n	o	p	q	r	s	t	u	v	w	x	y	Z
1	2	3	4	5	6	7	8	9	0	-	=	\
[]	;	'	,	.	/	'					Space

Figure 23 — 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.

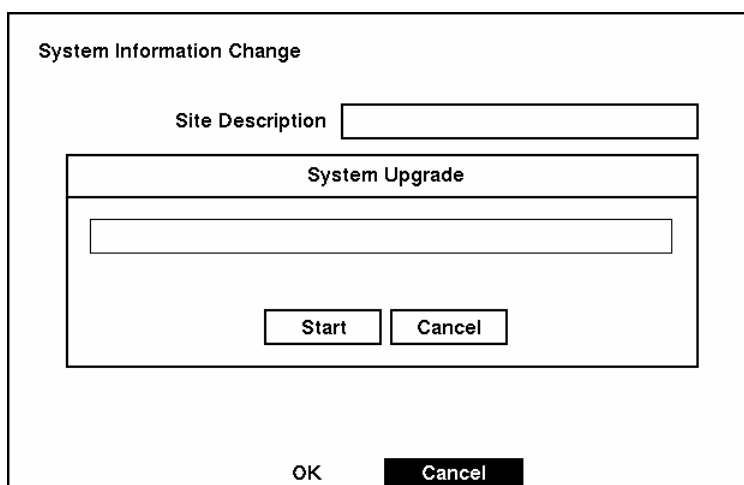
After you have created a title, assigned a unit ID number and selected a language, you can save your changes by highlighting **OK** and pressing the  button. Selecting **Cancel** exits the screen without saving the changes.

The box beside **Version** displays the version of DVR. The first two digits are the hardware version and the last four digits are the software version. For example, “2.0.2.100” means that the hardware version is “2.0” and the software version is “2.100”. (ATV, Samsung OEM only)

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

To upgrade the software, connect the USB device which includes 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.

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



The diagram shows a screen titled "System Information Change". Inside this screen, there is a "Site Description" label followed by a text input field. Below this is a "System Upgrade" section, which contains a large text input field for the upgrade package file name. At the bottom of the "System Upgrade" section are two buttons: "Start" and "Cancel". At the bottom of the entire "System Information Change" screen are two buttons: "OK" and "Cancel".

Figure 24 — System Upgrade screen.

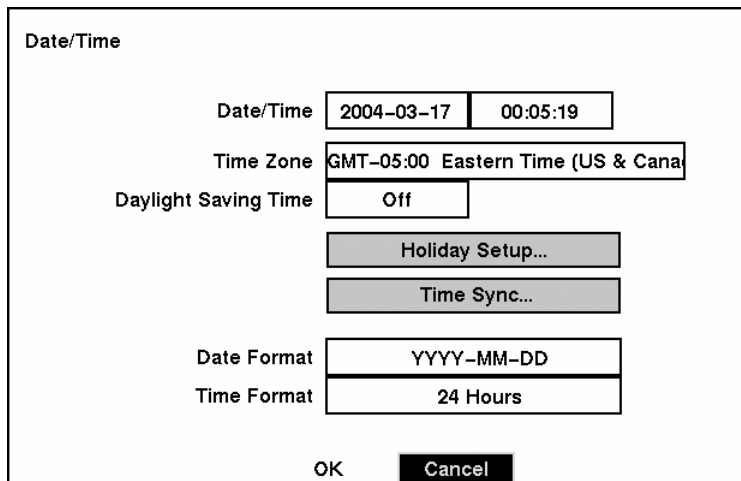
Select **Start**, and enter the Admin password to start upgrade. The system restarts automatically after completing upgrade.

NOTE: Only the system administrator can upgrade the software.

NOTE: You cannot upgrade software during backup.

Date/Time Setup

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







The image shows a 'Date/Time' setup screen. It has a title 'Date/Time' at the top left. Below it are several settings: 'Date/Time' with two boxes showing '2004-03-17' and '00:05:19'; 'Time Zone' with a box showing 'GMT-05:00 Eastern Time (US & Cana)'; 'Daylight Saving Time' with a box showing 'Off'; 'Holiday Setup...' with a grey button; 'Time Sync...' with a grey button; 'Date Format' with a box showing 'YYYY-MM-DD'; and 'Time Format' with a box showing '24 Hours'. At the bottom are 'OK' and 'Cancel' buttons.

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 25 — 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 will 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.

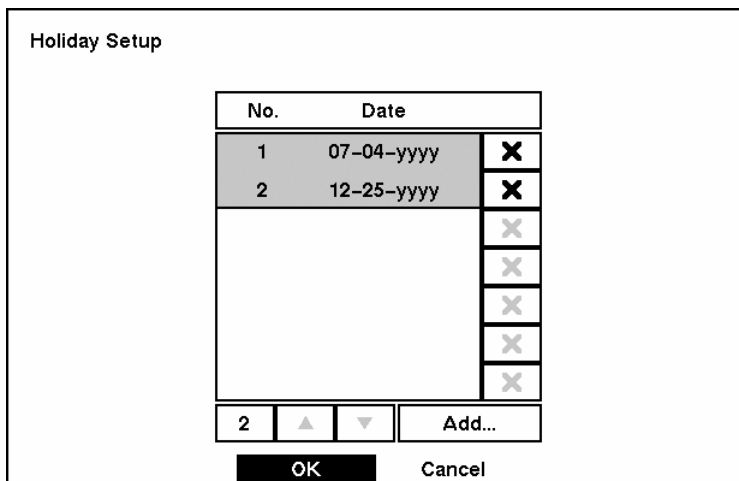
Highlight the box beside **Time Zone** and press the  button. Select the time zone you are in from the list and press the  button.

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 26 — 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 the time synchronization between the DVR and a time server including the standard time server provided by each country, or between the DVR and any other DVR.

Time Sync		
Automatic Time Sync	Off	
SNTP Server	192.168.1.129	
Interval	30 min.	
System Clock	-	
Server Clock	-	Update
Next Synchronization	-	Now ...
Run as Server	Off	
OK Cancel		

Figure 27 — 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.

Highlight the box beside **Interval** and press the button. Select the interval of time synchronization from 1 to 300 minutes.

The box beside **System Clock** displays the time information of the DVR.

The box beside **Server Clock** displays the time information 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 of the time server.

The box beside **Next Synchronization** displays the time when the time difference will be synchronized next. 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 lag between the DVR and the time server is over one minute, it may not synchronize the time difference to prevent any unexpected influence on the 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** setup screen appears.

System Check

Check Point	On/Off	Interval	Status
Record	On	1 Hour	Good
Alarm In 1	On	1 Hour	Good
Alarm In 2	On	1 Hour	Good
Alarm In 3	On	1 Hour	Good
Alarm In 4	On	1 Hour	Good

1 - 4

5 - 8

9 - 12


13 - 16

OK

Cancel


Figure 28 — 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 or if there is an alarm 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.

