Digital Video Recorder

Operation Instructions

Revision 8.00

DW-Pro 9000 Series (32 Channel, 16 Channel, 8 Channel)
DW-Pro 7000 Series (16 Channel, 4 Channel)

Digital Watchdog® DVR™
User Guide

Manual Edition 7K, 9K series – June 2005

The following words and symbols mark special messages throughout this guide:

WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

DIGITAL WATCHDOG INCORPORATED
Tampa, FL• U.S.A.

IMPORTANT SAFEGUARDS

1. Read Owner's Manual – After unpacking this product, read the owner's manual carefully, and follow all the operating and other instruction
2. Power Sources – This product should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home or business, consult your product dealer or local power company
3. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
4. Heat – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.
5. Water and Moisture – Do not use this product near water. Do not exceed the humidity specifications for the product as detailed in the Appendix section in this manual
6. Cleaning – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
7. Power Cord Protection – Power-supply cords should not be routed so that they are not likely to be walked on or pinched by items placed against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
8. Overloading – Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electrical shock.
9. Lightning – For added protection for this product during storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power line surges.
10. Object and Liquid Entry Points – Never insert foreign objects into the DVR unit, other than the media types approved by Digital Watchdog, as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the product.
11. Accessories – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious personal injury and serious damage to the product.
12. Disc Tray – Keep your fingers well clear of the disc tray as it is closing. Neglecting to do so may cause serious personal injury.
13. Burden – Do not place a heavy object on or step on the product. The object may fall, causing serious personal injury and serious damage to the product.
14. Disc – Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

IMPORTANT SAFEGUARDS, continued

15. Damage Requiring Service – Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:

    When the power-supply cord or plug is damaged.

    If liquid has been spilled, or objects have fallen into the unit.

    If the unit has been exposed to rain or water.

    If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.

    If the unit has been dropped or the enclosure has been damaged.

    When the unit exhibits a distinct change in performance - this indicates a need for service.

16. Servicing – Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified personnel.

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

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

NOTES ON HANDLING

When shipping the DVR unit, the original shipping carton packing materials come in handy.
For maximum protection, repack the unit as it was originally packed at the factory.

Do not use volatile liquids, such as insect spray, near the DVR unit. Do not leave rubber or plastic products in contact with the DVR unit for long periods of time. They will leave marks on the finish.

The top and rear panels of the DVR unit may become warm after long periods of use.
This is not a malfunction.

NOTES ON LOCATING

Place the DVR unit on a level surface. Do not use it on a shaky or unstable surface such as a wobbling table or inclined stand.

When you place this DVR unit next to a TV, radio, or VCR, the playback picture may become poor and the sound may be distorted. If this happens, place the DVR unit away from the TV, radio, or VCR.

NOTES ON CLEANING

Use a soft dry cloth for cleaning.

For stubborn dirt, soak the cloth in a weak detergent solution, wring well and wipe. Use a dry cloth to wipe it dry. Do not use any type of solvent, such as thinner and benzene, as they may damage the surface of the DVR unit.

If you use a chemical saturated cloth to clean the unit, follow that product's instructions.

NOTES ON MAINTENANCE

This DVR unit is designed to last for long periods of time. To keep your DVR unit always operational we recommend regular inspection maintenance (cleaning parts or replacement). For details contact your nearest dealer.

NOTES ON MOISTURE CONDENSATION

Moisture condensation damages the DVR unit. Read the following information carefully.

Moisture condensation occurs during the following cases:

When you bring the DVR unit directly from a cold place to a warm place.

When you use the DVR unit in a room where you just turned on the heater, or a place where the cold wind from the air conditioner directly hits the unit.

In the summer, when you use the DVR unit in a hot and humid place just after you move the unit from an air conditioned room.

When you use the DVR unit in a humid place.

