SIEMENS

Digital Video Recorder
SISTORE AX8 500/200 V3.6
SISTORE AX16 500/200 V3.6

User Manual

Building Technologies

Fire Safety & Security Products

Disclaimer

We have taken every possible care in preparing this manual. The contents of this manual are revised regularly and brought up to latest standards. Nevertheless, we are unable to provide any guarantee with regard to content, entirety or quality of the details contained in this manual.

No liability can be assumed for direct or consequential losses and third-party damages arising from the purchase of this product. In all cases, liability is limited to the purchase price of the product.

The information in these operating instructions was up to date at the time of publication. We reserve the right to make subsequent changes to technical or organizational details. Siemens assumes no liability for problems resulting from the use of this manual. The information contained in this document may be changed without prior notice. Siemens reserves the right to publicize any such changes by issuing updated versions or new editions.

Copyright

Siemens Fire & Security Products confers upon the purchaser the right to use the software.

This manual may not be copied, reproduced, transcribed or translated into another language in part or full without our written consent.

Trademarks

SISTORE is a trademark of Siemens Fire & Security Products.

Microsoft is a registered trademark and Windows a trademark of Microsoft Corporation. All other products or company names referred to explicitly in this manual are mentioned only for purposes of identification and/or description and may be trademarks or registered trademarks of their respective owners.

Contacting us

If you have questions or suggestions regarding this product or this documentation, please contact your local SIEMENS representative. You can also visit our Web site at http://www.siemens.com/sistoreax.

Training courses

Siemens Fire & Security Products provides training courses for all products.

About this document

This User Manual contains instructions for installation, configuration and operation of SISTORE AX. A complete version of this manual can be found in Adobe Acrobat format (PDF) on the SISTORE AX CD. This is the most recent version, unless changes have been made after the printing of this manual. All subsequent alterations have been included as far as possible.

Contents

1	**Safety**	**9**
1.1	Target readers	9
1.2	Work safety information	9
1.2.1	Transport	10
1.2.2	Installation	10
1.2.3	Service and maintenance	10
1.3	Meaning of the written warning notices	11
1.4	Meaning of the hazard symbols	11
2	**Directives and standards**	**12**
3	**Technical data**	**13**
4	**Details for ordering**	**15**
5	**Scope of delivery**	**15**
6	**Description of functions**	**16**
7	**Installation**	**18**
7.1	Connecting the video input	19
7.2	Connecting the loop-through video	19
7.3	Connecting the monitor	19
7.4	Connecting audio	20
7.5	Connecting alarms	20
7.6	Connecting to the RS485 port	21
7.7	Connecting to the USB ports	22
7.8	Connecting to the RS232 port	22
7.9	Connecting to the UltraWide SCSI port	22
7.10	Connecting to the network port	23
7.11	Factory reset	23
7.12	Connecting the power cord	24
8	**Configuration**	**25**
8.1	Front panel controls	25
8.2	Turning on the power	28
8.3	Initial unit setup	28
8.4	Setup screen	29
8.5	Recording settings	30
8.5.1	Record screen	30
8.5.2	Schedule screen	32
8.5.3	Pre-Event screen	35
8.5.4	Archive screen	36
8.6	Network setup	37
8.6.1	Network screen	37
8.6.2	Web Client Setup	40
8.6.3	LAN setup screen	41
8.7	Event settings	44
8.7.1	Alarm-In screen	44
8.7.2	Motion Detection screen	47
8.7.3	Video Loss screen	51
8.7.4	Text-In screen	53
8.7.5	System Event screen	57
8.7.6	Event status	60

8.8 Display....61
8.8.1 OSD screen....61
8.8.2 Main Monitor screen....62
8.8.3 Spot Monitor screen....63
8.9 Configuring devices....64
8.9.1 Camera setup screen....64
8.9.2 Audio setup screen....67
8.9.3 Alarm-Out screen....67
8.9.4 Remote Control screen....69
8.10 Storage screen....70
8.10.1 Storage Information screen....70
8.10.2 Storage Status screen....72
8.11 System....73
8.11.1 Information screen....73
8.11.2 Date/Time setup....76
8.11.3 User setup screen....79
8.11.4 Shutdown… screen....81
8.11.5 Log out…screen....81

9 Operation....82
9.1 Turning on the power....82
9.2 Live monitoring....82
9.2.1 Active Cameo mode....83
9.2.2 PIP mode....83
9.2.3 Zoom mode....83
9.2.4 PTZ mode....84
9.2.5 Image adjustment....86
9.3 Event monitoring....87
9.4 Covert camera....87
9.5 Spot monitoring....87
9.6 Using a mouse....88
9.7 Recording video....89
9.8 Recording audio....90
9.9 Playing recorded video....90
9.10 Searching video....92
9.10.1 Go to....93
9.10.2 Calendar Search....93
9.10.3 Record Table Search....94
9.10.4 Event Log Search....96
9.10.5 Text-In Search....98
9.10.6 Motion Search....100
9.10.7 Clip-Copy screen....102
9.10.8 Print screen....104
9.10.9 Disk mirroring....105

10 Troubleshooting....107

11 Disposal....107

12 Appendix 108
12.1 Preparing the USB hard disk drive in Windows 2000 108
12.2 Text-In Search examples 109
12.2.1 Search example I 109
12.2.2 Search example II 110
12.3 Web Client 111
12.3.1 Web View mode 112
12.3.2 Web Play mode 114
12.4 Time overlap 116
12.5 Recording tables 117
12.5.1 Recording times with 500 GB HDD (days) for PAL images 117
12.5.2 Recording times with 500 GB HDD (days) for NTSC images 118
12.6 Connector pin outs 119
12.7 Connection diagrams 120
12.7.1 Connecting the remote keyboard CKA4820 and dome cameras CCDA1415 and CCDA1425/1435 120
12.7.2 Connecting alarm input/output 121
12.8 Map of screens 122
12.9 System log notices 123
12.10 Error code notices 124

1 Safety

1.1 Target readers

The instructions in this document are designed **only** for the following target readers:

Target readers	Qualification	Activity	Condition of the product
Installer	Technical training for building or electrical installations.	Installs the product, individual components of the product or replacement parts.	Components of the product are not yet installed or need to be replaced or modified.
Operational startup personnel	Technical training for building or electrical installations. Training on the product is recommended.	Puts the product into operation for the first time, or changes the existing configuration.	The product is installed but not yet configured, or the existing configuration is to be changed.
End user	Has working knowledge of computers. Instruction by technical specialists is necessary.	Performs only the procedures for proper operation of the product.	The product is installed and configured.
Service personnel	Technical training for building or electrical installations.	Checks the product at regular intervals to ensure that it is in good working order and performs service work.	Product already in use and requiring servicing.

1.2 Work safety information

- Read the general safety precautions before operating the device.
- Keep this document for reference.
- Follow all warnings and instructions marked on the device.
- Always pass this document on together with the device.
- Any national or local safety standards or laws that apply to the development, design, installation, operation or disposal of a product must be adhered to in addition to the instructions in the product documentation.

Radio interference with other devices in the environment

- This is a Class A device. This equipment may cause radio interference in a residential installation. In this case the user is encouraged to perform appropriate measures to correct the interference.

Liability claim

- Do not connect the device if it is damaged or any parts are missing.
- Do not make any changes or modifications to the device unless they are have been approved by the manufacturer.
- Use only spare parts and accessories that have been approved by the manufacturer.

1.2.1 Transport

Damage during transport

- Do not expose the device to mechanical vibrations or shocks.
- Keep the packaging material for future transportation.

1.2.2 Installation

Damage due to unsuitable mounting location

- The environmental conditions recommended by the manufacturer must be observed (see Section 3: Technical data).
- Do not operate the device close to sources of powerful electromagnetic radiation.
- Do not operate the device in dusty places.
- The device should only be used for indoor applications.
- Do not expose the device to mechanical vibrations or shocks.
- Protect the device against moisture.

Cable damage due to mechanical load

- Make sure that cables are not under stress, kinked or damaged.

Damage to the device due to lack of ventilation

- Do not block or cover the ventilation openings of the device.
- Do not stack several devices on top of each other and do not place any objects on the device.

Danger of electrical shock due to incorrect connection

- Use the device only in conjunction with a power supply cable that has been approved in your country and complies with the national standards.
- This product is designed for TN power systems and for IT power systems in Norway with 230 V phase-to-phase voltage. Do not connect the device to any other IT power systems.

Damage to the device due to overvoltage

- Connect the device only to power sources with the specified voltage. Voltage supply requirements can be found on the type label (see Section 3: Technical data).

1.2.3 Service and maintenance

Danger of electrical shock during maintenance

- Always disconnect the power cable and other cables from the main power supply before performing maintenance.

Danger of electrical shock while cleaning the device

- Disconnect the device from the mains supply before cleaning.
- Do not use liquid cleaners or sprays that contain alcohol, spirit or ammonia.

1.3 Meaning of the written warning notices

The severity of a hazard is indicated by the following written warning notices.

Signal word	Type of risk
CAUTION	There is a risk of minor injuries or damage to property.

1.4 Meaning of the hazard symbols

The nature of the hazard is indicated by icons.

Warning of a hazard

2 Directives and standards

This product complies with the requirements of the following European directives. The EU declaration of conformity is available to the responsible agencies at:

Siemens Building Technologies
Fire & Security Products GmbH & Co. oHG
76181 Karlsruhe

Germany

European Directive 2004/108/EC ”Electromagnetic Compatibility”

Compliance with the European Directive 2004/108/EC has been proven by testing according to the following standards:

Emitted interference:	EN 61000-6-4 EN 55022 Class A
Interference resistance:	EN 50130-4

European Directive 2006/95/EEC ”Low-Voltage Directive”

Compliance with the European Directive 2006/95/EEC has been proven by testing according to the following standard:

Safety:	EN 60950-1

3 Technical data

Video	
Signal format	PAL or NTSC (auto-detect)
Video input	Composite: 8 or 16 looping inputs, 1 Vpp auto-terminating, 75 Ohms
Monitor outputs	Composite: 1 (BNC), 1 Vpp, 75 Ohms SVHS: 1 VGA: 1 SPOT: 4 (BNC), 1 Vpp, 75 Ohms
Video resolution	Composite: (PAL) 720 x 576, (NTSC) 720 x 480 VGA: 800 x 600 @ 60 Hz
Playback/record speed (images per second)	200 ips (PAL), 240 ips (NTSC)
Inputs / Outputs	
Alarm input	8 or 16 TTL, programmable as NC or NO
Alarm output	7 or 15 TTL open collector, terminal block, programmable as NC/NO, 30 mA @ 12 V DC 1 relay output, 2 A @ 125 V AC, 1 A @ 250 V AC, 1 A @ 30 V DC (NC), 5 A @ 125 V AC, 2 A @ 250 V AC, 3 A @ 30 V DC (NO)
Alarm reset input	1x TTL
Internal buzzer	80 dB @ 10 cm
Network connectivity	10/100 Mbps Ethernet (RJ-45)
Audio input	RCA input: 4, Line In
Audio output	RCA output: 1, Line Out
IR port	1 remote control
Connections	
Video input	Composite: 8 or 16 BNC
Video loop	Composite: 8 or 16 BNC (auto-terminating)
Monitor output	Composite: 1x BNC SVHS: 1 Y/C * VGA: 1 VGA SPOT (composite): 4 BNC
Audio In	4 RCA connectors
Audio Out	1 RCA connector
Alarm input/output	16/16 push-button, terminal blocks
Ethernet port	RJ-45
RS-232C serial port	DB9 (P)
RS-485 serial port	2-connector terminal block
UltraWide SCSI port	High-density female 68-pin connector
USB port	3 (USB 2.0)
Storage	
Primary storage	SATA hard-disk drive (up to 3) Built-in DVD-RW drive **
Secondary storage (optional)	UltraWide SCSI hard-disk drive (RAID) USB hard-disk drive, USB CD-RW drive or USB flash drive

Environmental	
Operating temperature	5 – 40 °C (41 – 104 °F)
Operating humidity	0 – 90%
Power supply	
Power	100 - 240 V AC, 2 A, 50/60 Hz
Power consumption	65 W max. (85 W when 3 hard-disk drives are installed)
General	
Dimensions (WxHxD)	430 x 88 x 405 mm (16.9" x 3.5" x 15.9")
Unit weight	10.2 kg (22.5 lbs)
Shipping weight	12.5 kg (27.6 lbs)
Shipping dimensions (WxHxD)	540 x 290 x 590 mm (21.3" x 11.4" x 23.2")
Approval	CE, UL, FCC, C-Tick

*) Using a shielded S-Video cable provides better quality video display and reduces image noise.

**) When installing a DVD-RW drive, connect the SATA I/O cable to the HDD3 socket.

Specifications are subject to change without notice.

4 Details for ordering

Type	Order No.	Designation	Weight
SISTORE AX8 500/200	S54569-C70-B2	SISTORE AX8, 500 GB, 200 ips	10.2 kg
SISTORE AX16 500/200	S54569-C90-B2	SISTORE AX16, 500 GB, 200 ips	10.2 kg

5 Scope of delivery

- Digital video recorder
- Power cord
- User Manual, Multilingual RAS Software and User Manual on CD-ROM
- Multilingual Installation Guide
- Rack-mount kit
- Assembly screws and guide rails for adding hard disk drives
- Screws for fixing SCSI connector
- Infrared remote control

6 Description of functions

SISTORE AX is a digital video recording system for the surveillance of rooms, premises, buildings, production workshops, critical public areas or any outdoor areas where security is important.

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

The DVR converts analog PAL or NTSC 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 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 Ethernet. There is a SCSI port that can be used to record or archive video to external hard disk drives, and there are also three USB ports that can be used to upgrade the system or copy video clips to external hard disk, CD-RW and flash drives.

NOTE

This manual covers the 8- and 16-channel digital video recorders. The DVRs are identical except for the number of cameras and alarms that can be connected and the number of cameras that can be displayed. For simplicity, the illustrations and descriptions in this manual refer to the 16-camera model.

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

- Efficient video compression through “MPEG4 Technology“
- 8 or 16 composite video input connectors
- Compatible with colour (NTSC or PAL) and B/W (CCIR and EIA-170) video sources
- Auto-detection for PAL and NTSC
- Multiple monitor connectors: 1 BNC Video Out, 1 SVHS, 4 Spot, 1 VGA
- Multiple search engines (date/time, calendar, event, motion, museum, text-in)
- Records up to 200/240 images per second (PAL/NTSC)

- "Loop-through" video connectors
- Continuous recording in disk overwrite mode
- Triplex Functionality (monitoring, recording and playback at the same time)
- Video archiving via UltraSCSI interface
- 3 USB 2.0 ports
- Continues recording while archiving, transmitting to remote site and during playback
- User-friendly Graphical User Interface (GUI) menu system
- Multiple recording modes (time-lapse, pre-event, alarm, motion and panic)
- Two-way audio communications
- 4-channel audio recording and 1-channel audio playback
- Text input for ATM and POS
- Alarm connections include: input, output and reset input
- Built-in alarm buzzer
- Live or recorded video access via Ethernet
- Time synchronization using industry standard protocol
- Built-in DVD-RW drive
- Self-diagnostics with automatic notification including hard disk drive S.M.A.R.T. protocol
- Infrared remote control

7 Installation

CAUTION Refer installation and servicing to qualified personnel.

The diagram below shows a typical DVR installation.

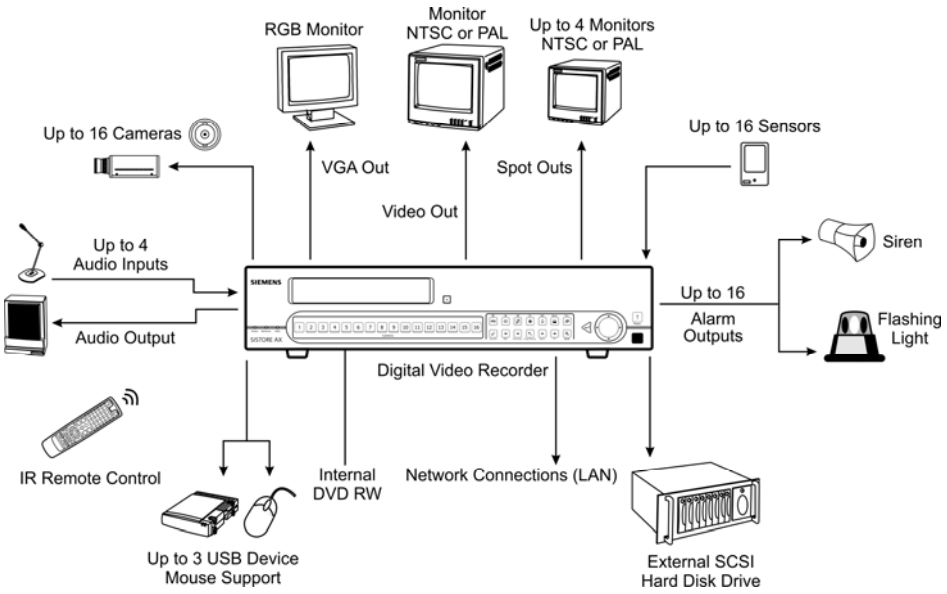


Fig. 1 Typical DVR installation

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.

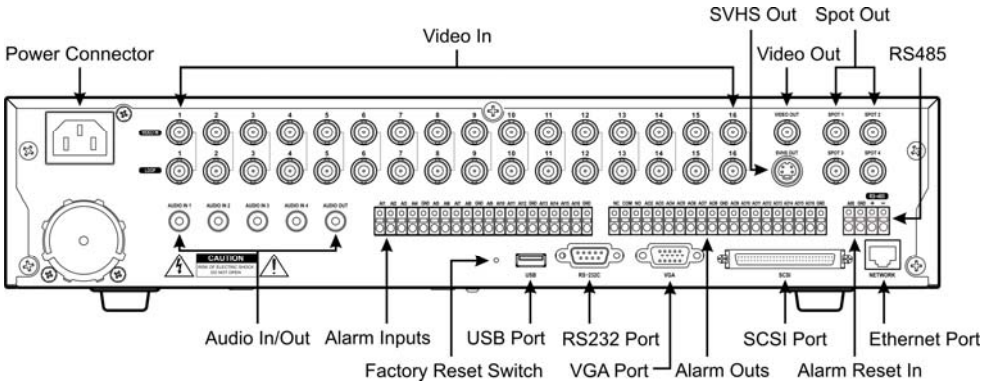


Fig. 2 16-channel DVR rear panel

Your DVR can be used with either PAL or NTSC equipment.

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

7.1 Connecting the video input

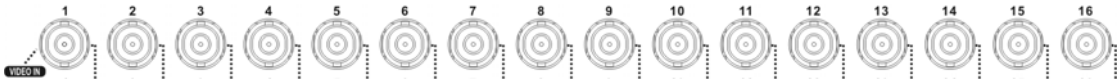


Fig. 3 Video input connectors

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

7.2 Connecting the loop-through video

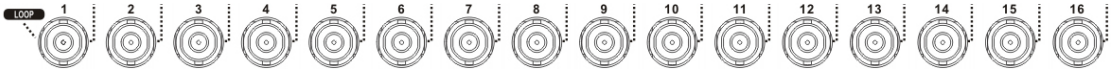


Fig. 4 Video loop-through connectors

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 a terminated device because it will cause poor quality video.

7.3 Connecting the monitor

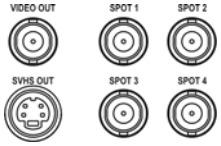


Fig. 5 Video Out connectors

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

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

Up to four Spot monitors can be connected to the DVR. Connect the spot monitors to the SPOT 1, SPOT 2, SPOT 3 and SPOT 4 connectors as needed.

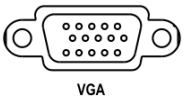


Fig. 6 VGA connector

A VGA connector is provided so that you can use a standard, multi-sync computer monitor as your main monitor. Use the cable supplied with your monitor to connect it to the DVR.

NOTE
Please note the technical specification for the VGA output in Section 3: Technical data.

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

7.4 Connecting audio

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

Fig. 7 Audio In and Out connectors.

Your DVR can record audio from up to four sources. Connect the audio sources to Audio In 1, Audio In 2, Audio In 3 and Audio In 4 as needed using RCA jacks. 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 DVR does not have a pre-amplifier for audio input, so the audio input should be from an amplified source, not directly from a microphone.

7.5 Connecting alarms

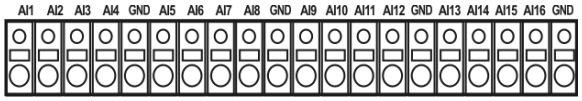


Fig. 8 Alarm Input connectors

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

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 4.3 V and should be stable at least 0.5 seconds to be detected. See Section 8.7.1 Alarm-In screen.
GND (Ground)	Connect the ground side of the alarm input and/or alarm output to the GND connector

NOTE
All the connectors marked GND are common.

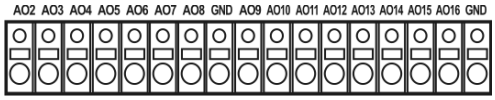


Fig. 9 Alarm Output connectors

AO 2 to 16 (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 30mA@12VDC. See Section 8.9.3: Alarm-Out screen.

Fig. 10 Relay Alarm Output connectors

NC/NO (Normally Closed/Normally Open) Connect the device to the COM and NC (Normally Closed) connectors or COM and NO (Normally Open) connectors. NC/NO is a relay output which sinks 2 A @ 125 V AC, 1 A @ 250 V AC, 1 A @ 30 V DC (NC) and 5 A @ 125 V AC, 2 A @ 250 V AC, 3 A @ 30 V DC (NO).

Fig. 11 Alarm Reset Input connectors

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

7.6 Connecting to the RS485 port

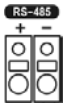


Fig. 12 RS485 connector

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+/TX+ and RX-/ TX- of the control system to the + and – (respectively) of the DVR. See the Section 8: Configuration and the PTZ camera or remote keyboard manual for configuring the RS485 connection.

7.7 Connecting to the USB ports

Fig. 13 Front USB connectors

Fig. 14 Rear USB connector

Three USB ports are provided to connect external hard disk, CD-RW or flash drives for video clip copying or system upgrades. One USB port is on the rear panel and the other two are on the front panel. Position external drives close enough to the DVR so that you can make the cable connections, usually less than 6 feet. Use the USB cable provided with the hard disk drive to connect it to the DVR.

A USB mouse (not supplied) can be connected to one of the ports. You can use the mouse to navigate through the screens and menus much like you would on a computer.

A PostScript™ USB printer (not supplied) can be connected to one of the ports. You can print selected images resulting from a search. Refer to Section 9.10: Searching video.

A USB to Serial converter can be connected to the USB port. Multiple text-in devices can be used with a USB to Serial converter.

7.8 Connecting to the RS232 port

Fig. 15 RS232 connector

An RS232 port is provided to connect a remote control keyboard.

7.9 Connecting to the UltraWide SCSI port

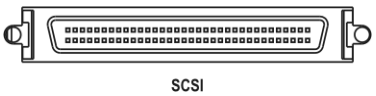


Fig. 16 SCSI connector

A SCSI port is provided to connect external storage devices for recording or archiving video. Connect the external SCSI hard disk drive (RAID) cable to the high-density 68-pin female UltraWide SCSI port. The length of SCSI cable should not exceed1.5 meters (5 feet). You can connect up to 8 UltraWide SCSI devices with SCSI IDs set from 0 to 15 except for 7, which is assigned as the Host ID.

NOTE
The SCSI bus must be terminated, otherwise the DVR will not operate properly.

NOTE
When using low speed SCSI devices, the recording speed might decrease.

IMPORTANT	Do **not** connect or disconnect SCSI devices while the DVR power is on. The DVR must be powered down to connect or disconnect SCSI devices. Power up SCSI devices so they are ready for operation before powering up the DVR. Power down SCSI devices after powering down the DVR and then disconnect SCSI devices.

NOTE
If the SCSI device is shut down while the device is operating, the DVR system might not operate normally

7.10 Connecting to the network port

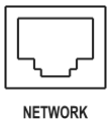


Fig. 17 Network connector

The DVR can be networked using the 10/100Mb Ethernet connector. Connect a Cat5 cable with an RJ-45 jack to the DVR connector. The DVR can be networked with a computer for remote monitoring, searching, configuration and software upgrades. See the Section 8: Configuration for configuring the Ethernet connections.

NOTE
The Network connecter is not designed to be connected directly with cable or wire intended for outdoor use.

7.11 Factory reset

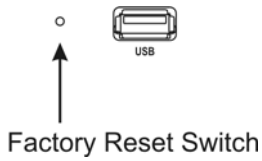


Fig. 18 Factory reset switch

The DVR has a factory reset switch to the left of the USB port on the rear panel. This switch will only be used on the rare occasions that you want to return all the settings to the original factory settings.

NOTE
When using the Factory Reset, you will lose any settings you have saved.

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

1. Turn the DVR off.
2. Turn it on again.
   ➔ While the DVR is initializing, the front panel LEDs will blink.
3. When any of the Camera 1 to 8 LEDs blink, poke the straightened paperclip in the unlabeled hole to the left of the USB port.
4. Hold the switch until all the LEDs on the front panel are lit.

NOTE
When the DVR successfully resets to factory defaults all the LEDs on the front panel flash five 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.

7.12 Connecting the power cord

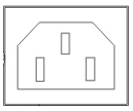


Fig. 19 Power cord connector

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

IMPORTANT	The power cord must be connected to the DVR before it is connected to a wall outlet, otherwise, the DVR might NOT be powered up properly. If the DVR is not turned on after connecting the power cord, disconnect the power cord, wait 10 seconds, and restart the DVR by following the proper connection procedures.
CAUTION	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.
CAUTION	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 Sections 8: Configuration and 9: Operation.

8 Configuration

NOTE
Your DVR should be completely installed before proceeding. Refer to Section 7: Installation.

8.1 Front panel controls

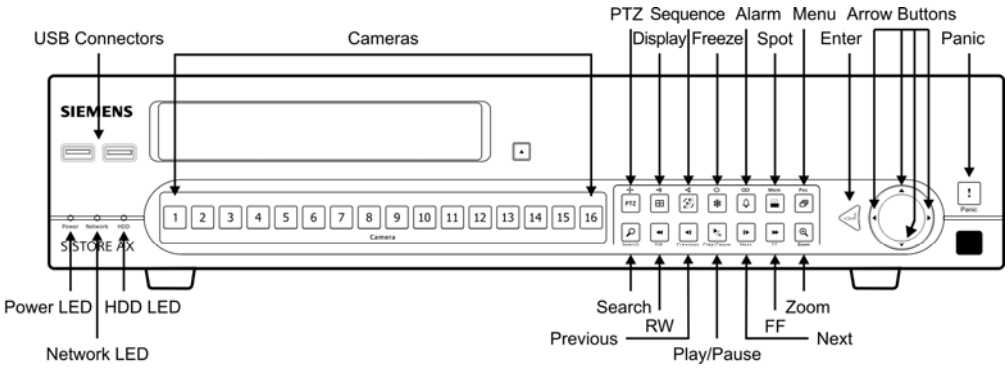


Fig. 20 16-channel DVR front panel

The front panel looks and operates much like a VCR combined with a multiplexer. Many of the buttons have multiple functions. The buttons on the infrared remote control, while laid out differently, perform the same functions as those on the front panel. 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.

NOTE
The infrared sensor on the DVR is just to the lower left of the Panic button. Make certain that nothing blocks the sensor, or the remote control will not function properly.

NOTE
You can also use a USB mouse (not supplied) to navigate through the screens and menus much like you would on a computer.