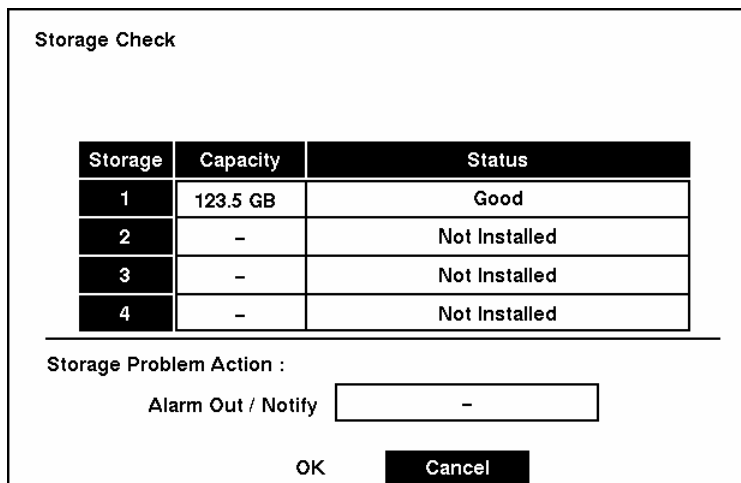
The **Status** field displays the fault conditions. When it is **Good**, there was recording or an alarm occurred during the designated time. When it is **Bad**, there was no recording or no alarm occurred during the designated time.

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 shut down the unit, and you will be asked for an administrator password.

Storage Check Screen

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



The Storage Check screen displays a table with storage information and options for handling storage problems.

Storage	Capacity	Status
1	123.5 GB	Good
2	–	Not Installed
3	–	Not Installed
4	–	Not Installed

Storage Problem Action :

Alarm Out / Notify

OK


Figure 29 — Storage Check screen.

The **Capacity** field displays the storage capacity.


The **Status** field displays “Good”, “Bad”, “S.M.A.R.T. Not work”, “S.M.A.R.T. Alert” or “Not installed”, according to the storage conditions.

- Good — The storage condition is normal.
- Bad — The data on the storage cannot be written or read.
- S.M.A.R.T. Not work — The storage condition is normal, however, the S.M.A.R.T. monitoring does not work or supported
- S.M.A.R.T. Alert — The S.M.A.R.T. monitoring detects a fault condition.
- Not installed — The storage device does not installed.

NOTE: Once you get the message “S.M.A.R.T. Alert”, it is recommended to replace the hard disk drive shortly, usually within 24 hours.

The DVR can be set to react to the storage problem by activating an internal buzzer or external alarms, and/or notifying the 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.

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)	2002-01-24 10:27:14
1282	System Started	2002-01-24 10:27:12
1281	Shutdown	2002-01-24 10:27:02
1280	System Time Changed	2002-01-24 10:27:00
1279	Setup Begin (Local)	2002-01-24 10:26:08
1278	System Started	2002-01-24 10:26:02
1277	Recovered from Power Failure	2002-01-24 10:26:02
1283	 	
Close		

Figure 30 — 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 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.

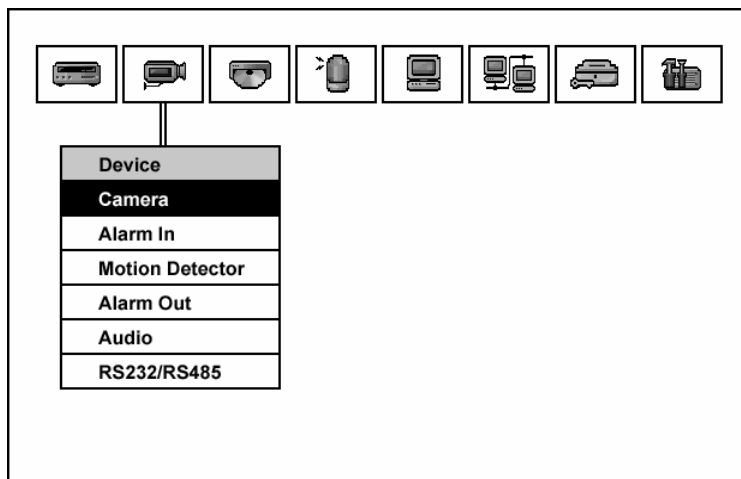

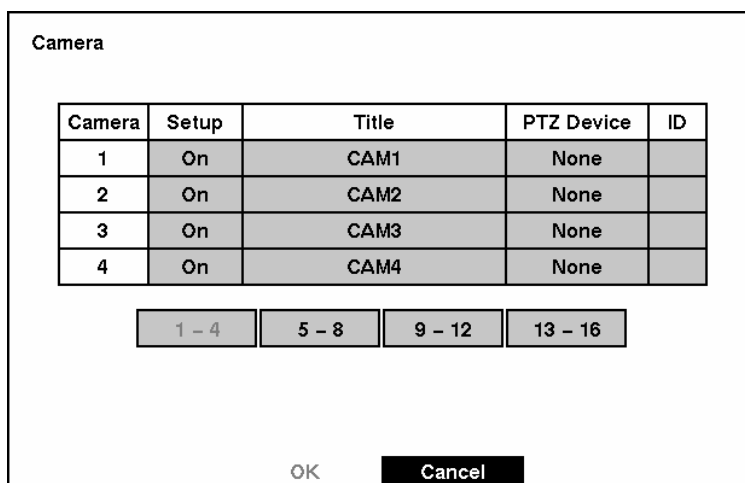


Figure 31 — Device menu screen.

Camera Setup Screen

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



Camera


Camera	Setup	Title	PTZ Device	ID
1	On	CAM1	None	
2	On	CAM2	None	
3	On	CAM3	None	
4	On	CAM4	None	

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


OK Cancel


Figure 32 — 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 from On, Off, Covert 1 or Covert 2.

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

You can assign titles to each camera by highlighting the camera title box 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.

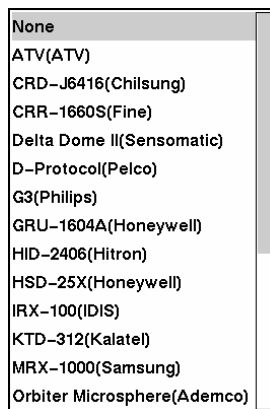


Figure 33 — PTZ Device list.

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 34 — 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

Motion Detector

Camera	On/Off	Sensitivity	Zone	Min Size	View
1	On	3		10	Off
2	On	3		10	Off
3	On	3		10	Off
4	On	3		10	Off

1 - 4

5 - 8

9 - 12

13 - 16

OK
Cancel


Figure 35 — Motion Detector setup screen.