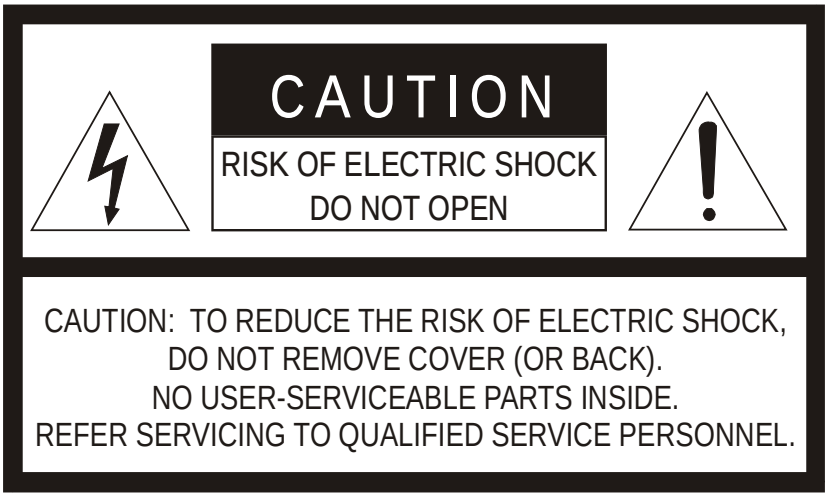
Do not use the DVR unit when moisture condensation may occur.

If the DVR unit is used in such a situation, it may damage discs and internal parts. Remove any CD discs, connect the power cord of the DVR unit to the wall outlet, turn on the DVR unit, and leave it for two to three hours. After two to three hours, the DVR unit will have warmed up and evaporated any moisture. Keep the DVR unit connected to the wall and moisture will seldom occur.

WARNING

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE.
DO NOT OPEN THE CABINET.
REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsinuated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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

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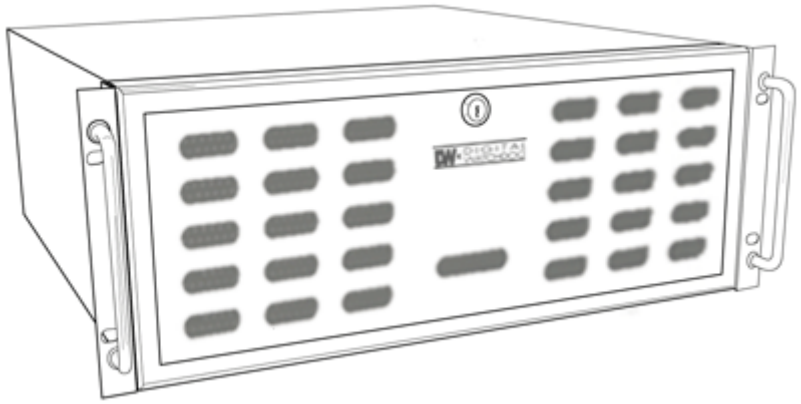
NOTES:

1 INTRODUCTION

1.1 PRODUCT DESCRIPTION



A Digital Watchdog DVR is simply a server that performs as a High Definition Digital Recorder. By utilizing the many features of a computer, including processing power, storage capacity, graphics compression, and security features, the DVR unit is more powerful than the analog recorders of the past.

The Digital Watchdog DVR server software comes pre-configured for fast and seamless integration within your existing IT infrastructure. Designed around Microsoft® Windows® 2000, the server software offers unparalleled stability, security, and ease of use. Accordingly, your security investment has never been easier to maintain. Multiple users may simultaneously connect through any network connection for instantaneous live viewing, digital search, and off site video storage. Users can also connect remotely through DSL, Cable Modems, ISDN, or 56K dial-up. This powerful software enables users to establish recording schedules, create motion detection zones, use PTZ controls, and configure alarm inputs and outputs for each of the system's cameras. With the latest advancements in the DVR Server Software, searching and indexing your video archive has never been easier. Video can now be found, viewed, and exported in a number of file formats with just a few clicks.

The Digital Watchdog DVR is high performance security product ready to meet today's security demands.

1.2 FEATURES

Digital Watchdog® DVRs include the following new features:

Optimized and Designed for Microsoft® Windows 2000®

Supports up to 16 Digital Control Outputs on Alarm Activation

Supports up to 16 Relay Inputs for Alarm Control

Remote System Operation & Configuration

Supports Multiple Simultaneous Remote Connections

PAN / TILT / ZOOM Controls

Simultaneous Video Search, Playback and Backup

Video Indexes for Easy Searching

Multiple Levels of Security Access

Up to 16 Looping Outputs

Optional POS and ATM Support

1 Composite Output

S Video Output

Up to 32 Camera Inputs

Up to 16 Audio Inputs

High Performance, Durable, Rackmount Case

Output the Video to a NTSC/PAL Display

Virtually Unlimited Storage Potential

Digital Signature Support

Continuous, Motion Detection, Alarm, Pre-Alarm, and Scheduled Recording Modes

Hardware Watchdog

720x480 / 720x240 / 350x240 NTSC Recording Resolution
720x576 / 720x288 / 360x288 PAL Recording Resolution