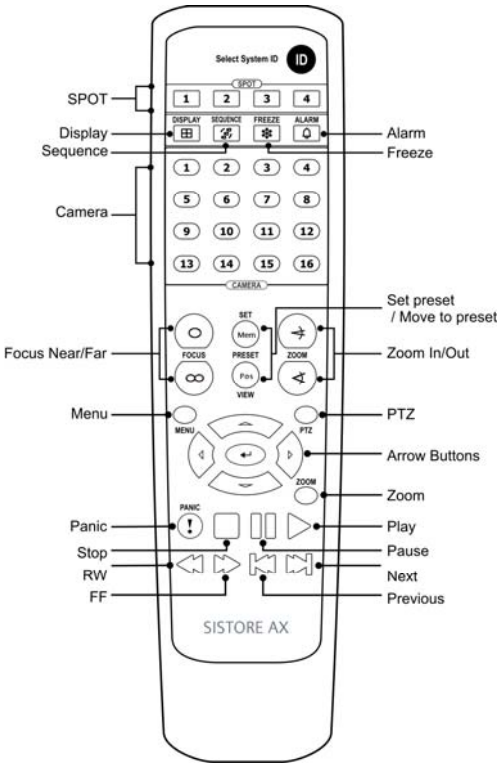


Fig. 21 Infrared remote control

Power LED	The Power LED is lit when the unit is On.
Network LED	The Network LED flickers when the unit is connected to a network via Ethernet.
HDD LED	The HDD LED flickers when the DVR is recording or searching video on the hard disk drive.
Camera buttons (1 to 16)	Pressing the individual camera buttons will cause the selected camera to display full screen. Buttons 1 to 9 are also used to enter passwords.
PTZ button	Pressing the PTZ button enters the PTZ (Pan/Tilt/Zoom) mode which allows you to control properly configured cameras.
Display button	Pressing the Display button toggles between different display formats. The available formats are: 4x4, 3x3, 2x2 and PIP (not all formats are available for the 8-channel DVR). The button is also used for Zoom In while in the 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. The button is also used for Zoom Out while in the PTZ mode.
Freeze button	Pressing the Freeze button freezes the current live screen. In the Search mode clip-copying can be done instantly by pressing and holding the button for two or more seconds. The button is also used for Near Focus in the PTZ mode.
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. The button is also used for Far Focus while in the PTZ mode.
Spot button	Pressing the Spot button allows you to select which cameras will display on the four Spot Monitors. After selecting the monitor you can opt to have that Spot Monitor display a single camera or all cameras sequentially. The infrared remote control allows you to go directly to the individual Spot Monitor menus. The button is also saves Presets in PTZ mode.

Menu button	Pressing the Menu button enters the ***Setup*** screen. You will need to enter the authorized user and password to access ***Setup***. Pressing the button also closes the current menu or setup dialog box. In the Playback mode, pressing the Menu button displays the ***Search*** menu. In Search mode clip-copying can be done instantly by pressing and holding the button for two or more seconds. The button is also loads a ***Preset View*** in the PTZ mode.
Search button	When in the live mode, pressing the Search button enters the Triplex mode.
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.
Previous button	Pressing the Previous button goes to the previous image.
Play/Pause button	Pressing the Play/Pause button plays back images at regular speed. Pressing the button while in the Playback mode pauses the video. The screen displays ▶ when the DVR is playing back video. The screen displays ❚❚ when in the Pause mode.
Next button	Pressing the Next button goes to the next 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.
Zoom button	Pressing the Zoom button zooms the current image on the screen. A PIP with a rectangle temporarily displays showing what area of the screen has been enlarged. You can use the arrow buttons to move the rectangle to another area. Pressing the ↵ (Enter) button toggles the zoom size between 2x, 3x and 4x.
Enter button	The ↵ (Enter) button selects a highlighted item or completes an entry that you have made during system setup.
Up, Down, Left, Right Arrow buttons	These buttons are used to navigate through menus and GUI. You can also use them to change numbers by highlighting a number in the menu and using the Up and Down arrow buttons to increase or decrease the number's value. The arrow buttons are also used to control Pan and Tilt when in the PTZ mode. When in the PIP display format, pressing the Up and Down arrow buttons moves the position of the small screen counter-clockwise and clockwise, and pressing the Left and Right buttons moves through screen pages.
Panic button	Pressing the Panic button starts panic recoding of all camera channels, and displays ! on the screen. Pressing the button again will stop panic recording.
ID button on remote control	If a DVR System ID is set to 0, the infrared remote control will control that DVR without any additional operations. (Refer to Section 8.11.1: Information screen for further information on setting the System ID.) If the system ID is 1 to 16, you must to press the ID button on the remote control and then press the number button (1 to 16) in order to control that DVR. If the System ID of two or more DVRs is set to 0, those DVRs will react to the infrared remote control at the same time.

8.2 Turning on the power

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

8.3 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.

Throughout the screens you will see ↩. Highlighting the ↩ and pressing the ↵ button gives you the opportunity to reset that screen to its default settings.

1. Press the Menu button to enter the setup screens.
   ➔ The ***Login*** screen appears.

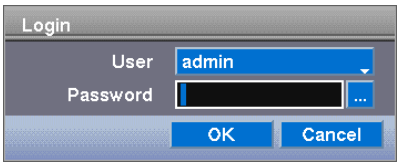


Fig. 22 Login screen

2. Select a ***User*** and enter the password by pressing the appropriate combination of Camera number buttons and then the ↵ button.

There is no default password when logging in the admin user for the first time.

NOTE
To assure the secure management of the system, setting up a password is strongly recommended.

NOTE
You can use a mouse (not supplied) to access the ***Login*** screen in addition to using the front panel buttons or the infrared remote control. Click the right mouse button to display the ***Login*** screen. To enter a password, click the ■ button, and the virtual keyboard displays. See instructions below for using the virtual keyboard.

8.4 Setup screen

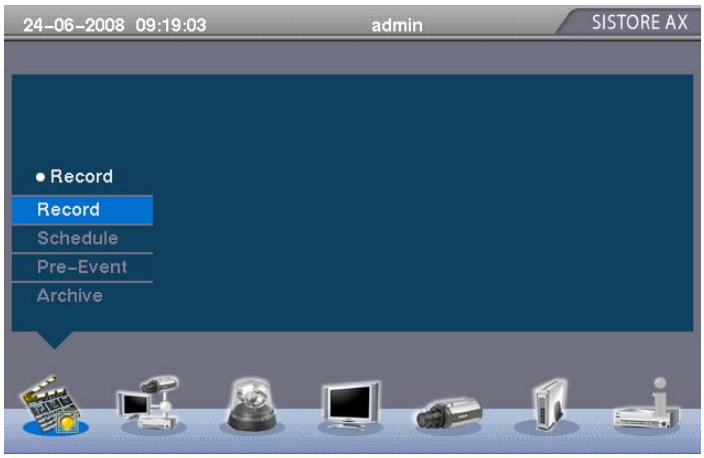


Fig. 23 Setup screen

Press the Menu button to enter the setup screen.

While setting up the DVR, there will be many opportunities to enter names and titles. When making these entries, a Virtual Keyboard will appear.

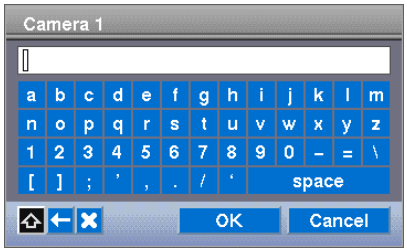


Fig. 24 Virtual Keyboard

Use the arrow keys to highlight the character you want in the name or title and press the ↵ button. That character appears in the title bar and the cursor moves to the next position. Clicking ⇧ toggles between the upper and lower case keyboards, ← backspaces, and ✖ deletes entered characters. You can use up to 31 characters including spaces in your title.

Special characters can be created using ^ and a capital letter; e.g., ^J for NL (New Line), ^M for CR (Carriage Return). Special characters are commonly used by text input devices and will be useful when performing Text-In Searches.

8.5 Recording settings

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.

Fig. 25 Record menu

8.5.1 Record screen

Highlight ***Record*** in the ***Record*** menu and press the ↵ button.

➔ The ***Record*** setup screen appears.

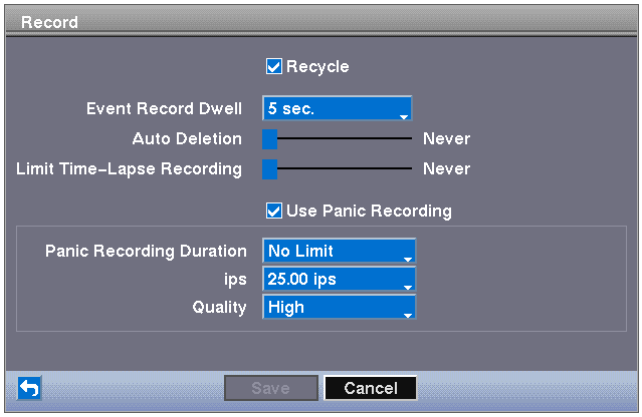


Fig. 26 Record setup screen

Highlighting ***Recycle*** and pressing the ↵ button toggles between On and Off. In the Recycle mode, the DVR records over the oldest video data once all available storage space has been used. When ***Recycle*** is turned off, the DVR stops recording once all available storage space has been used.

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

   ➔ You can set the dwell from 5 seconds to 15 minutes.

   Refer to the ***System Event - Actions*** screen in Section 8.7.5 for information regarding event recording.

2. Highlight the slide bar beside ***Auto Deletion***, and use the Left and Right arrow buttons to adjust the length of time recorded data will be kept from 1 to 99 days.

   ➔ The DVR automatically deletes video recorded earlier than the user-defined period under three conditions: at midnight, whenever the system reboots or whenever the user changes the ***Auto Deletion*** settings. Selecting "Never" will disable the Auto Deletion function.

   Highlighting ***Use Panic Recording*** and pressing the ↵ button toggles between On and Off.

3. Highlight the slide bar beside ***Limit Time-Lapse Recording***, and use the Left and Right arrow buttons to adjust the length of the maximum storage time for time-lapse recording from 1 to 99 days.

➔ The Limit Time-Lapse Recording feature will function when the storage device has enough space to record video data longer than the preset period. When this feature is On, the DVR records over the oldest "time-lapse" video once all available storage has been used in the Recycle mode, so more event video can be saved. Selecting ***Never*** will disable the Limit Time-Lapse Recording function.

NOTE

When the storage device does not have enough space to record video data longer than the preset Limit Time-Lapse Recording period, the DVR records over the oldest video data (time-lapse or event video) as it would in the Recycle mode even if this feature is turned On.

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.

CAUTION	When more than one disk is installed in the unit, the DVR records video on the disks sequentially based on time. And these sequentially recorded videos have the advantage that you can search recorded video easily even though a disk is removed from the unit. However, video recorded in the same time range might be saved on different disks by channel and by the type of recording mode. Once the Limit Time-Lapse Recording is set to On, the DVR will maintain this recording limitation even after disabling the function. If you want the DVR to record video on the disks sequentially based on time again, you must format all disks that are currently used for recording.

4. Highlight the ***Panic Recording*** – ***Duration*** box and set the duration of panic recording.

➔ Panic recording will stop automatically after the preset duration as long as the Panic button is not pressed to stop the panic recording. You can set the dwell from 5 minutes to 1 hour. Select "No Limit" if you want to stop panic recording manually.

Highlighting the ***Panic Recording – ips*** box and pressing the ↵ button allows you to set the images per second for Panic recording. You can select from 1.00 to 25.00 (30.00 for NTSC) images per second.

Highlighting the ***Panic Recording – Quality*** box and pressing the ↵ button allows you to set the recorded image quality for Panic recording. You can select from: Very High, High, Standard and Low.

➔ You can save your ***Record*** settings by highlighting ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.5.2 Schedule screen

Highlight ***Schedule*** in the ***Record*** menu and press the ↵ button.

➔ The ***Schedule*** setup screen appears.

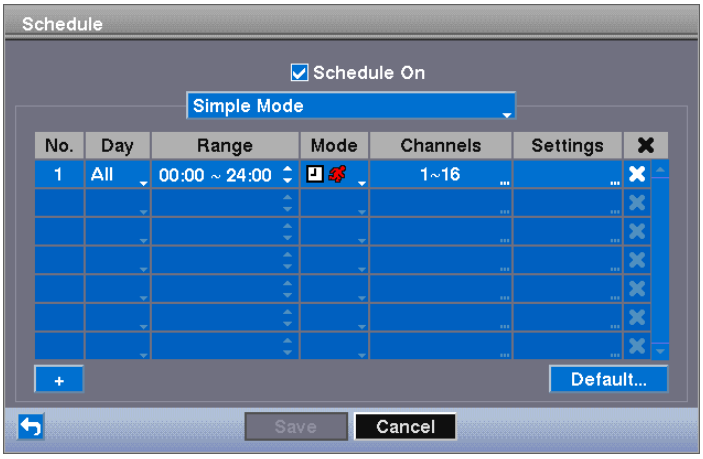


Fig. 27 Schedule (Simple Mode) setup screen

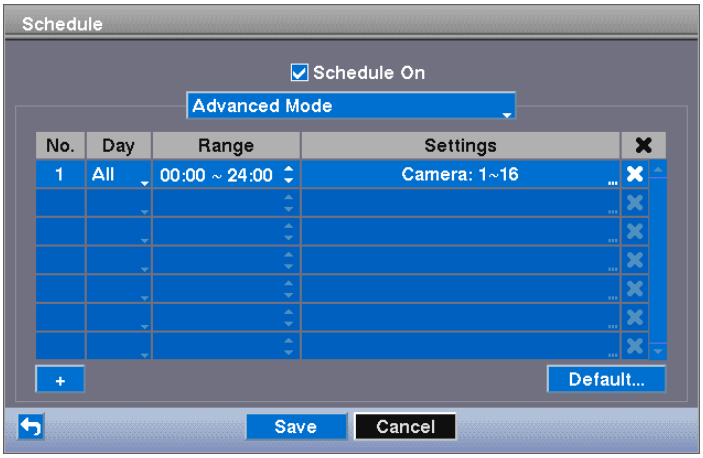


Fig. 28 Schedule (Advanced Mode) setup screen

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 15 minutes.

Highlighting ***Schedule On*** and pressing the ↵ button toggles between On and Off. In the Schedule On mode, the DVR records video based on the schedule established in the ***Schedule*** screen. When turning Schedule recording Off, you will be asked to confirm your decision, and ⊗ displays at the top-left corner of each camera screen. Panic recording will function even when Schedule is turned off. ! displays during panic recording.

Highlight the ***Schedule Mode*** box and press the ↵ button. You can select between Simple Mode and Advanced Mode. Selecting ***Advanced Mode*** allows you to set up individual recording schedule for each event.

NOTE

Changing the schedule mode will reset all event and action statuses.

1. Highlight the "+" and press the ↵ button to add a schedule item.
2. Highlight the box under the ***Day*** heading and press the ↵ button to change the days that the scheduled recording will take place.

   ➔ Choose from: Sun, Mon, Tue, Wed, Thu, Fri, Sat, M~F, Hol and All.
3. Highlight the box under the ***Range*** heading and press the ↵ button to change the time range that the scheduled recording will take place.

   ➔ The smallest time segment you can use is 15 minutes.
4. Highlight the box under the ***Mode*** heading and press the ↵ button to change the recording mode that will be used. (Simple Mode Only).

   ➔ Choose from: No Record, Time, Event and Time & Event.

   When the DVR is in the No Record mode, it will not record during the preset day and time range as long as the Panic button is not pressed. Use the No Record mode when you do NOT want the DVR to record during certain times.

   When the DVR is in the Time mode, the icon displays at the top-left corner of the screen. The DVR will record and displays the icon at the top-left corner of the screen during the scheduled times.

   When the DVR is in the Event mode, the red icon displays at the top-left corner of the screen. The DVR will record and displays the icon at the top-left corner of the screen when any event occurs. When the DVR is in the Pre-Event recoding mode, the yellow icon displays when there is no event, and the DVR is not recording. When the DVR is in the Pre-Event mode, the red and display when any event occurs and the DVR starts recording.

   When the DVR is in the Time & Event mode, the DVR will follow the Time settings and the icon displays at the top-left corner of the screen. The DVR follows the Event settings and the icon displays.
5. Highlight the box under the ***Channels*** heading and press the ↵ button to select which cameras will be recorded. (Simple Mode Only)
6. Highlight the box under the ***Settings*** heading and press the ↵ button to define the recording settings.

   ➔ You can set the ips and quality (ips, Quality and Dwell for Advanced Mode setup) of the recording for any modes you set up in the ***Mode*** column. If you do not set the ips, quality and Dwell in the ***Settings*** column, the DVR will follow the default settings. See below for details.

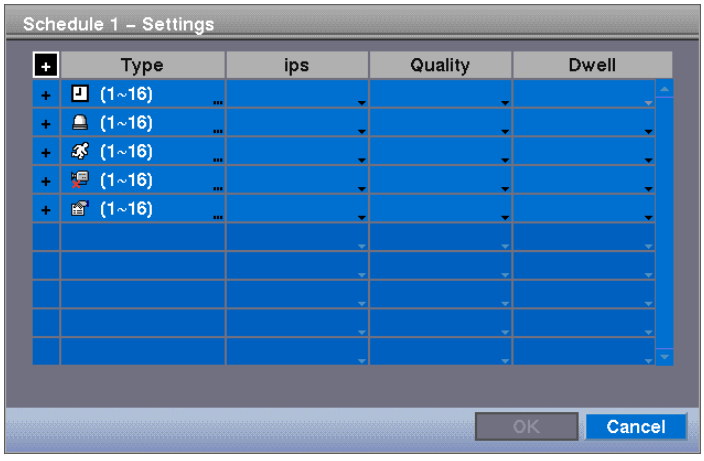


Fig. 29 Schedule – Settings (Advanced Mode) setup screen

NOTE

Descriptions of the Record icons in the *Type* column are as follows:

: Time-lapse (Time), :Alarm-In, : Motion, : Video Loss, : Text-In

NOTE

Channels that are not defined will use the setting values of the previous schedule item.

NOTE

When multiple events are detected at the same time from a specific channel, the DVR will record event video with the high setting values if the ips, Quality, Resolution and Dwell values of events are different from each other. However, the ips will be reset to the supported maximum value when the ips, Quality, Resolution and Dwell are all set to the highest value. (Advanced Mode Only)

7. Highlight the box under the ✖ heading and press the ↵ button to delete the recording settings.

➔ You will be asked to confirm that you want to delete the settings.

8. Highlight ***Default…*** and press the ↵ button.

➔ The ***Default*** screen appears.

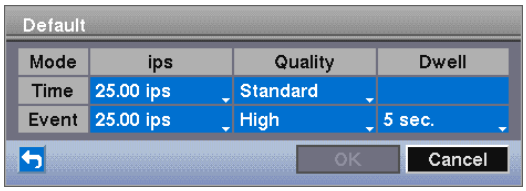


Fig. 30 Default (Advanced Mode) setup screen

Highlighting boxes under ***ips*** and pressing the ↵ button allows you to set the images per second for Time and Event recording. You can select from 1.00 to 25.00 (30.00 for NTSC) images per second.

Highlighting boxes under ***Quality*** and pressing the ↵ button allows you to set the recorded image quality for Time and Event recording. You can select from: Very High, High, Standard and Low.

Highlighting boxes under ***Dwell*** and pressing the ↵ button allows you to set the length of time you would like to record for the associated event. (Advanced Mode Only)

➔ You can save your changes by highlighting ***OK*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.5.3 Pre-Event screen

Highlight ***Pre-Event*** in the ***Record*** menu and press the ↵ button.

➔ The ***Pre-Event*** setup screen appears.

➔ If you do not have ***Event*** set up in the ***Record Schedule***, a message will display alerting you to this fact.

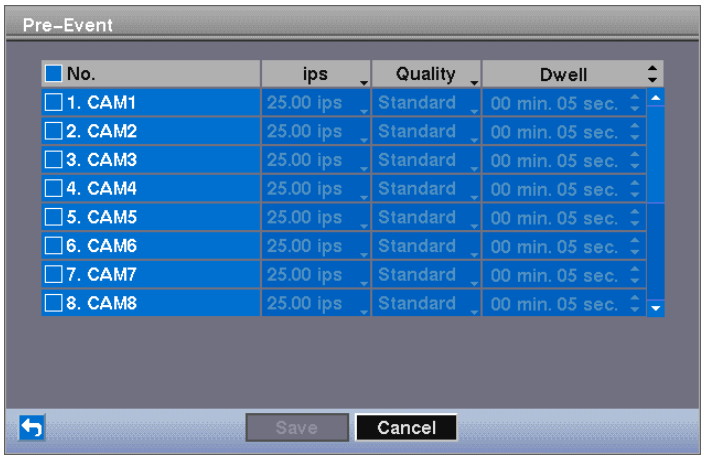


Fig. 31 Pre-Event setup screen

When the DVR is in the Event Record mode it is possible to have it record images before the event occurs. The ***Pre-Event*** 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 1.00 to 25.00 ips (30.00 ips NTSC), and image quality can be selected from Very High, 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 5 seconds to 30 minutes. The longer the dwell set, the fewer maximum ips can be set.

NOTE

When the DVR is in the Time or Time & Event mode, it ignores the pre-event settings and follows the time settings.

➔ You can save your changes by highlighting ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.5.4 Archive screen

Highlight ***Archive*** in the ***Record*** menu and press the ↵ button.

➔ The ***Archive*** setup screen appears.

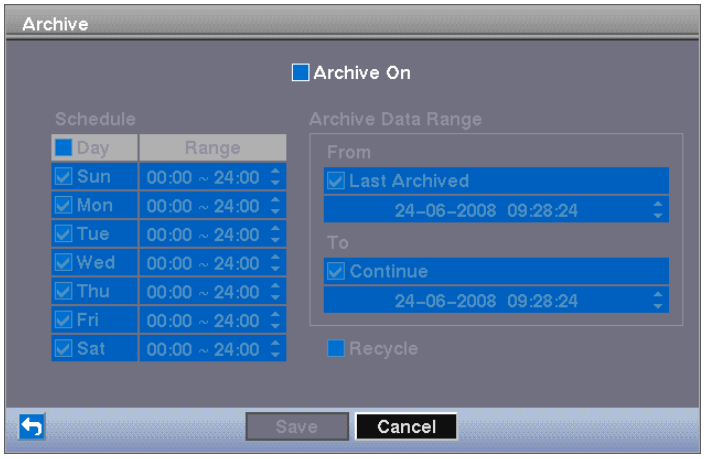


Fig. 32 Archive setup screen

1. Highlight ***Archive On*** and press the ↵ button to toggle between On and Off.

NOTE
If you have not set up a storage device for archiving, a message appears notifying you of this.

2. Select the Days and Time Range you want archived.

You can accept the Archive Data Range by leaving the default checkmarks in the ***Last Archived*** and ***Continue*** boxes.

If you wish to enter specific times and dates in ***From*** and ***To***, toggle the checkmarks Off and then enter the time and date.

3. Highlight ***Recycle*** and press the ↵ button to toggle between On and Off.

➔ When ***Recycle*** is On and the storage device is full, the newest archived video data will overwrite the oldest archived data.

➔ When ***Recycle*** is Off, the DVR will stop archiving video data until more space is made available.

➔ You can save your changes by highlighting ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.6 Network setup

In the main screen, use the Left or Right arrow buttons to display the ***Network*** menu.

Fig. 33 Network menu

8.6.1 Network screen

Highlight ***Network*** in the ***Network*** menu and press the ↵ button.

➔ The ***Network*** setup screen displays.

➔ You will be able to change the ***Network***, ***Mail***, ***Callback*** and ***Web Client*** settings.

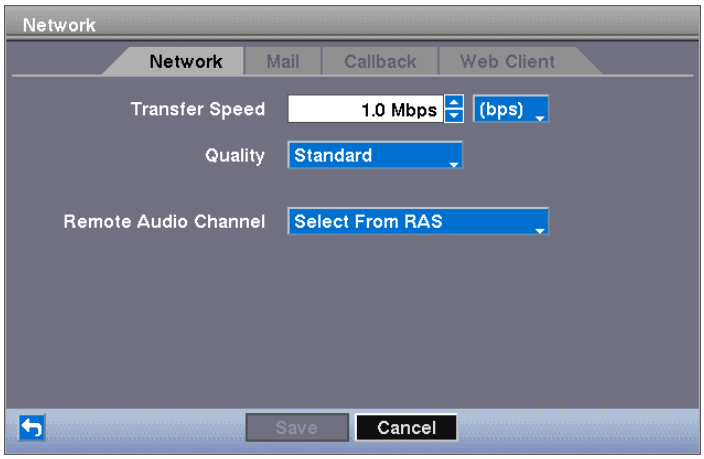


Fig. 34 Network setup screen

Network

1. Highlight the first box beside ***Transfer Speed***.
2. Press the Up and Down arrow buttons to set the Transfer Speed from 50 Kbps to 100 Mbps.
3. Highlight the second box beside ***Transfer Speed***.
   ➔ You can select the unit of measure for the transfer speed between: bps and ips.
4. Press the ↵ button to set the transfer speed.
5. Highlight the box beside ***Quality*** and press the ↵ button.
   ➔ You can select the quality from: Very High, High, Standard and Low.
6. Press the ↵ button to set the Quality.

NOTE

The higher ***Quality*** settings require higher ***Transfer Speed*** settings. The transfer speed you set is the maximum speed. Depending on the network environment, this speed may not be achieved.

7. The DVR supports two-way audio communications between a local system and a PC running RAS.
   ➔ Highlighting the box beside ***Remote Audio Channel*** and pressing the ↵ button allows you to select the audio channel that sends audio to the remote site. Selecting ***Select From RAS*** will send audio of the channel selected from RAS.

NOTE
Depending on network conditions, audio might be interrupted or out of synchronization during transmission.

8. Highlight the ***Mail*** tab, and the ***Mail*** screen displays.
   ➔ The DVR can be set up to send an email when an event occurs.

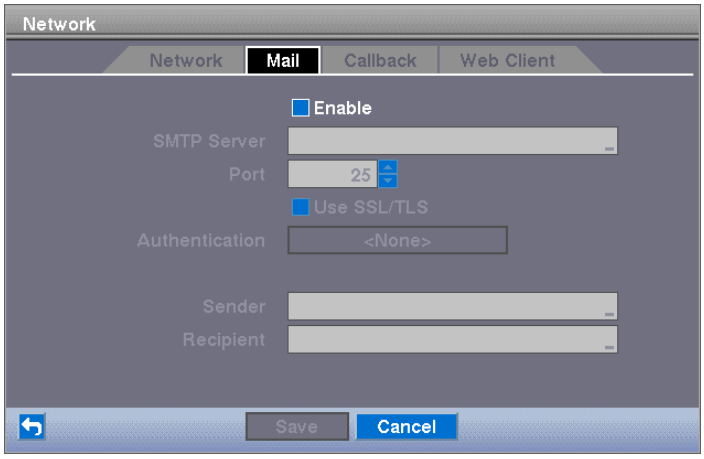


Fig. 35 Mail setup screen

Mail

1. Highlight ***Enable*** and press the ↵ button to toggle between On and Off.
   ➔ You will only be able to change the settings if ***Mail*** is enabled.
2. Highlight the box beside ***SMTP Server*** and press the ↵ button.
   ➔ A virtual keyboard appears that you can use to enter the IP address or domain name of the SMTP server.

NOTE
You will need to get the IP Address or domain name of the SMTP Server from your network administrator.

NOTE
You can use the domain name instead of IP address if you already set up the DNS Server when setting up the LAN.

3. Highlight the box beside ***Port*** and press the ↵ button.
4. Use the arrow buttons to enter the SMTP Server port number obtained from your system administrator. The default port number is 25.
5. Highlight ***Use SSL/TLS*** and press the ↵ button to toggle between On and Off.
   ➔ When it is On, the DVR can send an email via an SMTP server requiring SSL (Secure Sockets Layer) authentication.

6. Highlight the box beside ***Authentication*** and press the ↵ button.
   ➔ An ***Authentication*** screen appears.
7. Highlight ***Use*** and press the ↵ button to toggle between On and Off.
8. Highlight the box beside ***User/Password*** and press the ↵ button.
   ➔ A virtual keyboard appears allowing you to enter the user ID and password.

Fig. 36 Authentication setup screen

9. Highlight the box beside ***Sender*** and enter the sender's e-mail address.
10. Use the virtual keyboard to enter the e-mail address.