Your DVR has built-in video motion detector. Video motion detection 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.

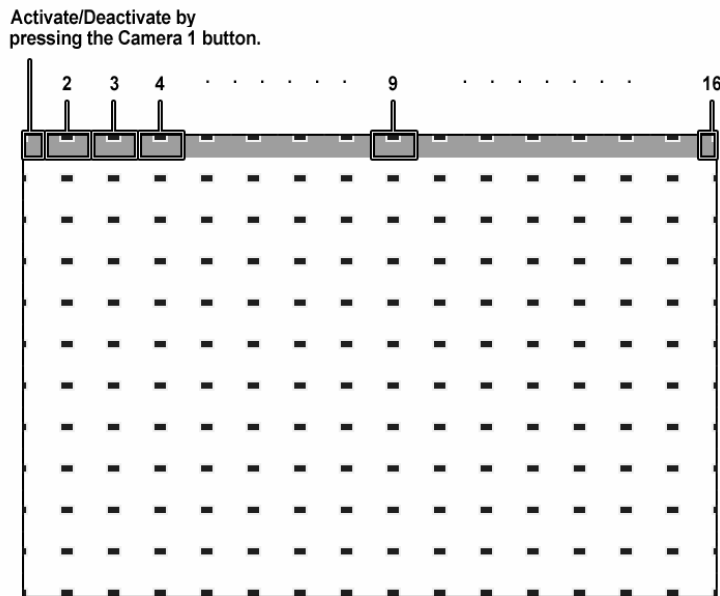



Figure 36 — Motion Detection Zone screen.

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 4, 9 or 16 individual block groups (4-, 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:

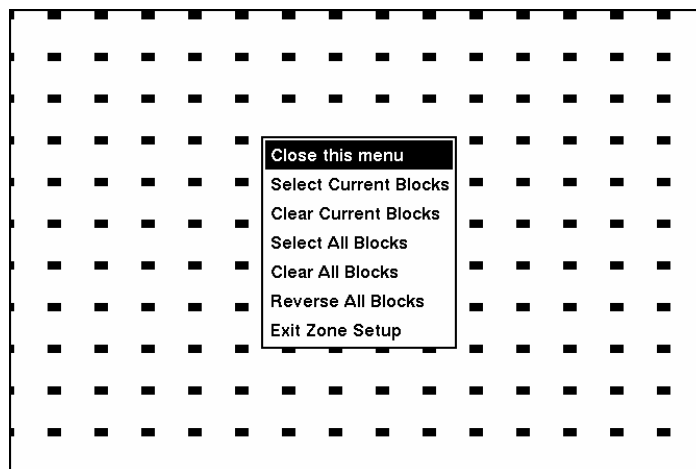


Figure 37 — Motion Detection Zone menu screen.

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.

Alarm Out	Title	Sched
1		<input checked="" type="checkbox"/>
2		<input checked="" type="checkbox"/>
Beep	Beep	<input checked="" type="checkbox"/>

OK Cancel

Figure 38 — 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.

The screen is titled "Alarm Out 1 Schedule". It features a grid with days of the week (S, M, T, W, T, F, S, H) on the left and time slots (0, 2, 4, 6, 8, 10, 12, 2, 4, 6, 8, 10) at the top. Each cell in the grid contains a small square icon. A legend at the bottom right indicates that a solid black square represents "On" and a solid yellow square represents "Event". At the bottom of the screen are "OK" and "Cancel" buttons.

Figure 39 — 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.


The screen is titled "Audio Setup". It contains three settings: "Audio Recording" set to "Off", "Mute" set to "On", and "Audio In" set to "Line-In". Each setting is displayed with its label on the left and the selected value in a box on the right. At the bottom of the screen are "OK" and "Cancel" buttons.

Figure 40 — 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**. Pressing the  button 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: The DVR will NOT record audio when the recording speed is set to less than 1 ips.

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	Baud Rate	Parity	Data	Stop	Usage
RS232	9600	None	8	1	External Modem
RS485	57600	None	8	1	Remote Control

OK
Cancel

Figure 41 — 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 RS485, it is possible to select either Remote Control or PTZ Control in the Usage field.

It is possible to select either External Modem or Remote Control in the RS232 — Usage field, and either Remote Control or PTZ Control in the RS485 — 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 above the button 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. The red dot appears on the monitor when the DVR is recording.

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:

End Of Disk	Stop
On Disk Full :	
Beep	Off
Alarm Out	Off
Mode	
Field Detect	On
Auto Deletion	Off 1 Day
OK Cancel	

Figure 42 — Record Mode Setup screen.

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 **Mode**. Pressing the ☐ button toggles between **Simplex** and **Duplex**. In the **Simplex** mode, the DVR can record up to 60 images per second for NTSC (50 for PAL). However, in the **Simplex** mode, you can only record or play back video, but not both. In the **Duplex** mode, you can record and play back video at the same time. However, you can only record up to 30 images per second for NTSC (25 for PAL) while in the **Duplex** mode.

NOTE: The maximum playback speed is 30ips (25ips PAL) while playing back video in the Duplex mode even if it was recorded at 60ips (50ips PAL) in the Simplex mode. Video that was recorded at 60 ips for NTSC (50 ips for PAL) in the Simplex mode will play back slower in the Duplex mode, and will have poor quality audio.

Highlight the box beside **Field Detect**. Pressing the ☐ button toggles between **On** and **Off**. When set to **On**, the Field Detection helps prevent shaking in the **Simplex** mode. 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 the video recorded earlier than user-defined period. Highlight the second box beside **Auto Deletion**, and press the ☐ button to select the period when the recorded data will be kept from 1 to 99 Days.

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"/>	20 ips	High	20 ips	High
2	<input checked="" type="checkbox"/>	20 ips	High	20 ips	High
3	<input checked="" type="checkbox"/>	20 ips	High	20 ips	High
4	<input checked="" type="checkbox"/>	20 ips	High	20 ips	High

☐ 1 - 4
 ☐ 5 - 8
 ☐ 9 - 12
 ☐ 13 - 16


Keep the continuous pictures ☐ Off ☐ 1 Hour

OK **Cancel**

Figure 43 — Time-Lapse Record Setup screen.

Highlight the box under **Speed** 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 DVR for Duplex mode, you will not be able to select 60 ips NTSC (50 ips PAL).

Highlight the box under Quality 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.