NOTES:

2 CONTROLS AND CONNECTIONS

2.1 SYSTEM SPECIFICATIONS

Digital Watchdog® state-of-the-art High Definition Digital Recorders are housed in a high performance and versatile 4U Aluminum Rack-Mount case allowing easy storage of multiple DVRs for enterprise applications. Every Digital Watchdog DVR Unit comes equipped with the latest technology:

Intel® Pentium® IV Processor

10/100 Network Interface Card (NIC)

256 MB of System Memory

32 MB Video Card

CD-RW Recorder

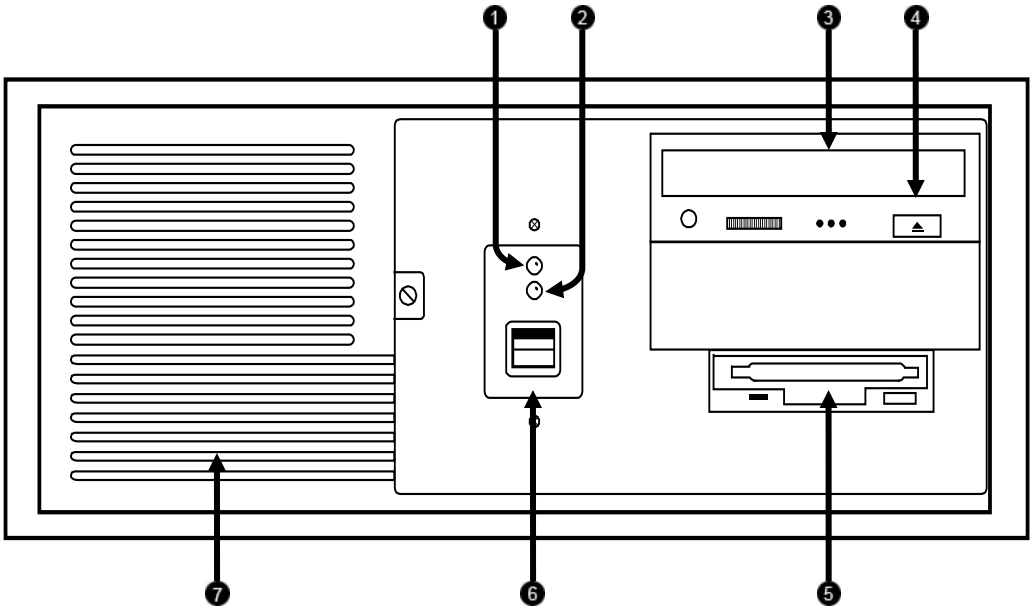
3.5" Floppy Drive

Full Duplex High-Fi Sound Functionality

120 GB Video Storage Drive

2.2 FRONT PANEL CONTROLS AND LEDS

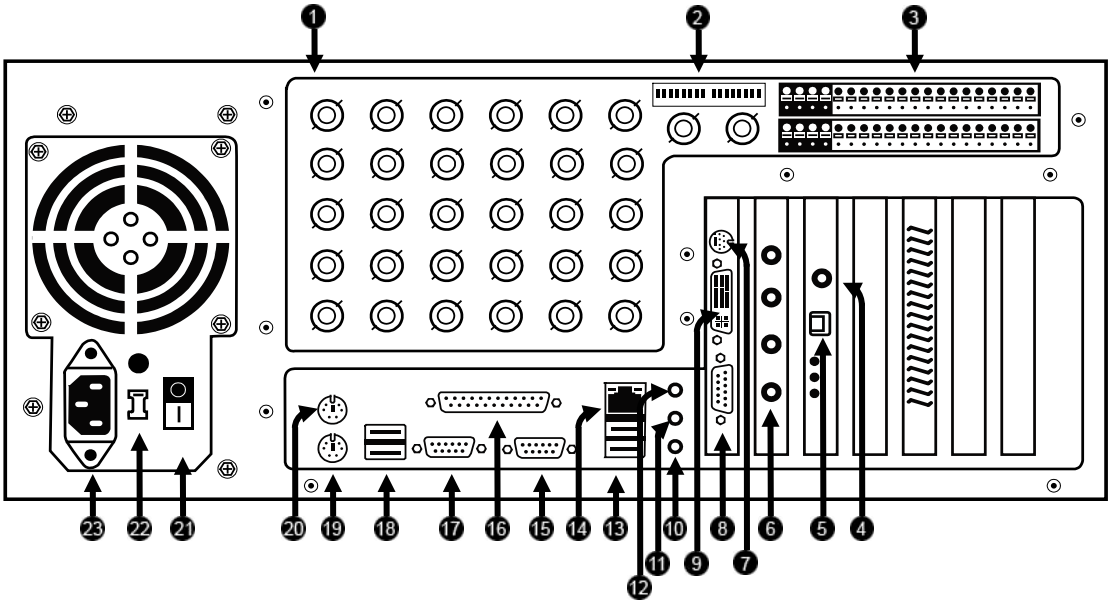
The front panel of the DVR unit contains the devices that will be commonly used for data removal, retrieval, and backup replacement. The most common components and buttons are shown below:



1	Hard Drive Activity LED Display	5	3.5” Floppy Disk Drive
2	Power LED Display	6	ON/OFF Power Switch
3	CD-RW Drive	7	Cooling Fan Air Intake
4	CD-RW Open Tray Button		

2.3 REAR PANEL CONNECTORS

The rear panel of the DVR unit contains virtually all of the connectors you will be using. Below is a diagram that outlines the location and description of each connector:

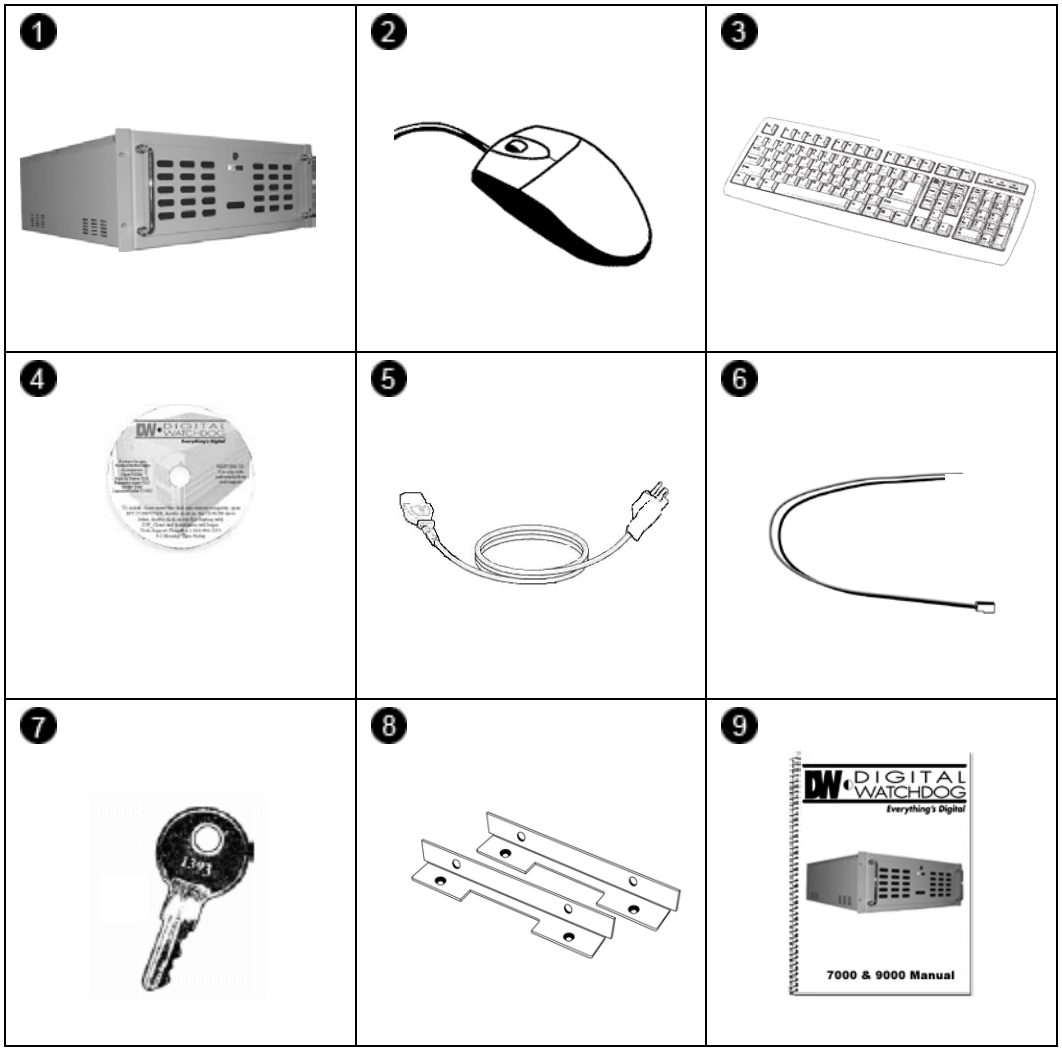


1	BNC Connectors for Video Input and Looping Outputs	12	Audio Line In
		13	USB Ports
2	75 Ohm Switch	14	RJ-45 Network Jack
3	Control Alarm Outputs / Sensor Inputs	15	DB-9 Serial Input 1
4	RCA Video OUT	16	LPT Parallel Printer Port
5	RS-422 Interface	17	DB-9 Serial Input 2
6	Audio Inputs	18	USB Ports
7	S-Video Output	19	PS/2 Keyboard Input
8	DB-15 SVGA Monitor Output	20	PS/2 Mouse Input
9	DVI-I Output (not used)	21	Secondary Power Switch
10	Audio Microphone In	22	110V / 220V Switch
11	Audio Speaker Out	23	IEEE AC Power Connector

3 GETTING STARTED

3.1 IDENTIFYING INCLUDED COMPONENTS

Digital Watchdog® DVRs come with a mouse, keyboard and selected software and cables. Identify the following components to make sure everything has been properly included with your new DVR unit. If any of the following items are missing, contact your dealer to arrange a replacement.



1	DVR Unit	6	PTZ Adapter
2	Mouse	7	Rackmount Attachments with Screws
3	Keyboard	8	DVR Key
4	DVR Repair Disc/ DVR Software Disc	9	DVR Manual
5	Power Adapter		

3.2 OPTIONAL COMPONENTS

To fully utilize your DVR unit's potential; several optional Digital Watchdog components are listed below. Contact your dealer for more information.

1 DVD ROM Recordable Drive

DVD Recorders are an exceptional way to store large amounts of Video Data easily. Each DVD can store up to 5 Gigabytes of Video Data.

2 USB External Hard Drive

An easy way to extract large amounts of Video Data from the DVR unit is to use a USB External Hard Drive. This drive connects to the USB port on the DVR unit and can be attached to any computer with an USB port.