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

11. Highlight the box beside ***Recipient*** and enter the recipient's e-mail address.
12. Use the virtual keyboard to enter the e-mail address.
13. Highlight the ***Callback*** tab.
    ➔ The ***Callback*** screen displays.
    ➔ The DVR can be set up to contact a computer running RAS (Remote Administration System) when an event occurs.

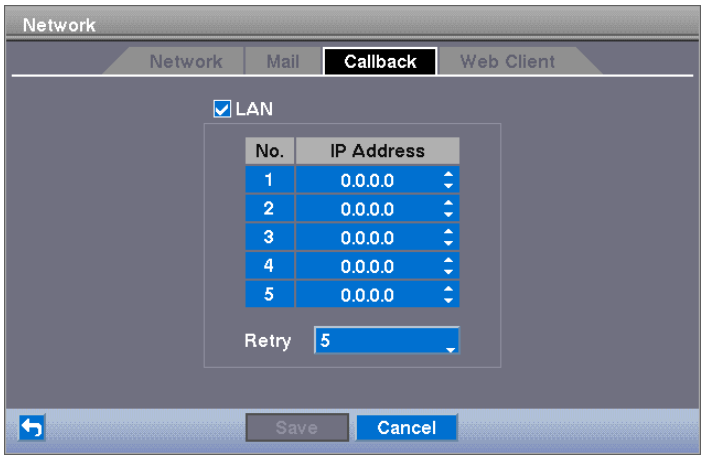


Fig. 37 Callback setup screen

Callback

1. Highlight ***LAN*** and press the ↵ button to toggle between On and Off.
   ➔ When LAN is turned On you can change the IP addresses.
2. Highlight the ***IP Address*** box that you want to change and press the ↵ button.
3. Use the arrow buttons to enter the IP address of the computer you want contacted during an event.
   ➔ You can enter up to five IP addresses.

4. Highlight the box beside ***Retry*** and enter the number of times you would like the DVR to try contacting the computer running RAS.
   ➔ You can select from 1 to 10 retries.
   ➔ You can save your notification changes by highlighting ***Save*** and pressing the ↵ button.
   ➔ Selecting ***Cancel*** exits the screen without saving the changes.
5. Highlight the ***Web Client*** tab.
   ➔ The ***Web Client*** screen displays.

8.6.2 Web Client Setup

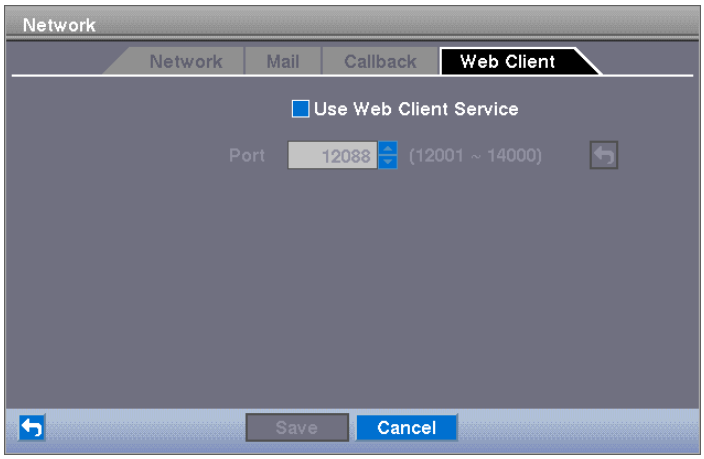


Fig. 38 Web Client setup screen

Web Client

1. Highlight ***Use Web Client Service*** and press the ↵ button to toggle between On and Off. See the Appendix, Section 12.3: Web Client for detailed descriptions of the Web Client service.
2. Highlight the box beside ***Port*** and press the ↵ button.
3. Set the port number used when accessing Web Client by using the Up and Down arrow buttons to increase or decrease the numbers.
   ➔ You can save your Network changes by highlighting ***Save*** and pressing the ↵ button.
   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.6.3 LAN setup screen

1. Highlight ***LAN*** in the ***Network*** menu and press the ↵ button.

   ➔ The ***LAN*** setup screen displays.

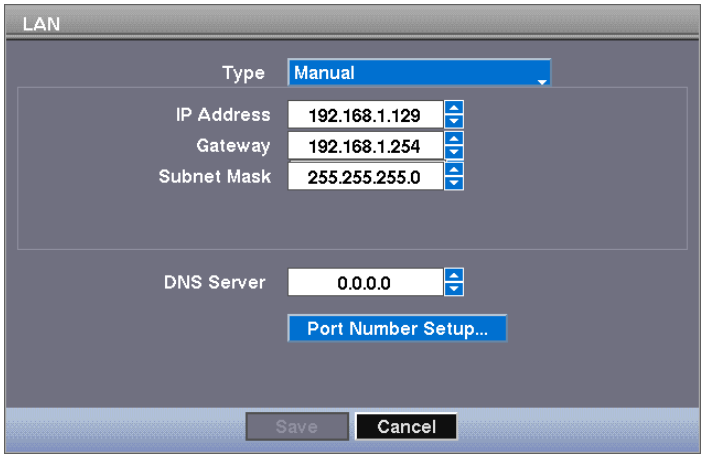


Fig. 39 LAN (Manual) setup screen

2. Highlight the box beside ***Type*** and press the ↵ button.

   ➔ You can select the type of network configuration from: Manual, DHCP and ADSL (with PPPoE).

3. Select the desired type and press the ↵ button.

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

NOTE

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

4. 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

5. Highlight the box beside ***DNS Server*** and press the Up and Down arrow buttons to set the IP address of the DNS server.
6. Highlight the ***Port Number Setup…*** box and press the ↵ button.

   ➔ The ***Port Number Setup*** screen appears.

NOTE

You will need to get the appropriate Port Numbers for each RAS and Web Client related program (Admin, Callback, Watch, Search and Audio) from your network administrator.

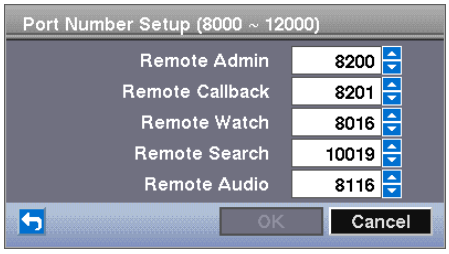


Fig. 40 Port Numbers setup screen

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

The factory default port settings are:

Remote Admin:	8200
Remote Callback:	8201
Remote Watch:	8016
Remote Search:	10019
Remote Audio:	8116

NOTE
The system restarts automatically after changing the port settings.

NOTE
Do NOT use the same port number for two different programs, otherwise, the DVR cannot be connected with the PC running RAS or Web Client.

NOTE
When changing the port settings, you must change the port settings on the PC running RAS or Web Client as well. Refer to the RAS manual for details.

➔ Selecting "DHCP" from the ***Type*** and highlighting the ***Save*** button reads the current IP address of the DVR configured by DHCP (Dynamic Host Configuration Protocol) network.

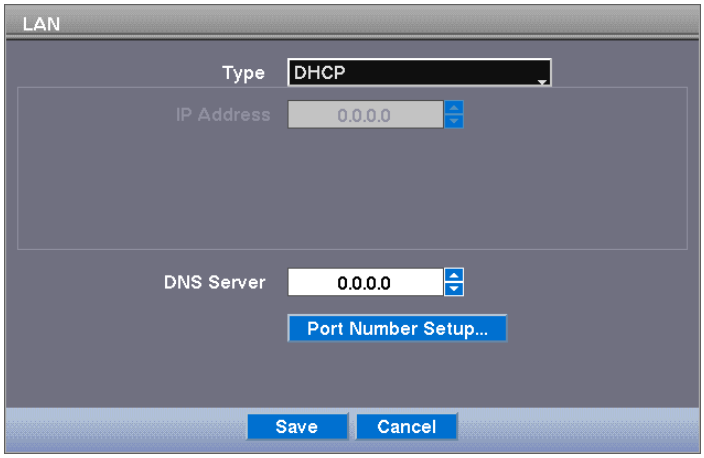


Fig. 41 LAN (DHCP) setup screen

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

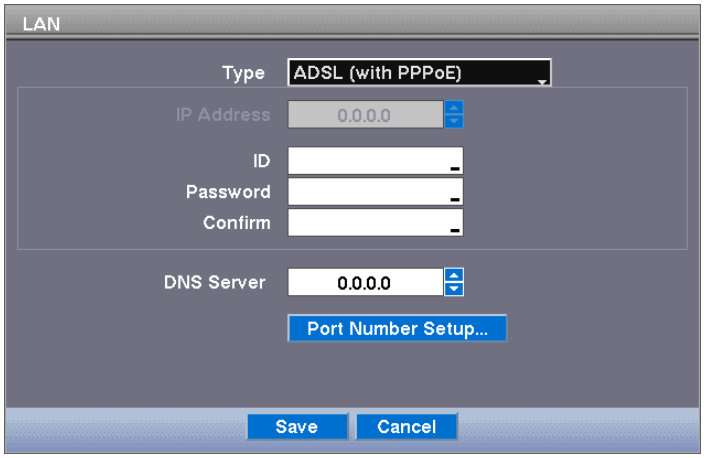


Fig. 42 LAN (ADSL) setup screen

8. Highlight the box beside ***ID*** and press the ↵ button.

➔ A virtual keyboard appears allowing you to enter the ID for ADSL connection.

9. Highlight the box beside ***Password*** and press the ↵ button.

➔ A virtual keyboard appears allowing you to enter the password for ADSL connection.

NOTE

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

NOTE

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

8.7 Event settings

Your DVR can be set to detect many different events. You can also determine how it reacts to these events.

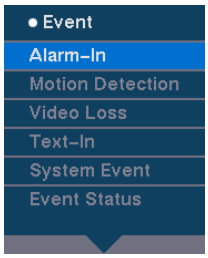


Fig. 43 Event menu

8.7.1 Alarm-In screen

Highlight ***Alarm-In*** in the ***Event*** menu and press the ↵ button.

➔ The ***Alarm-In*** setup screen appears.

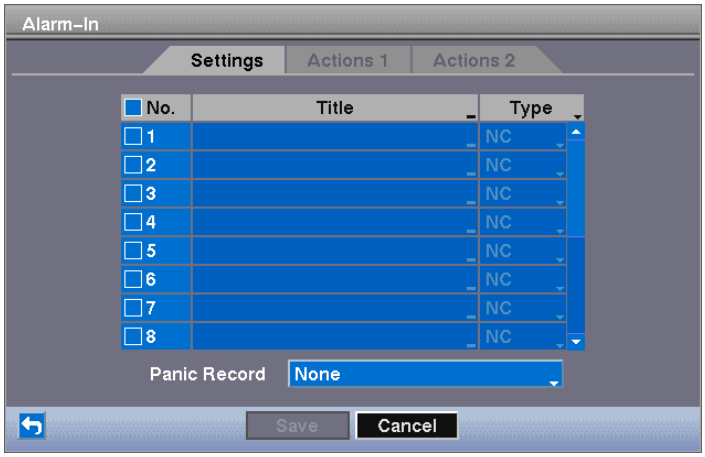


Fig. 44 Alarm-In Settings screen

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*** screen. You can turn each input On or Off by highlighting the alarm number and pressing the ↵ button.

Each input can be given a title.

Settings

1. Highlight the desired ***Title*** box and press the ↵ button.
   - ➔ A virtual keyboard appears allowing you to enter a title name.
   - ➔ Each input can be set as NO (normally open) or NC (normally closed).
   - ➔ You can set up the DVR to start panic recording whenever it senses an input on one of its alarm input connectors.
2. Highlight the box beside ***Panic Record*** and press the ↵ button.
   - ➔ A list of Alarm Inputs appears, and you can select which alarm input you want associated with panic recording. The DVR will continue panic recording until an input on the selected alarm input is released as long as the Panic button is not pressed to stop the panic recording.

3. Highlight the ***Actions 1*** and ***Actions 2*** tabs.
   ➔ The ***Actions 1*** and ***Actions 2*** setup screens appear.

Fig. 45 Alarm-In Actions 1 screen

Actions 1

You can set the actions the DVR will take whenever it senses an input on one of its alarm input connectors.

1. Highlight the desired box under the ***Record*** heading, and press the ↵ button.
   ➔ A list of cameras appears.
2. Select the cameras that you want the DVR to record whenever it detects an input on the associated alarm input.

NOTE
For the ***Record*** action, the camera you select should be set to the Event or Time & Event recording mode in the ***Record Schedule*** setup screen.

3. Highlight the desired box under the ***Alarm-Out*** heading, and press the ↵ button.
   ➔ A list of Alarm Outputs and Beep appear.
4. Select the Alarm Output connectors that you would like to activate whenever the DVR detects an input on the associated alarm input.
   You can also set the DVR's internal buzzer to sound.

NOTE
For the ***Alarm-Out*** action, the alarm output and beep you select should be set to the Event mode in the ***Alarm-Out*** setup screen (***Schedule*** tab).

5. Highlight the desired box under the ***Notify*** heading, and press the ↵ button.
   ➔ The ***Alarm-In Notify*** menu appears.

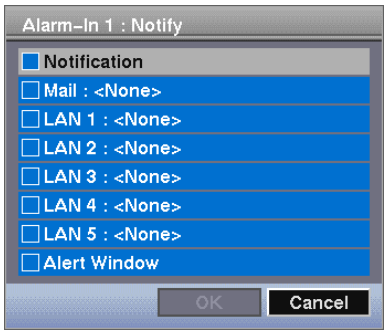


Fig. 46 Alarm-In Notify menu

You can toggle the entire list On and Off by highlighting ***Notification*** and pressing the ↵ button. You can toggle the individual items On and Off by highlighting that item and pressing the ↵ button.

6. Highlight ***OK*** and press the ↵ button to accept your changes.

NOTE

For the ***Notify*** action, the notify item you select should be enabled in the ***Notification*** setup screen and the DVR should be registered in the RAS (Remote Administration System).

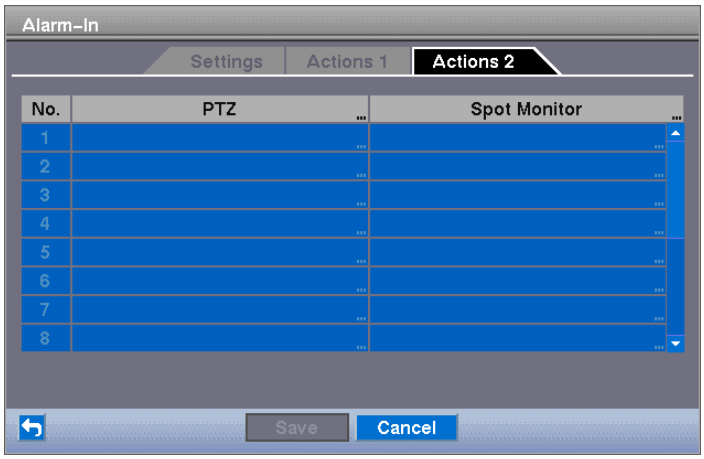


Fig. 47 Alarm-In Action 2 screen

Actions 2

1. Highlight the desired box under the ***PTZ*** heading, and press the ↵ button.
   ➔ A list of PTZ presets appear.
2. Select the preset position for each PTZ camera, where you want PTZ cameras to move to whenever the DVR detects an input on the associated alarm input.
3. Highlight the desired box under the ***Spot Monitor*** heading, and press the ↵ button.
   ➔ A list of SPOT monitors and cameras appears.

   Each SPOT monitor can be associated with a camera. The DVR will display the associated camera on the SPOT monitor whenever it detects an input on the associated alarm input.

   ➔ You can save your ***Alarm-In*** changes by highlighting ***Save*** and pressing the ↵ button.

   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.7.2 Motion Detection screen

Highlight ***Motion Detection*** in the ***Event*** menu and press the ↵ button.

➔ The ***Motion Detection*** setup screen appears.

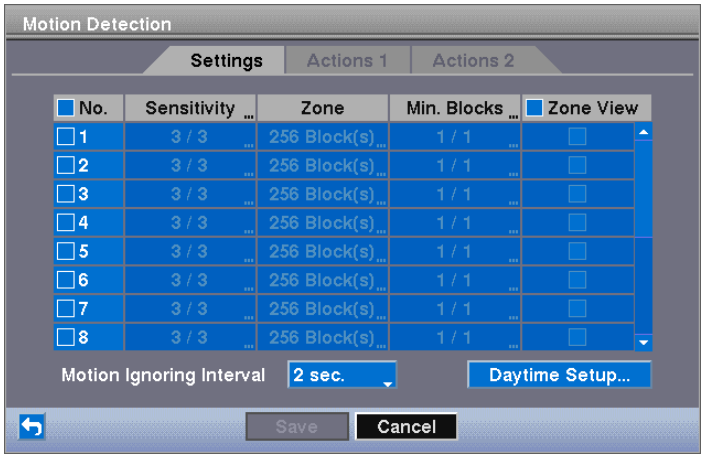


Fig. 48 Motion Detection Settings screen

Settings

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

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

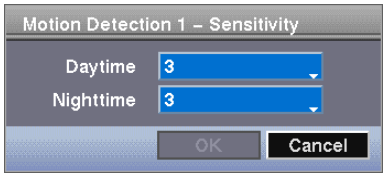


Fig. 49 Motion Detection Sensitivity screen

You can adjust the minimum number of detection blocks that must be activated to trigger a motion alarm. Highlighting the box under the ***Min. Blocks*** heading and pressing the ↵ button allow you to adjust the minimum number of detection blocks for ***Daytime*** and ***Nighttime*** independently. Smaller numbers provide greater sensitivity because fewer detection blocks must be activated.

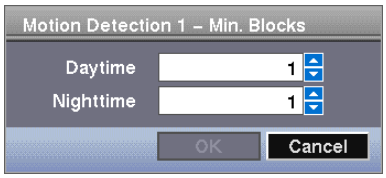


Fig. 50 Motion Detection Min. Blocks screen

Turning ***Zone View*** 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. 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 box under the ***Zone*** heading, and press the ↵ button.

➔ The ***Motion Detection Zone*** screen displays.

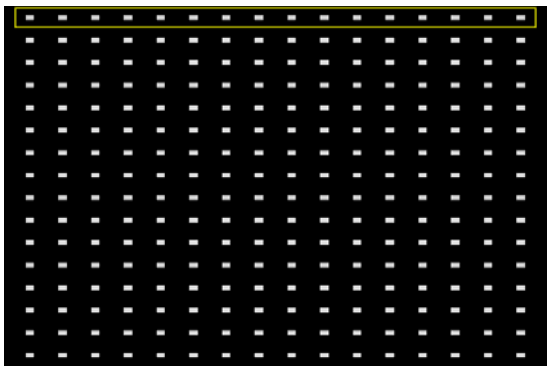


Fig. 51 Motion Detection Zone screen

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 8 or 16 individual block groups (8- 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:

Fig. 52 Motion Detection Zone menu

Select	Activates highlighted blocks to detect motion.
Clear	Deactivates highlighted blocks so that they will not detect motion.
Reverse	Activates inactive highlighted blocks and deactivates active highlighted blocks.
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.
OK	Accepts changes and closes Zone setup.
Cancel	Exits Zone setup without saving changes.

You can control excessive event logging and remote notification of motions detected after the motion dwell time by adjusting the motion ignoring dwell intervals.

Highlight the box beside ***Motion Ignoring Interval*** and press the ↵ button.

➔ A list of intervals ranging from 1 to 5 seconds or "Never" appears.

➔ The DVR will not log and notify motion events occurred during the preset interval range.

NOTE

The record action for motion events will not be affected by the ***Motion Ignoring*** function.

Highlighting ***Daytime Setup*** and pressing the ↵ button allow you to set up the ***Daytime*** range.

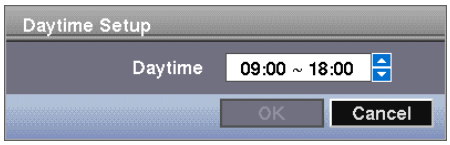


Fig. 53 Daytime Setup screen

1. Highlight the box beside ***Daytime*** and press the ↵ button.
2. Use the Up and Down arrow buttons to set the ***Daytime*** range.
   ➔ The DVR will consider the remaining time range as the Nighttime.
3. Highlight the ***Actions 1*** and ***Actions 2*** tabs.
   ➔ The ***Motion Detection Actions 1*** and ***Actions 2*** screens display.

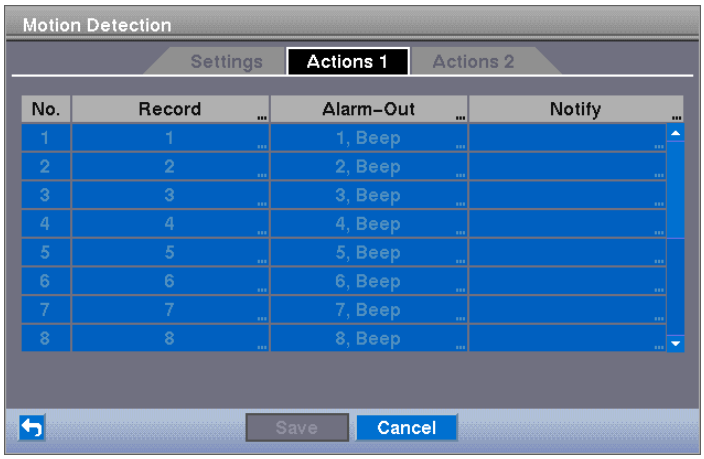


Fig. 54 Motion Detection Actions 1 screen

Actions 1

The DVR can be set to react to motion detection differently for each camera. Each camera can be associated with another camera, trigger an Alarm-Out connector, sound the DVR's internal buzzer, notify a number of different devices, and/or move PTZ cameras to preset positions.

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

1. Highlight the box under the ***Record*** heading and press the ↵ button.
   ➔ A list of cameras appears.
   You can associate as many cameras with that camera as you wish. If the DVR detects motion on the selected camera, it starts recording video from all the associated cameras.

NOTE
For the ***Record*** action, the camera you select should be set to the Event or Time & Event recording mode in the ***Record Schedule*** setup screen.

2. Highlight the box under the ***Alarm-Out*** heading and press the ↵ button.
   ➔ A list of Alarm Outputs appears.

You can associate as many Alarm-Outs with that camera as you wish. When the DVR detects motion on the selected camera's input, it triggers output signals on all the associated Alarm-Out connectors. You can also have the DVR's internal buzzer sound if motion is detected on the selected camera.

NOTE
For the ***Alarm-Out*** action, the alarm output and beep you select should be set to the Event mode in the ***Alarm-Out*** setup screen (***Schedule*** tab).

3. Highlight the box under ***Notify*** heading and press the ↵ button.

   You can toggle the entire list On and Off by highlighting ***Notification*** and pressing the ↵ button. You can toggle the individual items On and Off by highlighting that item and pressing the ↵ button.

4. Highlight ***OK*** and press the ↵ button to accept your changes.

NOTE
For the ***Notify*** action, the notify item you select should be enabled in the ***Notification*** setup screen and the DVR should be registered in the RAS (Remote Administration System).

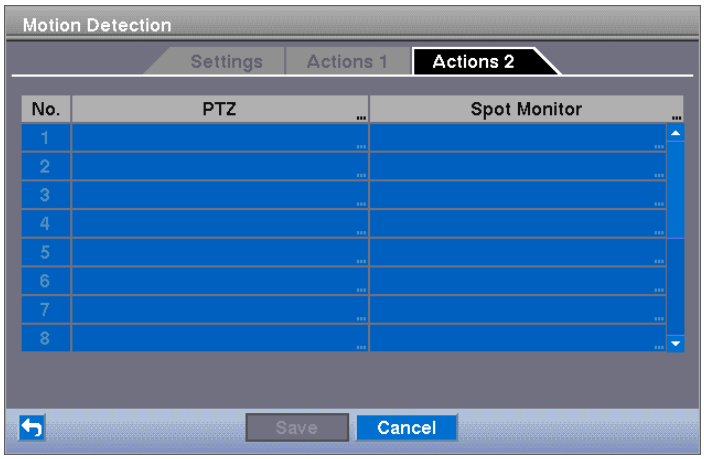


Fig. 55 Motion Detection Action 2 screen

Actions 2

1. Highlight the desired box under the ***PTZ*** heading, and press the ↵ button.
   ➔ A list of PTZ presets appear.
2. Select the preset position for each PTZ camera, where you want PTZ cameras to move to whenever the DVR detects motion on the selected camera's input.
3. Highlight the desired box under the ***Spot Monitor*** heading, and press the ↵ button.
   ➔ A list of SPOT monitors and cameras appears.

   Each SPOT monitor can be associated with a camera. The DVR will display the associated camera on the SPOT monitor whenever it detects motions on the selected camera.

   ➔ You can save your ***Motion Detection*** changes by highlighting ***Save*** and pressing the ↵ button.

   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.7.3 Video Loss screen

Highlight ***Video Loss*** in the ***Event*** menu and press the ↵ button.

➔ The ***Video Loss*** setup screen appears.

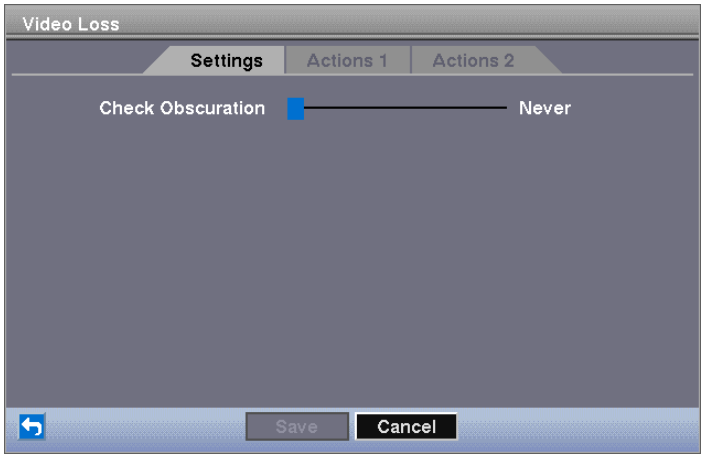


Fig. 56 Video Loss Settings screen

The DVR checks to see if anything is obscuring the camera.

Settings

1. Highlight the slider bar beside ***Check Obscuration***, and use the Left and Right arrow buttons to adjust the setting.
   ➔ The sensitivity can be set from "Never" to 126 (extremely sensitive).
2. Highlight the ***Actions 1*** and ***Actions 2*** tabs.
   ➔ The ***Video Loss Actions 1*** and ***Actions 2*** screens display.

Fig. 57 Video Loss Actions 1 screen

Actions 1

The DVR can be set to react to video loss differently for each camera. Each camera can be associated with another camera, trigger an Alarm-Out connector, sound the DVR's internal buzzer, notify a number of different devices, and/or move PTZ cameras to preset positions.

1. Highlight the box under the ***Record*** heading and press the ↵ button.
   ➔ A list of cameras appears.

You can associate as many cameras with that camera as you wish. If the DVR detects video loss on the selected camera, it starts recording video from all the associated cameras.

NOTE
For the ***Record*** action, the camera you select should be set to the Event or Time & Event recording mode in the ***Record Schedule*** setup screen.

2. Highlight the box under the ***Alarm-Out*** heading and press the ↵ button.
   ➔ A list of Alarm Outputs appears.
   You can associate as many Alarm-Outs with that camera as you wish. When the DVR detects video loss on the selected camera, it will trigger output signals on all the associated Alarm-Out connectors. You can also have the DVR's internal buzzer sound if video is lost on the selected camera.

NOTE
For the ***Alarm-Out*** action, the alarm output and beep you select should be set to the Event mode in the ***Alarm-Out*** setup screen (***Schedule*** tab).

3. Highlight the box under the ***Notify*** heading and press the ↵ button.
   You can toggle the entire list On and Off by highlighting ***Notification*** and pressing the ↵ button. You can toggle the individual items On and Off by highlighting that item and pressing the ↵ button.
4. Highlight ***OK*** and press the ↵ button to accept your changes.