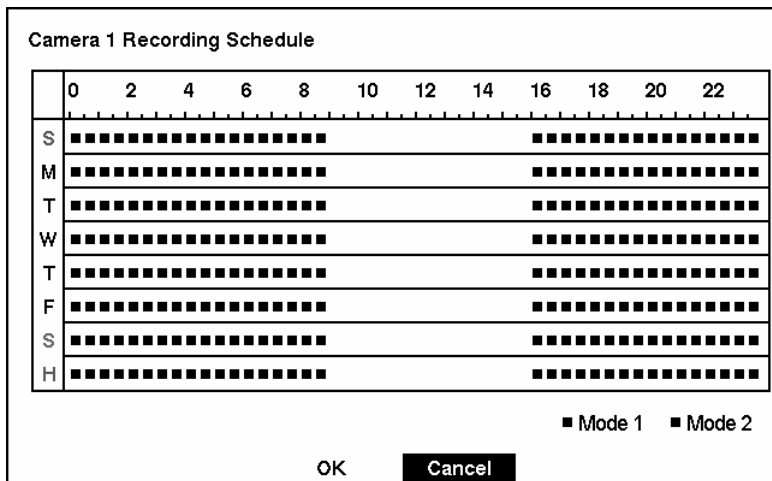
NOTE: Higher quality images require more storage space and will reduce the recording capacity of the hard disk drive.

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







The screenshot shows the 'Camera 1 Recording Schedule' screen. It features a 24-hour timeline at the top with markers every 2 hours (0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22). Below the timeline are rows for each day of the week (S, M, T, W, T, F, S, H). Each row contains a series of small black rectangles representing recording periods. A legend at the bottom right indicates that a solid black square represents 'Mode 1' and a square with a diagonal line represents 'Mode 2'. At the bottom of the screen are 'OK' and 'Cancel' buttons.


Figure 44 — 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

Pre-Event Record Setup

Camera	On/Off	Speed	Quality	Dwell
1	On	60 ips	High	10 sec
2	On	60 ips	High	10 sec
3	On	60 ips	High	10 sec
4	On	60 ips	High	10 sec

1 - 4

5 - 8

9 - 12

13 - 16

OK
Cancel

Figure 45 — 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 alarm 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 46 — 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 alarm events differently by activating an internal buzzer or external alarms.


Alarm In Event Action

		Mode 1	Mode 2
		Record	Alarm Out
Sensor	Sched	Alarm Out	
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 47 — 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.

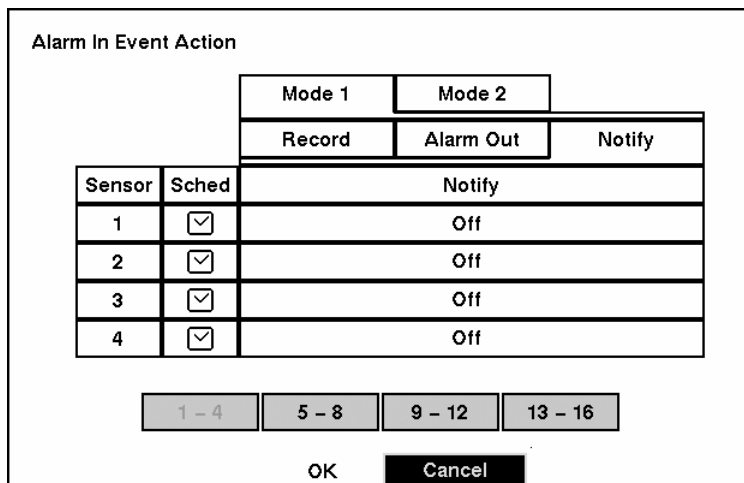
Highlight the **Alarm-Out** box and either **Beep** or the alarm output terminal that you want to associate with the sensor.

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 contact a computer running RAS (Remote Administration System), send an e-mail (LAN connections), or dial a pager (modem connections) when certain events occur. See the *Figure 58 – Callback Center (LAN) Setup screen* or *Figure 59 – Callback Center (Modem) Setup screen*.





The screen displays the 'Alarm In Event Action' configuration. It includes a table for sensor settings and navigation buttons.

		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		

Navigation buttons: 1 - 4, 5 - 8, 9 - 12, 13 - 16, OK, Cancel

Figure 48 — 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 alarm inputs are activated based on a defined schedule.

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 49 — 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	Notify
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 50 — 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 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 contact a computer running RAS (Remote Administration System), send an e-mail (LAN connections), or dial a pager (modem connections) when certain motion events occur. See the *Figure 58 – Callback Center (LAN) Setup screen* or *Figure 59 – Callback Center (Modem) Setup screen*.

Motion Detector Event Action

		Mode 1	Mode 2
		Record	Alarm Out
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	

Figure 51 — 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 motion events occur based on a defined schedule.

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

OK

Cancel

Figure 52 — 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

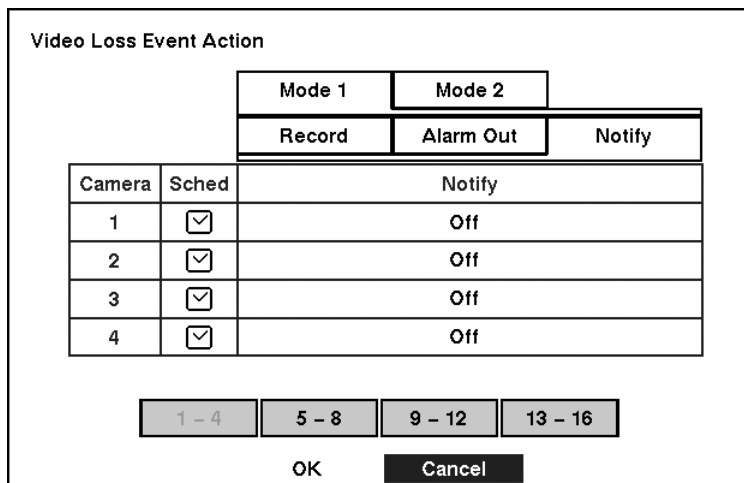
Figure 53 — Video Loss Event Action (Alarm Out) setup screen.

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

Highlight the Alarm-Out box and 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 contact a computer running RAS (Remote Administration System), send an e-mail (LAN connections), or dial a pager (modem connections) in the case of video loss. See the *Figure 58 – Callback Center (LAN) Setup screen* or *Figure 59 – Callback Center (Modem) Setup screen*.




The screenshot shows the 'Video Loss Event Action' setup screen. At the top, there are two tabs: 'Mode 1' and 'Mode 2'. Below them are three columns: 'Record', 'Alarm Out', and 'Notify'. The 'Notify' column is currently selected. Below the columns is a table with four rows, each representing a camera. The first two columns are 'Camera' and 'Sched', and the third is 'Notify'. The 'Sched' column contains checkboxes, all of which are checked. The 'Notify' column contains the word 'Off' for all four cameras. At the bottom of the screen, there are four buttons labeled '1 - 4', '5 - 8', '9 - 12', and '13 - 16'. Below these buttons are two buttons: 'OK' and 'Cancel'.