3 Fiber Network Interface Adapter

A Fiber Network Adapter is used in enterprise network environments where large amounts of data are transferred across the LAN. If large groups of people are logging in remotely across the LAN, the Fiber adapter will speed the data transfer.

4 Gigabit 10/100/1000 Network Interface Adapter

A Gigabit Ethernet adapter can transfer data up to 10 times faster than standard fast Ethernet which comes standard with the DVR unit. This speed can be helpful if many people access the DVR remotely.

5 Granite Rack (External Raid storage unit)

The Granite Rack external storage solution offers the potential of over 100 terabytes of data storage. 1U and 3U models are available. The addition of extended storage to a DVR will allow longer periods of recording without overwriting the previously recorded data.

3.3 KEYBOARD SETUP

To attach the keyboard to the DVR unit, plug the end of the Keyboard into the keyboard PS/2 Port located on the back of the machine. The keyboard PS/2 Port can be identified by the purple color. Refer to the Rear Panel Connectors diagram for more information.

3.4 MOUSE SETUP

To attach the mouse to the DVR unit, plug the end of the mouse into the mouse PS/2 Port located on the back of the machine. The mouse PS/2 Port can be identified by the green color.

The mouse uses a cursor called a pointer. Pointers come in many different shapes but are most commonly shaped like an arrow.

Your mouse has two buttons: a left button and a right button. Quickly pressing and releasing one of these buttons is called clicking. Sometimes you will need to double-click – or click the same button twice quickly.

In this manual:

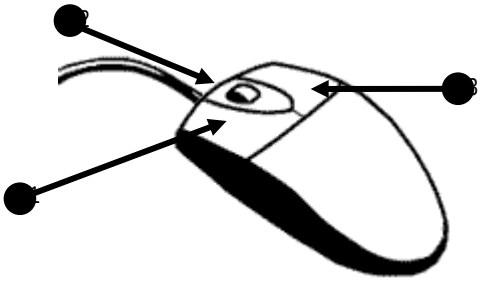
Click means to position your mouse point over an item and to single click the left button.