NOTE
For the ***Notify*** action, the notify item you select should be enabled in the ***Notification*** setup screen and the DVR should be registered in the RAS (Remote Administration System).

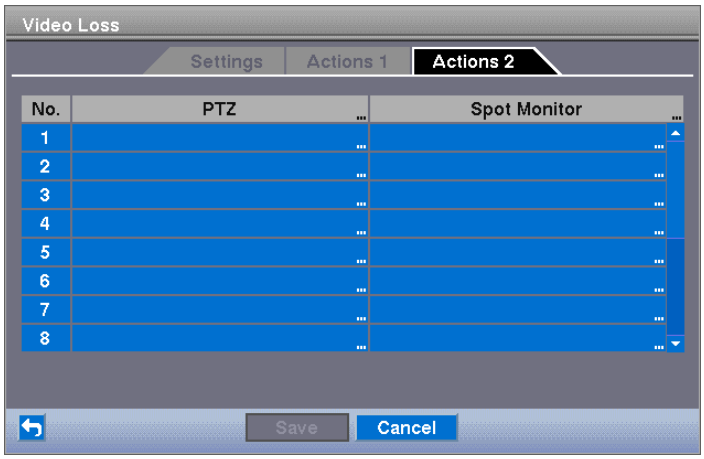


Fig. 58 Video Loss Actions 2 screen

Actions 2

1. Highlight the desired box under the ***PTZ*** heading, and press the ↵ button.
   ➔ A list of PTZ presets appear.
2. Select the preset position for each PTZ camera, where you want PTZ cameras to move to when the DVR detects video loss on the selected camera's input.
3. Highlight the box under the ***Spot Monitor*** heading and press the ↵ button.
   ➔ A list of SPOT monitors and cameras appears.

Each SPOT monitor can be associated with a camera. The DVR will display the associated camera on the SPOT monitor whenever it detects video loss on the selected camera.

➔ You can save your ***Video Loss*** changes by highlighting ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.7.4 Text-In screen

Highlight ***Text-In*** in the ***Event*** menu and press the ↵ button.

➔ The ***Text-In*** setup screen appears.

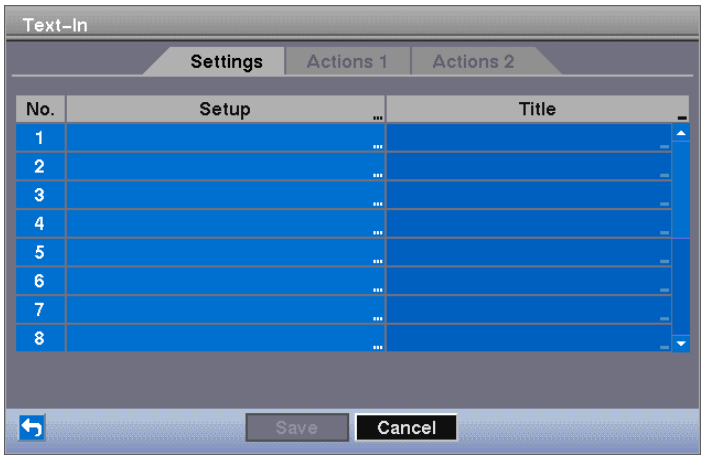


Fig. 59 Text-In Settings screen

Settings

The DVR can be set to react to text input from devices such as ATMs (Automated Teller Machines) and POS (Point of Sale; i.e., cash registers). This screen allows you to configure the DVR for each text-in device.

1. Highlight the box under the ***Setup*** heading, and press the ↵ button.

➔ Selecting the ***Setup*** heading changes all the parameters excluding ***Port*** settings of all the text input channels.

NOTE
The system performance might be affected when a large quantity of text inputs are detected from several channels at the same time.

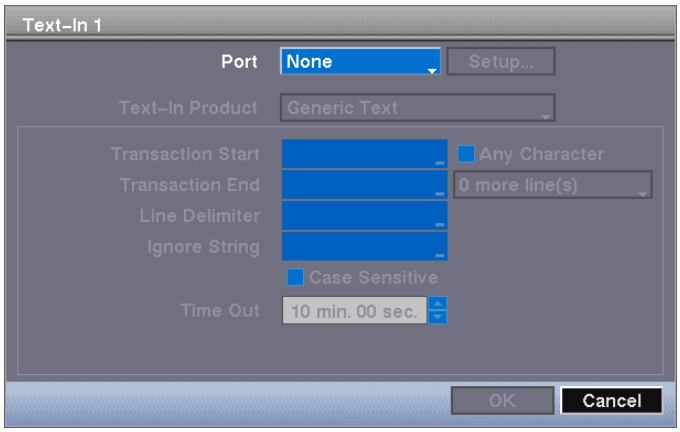


Fig. 60 Text-In Device Settings screen

2. Highlight the box beside ***Port***, and press the ↵ button.
3. Select from None, RS232, RS485 and USB-Serial (1~8).

NOTE
If you have set the Port as None, you will not be able to make any changes to the screen.

NOTE
When using the USB to serial text-in device, do **not** remove the USB cable from the port while the system is running.

4. Highlight ***Setup…***, and press the ↵ button.
5. Use the ATM or POS manufacturer's recommended settings when configuring the RS232, RS485 or USB-Serial ports.
6. Highlight the box beside ***Text-In Product***, and press the ↵ button.
7. Select your device from the list.

NOTE
The following description is for a Generic Text Device. The screen changes for different types of text input devices, and there will be different parameter boxes for you to enter information.

8. Highlight the box beside ***Transaction Start***, and press the ↵ button.
9. Use the virtual keyboard to enter the ***Transaction Start*** string. Refer to the device manufacturer's documentation for the text string that the device first sends when a transaction starts.
   ➔ If you want the DVR to react to any character sent from the text input device, you will want to turn On ***Any Character***.
10. Highlight ***Any Character***, and press the ↵ button to toggle between On and Off.

NOTE
If ***Any Character*** is turned On, you will not be able to enter any text in the ***Transaction Start*** box.

11. Highlight the box beside ***Transaction End***, and press the ↵ button.
12. Use the virtual keyboard to enter the ***Transaction End*** string.
    Refer to the device manufacturer's documentation for the text string that the device sends when a transaction ends.
13. Highlight the ***more line(s)*** box, and press the ↵ button.
14. Select the number of additional lines of text that you want the DVR to record.
    ➔ You can choose from 0 to 10.
15. Highlight the box beside ***Line Delimiter***, and press the ↵ button.
16. Use the virtual keyboard to enter the character(s) that the device uses to indicate the end of a line.
    ➔ Special characters can be created using ^ and a capital letter; e.g., ^J for NL (New Line), ^M for CR (Carriage Return).
    Refer to the device manufacturer's documentation for Line Delimiter character(s).
17. Highlight the box beside ***Ignore String***, and press the ↵ button.
18. Use the virtual keyboard to enter any strings of text that you want the DVR to ignore.

Refer to the device manufacturer's documentation for text strings that the device sends during transactions, so you will know which ones you do not want recorded.

19. Highlight the ***Case Sensitive*** box, and press the ↵ button to toggle between On and Off.

Refer to the device manufacturer's documentation to determine if the text strings are Case Sensitive.

➔ If the device distinguishes between upper and lower case letters, make certain the ***Case Sensitive*** box is turned On.

20. Highlight the box beside ***Time Out***, and press the ↵ button.

21. Set the length of time to wait for the new text string.

➔ The DVR will consider a transaction complete if no new text strings are entered between the last text input and the dwell time out. You can adjust the Time Out dwell from 5 seconds to 15 minutes.

22. Highlight the ***Actions 1*** and ***Actions 2*** tabs.

➔ The ***Text-In Actions 1*** and ***Actions 2*** screens display.

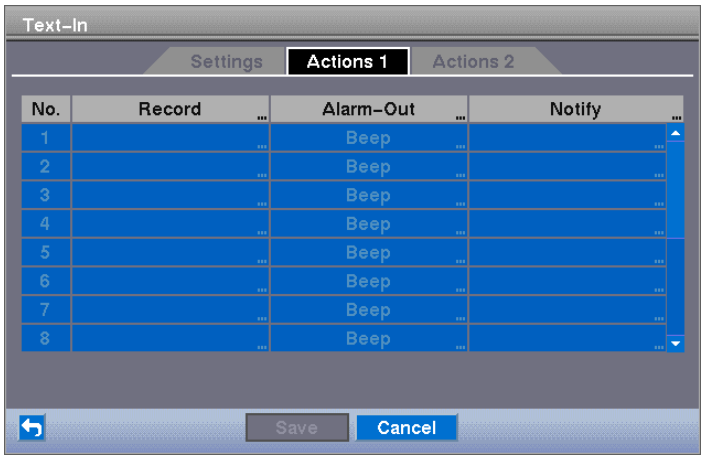


Fig. 61 Text-In Actions 1 screen

Actions 1

The DVR can be set to react to text input. Text input can be associated with cameras, trigger an Alarm-Out connector, sound the DVR's internal buzzer, notify a number of different devices, and/or move PTZ cameras to preset positions.

1. Highlight the box under the ***Record*** heading and press the ↵ button.

➔ A list of cameras appears.

You can associate as many cameras with the Text Input as you wish. If the DVR detects text input, it starts recording video from all the associated cameras.

NOTE

For the ***Record*** action, the camera you select should be set to the Event or Time & Event recording mode in the ***Record Schedule*** setup screen.

2. Highlight the box under the ***Alarm-Out*** heading and press the ↵ button.

➔ A list of Alarm Outputs appears.

You can associate as many Alarm-Outs with the Text Input as you wish. When the DVR detects text input, it triggers output signals on all the associated Alarm-Out connectors. You can also have the DVR's internal buzzer sound if text input is detected.

NOTE

For the ***Alarm-Out*** action, the alarm output and beep you select should be set to the Event mode in the ***Alarm-Out*** setup screen (***Schedule*** tab).

3. Highlight the box under the ***Notify*** and press the ↵ button.

   You can toggle the entire list On and Off by highlighting ***Notification*** and pressing the ↵ button. You can toggle the individual items On and Off by highlighting that item and pressing the ↵ button.

4. Highlight ***OK*** and press the ↵ button to accept your changes.

NOTE

For the ***Notify*** action, the notify item you select should be enabled in the ***Notification*** setup screen and the DVR should be registered in the RAS (Remote Administration System).

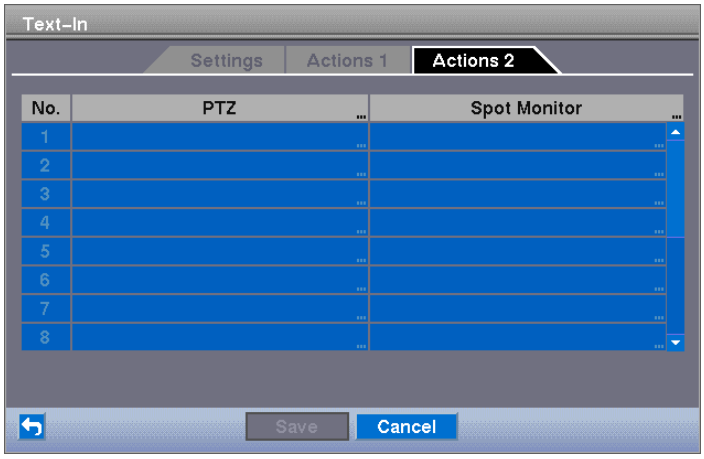


Fig. 62 Text-In Actions 2 screen

Actions 2

1. Highlight the desired box under the ***PTZ*** heading, and press the ↵ button.
   ➔ A list of PTZ presets appear.
2. Select the preset positions for each PTZ camera, where you want PTZ cameras to move to when the DVR detects text input.
3. Highlight the box beside ***Spot Monitor*** and press the ↵ button.
   ➔ A list of SPOT monitors and cameras appears.

   Each SPOT monitor can be associated with a camera. The DVR will display the associated camera on the SPOT monitor whenever it detects an input on the selected text-in device.

   ➔ You can save your ***Text-In*** changes by highlighting ***Save*** and pressing the ↵ button.

   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.7.5 System Event screen

Highlight ***System Event*** in the ***Event*** menu and press the ↵ button.

➔ The ***System Event*** setup screen appears.

Fig. 63 Health Check screen

Health Check

The DVR can be configured to run self-diagnostics and report the results.

Highlighting the box beside ***System*** and pressing the ↵ button allows you to select the interval that you want the DVR to run self-diagnostics on the system. You can select from 1 hr. to 30 days or "Never".

1. Highlight the ***Setup...*** box beside ***Check Recording*** and press the ↵ button.

   ➔ The ***Check Recording*** screen appears.

2. Highlighting ***Schedule On*** and pressing the ↵ button toggles On and Off.

   ➔ When set to On, you can select the day, time range and interval that you want the DVR to run self-diagnostics on the recorder. The ***Interval*** can be selected from 1 min. to 7 days or "Never". The ✖ box allows you to delete a check recording schedule.

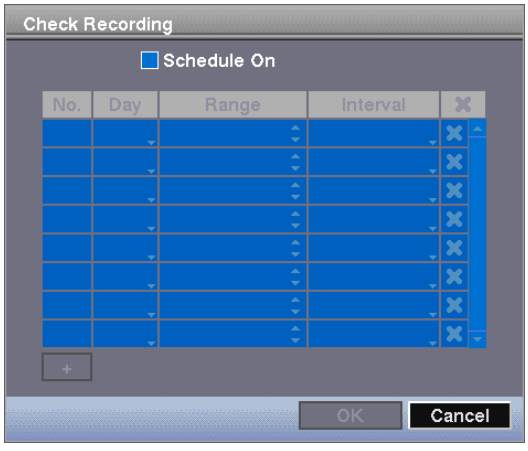


Fig. 64 Check Recording screen

Highlighting the box under the ***Interval*** heading beside each alarm-in and pressing the ↵ button allows you to change the interval that you want the DVR to run self-diagnostics on Alarm Inputs. You can select from 1 hr. to 30 days or Never.

3. Highlight the ***Storage*** tab and the ***Storage*** screen displays.

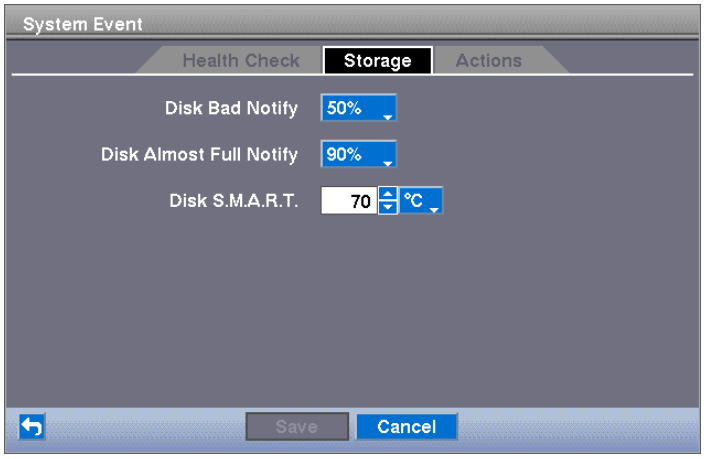


Fig. 65 Storage screen

Storage

1. Highlight the box beside ***Disk Bad Notify***, and press the ↵ button.
2. Select percentage level of bad disk sectors at which you want the DVR to trigger an alert. Percentage levels range from 10% to 90%.
3. Highlight the box beside ***Disk Almost Full Notify***, and press the ↵ button.
4. Select the percentage level of disk usage at which you want the DVR to trigger an alert. Percentage levels range from 80% to 99%.
5. Highlight the first box beside ***Disk S.M.A.R.T.***, and press the ↵ button.
6. Use the Up and Down arrow buttons to scroll through the numbers. Refer to the hard disk drive manufacturer's documentation for the correct temperature setting.

   ➔ If the temperature of hard disk drive exceeds the defined threshold, the system triggers an alert.
7. Highlight the second box beside ***Disk S.M.A.R.T.***, and press the ↵ button.
8. Select either ºC (Celsius) or ºF (Fahrenheit), and press the ↵ button.
9. Highlight ***OK***, and press the ↵ button to accept the changes.

   ➔ Selecting ***Cancel*** exits the screen without saving the changes.
10. Highlight the ***Actions*** tab.

    ➔ The ***System Event - Actions*** screen displays.

Fig. 66 System Event - Actions screen

Actions

The DVR can be set to react to system events. System events can be associated with an Alarm-Out connector, sound the DVR's internal buzzer, and/or notify a number of different devices.

1. Highlight the ***Alarm-Out*** box beside the desired event (Check Recording, Check Alarm-In, Disk Almost Full, Disk Full, Disk Bad, Disk Temperature, or Disk S.M.A.R.T.), and press the ↵ button.
   - ➔ A list of Alarm Outputs appears. You can associate as many Alarm-Outs with the Event as you wish.
   - ➔ If the DVR detects that event, it triggers output signals on all the associated Alarm-Out connectors. You can also have the DVR's internal buzzer sound if an event is detected.

NOTE
The ***Alarm-Out*** action cannot be set to System and Panic Record events.

2. Highlight the ***Notify*** box beside the desired event (System, Panic Record, Check Recording, Check Alarm-In, Disk Almost Full, Disk Full, Disk Bad, Disk Temperature, or Disk S.M.A.R.T.), and press the ↵ button.
   - ➔ You can toggle the entire list On and Off by highlighting ***Notification*** and pressing the ↵ button. You can toggle the individual items On and Off by highlighting that item and pressing the ↵ button.
3. Highlight ***OK*** and press the ↵ button to accept your changes.

NOTE
Mail notify is the only option available for the System event.

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

- ➔ You can save your ***System Event*** changes by highlighting ***Save*** and pressing the ↵ button.
- ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.7.6 Event status

Highlight ***Event Status*** in the ***Event*** menu and press the ↵ button to display the ***Event Status*** screen.

Fig. 67 Event Status screen

The ***Event Status*** screen displays the status of the DVR's systems and inputs. Events will be highlighted, and related channels or events will flicker for five seconds when detected.

Alarm-In, ***Motion***, ***Video Loss*** and ***Text-In*** will be highlighted when each event is detected based on the settings you made in the ***Alarm-In***, ***Motion Detection*** and ***Text-In*** setup screen on the ***Event*** menu.

Panic Record will be highlighted while the DVR is in the panic recording mode.

Check Alarm-In and ***Check Recording*** will be highlighted when each event is detected based on the settings you made in the ***System Event*** setup screen on the ***Event*** menu.

Disk Almost Full will be highlighted when the DVR is not in the Recycle mode and the level of disk usage reaches the Disk Almost Full percentage you made in the ***System Event*** setup screen on the ***Event*** menu.

Disk Full will be highlighted when the DVR is not in the Recycle mode and all available storage space has been used.

8.8 Display

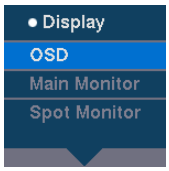


Fig. 68 Display Menu

8.8.1 OSD screen

Highlight ***Display*** in the ***Display*** menu and press the ↵ button.

➔ The ***OSD*** screen allows you to select what information will be displayed on the monitor.

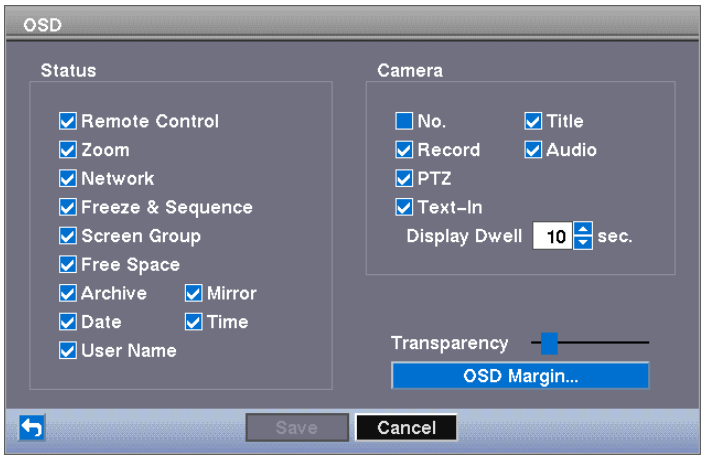


Fig. 69 OSD screen

Highlighting an item and pressing the ↵ button toggles that item On and Off. When an item is On, there is a checkmark in the box beside it. The following items can be turned On or Off:

Remote Control	The icon displays when the DVR can be controlled by the infrared remote control.
Zoom	The icon displays on the enlarged video.
Network	The icon displays when the unit is connected to a network via Ethernet.
Freeze & Sequence	The icon displays while in the Freeze mode, and the displays while in the Sequence mode.
Screen Group	The number of screen group displays when the DVR is not in the 4x4 display mode of the 16-channel DVR, and 3x3 mode of the 8-channel DVR.
Free Space	The icon displays when the DVR is in the Recycle mode, and the percentage of available storage space displays when the DVR is not in the Recycle mode.
Archive	The icon displays when the DVR is archiving recorded data.
Mirror	The icon displays when disks are mirroring.
Date/Time	The current date and time information displays.
User Name	The name of the current user logged in displays.
Camera No.	The camera number displays at the top-left corner of each camera screen.
Camera Title	The camera title displays at the top-left corner of each camera screen.
Record	The record related icons display on each camera screen.

Audio	The icon displays on each camera screen for which the DVR can play live audio on a local system, and the icon displays on each camera for which the DVR is sending audio to a PC running RAS.
PTZ	The icon displays on each PTZ camera screen.
Text-In	The text input strings display on the screen. You can adjust the Display Dwell time (sec.) for the text input strings displayed on the screen.

You can adjust the transparency of the setup screens by highlighting ***Transparency*** and using the Left and Right arrow buttons.

Highlighting ***OSD Margin…*** and pressing the ↵ button displays how OSD text will be displayed on the monitor. You can adjust the horizontal and vertical margins so that text and icons will not be hidden beyond the edges of the monitor.

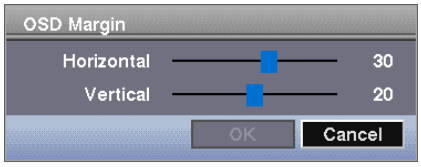


Fig. 70 OSD Margin screen

8.8.2 Main Monitor screen

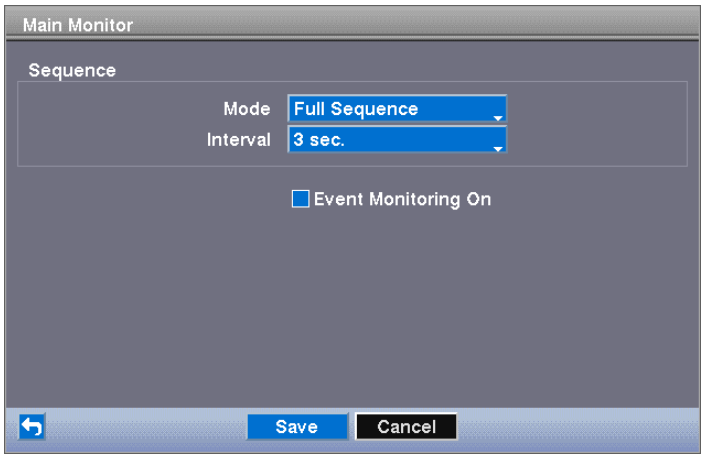


Fig. 71 Main Monitor screen

You can adjust the display dwell time for each camera displayed on the main monitor.

Highlight the box beside ***Mode*** and press the ↵ button.

➔ You can select between ***Full Sequence*** and ***Cameo Sequence***.

Pressing the Sequence button causes the DVR to sequence cameras, and the DVR can sequence cameras in two modes: “Full” and “Cameo”. In the Full mode, the DVR sequences through the cameras and displays them full screen. In the Cameo mode, the bottom right window in a multi-screen format sequences through the cameras.

NOTE

Any cameras that are Off, have lost video or are set to Covert (unless the user has authority to view covert cameras) will be excluded from the Cameo sequence.

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

NOTE
Sequence cannot be used in the 4x4 display mode of the 16-channel, and 3x3 mode of the 8-channel DVR.

You can adjust the display dwell time by highlighting the box beside ***Interval*** and pressing the ↵ button.

➔ You can select dwell intervals ranging from 1 second to 1 minute.

Highlight ***Event Monitoring On*** and press the ↵ button.

➔ Pressing the ↵ button toggles between On and Off.

➔ When it is On, the DVR will display the camera associated with the event when an event occurs.

8.8.3 Spot Monitor screen

1. Highlight ***Spot Monitor*** in the ***Display*** menu and press the ↵ button.
   ➔ The ***Spot Monitor*** setup screen displays.

Fig. 72 Spot Monitor screen

You can define which cameras display sequentially on the Spot Monitors.

2. Highlight the box in the ***Channels*** column for the desired Spot Monitor and press the ↵ button.
   ➔ You can save your Display settings by highlighting ***Save*** and pressing the ↵ button.
   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.9 Configuring devices

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

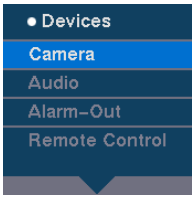


Fig. 73 Devices menu

8.9.1 Camera setup screen

Highlight ***Camera*** in the ***Devices*** menu and press the ↵ button.

➔ The ***Camera*** setup screen appears.

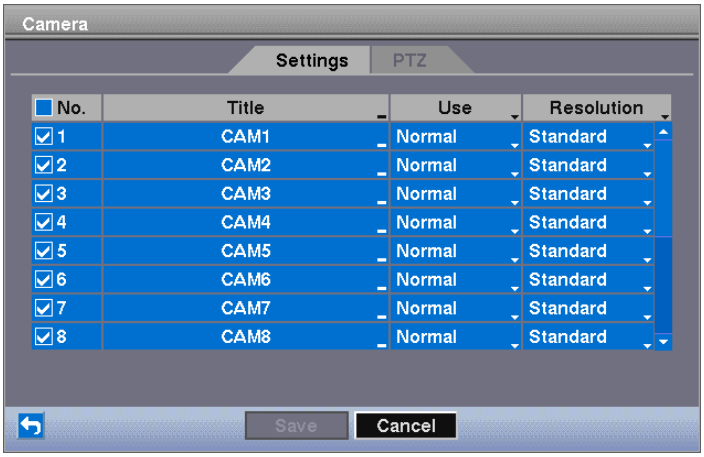


Fig. 74 Camera setup screen

You can turn the camera number On or Off, and you can change the ***Title*** of each camera using the virtual keyboard. You can also determine which cameras will display on the monitors by selecting Normal, Covert 1 or Covert 2 from a drop-down list in the ***Use*** column.

NOTE

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

NOTE

A user who does not have Covert Camera View authority, the user cannot view video from cameras set to Covert 1 or Covert 2 in both the live monitoring and playback modes.

Highlight the box in the ***Resolution*** column and select the recorded image resolution from Standard, High and Very High.

NOTE

Selecting *Very High* resolution will be applied to all the cameras within the same camera group. The DVR has two camera groups (No. 1: cameras 1 to 8 and No. 2: cameras 9 to 16 for the 16-channel model, and No. 1: cameras 1 to 4 and No. 2: cameras 5 to 8 for the 8-channel model).

NOTE

The maximum recording speed of each camera group will be limited to 100 ips when set to *Standard* resolution, 50 ips when set to *High* resolution and 25 ips when set to *Very High* resolution for all cameras.

When set to *High* resolution for all cameras within the same camera group, the DVR records video from each camera as fast as possible according to the preset recording speed within the total ips of each camera group. When the total ips are higher than the maximum recording speed of the camera group, the ips of each camera might decrease so as not to exceed the maximum recording speed. For example, if set to *High* resolution for all cameras within the same camera group of the 8-channel model DVR, 15 ips for Time recording and 25 ips for Event recording, the event-driven video from one camera will be recorded at 20 ips and the video from the three other cameras will be recorded at 10 ips each when events are detected by one camera.

The maximum recording speed per camera will be 6 ips per camera when set to On and *Very High* resolution for four cameras in the same camera group of the 16-channel DVR. See the table below.