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 54 — 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.

OSD (On-Screen Display) Setup Screen

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


The image shows a screenshot of the 'OSD Setup' screen. It has a title bar at the top left that says 'OSD Setup'. Below the title, there are six rows of settings. Each row consists of a label on the left and a rectangular box on the right. The first four rows are for 'Date', 'Time', 'Title', and 'Status', each with a box containing the word 'On'. The fifth row is for 'Left/Right Margin' with a box containing the number '24'. The sixth row is for 'Top/Bottom Margin' with a box containing the number '10'. At the bottom of the screen, there are two buttons: 'OK' on the left and 'Cancel' on the right. The 'Cancel' button is highlighted with a black background and white text.


Setting	Value
Date	On
Time	On
Title	On
Status	On
Left/Right Margin	24
Top/Bottom Margin	10


Figure 55 — 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 **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.

The image shows a 'Main Monitoring Setup' dialog box. It contains four settings, each with a label and a value box: 'Sequence Dwell Time' set to '3 sec', 'Sequence in Cameo' set to 'Off', 'Event Monitoring' set to 'Off', and 'Event Monitoring Dwell Time' set to '3 sec'. At the bottom, there are 'OK' and 'Cancel' buttons.

Setting	Value
Sequence Dwell Time	3 sec
Sequence in Cameo	Off
Event Monitoring	Off
Event Monitoring Dwell Time	3 sec

Figure 56 — Main Monitoring Setup screen.

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


Highlight the box beside **Sequence in Cameo** and press the button to toggle between On and Off. (Not on 4-camera model.)

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.

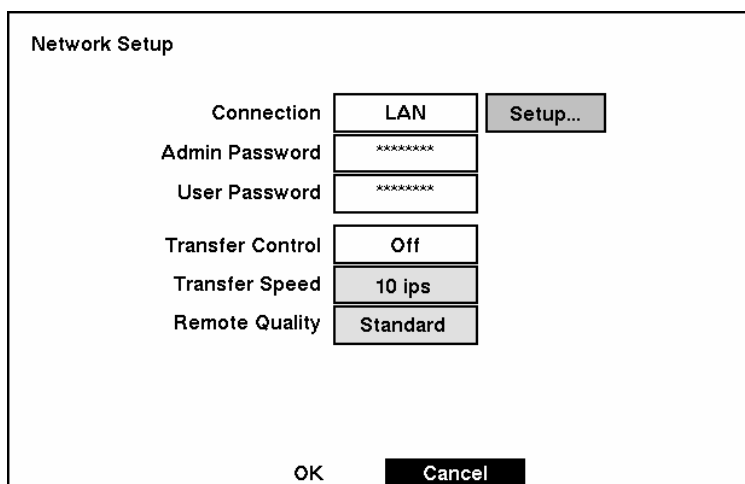
NOTE: Sequence cannot be used in the 4x4 display mode of the 16-channel, 3x3 mode of the 9-channel and the 2x2 mode of the 4-channel DVR.

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 monitor during the preset dwell time.

Highlight the box beside **Event Monitoring Dwell Time** and press the  button. Select 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.








Network Setup	
Connection	LAN 
Admin Password	*****
User Password	*****
Transfer Control	Off
Transfer Speed	10 ips
Remote Quality	Standard
<div>OK </div>	

Figure 57 — 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 it is 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, so this speed cannot be achieved according to the network environment.

NOTE: The transfer speed indicates the number of images which 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 DVR's recording performance. Simplex mode has a recording maximum of 60 NTSC images per second (50 PAL images per second), and Duplex mode has a recording maximum of 30 NTSC images per second (25 PAL images per second). The number of remote site (RAS) connected to the DVR does not affect the recording speed. It will be affected by only Transfer Speed. The local recording speed will not be affected if the DVR is not connected remotely.

NOTE: If the Transfer Control is not used, the speed of data transfer to remote site will be 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 the 'LAN Setup' screen with the following fields and values:

IP Address	192.168.1.129
Gateway	192.168.1.254
Subnet Mask	255.255.255.0
IP Port Number (8000 ~ 12000)	
Admin	8200
Watch	8016
Search	10019
Callback	8201

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

Figure 58 — LAN Setup screen.

NOTE: You will need to get the appropriate IP Address, Gateway and Subnet Mask, and IP 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 LAN settings are:

IP Address: 192.168.1.129
 Gateway: 192.168.1.254
 Subnet Mask: 255.255.255.0

The factory default IP Port settings are:

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

NOTE: The IP Port Number for each RAS related program should be identical, otherwise, the DVR cannot be connected with a PC running RAS.

CAUTION: When changing the IP port settings, you must change the IP port settings on a 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.

Modem Setup

RS232/RS485


RS232/RS485	Baud Rate	Parity	Data	Stop	Usage
RS232	9600	None	8	1	External Modem
RS485	57600	None	8	1	Remote Control


OKCancel


Figure 59 — RS232/RS485 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.

Callback Center (LAN) Setup Screen

Callback Center Setup	
IP Address	192.168.1.129
Retry	3
E-mail notification	Off
SMTP Server IP	192.168.1.254
E-mail recipient	root @ 192.168.1.254
E-mail sender	dvr @ 192.168.1.254

OK Cancel

Figure 60 — Callback Center (LAN) Setup screen.

The DVR can be set to contact a computer running RAS (Remote Administration System) or send an e-mail on a LAN when an event occurs.

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.

Callback Center (Modem) Setup Screen

Callback Center Setup

Pager Number

Mailbox

Site ID

Event

1 : Alarm In
2 : Motion
3 : Video Loss
10 : Storage

OK Cancel

Figure 61 — Callback Center (Modem) Setup screen.

If you have a modem connected to the DVR, it can be set up to dial a pager with a numeric message when an event occurs.


NOTE: The DVR will wait for at least one minute between pages. If another event occurs less than one minute 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.

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; e.g., 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-digit number. The first three digits are the site ID number and the last digit is the type of event. For example, “0753” means that Site 75 has lost video.

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 the playback, fast forward playback and fast backward playback modes from the live monitoring mode. A User password is also required to enter the search menu screen in the live monitoring mode, enter setup screen (access to only the Backup and Password setup screens). When pressing the **ALARM** button to display the event log in the live monitoring mode unless there is an active alarm, a User password is also required. 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 62 — 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 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 System Setup, backing up video, loading default setup and clearing all data.