Right click means to position your mouse point over an item and to single click the right button.

Double-click means to position your mouse point over an item and to click the left button twice.

Select means to position your mouse point over a radio button, checkbox, or list item and click on it.

The ratchet wheel in between the two buttons is used for added navigation functionality. By simply moving the wheel with your index finger (scrolling), you can quickly move through multiple pages, lines, or windows. The wheel may also function as a third button allowing you to quickly click or double-click an icon or a selected item



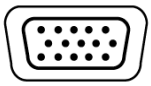
1 Left Button

2 Scroll button / Third Button

3 Right Button

3.5 MONITOR SETUP

There are up to 3 available connections for monitors which can be used individually or in tandem.



SVGA Output — To VGA Monitor.

S-Video Output — To TV/VCR.

Attach the Monitor or Monitors to the Rear of the DVR unit using the cable supplied by the Monitor Manufacturer. Refer to your monitor manual for detailed information on how to setup and use it.

NOTE: The monitor you use must be capable of having a screen resolution of 1024 x 768 and display colors of at least 32 Bit

3.6 POWER SETUP

Attach the AC power cable to the rear of the DVR Unit. See Rear Panel Connectors for more information.

WARNING:
To reduce the risk of electrical shock or damage to the equipment:

Do not disable the power grounding plug.
The grounding plug is an important safety feature.

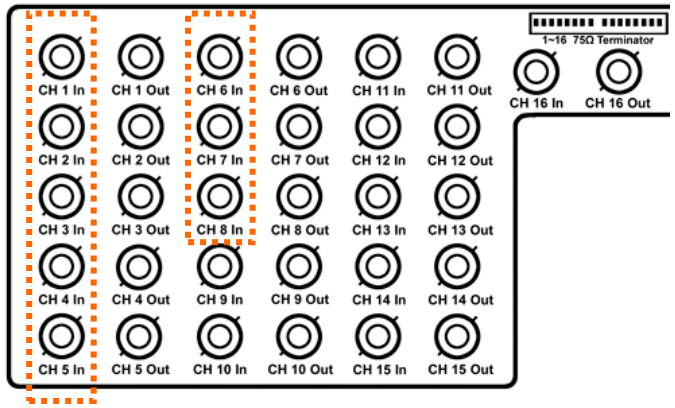
If the electrical plug you are using does not have a ground plug receptacle contact a licensed electrician to have it replaced with a grounded electrical outlet.

Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

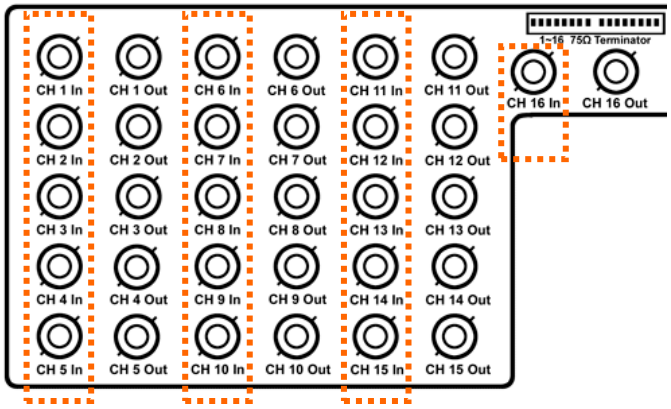
Disconnect the power from the computer by unplugging the power cord either from the electrical outlet or the computer.

3.7 CONNECTING A VIDEO SOURCE TO THE DVR

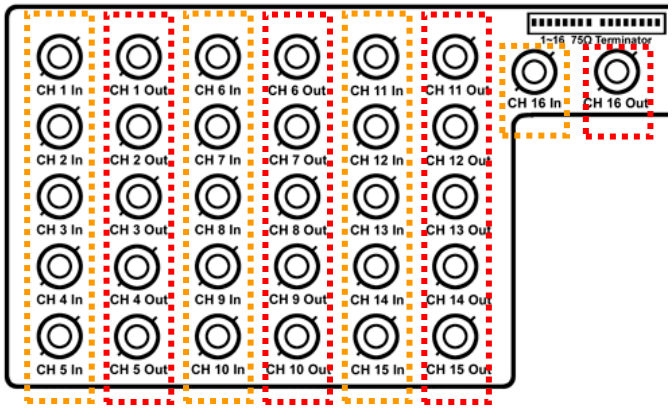
There are different types of Video Sources that can be plugged into your DVR unit including DVD players, VHS players, and CCTV Cameras. The back of the DVR unit contains up to 32 video inputs depending on the DVR model. The connectors use the BNC standard.