No. of cameras set to *On* and *Very High* resolution								
0	1	2	3	4	5	6	7	8
–	25 ips	12 ips	8 ips	6 ips	5 ips	4 ips	3 ips	3 ips

The maximum recording speed per camera will be 12 ips per camera when set to On and *Very High* resolution for two cameras in the same camera group of the 8-channel DVR. See the table below.

No. of cameras set to *On* and *Very High* resolution				
0	1	2	3	4
–	25 ips	12 ips	8 ips	6 ips

1. Highlight the ***PTZ*** tab, and the ***PTZ*** setup screen displays.

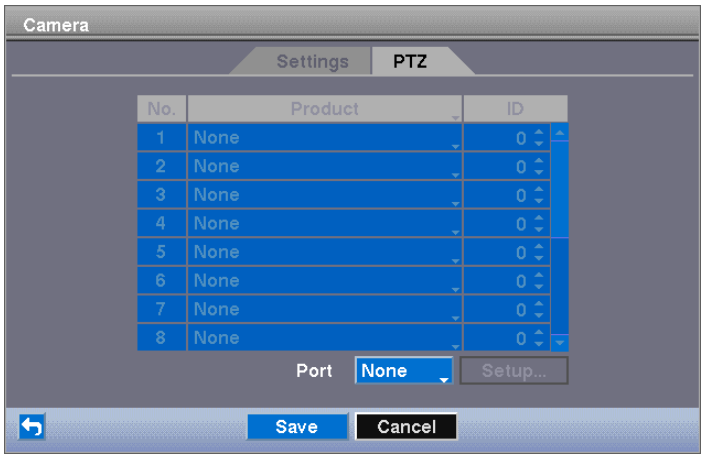


Fig. 75 Camera PTZ setup screen

NOTE

You will only be able to set up PTZ devices if the PTZ port is set to RS232 or RS485.

2. Highlight the box in the ***Product*** column for the PTZ camera you wish to configure and press the ↵ button.

➔ A list of PTZ devices appears.

3. Select your camera from the list and press the ↵ button.

➔ You will need to connect the camera to the RS232 or RS485 connector on the back of the DVR following the camera manufacturer's instructions.

Fig. 76 PTZ Device list

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

4. 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.

5. Highlight the ***Setup…*** box and press the ↵ button.

➔ The ***Port Setup*** window appears.

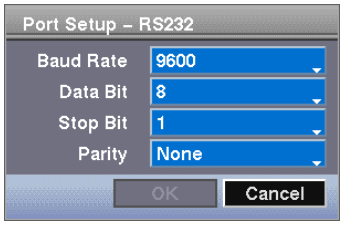


Fig. 77 Port Setup window

6. Configure the port's setting based on the PTZ camera manufacturer's instructions.

➔ You can save your ***Camera*** changes by highlighting ***OK*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.9.2 Audio setup screen

Highlight ***Audio*** in the ***Devices*** menu and press the ↵ button.

➔ The ***Audio*** setup screen appears.

Fig. 78 Audio setup screen

The DVR can record up to four audio inputs.

1. Highlight the box beside the input and press the ↵ button.
   ➔ A list of cameras appears, and you can select the camera associated with that audio input.
2. Highlight ***Enable Audio-Out*** and press the ↵ button.
   ➔ This toggles between enabling and disabling audio out.
   ➔ You can save your ***Audio*** setup by highlighting ***Save*** and pressing the ↵ button.
   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.9.3 Alarm-Out screen

Highlight ***Alarm-Out*** in the ***Devices*** menu and press the ↵ button.

➔ The ***Alarm-Out*** screen allows you to change the settings and establish a schedule for each alarm output from the DVR.

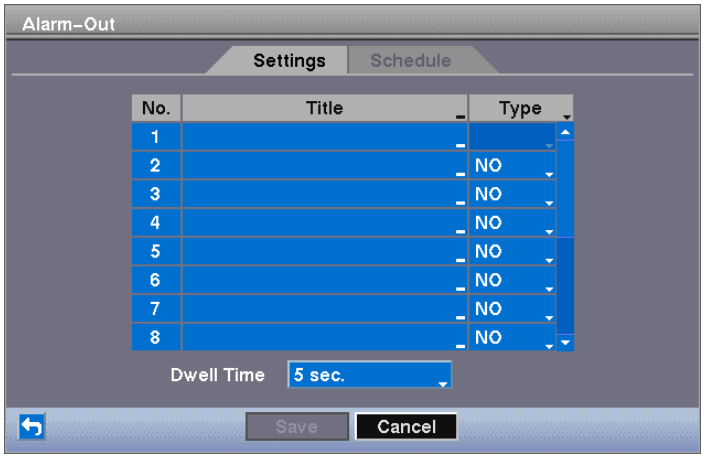


Fig. 79 Alarm-Out Settings screen

NOTE
You can change the settings of relay alarm output in the No. 1.

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 boxes under the ***Type*** heading allows to set the alarm output for NO or NC (normally open or normally closed).

Highlighting the box beside ***Dwell Time*** and pressing the ↵ button allow you to set the dwell time of the alarm output. Dwell times range from 5 seconds to 15 minutes.

Highlighting the ***Schedule*** tab causes the ***Schedule*** screen to display.

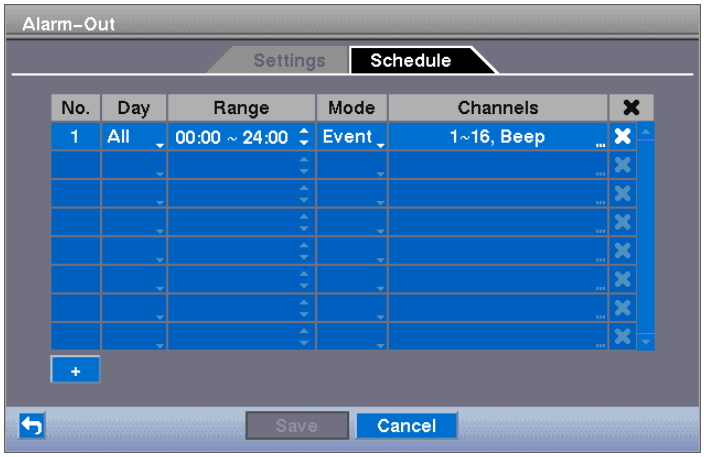


Fig. 80 Alarm-Out Schedule screen

You can add and edit alarm output schedules on this screen. Highlight the "+" and press the ↵ button to add a schedule. Highlighting the boxes under the column heading and pressing the ↵ button allow you to edit the information in those boxes.

The ***Day*** box allows you to select the days that the alarm schedule will be active. The choices are: Sun, Mon, Tue, Wed, Thu, Fri, Sat, M~F, Hol and All.

The ***Range*** box allows you to set the time that the alarm schedule will be active in 15-minute increments from 00:00 to 24:00.

The ***Mode*** box allows you to set how the alarm reacts during the scheduled time. 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.

The ***Channels*** box allows you to set which alarm outputs will be active. You can also select the DVR's internal buzzer.

The ✖ box allows you to delete an alarm output schedule. You will be asked to confirm whether or not you really wish to delete the schedule.

➔ You can save your ***Alarm-Out*** changes by highlighting ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.9.4 Remote Control screen

Highlight ***Remote Control*** in the ***Devices*** menu and press the ↵ button.

➔ The ***Remote Control*** setup screen allows you to select a port and make correct settings for a remote keyboard.

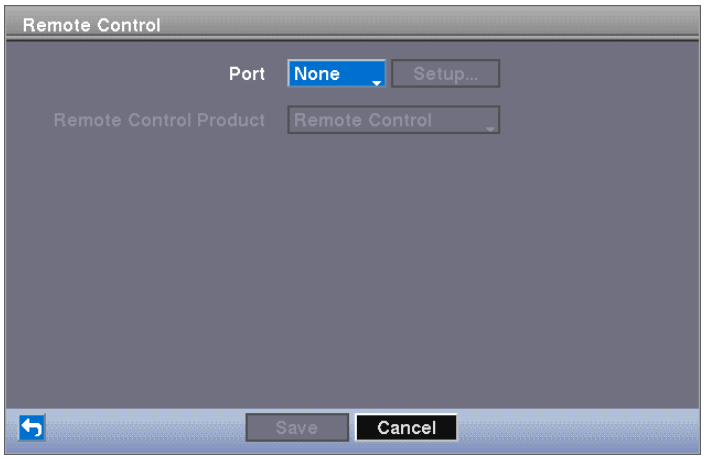


Fig. 81 Remote Control setup screen

1. Highlight the box beside ***Port*** and select from None, RS232 and RS485.
   ➔ If the RS232 port and RS485 port are in use for PTZ control, networking or text input, the remote keyboard cannot be configured.
2. Highlight ***Setup…*** and select the correct Baud Rate, Parity, Data Bits and Stop Bits for the device you are connecting to the DVR.
3. Highlight the box beside ***Remote Control Product*** and select the device from the list.
   ➔ You can save your ***Remote Control*** settings by highlighting ***Save*** and pressing the ↵ button.
   ➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.10 Storage screen

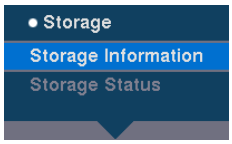


Fig. 82 Storage Menu

8.10.1 Storage Information screen

Highlight ***Storage Information*** in the ***Storage*** menu and press the ↵ button.

➔ The ***Storage Information*** setup screen appears and displays information about the DVR's storage devices.

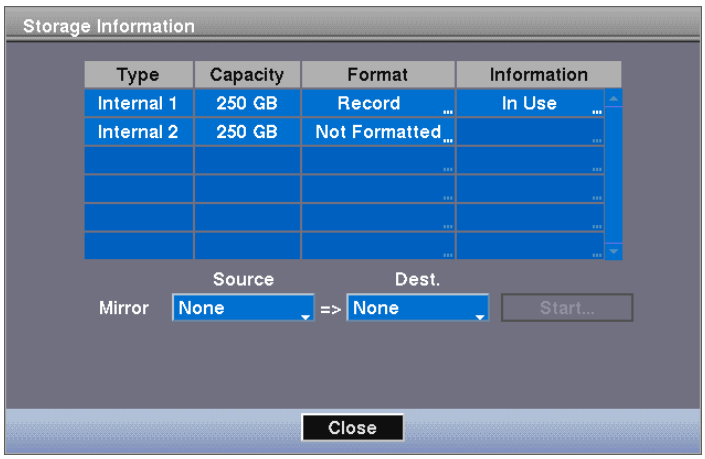


Fig. 83 Storage Information screen

The information in the ***Type*** column describes the storage device.

The capacity of the storage device is displayed in the ***Capacity*** column.

The ***Format*** column displays whether the device is used for recording (Record) or archiving (Archive). "Not Using" indicates the device is not used for either recording or archiving. "Not formatted" indicates the device is not formatted. ⊙ indicates when the device has temporary space set aside so that video clips can be saved on a CD-RW or DVD-RW.

Highlight the box in the ***Format*** column for the desired storage device and press the ↵ button. You will be able to format the device for recording or archiving. When selecting "Not Using" from ***Use As*** and highlighting the ***Format*** button, the device will not be used for either recording or archiving. You can also set aside space to store temporary files for CD or DVD burning by selecting ***Partition*** – ***CD/DVD Burn***.

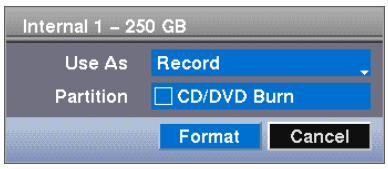


Fig. 84 Device Format screen

NOTE
A USB hard disk drive (2.0 or higher version only) can be formatted and used only for archiving.

NOTE
System upgrades require formatting internal hard disk drives, so do not uninstall internal hard disk drives even though they are not used for either recording or archiving

The ***Information*** column displays whether the device is being used or not. "Other" indicates the device has been used for another DVR.

Highlight the box in the ***Information*** column for the desired storage device and press the ↵ button.

➔ You will be able to check the time information about recorded data.

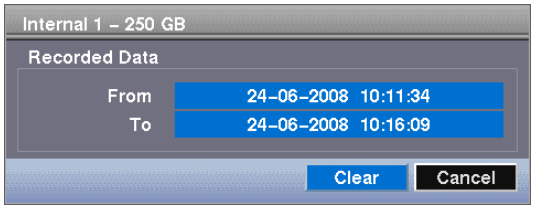


Fig. 85 Device Information screen

If you want to erase recorded data on the selected device, highlight ***Clear*** and press the ↵ button. You will be asked whether or not you want to delete the data.

If you want to use a USB hard disk drive, highlight ***Use*** and press the ↵ button after connecting the device. Highlight ***Don't Use*** and press the ↵ button if you want to stop using the device.

NOTE
When disconnecting a USB hard disk drive from the DVR, highlight ***Don't Use*** first and then disconnect the device.

NOTE
Do **not** disconnect the USB cable or the power from the device while copying video clips. If the USB cable is disconnected while copying video clips, archived data might be lost.

Highlight the boxes beside ***Mirror*** and press the ↵ button.

➔ The DVR can be set up to mirror Source disks to designated Dest. (destination) disks selected from internal hard disk drives.

Refer to Section 9.10.9 Disk mirroring for further information on setting up disk mirroring.

8.10.2 Storage Status screen

Highlight ***Storage Status*** in the ***Storage*** menu and press the ↵ button.

➔ The ***Storage Status*** setup screen appears and displays status of the DVR's storage devices.

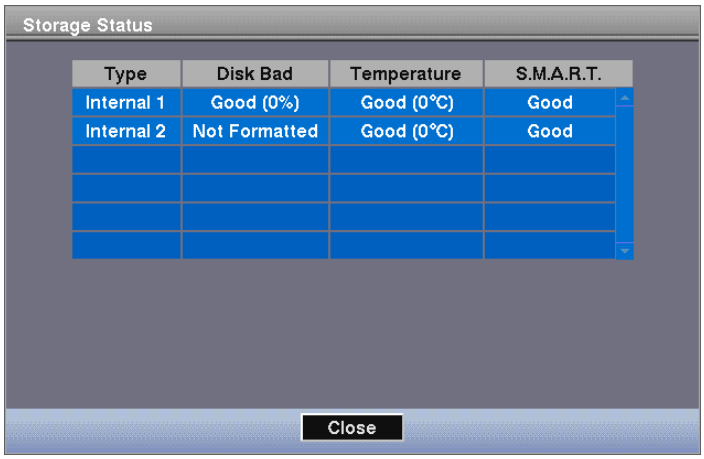


Fig. 86 Storage Status screen

The ***Type*** column displays the type of storage device.

The ***Disk Bad*** column displays the percentage of bad sectors. "Not formatted" indicates the device is not formatted.

The ***Temperature*** column displays the temperature of the storage device.

The ***S.M.A.R.T.*** column displays "Good", "Bad" or "N/A", depending on storage conditions:

Good	The storage condition is normal.
Bad	Data cannot be written on or read from the storage device.
N/A	Storage conditions are normal, however, the S.M.A.R.T. monitoring is not working or supported.

NOTE

When the storage condition is "Bad", the ***Event Status – Storage*** screen displays and you can check the storage condition for details. Once the "Bad" message displays, replacing the hard disk drive is recommended, usually within 24 hours.

NOTE

Temperature and S.M.A.R.T. information will be available only for internal hard disk drives supporting the SMART (Self-Monitoring Analysis and Reporting Technology) monitoring program.

➔ Selecting ***Close*** and pressing the ↵ button exits the screen.

8.11 System

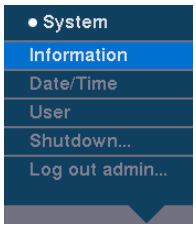


Fig. 87 System menu

8.11.1 Information screen

Highlight ***Information*** in the ***System*** menu and press the ↵ button.

➔ The ***Information*** screen appears.

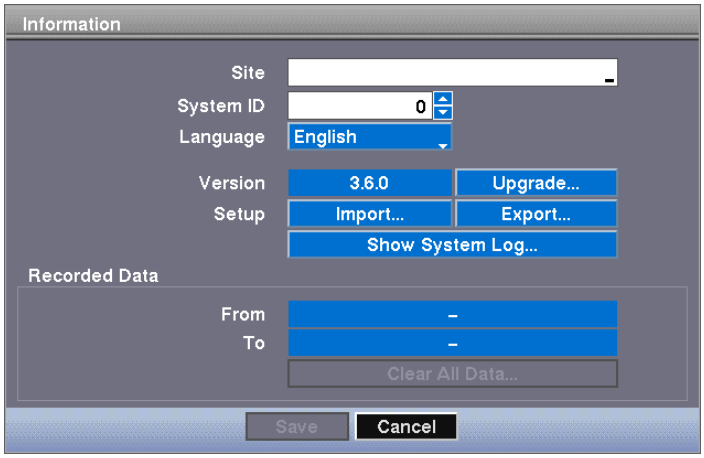


Fig. 88 Information screen

In the ***Information*** screen, you can name the site location, assign a System ID number, select the language the screens are displayed in, display software version number, upgrade the software, import and export the setup, show the System Log, display recorded time data, and clear all data.

1. Highlight the ***Site*** box and press the ↵ button.
   ➔ A virtual keyboard appears that you can use to enter a Site Name.
2. Once you have entered your title, highlight ***Close*** and press the ↵ button.
3. Highlight the box beside ***System ID*** and press the ↵ button.
4. Change the number by highlighting it and using the Up and Down arrow buttons to increase and decrease the number from 0 to 99.

NOTE

The System ID number is used to identify the unit when it is connected with other DVRs through the RS485 port. You cannot use the same ID number for two or more DVRs that are in the same RS485 network. It is possible to have multiple DVRs with System ID 0 that are in the same area as long as they are not part of an RS485 network. If this is the case, all will be controlled at the same time when using the infrared remote control.

5. Highlight the box beside ***Language*** and press the ↵ button.
   ➔ A drop-down menu displays the available languages.

6. Highlight the desired language and press the ↵ button.
   ➔ The box beside ***Version*** displays the software version of the DVR.

Upgrading the software

To upgrade the software, connect a USB device containing the upgrade package file to the DVR.

1. Highlight ***Upgrade…*** and press the ↵ button.
   ➔ The ***Upgrade*** screen appears.
   The screen displays the upgrade package file names that are available. The ".rui" indicates that the file is for software upgrades and ".ofi" indicates that the file is for optical drive firmware upgrades.
2. Select the desired file and press the ↵ button.
   Highlighting the ***Install*** button and pressing the ↵ button will install the selected software package. Highlighting the ***Cancel*** button and pressing the ↵ button will close the window without upgrading the software.
   ➔ If the upgrade package file is not installed on the DVR properly, you will get an error message.
   ➔ The system restarts automatically after completing the upgrade.

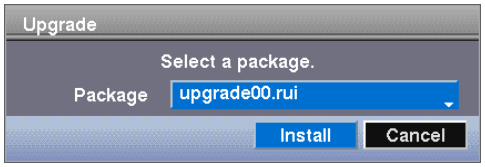


Fig. 89 Upgrade screen

NOTE
The ***Upgrade*** button will be deactivated if the internal hard disk drive has not been formatted as it requires the space for temporary files when upgrading the system.

NOTE
The USB device must be FAT16 or FAT32 format.

You can import saved DVR settings or export the current DVR settings.

Importing settings

To import saved DVR settings, connect the USB device containing the setup file (.dat) to the DVR.

1. Highlight ***Setup – Import…*** and press the ↵ button.
2. Select the desired setup file and press the ***Import*** button to import the selected settings and change the DVR settings accordingly.
3. Highlight ***Include Network Setup*** and press the ↵ button to toggle between On and Off.
   ➔ When set to Off, the network settings will not be changed.

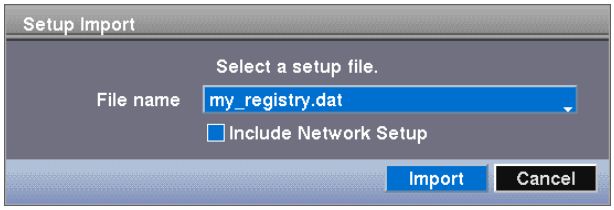


Fig. 90 Setup Import screen

Exporting settings

To export the current DVR settings, connect the USB device to the DVR.

1. Highlight ***Setup – Export…*** and press the ↵ button.
2. Highlight the box beside ***File name*** and press the ↵ button.
   - ➔ A virtual keyboard allows you to enter the file name.
   - ➔ Selecting ***Export*** will save the current settings in .dat file format on the USB device.

Fig. 91 Setup Export screen

NOTE

Even after changing the DVR settings by importing saved settings, the time-related settings (Date/Time, Time Zone and Daylight Saving Time) will NOT be changed.

NOTE

The USB device must be FAT16 or FAT32 format.

System Log

Highlight ***Show System Log…*** and press the ↵ button to display the ***System Log*** screen.

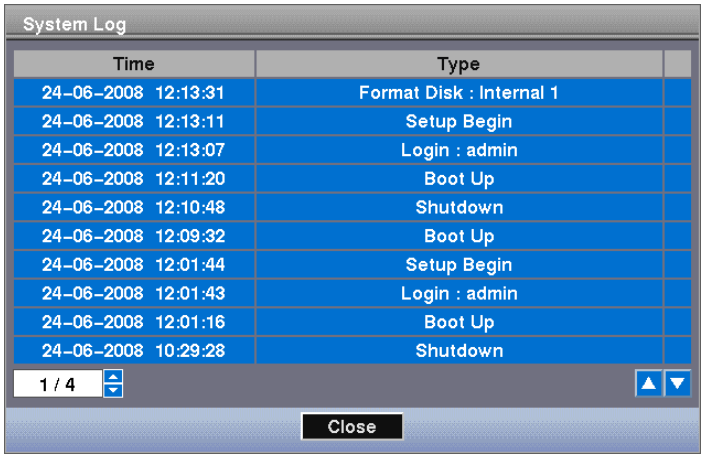


Fig. 92 System Log screen

The ***System Log*** screen lists system activities (up to 5,000 from the latest) that have occurred along with the time and date. The icon will display in the last column for system activities of the remote site. You can scroll through the log pages by using the Up and Down arrows, or you can go directly to a log page by entering the log page number in the box at the bottom left of the screen. Highlight ***Close*** and press the ↵ button to exit the screen.

The box beside ***Recorded Data – From / To*** displays the time information of recorded data.

Highlighting ***Clear All Data…*** and pressing the ↵ button will clear all video data. You will be asked to verify that you wish to clear all data before the DVR erases the video data. ***Clear All Data…*** will not clear the System Log.

After you are finished with the ***Information Screen***, you can highlight ***Save*** and press the ↵ button to save the changes and exit the screen. If you do not wish to save the changes, highlight ***Cancel*** and press the ↵ button to exit the screen.

8.11.2 Date/Time setup

Highlight ***Date/Time*** in the ***System*** menu and press the ↵ button.

➔ The ***Date/Time*** setup screen appears.

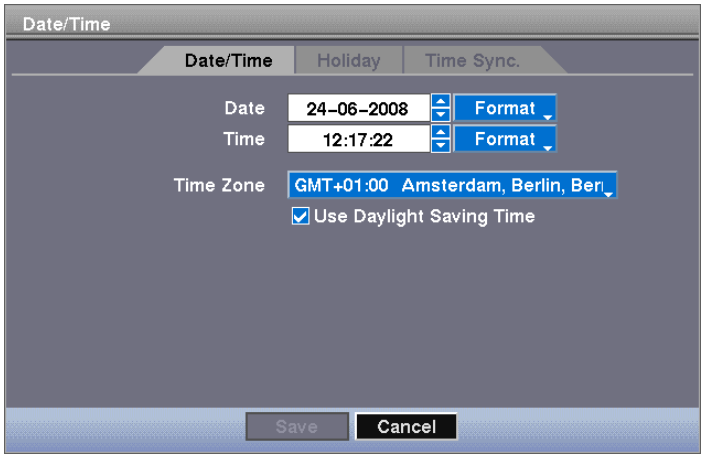


Fig. 93 Date/Time setup screen

Date/Time

1. Highlight the first box beside ***Date*** and press the ↵ button.
   ➔ The individual sections of the date will highlight.
2. 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.
3. Once you have the correct date, press the ↵ button.
4. Highlight the ***Format*** box beside ***Date*** and press the ↵ button.
5. Select from the three available date formats and press the ↵ button to save your selected format.
6. Highlight the first box beside ***Time*** and press the ↵ button.
   ➔ The individual sections of the time will highlight.
7. 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.
8. Once you have the correct time, press the ↵ button.
9. Highlight the ***Format*** box beside ***Time*** and press the ↵ button.

10. Select from the three available time formats and press the ↵ button to save your selected format.

NOTE
The clock will not start running until you have highlighted ***Save*** and pressed the ↵ button.

11. Highlight the box beside ***Time Zone*** and press the ↵ button.

12. Select your time zone from the list and press the ↵ button.

13. Highlight ***Use Daylight Saving Time*** and press the ↵ button.

➔ Pressing the ↵ button toggles between On and Off.

14. Highlight the ***Holiday*** tab, and the ***Holiday*** setup screen appears

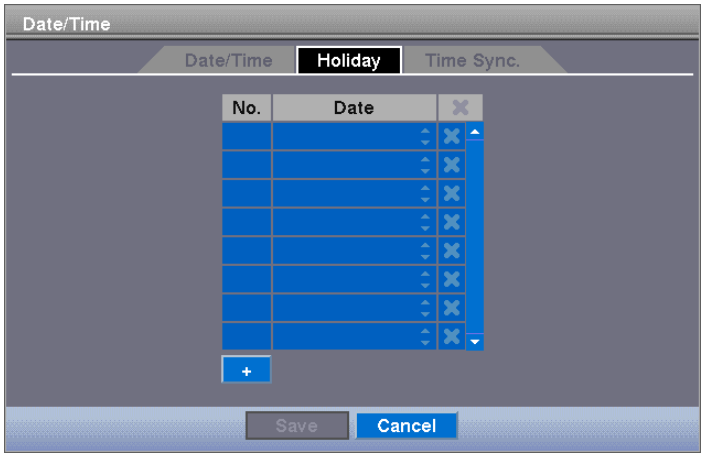


Fig. 94 Holiday setup screen

Holiday

You can set up holidays by highlighting "+" and pressing the ↵ button.

➔ The current date appears.

1. Highlight the month and day and change them by using the Up and Down arrow buttons.

2. Press the ↵ button to add the date.

➔ Dates can be deleted by highlighting the ✖ 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.

Highlighting the ***Time Sync.*** tab causes the ***Time Sync.*** screen to display. You can set up time synchronization between the DVR and standard time servers that are available in most time zones and countries, or between the DVR and another DVR.

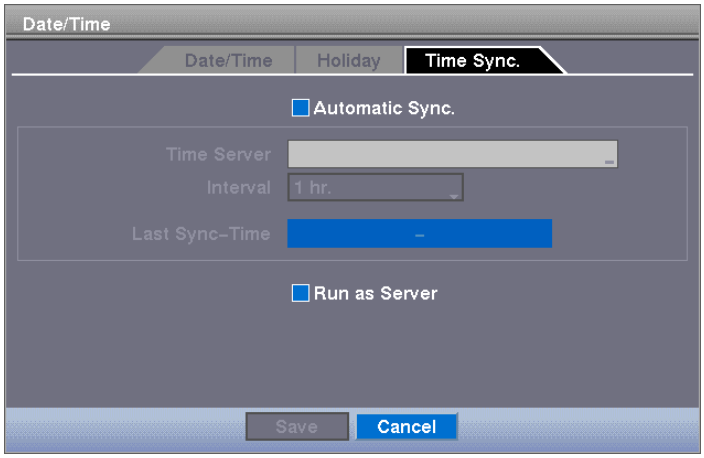


Fig. 95 Time Sync. screen

Time Sync.

1. Highlight the box beside ***Automatic Sync.*** and press the ↵ button.
   ➔ This toggles between On and Off.
2. Highlight the box beside ***Time Server*** and press the ↵ button.
   ➔ A virtual keyboard appears that you can use to enter the IP address or domain name of the time server.