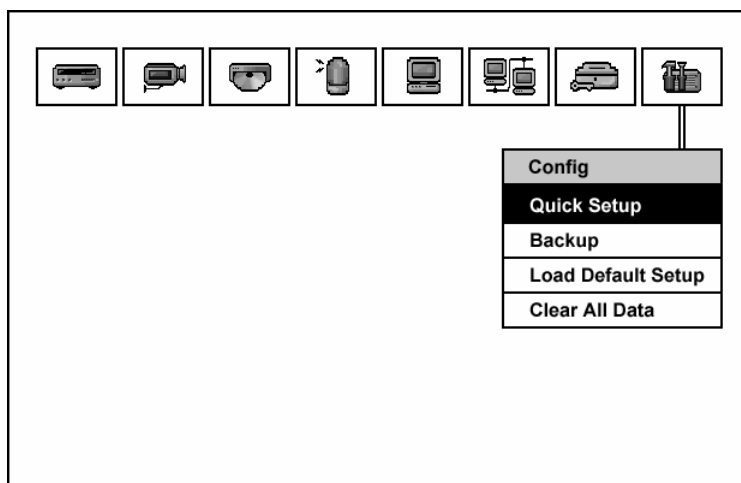


Figure 63 — Config screen.

Backup

The Backup screen can be used to back up video to an external USB hard disk drive or USB CD-RW drive.

The Backup screen contains the following elements:

- Backup** (Title)
- USB HDD** (Selected drive type)
- ☒ **Audio** (Checked checkbox)
- From** section:

<input checked="" type="checkbox"/> First	2003-07-24	03:50:51
-------------------------------------------	------------	----------
- To** section:

<input checked="" type="checkbox"/> Last	2003-07-24	03:50:51
------------------------------------------	------------	----------
- Camera** selection grid:

<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4
<input checked="" type="checkbox"/> 5	<input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 7	<input checked="" type="checkbox"/> 8
<input checked="" type="checkbox"/> 9	<input checked="" type="checkbox"/> 10	<input checked="" type="checkbox"/> 11	<input checked="" type="checkbox"/> 12
<input checked="" type="checkbox"/> 13	<input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 15	<input checked="" type="checkbox"/> 16
- File Name** (Text input field)
- Start** (Button)
- Close** (Button)

Figure 64 — Backup screen.

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

The default video segment to be backed up is from the first to last frame. However, you can define how much video to back up by changing the start and end times and dates. You will need to enter a file name before the video will back up. A virtual keyboard appears allowing you to enter a file name.

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.

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, and recording video at the same time you are watching previously recorded video.

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

Turning on the Power

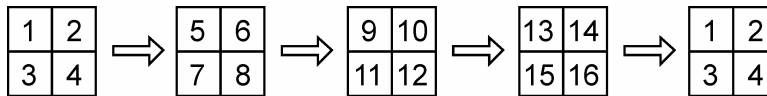
Once you have installed the DVR following the instructions in *Chapter 2 — Installation*, it is ready to record. Plugging in the power cord will cause unit to go through its self-diagnostics.

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.

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 while in 4x4 format, the DVR changes the page as follows:



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 display as active cameo. After selecting a camera number as active cameo, the DVR moves the active cameo to the next position. You can change the screen layout using this process. The screen layout can also be changed in the playback mode.

The active cameo also can be used to select a camera to control Pan, Tilt and Zoom capabilities. In the PTZ mode, enter the Active Cameo mode by pressing the **↔** button, and move the active cameo to the camera you want to control. Then exit from the Active Cameo mode by pressing the **↔** button again to control the selected camera.

NOTE: The active cameo mode can be set or released in the playback mode while playback video is paused.

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 **PLAY/PAUSE** button to zoom in, and press the **FF** button to zoom out. You can use the **SEARCH** and **DISPLAY** buttons to focus the image.

PTZ Preset – Camera 1

Camera 1: CAM

1:	Lobby	9:	
2:	Door	10:	
3:	Room	11:	
4:		12:	
5:		13:	
6:		14:	
7:		15:	
8:		16:	

Close

Figure 65 — PTZ Preset screen.

Preset View

1: Lobby
2: Door
3: Room
4:
5:
6:
7:
8:
9:
10:

Figure 66 — Preset View screen.

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 the PTZ Preset dialog box will appear. Select the number you want to assign to the preset and press the **OK** 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 **OK** button to load the preset.

Recording Video

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

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. Here is a brief description of some of the settings:

- **Overwrite** or **Stop** when the hard disk drive is full. The factory default is **Overwrite**. It does this by recording over the oldest video. The DVR can be set to stop recording once the hard disk drive is full.
- **Duplex** or **Simplex**. The factory default mode is **Duplex** recording. In the Duplex mode, you can both record and play back video at the same time. In the Simplex mode you can either record or play back video, but you cannot do both at the same time. The advantage to the Simplex mode is that you can record at 60 NTSC images per second; while Duplex mode has a recording maximum of 30 NTSC images per second (50 and 25 images per second PAL), but allows simultaneous operation.

NOTE: The DVR is **NOT** recording if only the red LED above the REC button is lit. When the DVR is set for *Time-lapse* or *Event* recording, the red LED above 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: If the DVR is set in the *Simplex* mode, you will need to stop recording before playing back video.

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

Camera Buttons (1 to 16)







Pressing a camera button will display that camera full screen.

DISPLAY Button

Pressing the **DISPLAY** button during will cycle the display through the different screen layouts. The display modes are: full, 4x4, 3x3, and 2x2 (not all formats are available for the 9- and 4-channel DVRs).

NOTE: You cannot change the display format while playing back video. Pause the video first, then change the format.

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.

PREV (Previous) Button

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

STOP Button

Pressing the **STOP** button during 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.

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.

Searching Video

Pressing the **SEARCH** button displays the Search Menu.



Figure 67 — 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)

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

Date/Time Search

The screen is titled "Date/Time Search". Below the title, it says "Enter Date/Time:". There are two input fields: the first contains "01-21-2002" and the second contains "07:04:55 AM". Below these fields are two buttons: "OK" and "Cancel".

Figure 68 — 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**, **PREV**, and **NEXT** buttons can now be used to review the surrounding video.

Calendar Search







The screen is titled "Calendar Search". It displays a calendar for January 2002. The header shows "< 01-12-2002 >". The days of the week are listed in the first row: SUN, MON, TUE, WED, THU, FRI, SAT. The dates are arranged in a grid. The date 12 is highlighted. Below the calendar is a timeline with a slider and numbers 0, 2, 4, 6, 8, 10, 12, 2, 4, 6, 8, 10. At the bottom are "Go" and "Cancel" buttons.

Figure 69 — 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. 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 , , , , and  buttons can now be used to review the surrounding video.