8 CHANNEL



16 CHANNEL



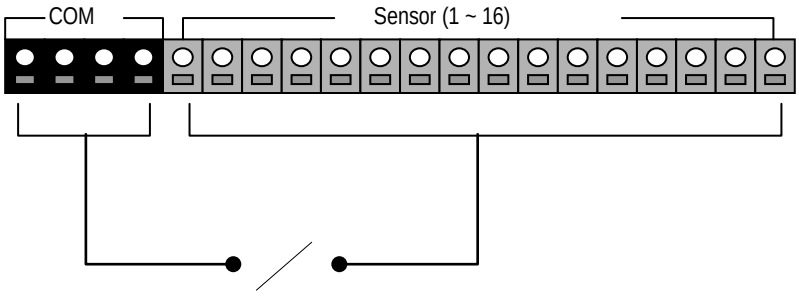
32 CHANNEL

The Video inputs are RG-58 BNC connectors. Simply plug one end into your video source (DVD, Camera, etc.) and plug the other end into the desired BNC input on the DVR unit.

3.8 CONNECTING SENSORS TO THE DVR

Each DVR unit may have up to 16 Sensor inputs. These inputs can be used with devices such as Infrared devices, motion devise, glass breakage alarms, door and window trips, and many more. The Sensors can be set to Normally Open or Normally Closed inside the software.

There are 4 Commons (-) and 16 inputs (+). There is no power supplied to the ports so an external power supply must be used if power becomes necessary.



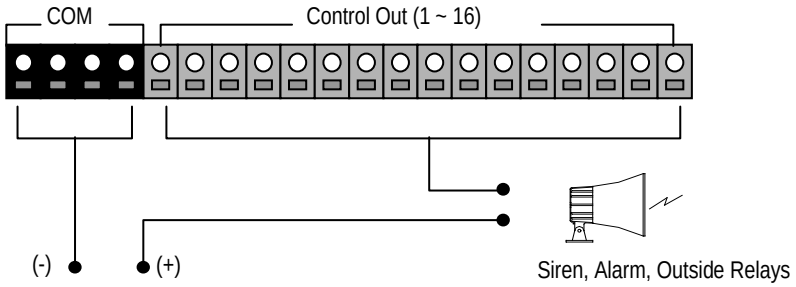
Sensor Inputs

Normally Open or Normally Closed option is available inside the DVR Software.

There is no power supplied to the ports. Use an external power supply if necessary.

3.9 CONNECTING CONTROL OUTPUTS TO THE DVR

Each DVR unit may have up to 16 Control Outputs. These outputs can be used to trigger devices such as Sirens, Phone Dialers, Lights, and any other relay activated device.



External Power Supply (DC 12V)

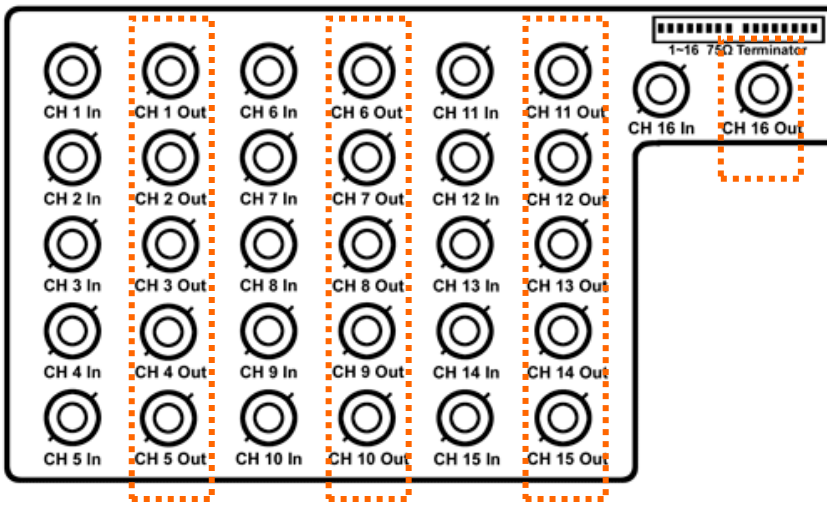
Use 12V, below 300mA. For controlling lights or other devices, use another external relay.