NOTE
You can use the domain name instead of IP address if you already set up the DNS Server when setting up the LAN.

3. Highlight the box beside ***Interval*** and press the ↵ button.
4. Set the time interval for synchronization from 30 minutes to 1 day at various time intervals.
   ➔ ***Last Sync-Time*** displays the last time the DVR was synchronized with the time server.
5. Highlight ***Run as Server*** 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 ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.11.3 User setup screen

Highlight ***User*** in the ***System*** menu and press the ↵ button.

➔ The ***User*** setup screen displays the authorized groups and users.

➔ You can add and delete groups and users. When adding a group, you can assign authority levels to the group.

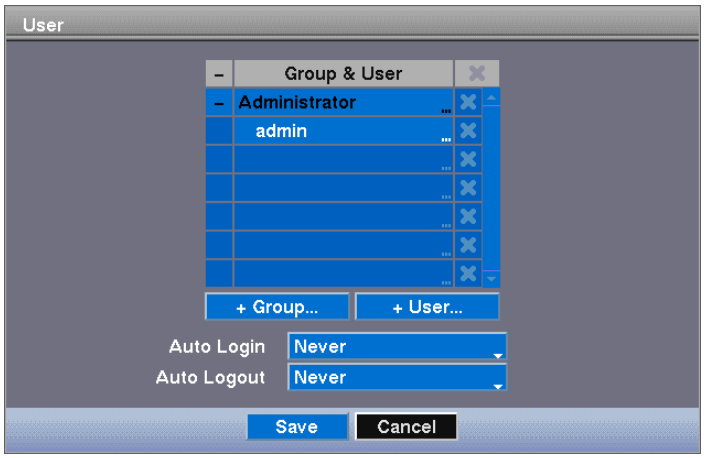


Fig. 96 User setup screen

The **+/-** column is used to collapse and expand user groups. If there is a "+" or "–" in this column, it indicates the item is a Group Name. If there is a "–" in front of the Group Name, it indicates that the group has been “expanded” and all of the User Names within that group are displayed below the Group Name. If there is a "+" in front of the Group Name, it indicates that the group has been “collapsed” and all of the User Names within that group are hidden. To collapse or expand a group, highlight the **+/-** column in front of the desired group and press the ↵ button.

Highlighting a Group Name and pressing the ↵ button allows you to change the authority levels assigned to the group.

NOTE

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.

Highlighting a User Name and pressing the ↵ button allows you to add or change the password assigned to that user. You can also change the group to which the user is assigned.

The ✖ column can be used to delete a User Name or an entire Group. If the ✖ is greyed out, that Group or User cannot be deleted. Highlight the ✖ and press the ↵ button. You will be asked to confirm that you want to delete the User or Group. To delete the User currently logged into the DVR on a local system or a PC running RAS, log the user out of the system first and then delete the user.

To add a Group, highlight the ***+ Group…*** box and press the ↵ button. A virtual keyboard appears allowing you to enter the Group name. You can use up to 15 characters including spaces in the group name. Enter the name and assign authority levels to the group.

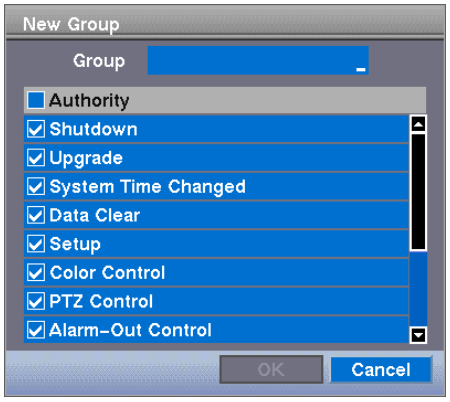


Fig. 97 New Group setup screen

Highlighting the ***Authority*** box and pressing the ↵ button will toggle between all authority levels being turned On and Off. Highlighting the individual authority level boxes and pressing the ↵ button will toggle between that authority level being turned On and Off. The authority levels that can be turned On and Off are:

Shutdown	The user can shut the system down on a local system.
Upgrade	The user can upgrade the software on a local system or a PC running RAS.
System Time Changed	The user can change the system date and time on a local system or a PC running RAS.
Data Clear	The user can clear all video data or format disks on a local system or a PC running RAS.
Setup	The user without Setup authority cannot establish any system settings excluding system shutdown and logout on a local system or a PC running RAS.
Color Control	The user can control brightness, contrast, hue and saturation for cameras on a local system or a PC running RAS.
PTZ Control	The user can control the PTZ camera on a local system or a PC running RAS.
Alarm-Out Control	The user can reset the DVR's outputs including the internal buzzer during an alarm by pressing the Alarm button on a local system or alarm-out control button on a PC running RAS.
Covert Camera View	The user can view video from cameras set as Covert while in the Live Monitoring or Search mode on a local system or a PC running RAS.
System Check	The user can view the remote system status or check the remote system status as a batch process on a PC running RAS.
Record Setup	The user can establish all Record settings on a local system or a PC running RAS.
Search	The user can access the Search mode on a local system or a PC running RAS.
Clip-Copy	The user can copy video clips on a local system or a PC running RAS, and save video data in an AVI, bitmap or JPEG file format.

To add a User, highlight the ***+ User…*** box and press the ↵ button. A virtual keyboard appears allowing you to enter the User Name. Enter the name and assign the User to a Group and password. You can use camera buttons 1 to 9 on either the front panel or remote control to assign the password. The password can be up to 8 digits. You will be asked to confirm the password.

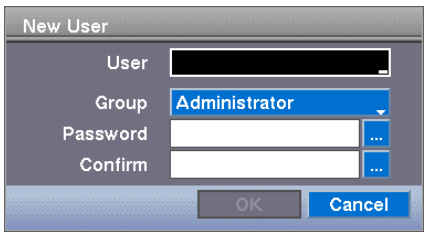


Fig. 98 New User setup screen

NOTE

In addition to using the front panel buttons or the infrared remote control, you can use the virtual keyboard to assign the password. To display the virtual keyboard click the ... button using the mouse (not supplied).

Highlighting the box beside ***Auto Login*** allows you to select a User to be automatically logged in when the DVR is powered up. It can also be set to never automatically login a user.

Highlighting the box beside ***Auto Logout*** allows you to select from a list of times that the user will be automatically logged out. The options are: Never, 1 min., 3 min., 5 min., 10 min., 15 min., 20 min., 25 min., 30 min. and 1 hr.

➔ You can save your changes by highlighting ***Save*** and pressing the ↵ button.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

8.11.4 Shutdown… screen

Highlight ***Shutdown*** in the ***System*** menu and press the ↵ button.

➔ The ***Shutdown*** screen appears asking you to confirm whether or not you want to shut the system down.

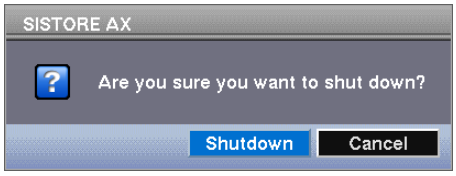


Fig. 99 Shutdown screen

After selecting ***Shutdown*** and pressing the ↵ button, a screen will appear telling you when it is safe to disconnect power.

8.11.5 Log out…screen

Highlight ***Log out…*** in the ***System*** menu and press the ↵ button.

➔ The ***Log out*** screen appears asking you to confirm whether or not you want to log out the current user.

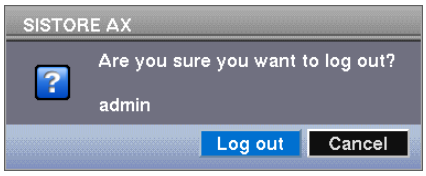


Fig. 100 Log out screen

After selecting ***Log out*** and pressing the ↵ button, the user will be logged out.

9 Operation

NOTE
This chapter assumes your DVR has been installed and configured. If it has not, please refer to Sections 7: Installation and 8: Configuration.

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 Section 8: Configuration.

9.1 Turning on the power

Once you have installed the DVR following the instructions in Section 7: Installation, it is ready to record.

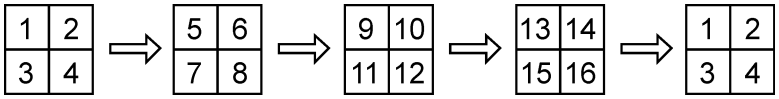
9.2 Live monitoring

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

Pressing the Display button cycles the DVR through the different display formats.

The DVR can be set to display full-screen video for a preset dwell time when an Event occurs. Video from the lowest camera number associated with the event sensor will be displayed, the DVR will return to the previous screen format after event monitoring dwell time expires. While the event monitoring is activated, the monitoring for all other subsequent events will be ignored. Pressing individual camera buttons or the Display button during event monitoring releases the current event monitoring and displays the selected camera or returns to the previous screen format.

Pressing the Sequence button causes the cameras to display sequentially. When in one of the multi-view formats, pressing this button will cause the DVR to go through predefined screen layouts (Full Sequence). Or, the bottom, right screen will display live cameras sequentially (Cameo Sequence). Selecting another display mode, or pressing the Sequence button again exits the Sequence mode. When in one of the multi-view formats, pressing the Left or Right arrow buttons will cause the DVR to go to the previous or the next page. For example, if you press the Right arrow button in the 2x2 format, the DVR changes pages as follows:



If all the cameras in a page are Off, have lost video or are set to Covert (unless the user has authority to view covert cameras), that page will be excluded from the sequence.

NOTE

The Full Sequence for the full sequence monitoring and the Cameo Sequence for the cameo sequence monitoring should be selected in the ***Display*** setup screen (***Sequence*** tab).

Pressing the Freeze button will freeze the current image on the screen until you press the button again. While in the Freeze mode, the icon displays in bottom-left corner if ***Freeze*** is selected in the ***Display*** setup screen (***OSD*** tab).

To display cameras sequentially on a spot monitor, press the Spot button and select the Spot Monitor and Sequence from the menu.

9.2.1 Active Cameo mode

You can enter the Active Cameo mode by pressing the ↵ button in any multi-view format. The yellow outline surrounding the 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 remains in effect for 15 seconds if there is no further operation.

In active cameo mode, press the button for the camera you want displayed as active cameo. After setting the camera number to active cameo, the DVR moves the active cameo to the next cameo. You can change the screen layout in this way.

9.2.2 PIP mode

You can display a Picture-in-Picture by pressing the Display button. You can change the location of the PIP counter-clockwise and clockwise by pressing the Up and Down arrow buttons and change its size by turning the Jog Dial clockwise or counter-clockwise.

9.2.3 Zoom mode

You can enlarge an area of the video by pressing the Zoom button. For a few seconds after pressing the Zoom button, a PIP displays. Inside the PIP, a rectangle shows the area that is enlarged. You can move the rectangle around using the arrow buttons. While in the Zoom mode, you can enlarge the area more by pressing the ↵ button. The Zoom mode options are 2x, 3x and 4x. Exit the Zoom mode by pressing the Zoom button. While in the Zoom mode, the icon displays in bottom-left corner if Zoom is selected in the ***Display*** setup screen (***OSD*** tab).

9.2.4 PTZ mode

If a user who has PTZ Control authority logs into the system, the user can control PTZ cameras. The DVR will control cameras with Pan, Tilt and Zoom capabilities. Press the PTZ button to enter the PTZ mode and press the button again to exit the PTZ mode. You can control the camera using front panel control buttons, by setting up presets or by selecting the expanded PTZ features.

Select the PTZ camera you wish to control by selecting it from the menu.

➔ The icon PTZ displays on the PTZ camera screen.

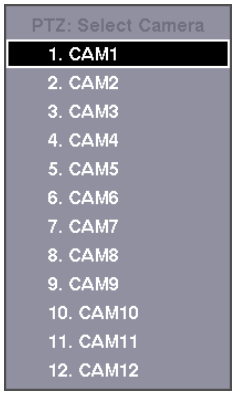


Fig. 101 PTZ Select Camera menu

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 Display button to zoom in, and press the Sequence button to zoom out.

You can use the Freeze and Alarm buttons to focus the image.

You can establish preset positions for PTZ cameras.

Press the Spot button to establish Presets.

Fig. 102 PTZ Preset screen

You can quickly move PTZ cameras to Preset positions. Press the Menu button to view an established camera Preset position.

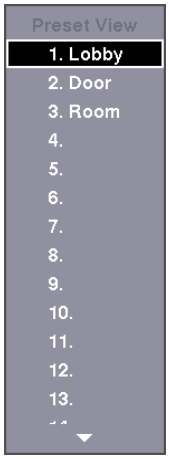


Fig. 103 Preset view screen

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 Spot button, and the ***PTZ Preset*** dialog box will appear. Select the number you want to assign to the preset and press the ↵ button. Use the virtual keyboard to enter the preset name. Press the Menu button to load the PTZ preset and the ***Preset View*** dialog box will appear. Select the desired preset and press the ↵ button to load the preset.

Pressing the Menu button displays the following ***PTZ*** menu. Set the feature you wish to control by selecting it from the menu. Refer to the camera instructions for the proper settings. Depending on the camera specifications, some features may not be supported.

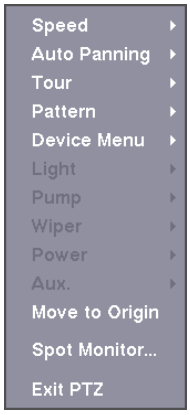


Fig. 104 PTZ menu

You can use a mouse for convenient PTZ control. Position the mouse pointer at the bottom of the screen, and the following PTZ toolbar will display.

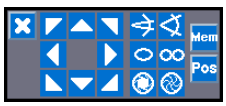


Fig. 105 PTZ controls

Clicking ✖ on the left side exits the toolbar. If you want to display the toolbar again, position the mouse pointer at the bottom of the screen. Change the toolbar location by clicking the empty space on the left side of the toolbar and drag it to where you want it located on the screen. Use the arrow buttons on the toolbar to pan or tilt the camera in the direction you want. The other controls on the toolbar perform as described below:

Zoom In / Out

Focus Near / Far

Iris Open / Close

Set / Load Preset

9.2.5 Image adjustment

NOTE

It is important that cameras and monitors are correctly installed and adjusted prior to making any image adjustments using the DVR's controls.

If a user who has Colour Control authority logs into the system, the user can adjust the image. Pressing and holding a camera button for a few seconds displays an image adjustment dialog. You can control brightness, contrast, hue and saturation for each camera.

NOTE

Any image adjustments you make will be applied to both the live video on the monitors and the recorded video.

9.3 Event monitoring

When an event occurs, the DVR will display the camera associated with the event if ***Event Monitoring On*** is selected in the ***Display*** setup screen (***OSD*** tab).

How the cameras are displayed depends on the number of cameras associated with the event. If one camera is associated with the event, the DVR will display the camera full screen. If two to four cameras are associated with the event, the DVR will display the cameras on a 2x2 screen. If five to nine cameras are associated with the event, the DVR will display the cameras on a 3x3 screen. If 10 or more cameras are associated with the event, the DVR will display the cameras on a 4x4 screen.

Event monitoring lasts for the dwell time set for event recording. After the dwell time has elapsed, the monitor returns to the previous screen unless another event has occurred. If you want to return to the live monitoring mode before the dwell time has elapsed, press the Display button or one of the camera buttons.

9.4 Covert camera

If a camera is set up as Covert 1 in the ***Camera*** setup screen (***Settings*** tab), that camera will not be displayed unless a user with Covert Camera View authority logs into the system. However the camera title and status icons will be displayed on the monitor.

If a camera is set up as Covert 2 in the ***Camera*** setup screen (***Settings*** tab), that camera appears to be Off unless a user with Covert Camera View authority logs into the system. The camera title will be greyed out and status icons will not be displayed on the monitor.

NOTE

When a camera is set up as Covert 1, the DVR displays the camera title and status icons on the covert video. When set up as Covert 2, the DVR displays only the camera title on the covert video.

If a user who has Covert Camera View authority logs into the system, the user can view video from cameras set to Covert 1 or Covert 2 including the camera titles and status icons.

9.5 Spot monitoring

You can select the camera you want to display on a Spot Monitor. Press the Spot button on the front panel or remote control, and select one of four Spot Monitors. Then, select the camera to be displayed on the Spot Monitor.

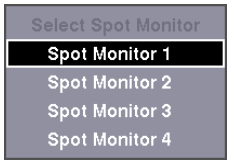


Fig. 106 Spot Monitor menu

If you want to display more than one camera on a Spot Monitor, you can display them sequentially. In the Spot Monitor selection mode, press the Sequence button on the front panel or remote control, or select ***Sequence On*** from the menu to start displaying cameras sequentially. Press the Sequence button or select ***Sequence On*** again to stop sequencing on the Spot Monitor. Any cameras that are Off, have lost video or are set to Covert (unless the user has authority to view covert cameras) will be excluded from the sequence.

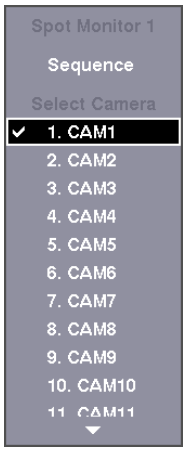


Fig. 107 Sequence menu

When the Spot Monitor is in the sequence mode, you can set the camera's display dwell time. Refer to Section 8: Configuration for details.

9.6 Using a mouse

You can use a mouse instead of the front panel buttons to perform many of the DVR functions. The following operations are supported when using a mouse during live monitoring.

When in one of the multi-view formats (e.g., PIP, 2x2, 3x3 or 4x4), clicking the mouse button on a camera image switches that camera to full screen. Clicking the mouse button again returns to the previous multi-view format.

When in one of the multi-view formats, scrolling the mouse wheel up and down operates the same as pressing the Display button by switching the screen format between PIP, 2x2, 3x3 and 4x4.

Clicking the right mouse button during live monitoring displays the following menu:

Fig. 108 Mouse menu

Selecting ***Freeze***, ***PTZ…*** and ***Spot Monitor…*** is the same as pressing the Freeze, PTZ and Spot buttons as described above in Section 9.2: Live monitoring.

Selecting ***Zoom…*** zooms in on the live image. While in the zoom mode, there are two ways to move around the enlarged portion of the video. First, there is a PIP located in right-bottom corner. The PIP has a rectangle showing what area of the image has been enlarged. Click inside the PIP to move to another area of the image you want enlarged. Second, click and hold the mouse button on the enlarged video and drag the video.

Selecting ***Display*** shows the following menu:

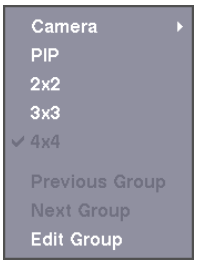


Fig. 109 Mouse display menu

Clicking ***Camera*** and selecting the camera number is the same as pressing the individual camera buttons on the front panel which displays the selected camera full screen. When in the PIP display mode, clicking the right mouse button and selecting PIP changes the location and the size of the PIP.

Selecting ***PIP***, ***2x2***, ***3x3*** and ***4x4*** display the cameras in the selected multi-view screen mode.

Clicking ***Previous Group*** or ***Next Group*** is the same as pressing the Left or Right buttons on the front panel which moves to the previous or next page.

Selecting ***Edit Group*** supports the active cameo function. Select ***Edit Group*** and choose a camera that you want to change display position (e.g., Camera A). Then, click the right mouse button to display the menu. If you select another camera in the menu (e.g., Camera B), the screen displays Camera B instead of Camera A. When in the 4x4 format, Camera A and Camera B will switch positions.

9.7 Recording video

Once you have installed the DVR following the instructions in Section 7: Installation, it is ready to record. The DVR will start recording based on the settings you made in the ***Record*** setup screen. See Section 8: Configuration.

"Recycle On" or "Recycle Off". The factory default is "Recycle On". It does this by recording over the oldest video once the hard disk is full. Setting the DVR to "Recycle Off" causes it to stop recording once the hard disk is full.

"Standard" (CIF), "High" (Half D1) or Very High (D1). The factory default resolution is "Standard". When set to "Standard", the DVR has a maximum recording speed of 200 ips for PAL resolution (240 ips for NTSC). When set to "High", the DVR has a maximum recording speed of 100 ips for PAL (120 ips for NTSC). When set to Very High, the DVR has a maximum recording speed of 50 ips (60 ips for NTSC).

Pressing the Panic button starts panic recording of all cameras, and pressing the button again stops panic recording. If you set the Panic Recording Duration in the ***Record*** Screen, panic recording will stop automatically according to the preset duration as long as the Panic button is not pressed.

NOTE
When the DVR is not in the Recycle mode and all available storage space has been used, panic recording will not operate.

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 Section 8: Configuration for detailed descriptions of the recording mode options.

9.8 Recording audio

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

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

9.9 Playing recorded video

If a user who has Search authority logs into the system, the user can view recorded image. Once video has been recorded, you can view it by pressing the Play/Pause button.

The DVR supports the Triplex function: monitoring, recording and playing back at the same time. Pressing the Search button while in the live monitoring mode enters the Triplex mode and displays the Select Playback Camera menu.

Fig. 110 Select Playback Camera menu

Selecting All Channels plays back video of all cameras. The DVR maintains the same display format as it does in the live mode except for the PIP format. You can also change the screen layout in the same way as you do in the live mode.

Selecting the camera number under Triplex enters the Triplex mode and plays back video of the selected camera. When in the single-screen display format, the camera currently displayed on the screen will be selected and when in the PIP display format, the camera displayed on the PIP screen will be selected for the search channel. During the Triplex mode, the DVR maintains the same display format as it does in the live mode. A red outline surrounding the video and the camera title indicates the search channel. While in the Triplex Mode, the DVR continues recording cameras as they were set up in the recording schedule. Also, live monitoring will continue except for the camera that has been selected for playback.

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. Recorded audio will be played when the DVR displays a camera with recorded audio in full screen mode. Pressing the Play/Pause button again will freeze the video on the screen.

NOTE
Only the administrator and users with Covert Camera View authority can view video from covert cameras. The covert cameras in the playback mode are determined by the current camera settings.

Camera buttons (1 to 16)	Pressing the individual camera buttons will cause the selected camera to display full screen. Buttons 1 to 9 are also used to enter passwords.
Display button	Pressing the Display button toggles between different display formats. The available formats are: 4x4, 3x3, 2x2 and PIP (not all formats are available for the 8-channel DVR).
Search button	When in the live mode, pressing the Search button enters the Triplex mode.
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.
Previous button	Pressing the Previous button goes to the previous image.
Play/Pause button	Pressing the Play/Pause button plays back images at regular speed. Pressing the button while in the Playback mode pauses the video. The screen displays ▶ when the DVR is playing back video. The screen displays ❚❚ when in the Pause mode.
Next button	Pressing the Next button goes to the next 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.
Zoom button	Pressing the Zoom button zooms the current playback image on the screen. A PIP with a rectangle temporarily displays showing what area of the screen has been enlarged. You can use the arrow buttons to move the rectangle to another area. Pressing the ↵ (Enter) button toggles the zoom size between 2x, 3x and 4x.

You can use a mouse for convenient playback control. Position the mouse pointer on the search screen, and the following search toolbar will display.

Fig. 111 Mouse playback controls

Clicking ✖ on the left side exits the toolbar. If you want to display the toolbar again, position the mouse pointer on the screen. Change the toolbar location by clicking the empty space on the right side of the toolbar and drag it to where you want it located on the screen.

The individual controls on the toolbar perform the following functions as described below:

- Go to the first image
- Fast backward play
- Go to the previous image
- Play
- Go to the next image
- Fast forward play
- Go to the last image

9.10 Searching video

Pressing the Menu button or clicking the right mouse button while in the Search mode displays the ***Search*** Menu.

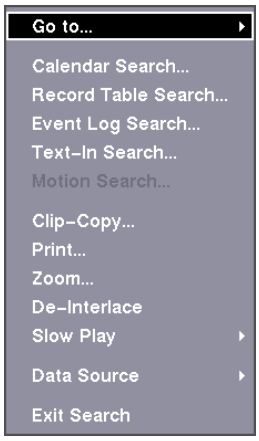


Fig. 112 Search menu

Go to…	Displays the first or last recorded image, or searches by data and time (see below for more details)
Calendar Search…	Searches using a calendar (see below for more details)
Record Table Search…	Searches using a recording table (see below for more details)
Event Log Search…	Selects video from the event log (see below for more details)
Text-In Search…	Searches text input strings (see below for more details)
Motion Search…	Searches motion events (see below for more details)
Clip-Copy…	Clips a video segment and saves it (see below for more details)
Print…	Allows you to print a selected image (see below for more details)
Zoom…	Zooms the current playback image
De-Interlace	Turns the de-interlace filter on
Slow Play…	Plays video at low speed (x1/2, x1/3, x1/4, x1/6 and x1/8)
Data Source	Allows you to choose between recorded and archived video
Exit Search	Exits the ***Search*** Menu

NOTE

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

NOTE

The video signal has a time difference of 1/50 second (1/60 second for NTSC) between odd and even fields because it is composed of 50 interlaced fields per second (60 fields for NTSC). When recording video with Very High (D1) resolution, video is made up of frame units combining two fields – one odd field and one even field. This can cause horizontal scan lines or flashes in areas with motion because of the time difference between the two fields. Turning on the de-interlace filter provides clearer video by eliminating these horizontal scan lines and flashes.

9.10.1 Go to

Fig. 113 Go to menu

Selecting ***First*** displays the first recorded image and selecting Last displays the last recorded image.

Selecting ***Date/Time*** displays the Go to the Date/Time screen.

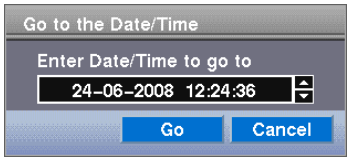


Fig. 114 Go to the Date/Time screen

1. Move the cursor over the date and time and press the ↵ button.
   - ➔ You can use the Left and Right arrow buttons to highlight the year, month, day, hours, minutes and seconds.
   - ➔ Use the Up and Down arrow buttons to change to the date and time you want to search for video.
2. Once you have set the date and time you want, press the ↵ button.
3. Then highlight ***Go*** and press the ↵ button.
   - ➔ The selected date and time will display. (If no video was recorded during the selected time, a message appears alerting you that no image was recorded at that time.)
   - ➔ The Play/Pause, RW, FF can now be used to review the surrounding video.

9.10.2 Calendar Search

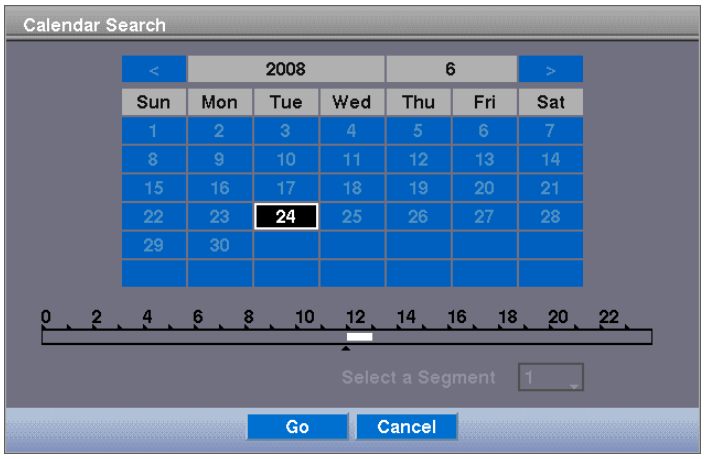


Fig. 115 Calendar Search screen

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 displays at the bottom of the calendar. Hours in which video was recorded will be highlighted with blue. You can use the 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.

If the DVR's time and date have been reset to a time that is earlier than some recorded video, it is possible for the DVR to have more than one video stream in the same time range. Move to ***Select a Segment***, and select the video stream you want to search. Refer to the Appendix, Section 12.4: Time overlap for further information on searching time-overlapped video streams.

NOTE
The lower number of the Segment indicates the latest recorded video.

Once you have set the date and time you want to search, highlight ***Go*** and press the ↵ button. The selected date and time will display. The Play/Pause, RW, FF, Jog and Shuttle can now be used to review the surrounding video.