Event Search








Event Log			
No.	Type	Title	Date/Time
976	Motion 3	CAM	04-22-2002 06:40:58 PM
975	Motion 2	CAM	04-22-2002 06:40:56 PM
974	Motion 1	CAM	04-22-2002 06:40:54 PM
973	Alarm-In 4		04-22-2002 06:40:51 PM
972	Alarm-In 3		04-22-2002 06:40:51 PM
971	Alarm-In 2		04-22-2002 06:40:51 PM
970	Alarm-In 1		04-22-2002 06:40:51 PM
976			
Close			

Figure 70 — Event Log screen.

The DVR maintains a log of each time the Alarm Input port is activated. The Event Search 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 71 — Event Search (by Camera) screen.

Event Search

Serach 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 72 — 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.

Archiving

The Backup screen contains the following elements:

- Backup** title at the top left.
- Two buttons: **USB HDD** and ☒ **Audio**.
- From** row: ☒ **First**, **2003-07-24**, **03:50:51**.
- To** row: ☒ **Last**, **2003-07-24**, **03:50:51**.
- A horizontal separator line.
- Camera** section with a 4x4 grid of checkboxes numbered 1 to 16, all of which are checked.
- File Name** label followed by a text input field.
- Start** and **Close** buttons at the bottom.

Figure 73 — Backup screen.


It is possible to archive video to an external USB-IDE hard disk drive or USB CD-RW drive. The archived images can be viewed on computers running Microsoft Windows 98, ME or 2000. Refer to the *Appendix A — USB Hard Disk Drive Preparation* for information on preparing the external drive for archiving.

CAUTION: Do NOT disconnect the USB cable or the power from the external drive while archiving video. If external drive is shut down or the USB cable is disconnected while archiving, THE DVR SYSTEM MAY NOT WORK NORMALLY OR THE FILE SYSTEM OF THE EXTERNAL DRIVE COULD BE DAMAGED, and you will get an error message the next time you try to archive. 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 storage devices has been corrupted, this error message cannot be dismissed. Even after restarting the DVR it may automatically restart while preparing a backup. You must recover the file system by using the recovery program, or you must reformat the drive when using the hard disk drive.

You can select the drive type from USB HDD or USB CD-RW.

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

You can choose to archive video from the first to last recorded images, or you can set the start and stop times and dates. You can also select which camera you wish to archive.

Highlight the **File Name** box and press the  button. A virtual keyboard appears. Enter a file name for the video you are archiving 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.

When using an external USB-IDE hard disk drive, the DVR will display the drive capacity, the backup file size and ask if you want to continue. When using the USB CD-RW drive, the DVR will display the free space of the media and the backup file size and ask if you want to continue.


NOTE: Do not back up files larger than 2GB.

CAUTION: The recording speed might decrease while archiving video to an external USB drives. During the CD burning, the recording speed will decrease to 0.5ips a camera. Also, CD burning might not be successful if other tasks such as recording, playback, remote access, etc. are running or initiating during CD burning. During archiving the title bar will first display Preparing backup, then it will show the progress. Once archiving is complete, the title bar will display Backup is completed.

During archiving the title bar will first display Preparing backup, then it will show the progress. Once archiving is complete, the title bar will display Backup is completed.

You can end the archiving process at any time by highlighting the **Cancel** button and pressing the  button.

NOTE: You cannot end the archiving process while making CD-RW image or burning a CD-RW.

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

Refer to *Appendix B — Reviewing Backup Images* for instructions on how to review the images you have archived.

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 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 — Reviewing Backup Images

NOTE: It is suggested that the computer used for the Player program has at least an 800MHz Pentium III. If your CPU is slower than this, backup files recorded at maximum speed with very high image quality will be played back slowly.

Disconnect the external USB-IDE hard disk drive or USB CD-RW drive from the DVR, and connect it to your PC. Double-clicking the target backup file starts the Player program.

NOTE: You do not need to install any special software on your personal computer to review the video. The backup file contains the Player program.

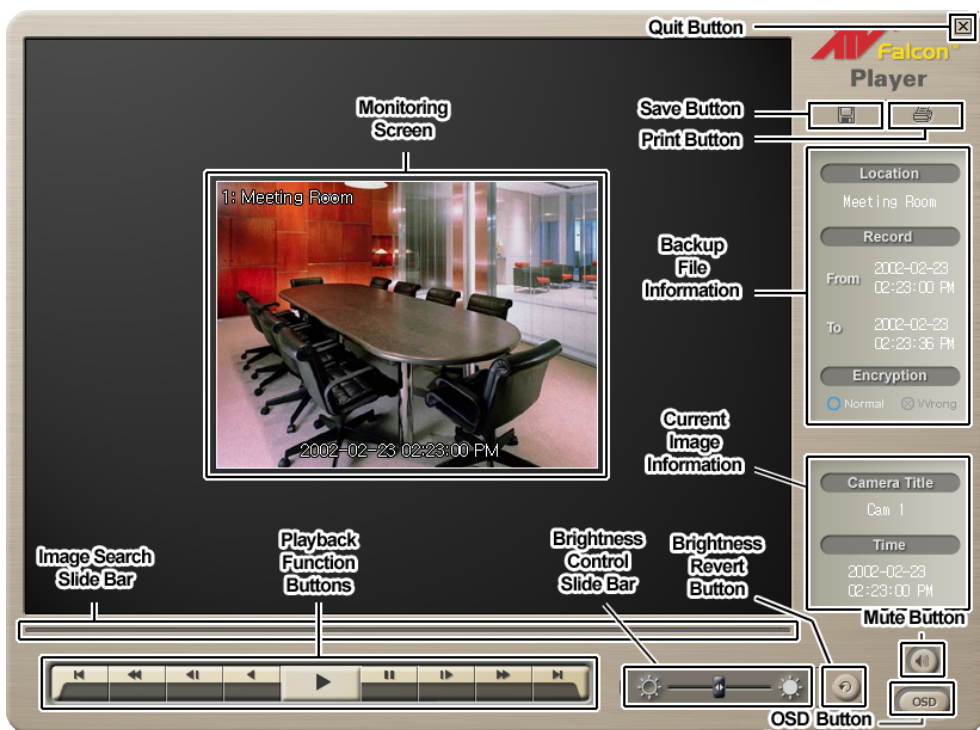


Figure 74 — Player screen.

The Monitoring Screen displays the backed up images. Clicking the right mouse button on the images switches the screen size between 320x240 and 640x480.

Clicking the Quit button exits the Player program.

Click the Save button to save the current image in a bitmap file format to the local hard disk drive or floppy disk.

Click the Print button to print the current image on the printer connected to your computer.

The **Backup File Information** window displays information regarding the backup file. **Location** displays the site description of the DVR where the backup was made. **Record** displays the time span of the video backup file. **Encryption** displays whether the backup file has been tampered with. **Normal** means the file has not been tampered with, **Wrong** means the system has detected tampering, and **no mark** means the user cancelled the encryption check.