NOTE
It is possible that no recorded image displays on the current screen. Press the Display button and change the screen mode to 4x4. You will be able to easily see the camera have recorded video during target time.

9.10.3 Record Table Search

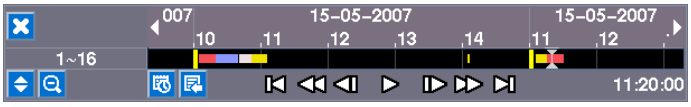


Fig. 116 Record Table Search (Standard View) screen

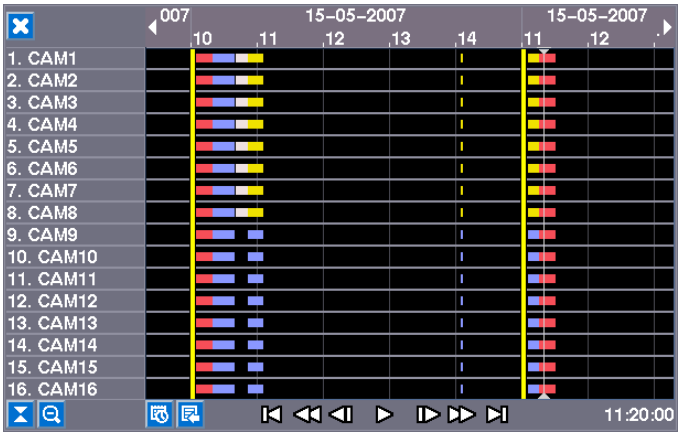


Fig. 117 Record Table Search (Expanded View) screen

Recording information about video images currently displayed on the screen displays on the recording status bar. A white vertical line indicates the current search position. To search specific video, move the vertical line by using the Left or Right arrow buttons on the front panel or by clicking the mouse on the desired segment.

If the DVR's time and date have been reset to a time that is earlier than some recorded video, it is possible for the DVR to have more than one video stream in the same time range. In this case, the overlapping time range in the record table will be separated by a yellow vertical line.

NOTE
The recorded data in the time range located after the yellow vertical line is the latest.

There are two view modes. Selecting (Standard view) or (Expanded view) located at the bottom switches to the other view mode. Standard view displays combined recording information of all camera channels currently displayed on the screen. Expanded view displays the recording information of each camera channel currently displayed on the screen.

Selecting or located at the bottom zooms the record table. Selecting displays eight hours (1-minute based), and selecting displays 24 hours (3-minute based) at once. To move to earlier or later times that are not shown in the current record table screen, select the arrows located at the end of the times by using the arrow buttons on the front panel or remote control.

NOTE
If the DVR has images recorded in more than one recording mode in the same time range, the recording status bar displays recording information in the following priority order: Panic → Pre-Event → Event → Time. The colour of the bar indicates different recording modes: Red for Panic, White for Pre-Event, Yellow for Event, and Blue for Time.

Selecting located at the bottom displays the Search menu.

Selecting located at the bottom displays the 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. The first recorded image of the selected date will pause on the screen. Once you have selected the date you want to search, review the surrounding video by using the playback controls located at the bottom. Refer to Section 9.9: Playing recorded video for information regarding playback controls.

Selecting located in top-left corner exits the Record Table Search screen.

NOTE
It is possible that no recorded image displays on the current screen. Press the Display button and change the screen mode to 4x4. You will be able to easily see the camera have recorded video during target time.

9.10.4 Event Log Search

Fig. 118 Event Log Search screen

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

The ***Event Log Search*** screen can also be accessed by pressing the Alarm button unless there is an alarm. There is no determined user authority to display the ***Event Log Search*** screen, however, the event video will not be played unless a user with Search authority logs into the system.

Pressing the ↵ button will extract the event video and display the first image of the event. Pressing the Play/Pause button will start playing the “event” video segment. Pressing Search returns to live monitoring.

NOTE

It is possible that no recorded image displays on the current screen. Press the Display button and change the screen mode to 4x4. You will be able to easily see the camera have recorded video during target time.

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

Fig. 119 Event Log Search Option screen

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

1. Highlight the box beside ***From*** and press the ↵ button to toggle between On and Off.

➔ When set to Off, you can enter a specific Date and Time.

➔ When set to On, the search will be from the first recorded image.

2. Highlight the box beside ***To*** and press the ↵ button to toggle between On and Off.

➔ When set to Off, you can enter a specific Date and Time.

➔ When set to On, the search will be from the last recorded image.

3. Highlight the box beside ***Check Time Overlap*** and press the ↵ button.

➔ It toggles between On and Off.

You will only be able to turn the Check Time Overlap on or off if a user-defined date and time is set to From and To. If the DVR's date and time have been reset, it is possible for the DVR to have more than one overlapping start and stop time. When set to On, you will be asked to select one of the overlapping start and stop time. When set to Off, the DVR will display search results from all start times to all stop times.

4. Highlight the box beside ***Alarm-In*** and press the ↵ button.

➔ You can select the alarm inputs that you want to include in your search.

5. Highlight the box beside ***Motion*** and press the ↵ button.

➔ You can select the cameras for which you want any reports of motion detection.

6. Highlight the box beside ***Video Loss*** and press the ↵ button.

➔ You can select the cameras for which you want any reports of lost video.

7. Highlight the box beside ***Text-In*** and press the ↵ button.

➔ You can select the text-in devices which you want any report of text input.

8. Highlight the box beside ***Record Channels*** and press the ↵ button.

➔ You can select the cameras that you want to search for any reports of event recorded data. The DVR will display the events (not the camera channels) that occurred and that also are recorded on the camera channel that you selected. If you do not select a camera channel in this field, the DVR will search events that are not associated with cameras.

➔ You can also toggle On and Off self-diagnostic events as part of your search. The choices are:

- Panic Record
- Check Recording
- Check Alarm-In
- Disk Almost Full
- Disk Bad
- Disk Temperature
- Disk S.M.A.R.T.

➔ Once you set your desired search conditions, highlight ***Search*** and press the ↵ button to display the search results in the ***Event Log Search*** screen.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

9.10.5 Text-In Search

Fig. 120 Text-In Search screen

The DVR maintains a log of each time there is Text Input. The ***Text-In 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 video associated with the Text Input and display the first image of the event. Pressing the Play/Pause button will start playing the “event” video segment. Pressing Search returns to live monitoring.

NOTE

It is possible that no recorded image displays on the current screen. Press the Display button and change the screen mode to 4x4. You will be able to easily see the camera have recorded video during target time.

NOTE

Text Input information will be overlaid on the image while the recorded video is played at regular speed.

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

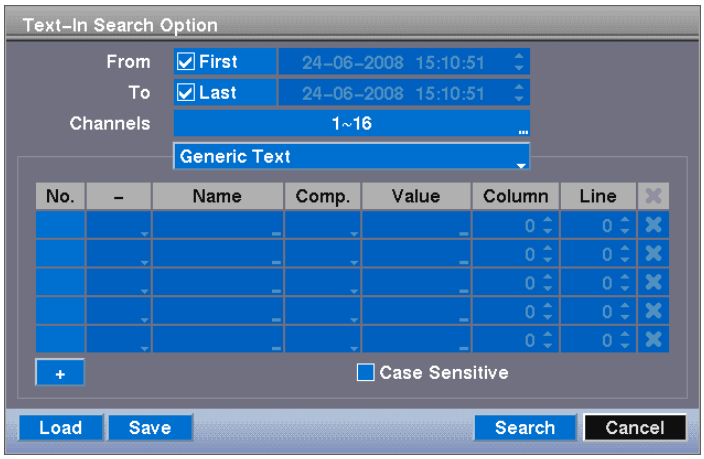


Fig. 121 Text-In Search Option screen

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

1. Highlight the box beside ***From*** and press the ↵ button to toggle between On and Off.
   ➔ When set to Off, you can enter a specific Date and Time.
   ➔ When set to On, the search will be from the first recorded image.
2. Highlight the box beside ***To*** and press the ↵ button to toggle between On and Off.
   ➔ When set to Off, you can enter a specific Date and Time.
   ➔ When set to On, the search will be from the last recorded image.
3. Highlight the channels and press the ↵ button.
4. Select the text-in devices that you want to search for text input.
5. Highlight the ***Text Input Device*** box and press the ↵ button.
6. Select your Text Input Device from the list.
   ➔ Highlighting the + and pressing the ↵ button allows you to add a new set of search parameter.
7. Set up the desired search parameter.
   Refer to the Appendix, Section 12.2: Text-In Search examples for further information on setting up search parameters.
   ➔ The ✖ column can be used to delete a set of search parameter or entire sets of search parameters.
8. Highlight ***Case Sensitive*** and press the ↵ button.
   ➔ This will toggle between On and Off.
   ➔ When this feature is On, the search will find only those text strings in which the case matches.
9. Highlight ***Load*** and press the ↵ button to load saved search option settings.
10. Select the desired search option settings.
11. Highlight ***Save*** and press the ↵ button to save the current search option settings.
    ➔ A virtual keyboard appears that you can use to enter the search option name.

➔ Once you set your desired search conditions, highlight ***Search*** and press the ↵ button to display the search results in the ***Text-In Search*** screen.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

9.10.6 Motion Search

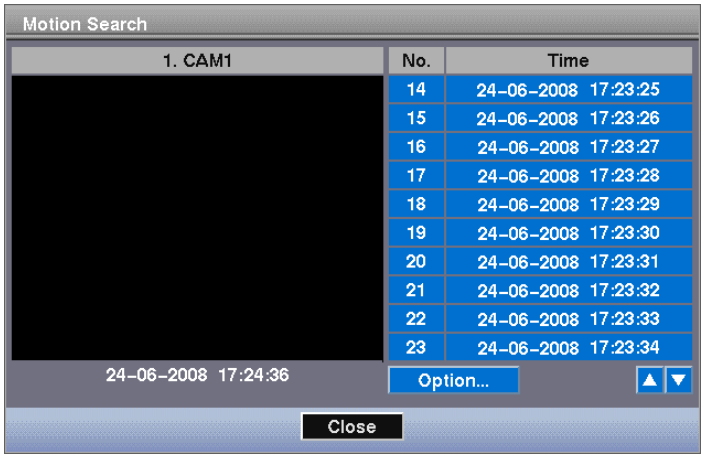


Fig. 122 Motion Search screen

The ***Motion Search…*** can be selected from the ***Search*** menu while the DVR displays the camera full screen. The ***Motion Search*** screen displays a list of motion events. Use the arrow buttons to highlight the event for which you would like to see and press the ↵ button to display the video associated with selected event on the small search screen.

Highlighting ***Close*** and pressing the ↵ button extract the video associated with the Motion event and display the first image of the event. Pressing the Play/Pause button will start playing the “event” video segment. Pressing Search returns to live monitoring.

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

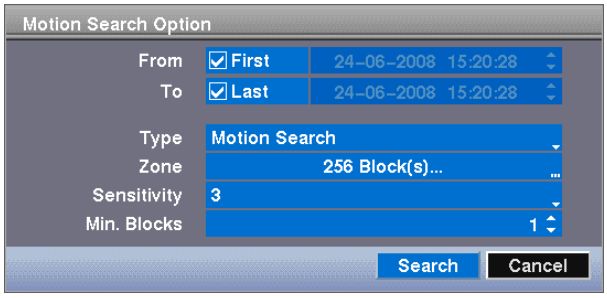


Fig. 123 Motion Search Option screen

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

1. Highlight the box beside ***From*** and press the ↵ button to toggle between On and Off.
   - ➔ When set to Off, you can enter a specific Date and Time.
   - ➔ When set to On, the search will be from the first recorded image.
2. Highlight the box beside ***To*** and press the ↵ button to toggle between On and Off.
   - ➔ When set to Off, you can enter a specific Date and Time.
   - ➔ When set to On, the search will be from the last recorded image.

3. Highlight the box beside ***Type*** and press the ↵ button.

➔ You can select between Motion Search and Museum Search. Motion Search detects motion in the defined area. Museum Search detects if a defined object has moved.

4. Highlight the box beside ***Zone*** and press the ↵ button.

➔ An image from the video appears with a grid overlaid.

➔ You can turn sensor blocks On and Off to define the area of the picture in which you want to search for motion.

NOTE

Defining the area of the image in which you want to search for motion is nearly identical to setting up the DVR for Motion Detection. Please refer to the ***Motion Detection*** screen in Section 8: Configuration for more detailed instructions on setting up the detection blocks.

NOTE

When setting the Museum Search Zone, the zone should be placed inside of the border line of the target object. If the selected block is placed on the boarder line, the sensitivity of the Museum Search may decrease.

➔ The zone should be placed or focused on the centre or, at least, within the outline of targeted object.

5. Highlight the box beside ***Sensitivity*** and press the ↵ button.

➔ You will be able to select from 1 (low sensitivity) to 5 (high sensitivity).

6. Highlight the box beside ***Min. Blocks*** and press the ↵ button.

➔ You will be able to set the number of sensor blocks that must be activated.

➔ Setting the Min. Blocks will only be available if Motion Search is selected.

➔ Once you set your desired search conditions, highlight ***Search*** and press the ↵ button to display the search results in the ***Motion Search*** screen.

➔ Selecting ***Cancel*** exits the screen without saving the changes.

When you search for motion events of another camera, you will be asked whether or not you want to delete the previous search results from the list.

9.10.7 Clip-Copy screen

The ***Clip-Copy*** screen can be used to copy video clips to an internal DVD-RW drive, or external USB hard disk, CD-RW or flash drive. The copied video clips can be viewed on computers running Microsoft Windows 98, ME, 2000, or Vista. Refer to the Appendix, Section 12.1: Preparing the USB hard disk drive in Windows 2000 for information on preparing the external drive for clip copy. The clip copy can be simply done by pressing the Menu button or the Freeze button.

Press and hold the Menu button for more than two seconds while in the Search mode, and the ***Clip-Copy*** screen appears to allow clip copy setup.

Pressing the Freeze button during the playback will set the starting point of the video to be clip copied, and the icon displays at the bottom-left corner of the screen. Pressing the Freeze button again will set the ending point of the video to be clip copied by displaying the ***Clip-Copy*** screen.

Pressing and holding the Freeze button for more than two seconds while in the Search mode or Live Monitoring mode initiates the One-Touch Clip Copy function. The last recorded image will be the ending point of video to be clip copied, and the system will automatically begin to calculate the possible video data size that the selected storage media can handle.

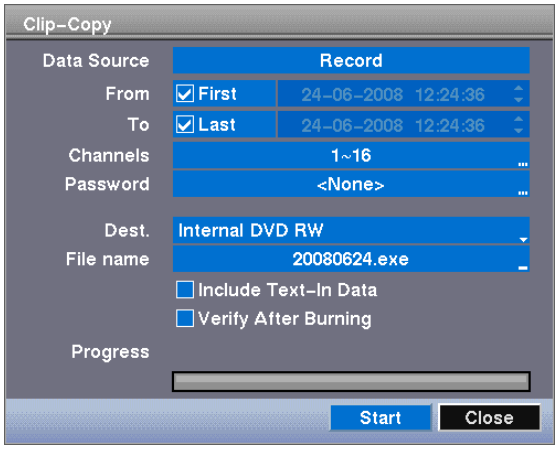


Fig. 124 Clip-Copy screen

The ***Data Source*** box displays the source from which you make a video clip copy. The data source can be selected from ***Record*** or ***Archive*** in the ***Search*** menu.

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

1. Highlight the box beside ***From*** and press the ↵ button to toggle between On and Off.
   - ➔ When set to Off, you can enter a specific Date and Time.
   - ➔ When set to On, the search will be from the first recorded image.
2. Highlight the box beside ***To*** and press the ↵ button to toggle between On and Off.
   - ➔ When set to Off, you can enter a specific Date and Time.
   - ➔ When set to On, the search will be from the last recorded image.
3. Highlight the box beside ***Password*** and press the ↵ button.
   - ➔ A virtual keyboard appears allowing you to enter the password for reviewing the video clips.

4. Highlight the box beside ***Channels*** and press the ↵ button.

➔ You can select the cameras that you would like to include in your video clip.

5. Highlight the box beside ***Dest.*** and press the ↵ button.

➔ You can select the storage device on which you would like to record the video clip. You can choose from Internal DVD-RW, USB Storage and USB CD-RW.

IMPORTANT The USB device for clip copy must be FAT 16 or FAT32 format.

NOTE
While copying video clips on the CD-RW or DVD RW, the recording speed might decrease.

NOTE
While copying video clips on the CD-RW or DVD RW, the DVR will stop archiving video data until clip copy is finished.

NOTE
When the error message “Firmware update of the optical drive is required” displays, update the firmware of the installed DVD RW drive. Please follow the instructions described in the chapter Configuration, System Information.

The DVR automatically assigns a file name to the video clip. However, you can give the video clip file a different name.

6. Highlight the box beside ***File Name*** and press the ↵ button.

➔ A virtual keyboard appears.

7. Enter a file name for the video you are backing up and select ***Close***.

➔ The DVR will automatically add the camera number (for example “01”) and “.exe” to the file name.

NOTE
When naming a file, you cannot use the following characters: \, /, :, *, ?, “, <, >, |.

8. Highlight ***Include Text-In Data*** and press the ↵ button.

➔ This will toggle between On and Off. When this feature is On, you can include text-in data when copying video if the video was recorded with text-in data.

9. Highlight ***Verify After Burning*** and press the ↵ button.

➔ This will toggle between On and Off. When this feature is On, you can verify that the data is written on the CD-RW or DVD RW properly.

10. Once you have given the video clip a file name, highlight the ***Start*** button and press the ↵ button.

➔ The confirmation screen displaying data size will appear. When the storage device does not have enough space, the DVR will ask if you want to copy as much of the video clip as possible in the available space.

11. Highlight the ***Continue*** button and press the ↵ button to continue clip copy.

➔ Once the clip copy starts, you can cancel it by selecting ***Cancel*** or hide the screen by selecting ***Close***.

➔ When selecting ***Close***, Clip Copy continues and a confirmation screen will display when complete.

NOTE
Only 4.7 GB DVD media is available. To clip copy video on the DVD media using remaining space, the size of previously recorded data on the DVD media should be less than 4 GB.

NOTE
Select the Full Erase option when erasing recorded data on DVD media, otherwise the media will not operate properly when rewritten.

NOTE
The file size for clip copy is limited to 30GB. When copying video clips larger than 2GB, the video clips will be save in units of 2GB. For example, 3 individual 2GB files will be created when saving a 6GB video clip. However, the file size for the One-Touch Clip Copy is limited to 2GB.

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

You do not need to install any special software on your personal computer to review the video clips. Refer to the RAS manual for instructions on how to review video clips you have copied.

NOTE
During Clip Copy, you cannot shut the system down, clear data on the storage device, or format the storage device.

NOTE
Do **not** disconnect the USB cable or the power from the external drive while copying video clips. If the external drive is shut down or the USB cable is disconnected while copying video clips, THE DVR SYSTEM MAY NOT WORK NORMALLY OR THE EXTERNAL DRIVE COULD BE DAMAGED, and you will get an error message the next time you try to copy video clips. You will need to power down the DVR and restart it to get rid of the error message. Once the file system of the USB hard disk drive has been corrupted, this error message cannot be dismissed. Even after restarting the DVR it may automatically restart while preparing to clip copy. You must recover the file system using the recovery program, or you must reformat the hard disk drive.

9.10.8 Print screen

You can print images from the screen. Connect a PostScript™ printer to one of the USB ports. A message appears asking you if you want to print the current image.

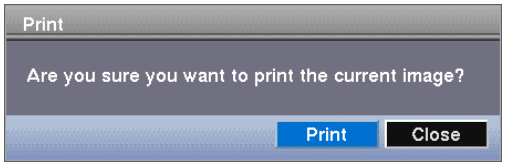


Fig. 125 Print screen

NOTE
If your printer only supports an LPT connection (parallel), use an LPT to USB converter cable. The printer cable is not provided.

9.10.9 Disk mirroring

The DVR supports disk mirroring to prevent unexpected loss of recorded video data that might be caused by disk damage or corruption. You can set up disk mirroring by highlighting ***Storage*** in the ***System*** menu and pressing the ↵ button.

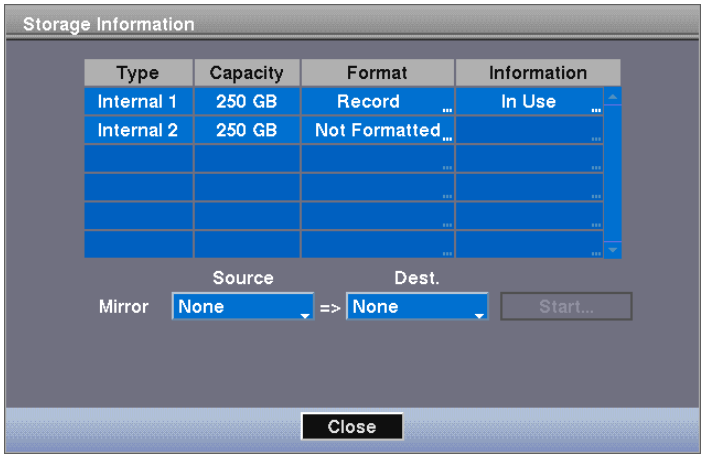


Fig. 126 Storage Information screen

In the Information screen, you can enable mirroring between two disks by designating the source disk and the destination disk from a list of internal hard disk drives.

Highlighting the boxes under ***Source*** and ***Dest.*** and pressing the ↵ button allows you to select the source disk and the destination disk for the selected Mirror.

NOTE
The source disk can be designated only from devices formatted for recording.

NOTE
A device formatted for archiving cannot be used for disk mirroring.

NOTE
The manufacturer, model and capacity of the source disk and the destination disk should be same for the proper mirroring between two disks.

NOTE
While disks are mirroring, the DVR will stop archiving video data.

IMPORTANT Any existing data on the Destination Disk will be erased once it is designated as a mirror destination disk.

Highlighting ***Start*** and pressing the ↵ button displays a confirmation screen asking you to confirm whether or not you want to start mirroring the selected disk. Once you start mirroring, the two disks will be resynchronized. Any data on the destination disk will be erased, and the data on the source disk will be copied to the destination disk. If the source disk is formatted and has no data, the disks will not be resynchronized. Resynchronization takes about 40 minutes per each 10GB of capacity. After resynchronization is complete, disk mirroring (writing data on the two disks at the same time) will start.

NOTE
Resynchronization will pause while searching video.

Once disk mirroring starts, you can cancel it by highlighting ***Stop*** and pressing the ↵ button. Selecting ***Stop*** displays a confirmation screen asking you to confirm whether or not you want to stop mirroring for the selected disk.

NOTE
Once disk mirroring stopped, the destination disk will be set to *Not Used*. If resynchronization has been finished, the destination disk cannot be used for recording or archiving, but it can be used for searching. If you want to use the disk for recording or archiving, you must reformat it.

IMPORTANT	Disk mirroring will NOT automatically restart from an interrupted state. Once mirroring is stopped, you must restart it by following the mirroring setup procedures.

10 Troubleshooting

Problem	Possible solution
No power	● Check power cord connections. ● Confirm that there is power at the outlet.
No live video	● 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.
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.
The icon displays, however, the DVR is not recording	When the DVR is in the Pre-Event recording mode, the yellow and display when there is no event, and the DVR is not recording. The red and display when any event occurs and the DVR starts recording.

11 Disposal

All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.

This crossed-out wheeled bin symbol on the product means the product is covered by the European Directive 2002/96/EC.

The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health. It is a precondition for reuse and recycling of used electrical and electronic equipment. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

12 Appendix

12.1 Preparing the USB hard disk drive in Windows 2000

NOTE
Preparing a USB hard disk drive under Windows XP and Windows Vista is almost identical to Windows 2000.

1. Connect the USB hard disk drive to your computer using the USB cable.
2. Turn on your computer.
   ➔ The USB device icon should display on the Taskbar.
   ➔ If the USB hard disk drive is partitioned or has data, it will show up in ***My Computer*** as a hard disk drive icon.
3. Check the file system by right clicking on the icon and checking under ***Properties > General > File System***.
4. If the file system is **not** FAT32 format, format the USB hard disk drive using the FAT32 format.
5. If the USB hard disk drive is not partitioned, go to ***Administrative Tools*** in ***Control Panel*** and launch ***Computer Management***.
6. Open ***Disk Management*** in ***Storage*** and right click an unallocated region of the USB hard disk drive.
7. Then, click ***Create Partition***.
8. In the ***Create Partition*** wizard, click ***Next*** then ***Primary Partition***, and follow the instructions on the screen.
9. Make sure that the FAT32 is selected for the file system.

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

   ➔ After formatting is complete, the USB hard disk drive will be added to ***My Computer***.
10. Connect the USB hard disk drive to the DVR.

12.2 Text-In Search examples

12.2.1 Search example I

```
         1         2         3         4         5         6
1234567890123456789012345678901234567890123456789012345678901234567890

    Item        Unit price      Qty        amount
================================================
 Coke          | $     2.20 |      1(s) | $       2.20
 Fanta         | $     2.20 |      1(s) | $       2.20
 Hotdog        | $     3.50 |      3(s) | $      10.50
 Pepsi         | $     1.95 |      1(s) | $       1.95
================================================
                             total : $       16.85
Thank you~~
```

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

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

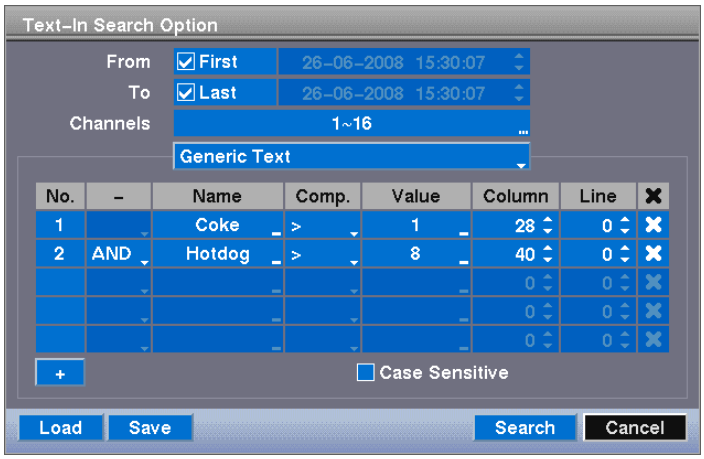


Fig. 127 Text-In Search example (1) screen

12.2.2 Search example II

```
        1         2         3         4         5         6
12345678901234567890123456789012345678901234567890123456789012345678901234567890

    Item        Unit price      Qty        amount
================================================
 Coke          | $    2.20 |     1(s)
                                          $      2.20
 Fanta         | $    2.20 |     1(s)
                                          $      2.20
 Hotdog        | $    3.50 |     3(s)
                                          $     10.50
 Pepsi         | $    1.95 |     1(s)
                                          $      1.95
================================================
                              total : $       16.85
Thank you~~
```

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

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

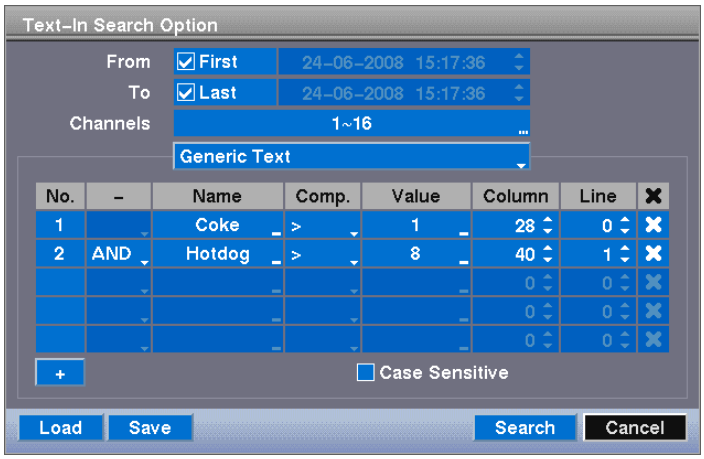


Fig. 128 Text-In Search example (2) screen

12.3 Web Client

Web Client allows you to access a remote DVR, monitor live video images and search recorded video using Internet Explorer web browser anytime from virtually anywhere.

Computer system requirements for using Web Client are:

- Operating System: Microsoft® Windows® 2000, Microsoft® Windows® XP or Microsoft® Windows® Vista
- CPU: Intel Pentium III (Celeron) 600 MHz or faster
- RAM: 128 MB or higher
- VGA: 8 MB or higher (1024x768, 24 bpp or higher)
- Internet Explorer: Version 6.0 or later

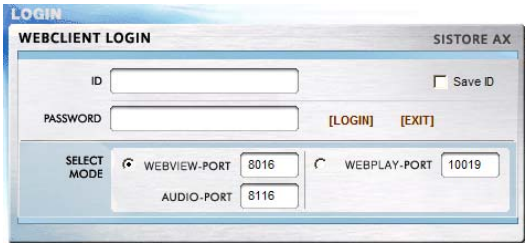
Start Internet Explorer on your local PC and enter “http://IP address:port number” (The DVR IP address and the Web Client port number (default: 12088) set in the Network setup screen (Web Client tab)) in the address field.

NOTE

You will need to get the appropriate IP address for the DVR you want to connect to and the Web Client port number from your network administrator.

NOTE

Web Client only works with Microsoft Internet Explorer and will NOT work with Netscape or other browsers.



Select between the ***WEBVIEW*** (Web monitoring) and ***WEBPLAY*** (Web search) modes and enter the appropriate port number of the program. Entering your ID and PASSWORD and clicking the ***[LOGIN]*** button logs in using the selected mode. Selecting ***Save ID*** saves the ID you entered.

NOTE

The port numbers for *WEBVIEW*, *WEBPLAY* and *AUDIO* should be the same with port numbers for *Remote Watch*, *Remote Search* and *Remote Audio* that were set during Network setup.

NOTE

When running the updated Web Client for the first time, Internet Explorer might occasionally load the information of the previous version. In this case, delete the temporary Internet files by selecting Tools → Internet Options → General tab, and then run Web Client again.

NOTE

There might be a problem with the bottom of the Web Client page being cropped caused by the address or status bars in Microsoft Internet Explorer 7.0. In this situation, it is recommended that websites open windows without address or status bars by changing Internet setting. (Go to the Tools → Internet Options → Security tab → Click the Custom level… button → Select *Enable* for the *Allow websites to open windows without address or status bars* option.)

NOTE

When running Web Client in the Microsoft Windows Vista operating system, it is recommended that you start Internet Explorer with elevated administrator permissions. Click the right mouse button on the Internet Explorer icon and select the *Run as administrator* option from the context menu. Otherwise, some functions of Web Client might be limited.

NOTE

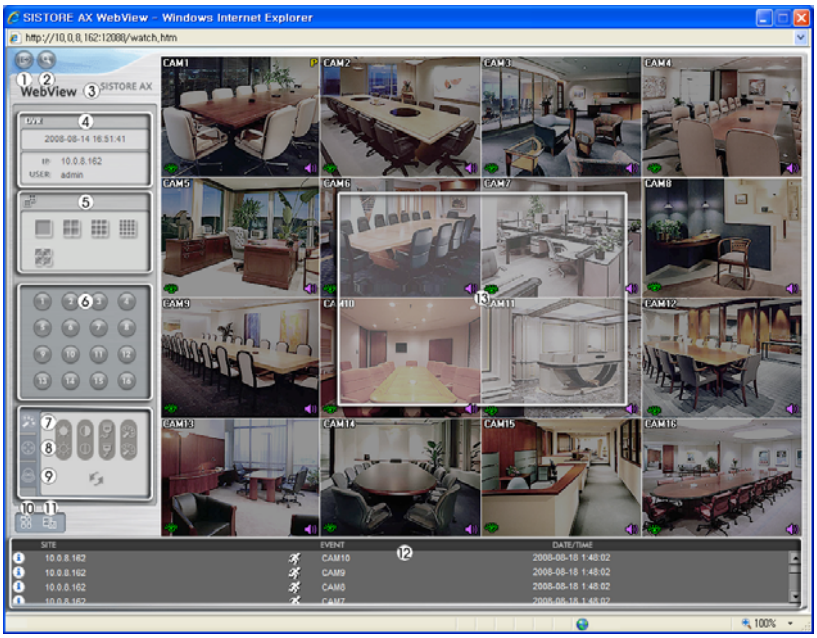
There might be a problem with screen display or screen update caused by low image transmission speed when using the Microsoft Windows Vista operating system. In this situation, it is recommended you disable the Auto Tuning capability of your computer.

Run the Command Prompt with elevated administrator permissions (Go to the Start Menu → Accessories → *Command Prompt* → Click the right mouse button and select the *Run as administrator* option). Then enter “netsh int tcp set global autotuning level=disable” and press the enter key. Restart your computer to apply the changes.

If you want to enable the Auto Tuning capability again, enter “netsh int tcp set global autotuning level=normal” after running the Command Prompt with elevated administrator permissions. Restart your computer to apply the changes.

12.3.1 Web View mode

WebView is a remote web monitoring program that allows you to monitor live video transmitted in real-time from the remote DVR.



① Click the button to log out of the Web Client program.

② Click the button to access to the web search mode.

③ Position the mouse pointer on the WebView logo to see the version of the Web Client program.

④ The DVR information window displays the login information of Web Client.

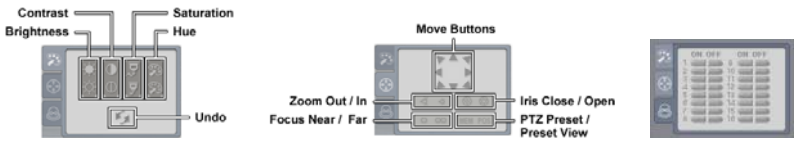
⑤ Click the screen format to select the desired display mode. When changing the screen format, the selected camera on the current screen will be located in the first cell of the new layout.

⑥ Click the camera button (1 to 16) to select the camera to be viewed.

⑦ Click the button to adjust the brightness, contrast, saturation and hue of monitored image.

⑧ Click the button to control pan, tilt and zoom of the camera from a remote site.

⑨ Click the button to control alarm out devices at the remote site.



⑩ Click the button to set up the image drawing mode and OSD display. You can adjust the display speed by changing the image drawing mode, and select OSD information to be displayed on the screen.

⑪ Click the button to save the current image as a bitmap or JPEG file format.

⑫ The event status window at the bottom displays a list of events that were detected from the remote site.

⑬ Selecting a camera on the screen and clicking the right mouse button displays the text menu screen.

- Enable Audio: Enables audio communication with the remote site. When the audio control panel displays, click to send audio to the connected remote site and click the button again to stop sending audio. Click the button to monitor live audio from the connected remote site through the attached speaker and click the button again to stop monitoring live audio. Clicking both the button and the button allows two-way communication. Clicking the button disables audio communication.
- Aspect Ratio: Changes the image aspect ratio.
- Anti-Aliasing Screen: Enhances image display quality by eliminating stair stepping (aliasing) effects in the enlarged image.

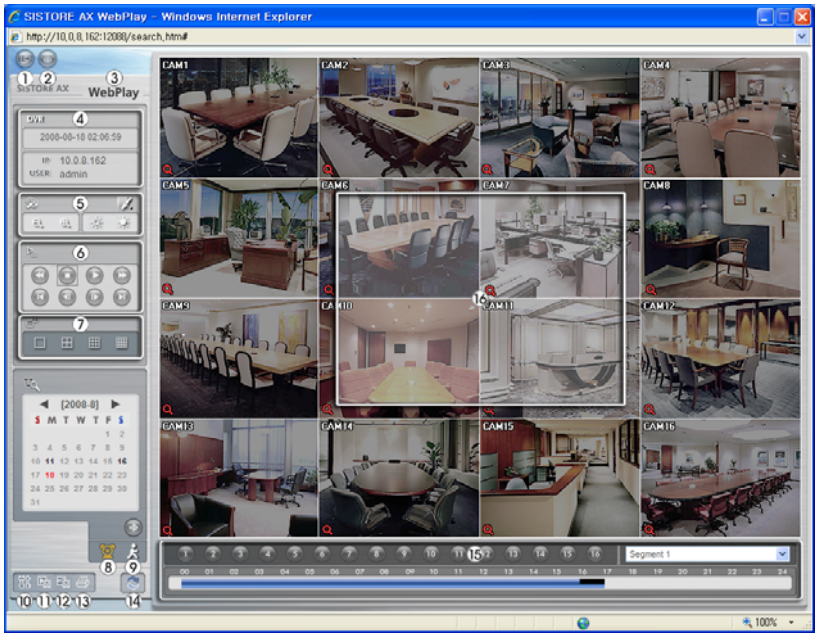
NOTE

The icon will display on each camera screen when audio communication is available between the Web Client system and a DVR.

12.3.2 Web Play mode

WebPlay is a remote web search program that allows you to search recorded video on the remote DVR.

NOTE
The remote site connection in the Web search mode will automatically be disconnected if there is no activity for 30 minutes.



① Click the button to log out the Web Client program.

② Click the button to access to the web monitoring mode.

③ Position the mouse pointer on the WebPlay logo to see the version of the Web Client program.

④ The DVR information window displays the time information of recorded data on the remote DVR and login information of Web Client.

⑤ Click the button to blur, sharpen, equalize and interpolate playback images. Click the button to zoom out or zoom in the recorded image. Click the button to adjust the brightness of the recorded images.

NOTE
Image processing works only in the pause mode.

⑥ The playback function buttons include fast backward, pause, play, fast forward, go to the first image, go to the previous image, go to the next image, and got to the last image.

⑦ Click the screen format to select the desired display mode.

⑧ Click the button to enter the time-lapse search mode which allows you to search for recorded data by time and then play back images found within the time parameters. The Timetable window located at the bottom displays the time information for the image of the date selected on the calendar. If more than one video stream in the same time range, you can select the video stream you want to search. Clicking a specific time displays the image recorded at that time on the screen. Selecting the button allows you to display an image from a specific time.

⑨ Click the button to enter the event search mode which allows you to search for event log entries using specific conditions and play back the images associated with those event entries.

⑩ Click button to set up the image drawing mode and OSD display. You can change the display speed by adjusting the image drawing mode, and select OSD information to display on the screen.

⑪ Click the button to save any video clip of recorded data as an executable file,

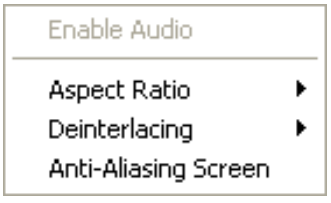
⑫ Click the button to save the current image in a bitmap or JPEG file format.

⑬ Click the button to print the current image on a printer connected to your computer.

⑭ Click the button to reload the recording data.

⑮ The timetable displays recorded data of the selected camera by time (in hour segments). If the DVR's time and date have been reset to a time that is earlier than some recorded video and more than one video segment exists in the same time range, select the video segment you want to search from the ***SEGMENT*** menu at the top-right corner on the timetable.

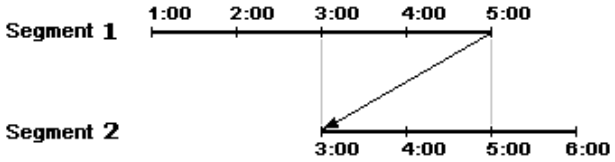
⑯ Selecting a camera on the screen and clicking the right mouse button displays the text menu screen.



- Aspect Ratio: Changes the image aspect ratio.
- Deinterlacing: Using a deinterlace filter for interlaced video enhances image display quality by eliminating horizontal scan lines and noise in areas with motion.
- Anti-Aliasing Screen: Enhances image display quality by eliminating stair stepping (aliasing) effects in the enlarged image.

12.4 Time overlap

If the DVR's time and date have been reset to a time that is earlier than the existing recorded video, it is possible for the DVR to have more than one video stream in the same time range. In this case, you can search overlapping video streams individually by selecting a specific segment. For example, when the DVR has recorded video from one to five o'clock and the user changes the time backward from five to three o'clock and then continues recording until six o'clock, there will be two video streams and segments from three to five o'clock.



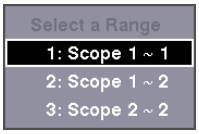
You can search overlapping video streams by selecting a specific time or time range. If you want to search recorded video at four o'clock during the overlapping time range using a search menu such as ***Go to the Date/Time***, select the segment you want to search.

If you want to search recorded video from four to five o'clock during the overlapping time range using a search menu such as ***Event Log Search***, ***Text-In Search*** or ***Motion Search***, it is possible for the DVR to have two overlapping start and stop times. You will be asked to select one of the overlapping start and stop times from the search time ranges as follows:

– From four o'clock of the first segment to five o'clock of the first segment

– From four o'clock of the first segment to five o'clock of the second segment

– From four o'clock of the second segment to five o'clock of the second segment



12.5 Recording tables

12.5.1 Recording times with 500 GB HDD (days) for PAL images

	Recording quality (standard resolution)			
Recording speed	**Very high (12 KB)**	**High (8 KB)**	**Standard (4 KB)**	**Low (2 KB)**
200 ips	2.4	3.6	7.2	14.5
100 ips	4.8	7.2	14.5	28.9
50 ips	9.6	14.5	28.9	57.9
25 ips	19.3	28.9	57.9	115.7
20 ips	24.1	36.2	72.3	144.7
15 ips	32.2	48.2	96.5	192.9
10 ips	48.2	72.3	144.7	289.4
5 ips	96.5	144.7	289.4	578.7
1 ips	482.3	723.4	1,446.8	2,893.5

	Recording quality (high resolution)			
Recording speed	**Very high (24 KB)**	**High (16 KB)**	**Standard (8 KB)**	**Low (4 KB)**
100 ips	2.4	3.6	7.2	14.5
50 ips	4.8	7.2	14.5	28.9
25 ips	9.6	14.5	28.9	57.9
20 ips	12.1	18.1	36.2	72.3
15 ips	16.1	24.1	48.2	96.5
10 ips	24.1	36.2	72.3	144.7
5 ips	48.2	72.3	144.7	289.4
1 ips	241.1	361.7	723.4	1,446.8

	Recording quality (very high resolution)			
Recording speed	**Very high (48 KB)**	**High (32 KB)**	**Standard (16 KB)**	**Low (8 KB)**
50 ips	2.4	3.6	7.2	14.5
25 ips	4.8	7.2	14.5	28.9
20 ips	6.0	9.0	18.1	36.2
15 ips	8.0	12.1	24.1	48.2
10 ips	12.1	18.1	36.2	72.3
5 ips	24.1	36.2	72.3	144.7
1 ips	120.6	180.8	361.7	723.4

12.5.2 Recording times with 500 GB HDD (days) for NTSC images

	Recording quality (standard resolution)			
Recording speed	**Very high (12 KB)**	**High (8 KB)**	**Standard (4 KB)**	**Low (2 KB)**
240 ips	2.0	3.0	6.0	12.1
120 ips	4.0	6.0	12.1	24.1
60 ips	8.0	12.1	24.1	48.2
30 ips	16.1	24.1	48.2	96.5
20 ips	24.1	36.2	72.3	144.7
15 ips	32.2	48.2	96.5	192.9
10 ips	48.2	72.3	144.7	289.4
5 ips	96.5	144.7	289.4	578.7
1 ips	482.3	723.4	1,446.8	2,893.5

	Recording quality (high resolution)			
Recording speed	**Very high (24 KB)**	**High (16 KB)**	**Standard (8 KB)**	**Low (4 KB)**
120 ips	2.0	3.0	6.0	12.1
60 ips	4.0	6.0	12.1	24.1
30 ips	8.0	12.1	24.1	48.2
20 ips	12.1	18.1	36.2	72.3
15 ips	16.1	24.1	48.2	96.5
10 ips	24.1	36.2	72.3	144.7
5 ips	48.2	72.3	144.7	289.4
1 ips	241.1	361.7	723.4	1,446.8

	Recording quality (very high resolution)			
Recording speed	**Very high (48 KB)**	**High (32 KB)**	**Standard (16 KB)**	**Low (8 KB)**
60 ips	2.0	3.0	6.0	12.1
30 ips	4.0	6.0	12.1	24.1
20 ips	6.0	9.0	18.1	36.2
15 ips	8.0	12.1	24.1	48.2
10 ips	12.1	18.1	36.2	72.3
5 ips	24.1	36.2	72.3	144.7
1 ips	120.6	180.8	361.7	723.4

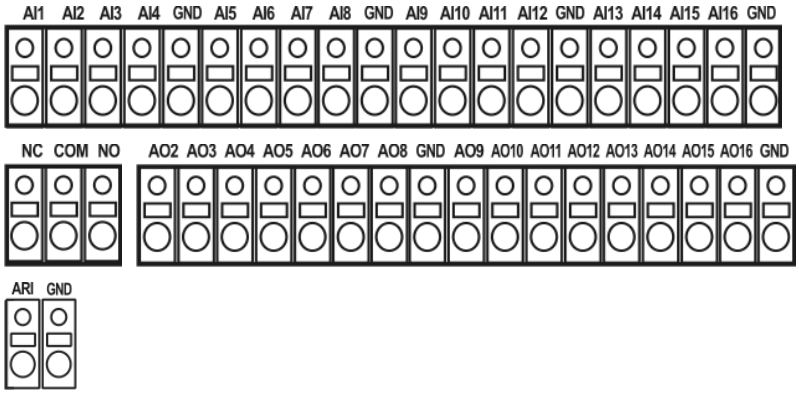
NOTE

The ips (images per second) of the above table is not the configured recording speed per camera, but the total number of recorded images per second. The values of the table represent the average case, therefore it is not guaranteed, and it might be decreased while recording audio. Minimum 500 MB of hard disk drive space a day for one channel is required for audio recording.

The SISTORE AX has a maximum recording speed of 200 images for PAL (240 images for NTSC) per second (ips) with standard resolution and 100 images for PAL (120 images for NTSC) per second (ips) with high resolution that will be applied globally depending on the number of cameras recorded.

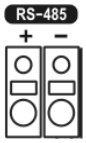
12.6 Connector pin outs

I/O connector pin outs



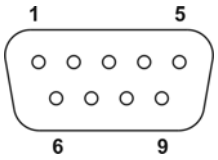
AI (1 to 16)	Alarm Inputs 1 to 16
GND	Chassis Ground (6 connectors)
NC	Relay Alarm Output (Normally Closed)
COM	Relay Common
NO	Relay Alarm Output (Normally Open)
AO (2 to 16)	Alarm Outputs 2 to 16
ARI	Alarm Reset In

RS485 connector pin outs



Master unit		Slave unit
+ →	To	→ TX+
– →	To	→ TX-

RS232 connector pin outs



Pin 1	DCD (Data Carrier Detect)
Pin 2	RXD (Receive Data)
Pin 3	TXD (Transmit Data)
Pin 4	DTR (Data Terminal Ready)
Pin 5	GND (System Ground)
Pin 6	DSR (Data Set Ready)
Pin 7	RTS (Request To Send)
Pin 8	CTS (Clear To Send)
Pin 9	RI (Ring Indicator)

12.7 Connection diagrams

12.7.1 Connecting the remote keyboard CKA4820 and dome cameras CCDA1415 and CCDA1425/1435

Settings on the SISTORE AX

In the “Camera” menu:

– PTZ Device: Siemens CCDA

– ID: #1 … #n

In the menu “RS232/RS485”

	RS232	**RS485**
Baud Rate	19,200	19,200 (CCDA1415) 1200…**9600** (CCDA1425/1435)
Parity	None	None
Data Bit	8	8
Stop Bit	1	1
Usage	Remote control	PTZ control

Pin out RS232 connection

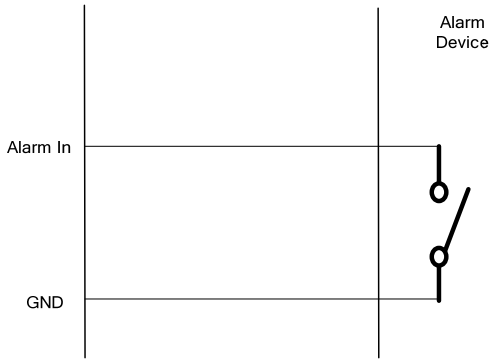
SISTORE AX: RS 232	**CKA4820: RS232 Com 1A**
Pin 1	Pin 1
Pin 2	Pin 3
Pin 3	Pin 2
Pin 5	Pin 5
Pin 9	Pin 9

Pin out RS485 connection

SISTORE AX: RS 485	**CCDA14xx**
Tx +	Data +
Tx -	Data -

12.7.2 Connecting alarm input/output

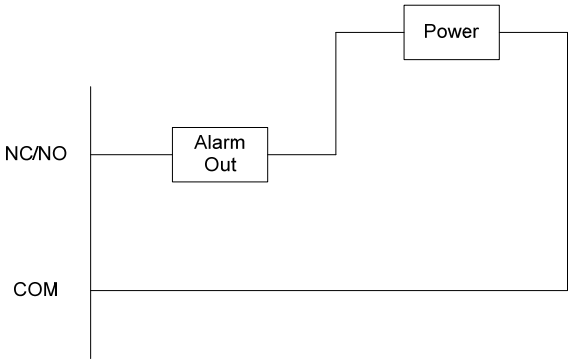
Recommended Alarm-In connection



Mechanical alarm input device can be used as above, and 5 V TTL logic can also be used.

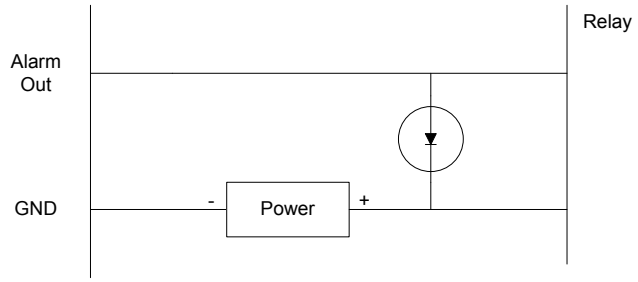
NOTE
The threshold voltage of alarm input is below 5 V.

Recommended RELAY Alarm-Out connection



Mechanical alarm output device can be used as above. NC/NO is a relay output which sinks 2 A @ 125 V AC, 1 A @ 250 V AC, 1 A @ 30 V DC (NC) and 5 A @ 125 V AC, 2 A @ 250 V AC, 3 A @ 30 V DC(NO).

Recommended TTL Open Collector Alarm-Out connection

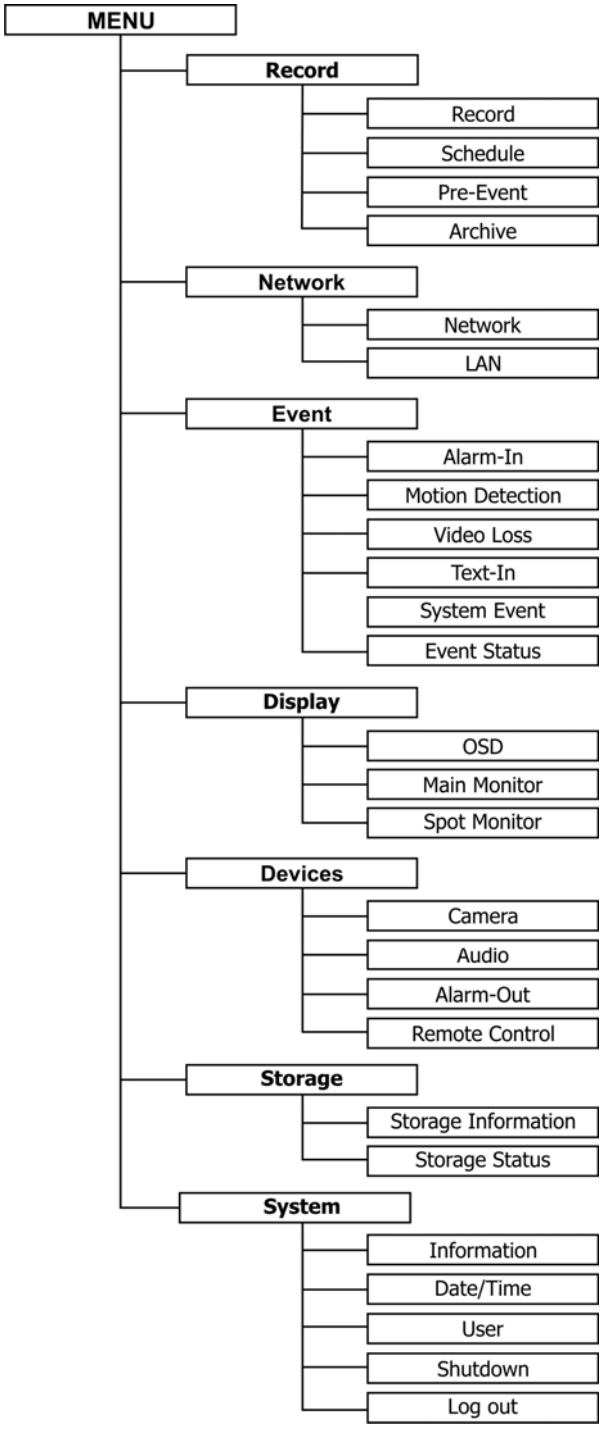


The following are examples of the available TTL open collector alarm out:

12 VDC application	NAiS:Tq2-12V, DS1E-M-12V, JQ1-12V-F
5 VDC application	NAiS:TQ2-5V, DS1E-M-5V

NOTE
The permitted current of alarm output sync is up to 30 mA, and a flywheel diode is required.

12.8 Map of screens



12.9 System log notices

Boot Up
Shutdown
Restart
Upgrade
Upgrade Fail
Power Failure
System Time Change
Time Zone Changed
Time Sync
Time Sync Fail
Disk Bad
Login
Logout
Setup Begin
Setup End
Remote Setup Change
Remote Setup Fail
Setup Imported
Setup Import Failure
Setup Exported
Setup Export Failure
Setup Export Cancel
Schedule On
Schedule Off
Panic Record On
Panic Record Off
Clear All Data
Clear Disk
Format Disk
Disk Full
Auto Deletion
Search Begin
Search End
Clip-Copy Begin
Clip-Copy End
Clip-Copy is Canceled
Clip-Copy Failed
Clip-Copy User:
Clip-Copy From:
Clip-Copy To:
Clip-Copy Duration of Video:
Clip-Copy Camera:
Callback Fail
Print Begin
Print End
Print Canceled
Archive On
Archive Off

12.10 Error code notices

System Upgrade Related	
Number	Description
0	Unknown error.
1	File version error.
2	Operating system version error.
3	Software version error.
4	Kernel version error.
100	Upgrade device mounting failed.
101	Package is not found.
102	Extracting package failed.
103	LILO failed.
104	Rebooting failed.
105	Invalid package.
106	ODD firmware upgrade failed.
300	Remote connection failed.
301	Remote network error.
302	Remote upgrade is not authorized.
303	Saving remote package failed.
304	Remote upgrade is cancelled by the user.
400	USB device mounting failed.
401	Reading upgrade package on the USB device failed.
402	Copying upgrade package on the USB device failed.
403	USB device is not connected.
404	USB device is being used.
405	Unsupported file system.
500	System is busy clip copying.
Clip Copy Related	
Number	Description
0	Unknown error.
1	Device error.
2	Mounting failed.
3	No media.
4	Invalid media.
5	File already exists.
6	Not enough space.
7	Creating temporary file failed.
8	Opening disk failed.
9	Formatting disk failed.
10	Database has been changed.
11	Appending failed.
12	Bad sector.
13	No executable file.
14	Opening executable file failed.
15	Writing executable file failed.
16	Creating image failed.
17	Burning failed.
18	Burning is out of time.
19	Connecting device failed.
20	Device is busy.
21	Unsupported file system.
22	Verify failed.

Issued by
Siemens Building Technologies
Fire & Security Products GmbH & Co. oHG
D-76181 Karlsruhe

www.buildingtechnologies.siemens.com/

Document no. **A6V10217511**
Edition 01.12.2008