The **Current Image Information** window displays information about the current image. **Camera Title** displays the camera name of the current image, and **Time** displays the date and time the image was recorded.

The **Image Search Slide Bar** displays the current playback position. The user can move to another image clicking the mouse and dragging along the slide bar.

The **Playback Function Buttons** include fast backward, backward, play, pause, fast forward, go to the first image, go to the previous image, go to the next image, and go to the last image buttons.

The **Brightness Control Slide Bar** adjusts the brightness of the backup images by clicking the mouse and dragging along the slider bar. Brightness can be adjusted by using the arrow buttons located at each end of the bar.

The **Brightness Revert Button** reloads to the original image.

The **OSD (On-Screen Display) Button** switches the OSD option. The OSD information includes camera location and date/time.

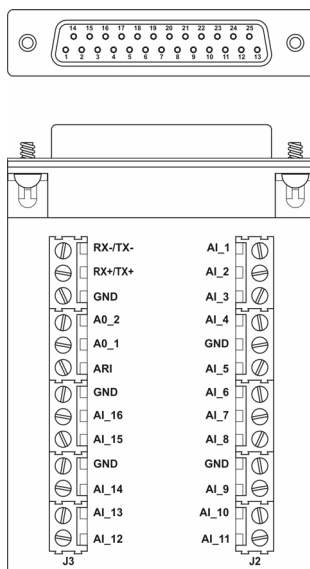
Clicking the **Mute Button** mutes the recorded audio.

Appendix C — Troubleshooting

Problem	Possible Solution
No Power	<ul style="list-style-type: none"> • Check power cord connections. • Confirm that there is power at the outlet.
No Live Video	<ul style="list-style-type: none"> • Check camera video cable and connections. • Check monitor video cable and connections. • Confirm that the camera has power. • Check camera lens settings.
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. 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.

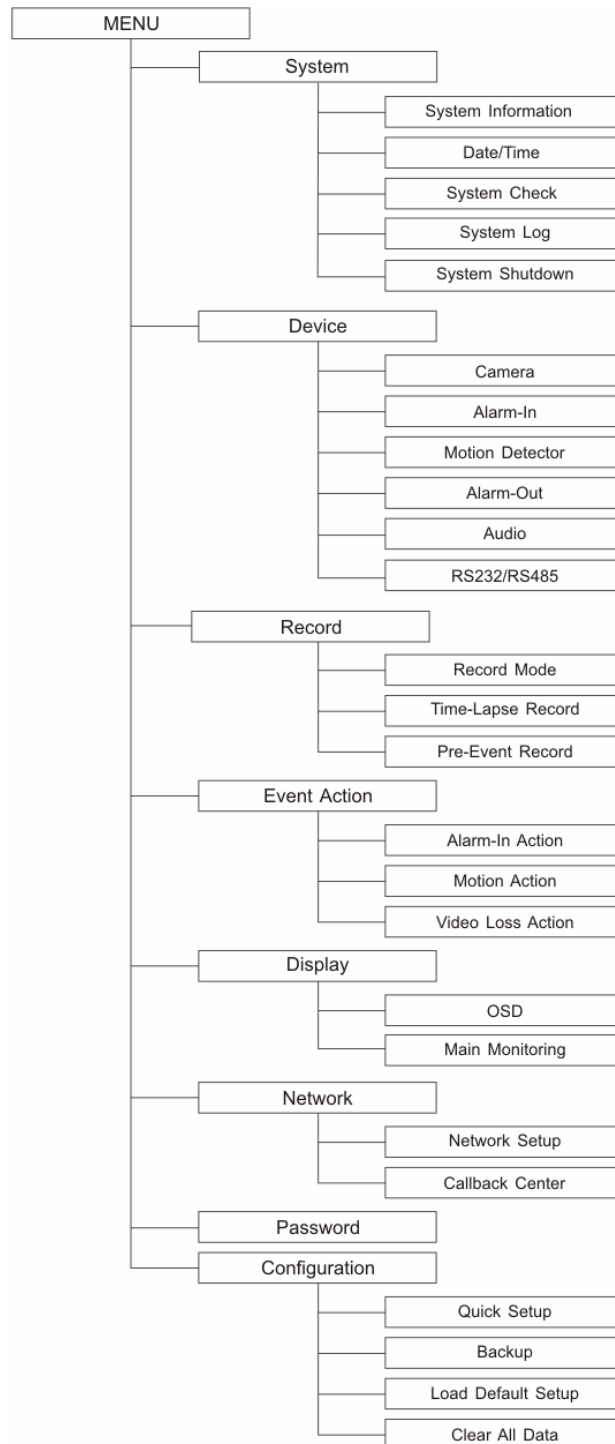
Appendix D — Connector Pin Outs

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	Ground	15	Alarm Output 2
3	Alarm Output 1	16	-
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

Appendix E — Map of Screens



Appendix F — Specifications

VIDEO	
Signal Format	NTSC or PAL (selector switch)
Video Input	Composite: 4, 9 or 16 looping inputs, 1 Vp-p, auto-terminating, 75 Ohms
Monitor Outputs	Composite: One, 1 Vp-p, 75 Ohms SVHS: One
Video Resolution	720x480 (NTSC), 720x576 (PAL)
Playback/Record Speed (images per second)	Simplex: 60ips (NTSC), 50ips (PAL) Duplex: 30ips (NTSC), 25ips (PAL)

INPUTS/OUTPUTS	
Alarm Input	4, 9 or 16 TTL, NC/NO programmable, 4.3V threshold, using supplied Alarm I/O Board
Alarm Output	2 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	One, “line in” or “mic” programmable
Audio Output	One, “line”

CONNECTORS	
Video Input	Composite: 4, 9 or 16 BNC
Video Loop	Composite: 4, 9 or 16 BNC
Monitor Output	Composite: 1 BNC SVHS: 1 Y/C
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	DB-9 male connector
Printer Port	One
USB Port	One

Specifications are subject to change without notice.

STORAGE	
Primary Storage	EIDE hard disk drive (up to 2)
Backup Storage	USB hard disk drive

GENERAL	
Dimensions (W x H x D)	16.9" x 1.7" x 15.7" (430mm x 44mm x 399mm)
Unit Weight	12.3 lbs. (5.6kg)
Shipping Weight	19.4 lbs. (8.8kg)
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 Supply	100 to 240 VAC, 1/2 A, 60/50Hz Auto ranging adapter included.
Input Voltage	12 VDC
Power Consumption	70 Watts Max.

APPROVALS	
FCC	FCC PART 15 Subpart B, Class A
CE	EMI: EN55022, 1998, Class A Safety: EN60950 Immunity: EN50130-4, 1998, Alarm Standard

Specifications are subject to change without notice.