Maximum voltage is 24V AC @ 1 amp

Output uses a Form C Relay

3.10 LOOPING OUTPUTS

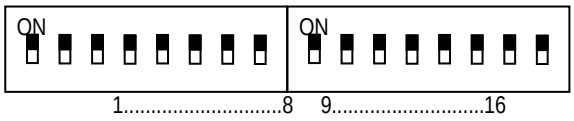
The 8 and 16 Channel DVR units may have up to 16 Looping outputs. Depending on the destination of the outputs, each output may have to be terminated.



The Video inputs are RG-59 BNC connectors. Make sure there is a video source connected to the input and then connect a cable to the Channel Out. The looping outs can be connected to video monitors or combined with adapters to connect to VCR's.

3.11 LOOPING OUTPUT TERMINATION

When terminating the outputs becomes necessary the DVR unit has built in termination that allows you to select individual outputs to terminate individually. It is not always necessary to terminate the output when using it. It is dependant on the device with which you are connecting it to. As a rule, if an image appears distorted or virtually unviewable, it most likely needs to be terminated.



ON	Not connected to a monitor (Normal)
OFF	Connected to a monitor (Looped)

Always leave the dipswitch set to the ON position when the Looping Outputs are not used.

NOTES:

4 DVR BASICS

4.1 TURNING ON THE DVR

1 Turn on the monitor and any external peripherals (ex. Printers, External Storage Devices, etc.) connected to the DVR™ unit.

2 Turn on the Secondary Power Switch located in the rear of the DVR™ unit.

3 Turn on the main power switch located on the front of the DVR™ unit.

The DVR™ will run a series of self-tests. After two or three minutes a series of messages may be displayed as the various hardware and software subsystems are activated. Under normal circumstances you should not be asked to respond to these messages. If you are asked to respond to the messages (adding a Printer, Monitor, etc for the first time) follow the instructions carefully.

4 Startup is complete when Digital Watchdog® DVR™ software is finished loading and displays the main menu screen.

4.2 TURNING OFF THE DVR

1 Click the Exit button on the main menu screen of the DVR™ software.

2 Select Power Off from the drop down menu, which appears in the Power Off prompt, and click Ok.

The DVR™ unit may take several minutes to shut down completely.

CAUTION: Always be sure to follow the proper procedures when turning off the power to the DVR unit. NEVER disconnect the power to the DVR unit while it is still running or in the process of shutting down. Doing so can cause data loss, file corruption, system instability and hardware failure.

4.3 SETTING THE TIME AND DATE

1 Exit to Windows by clicking the EXIT button from the Main Display Screen and selecting Restart in Windows Mode. (See the Display Screen section later in this chapter)

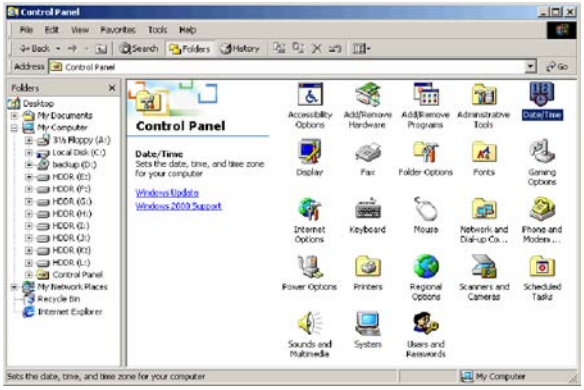
2 Open Windows Explorer. Do this by right-clicking on the My Computer Icon (located on the top left hand corner of the Desktop) and select Explore.

3 Double click on CONTROL PANEL to open it. If you do not see CONTROL PANEL listed, double-click MY COMPUTER to expand the folder tree.

4 Double Click on DATE/TIME inside Control Panel.

5 Adjust the Date and Time.

6 When finished, close all open windows and restart the DVR unit. DO this by pressing the START button (Located on the lower left hand side of the Desktop) and selecting SHUT DOWN.



4.4 EXPORTING DVR SETTINGS

Exporting DVR settings can help you configure multiple DVRs quickly or reconfigure a unit that has failed. There are some things that must be kept in mind when using this feature.

You cannot use this function on:

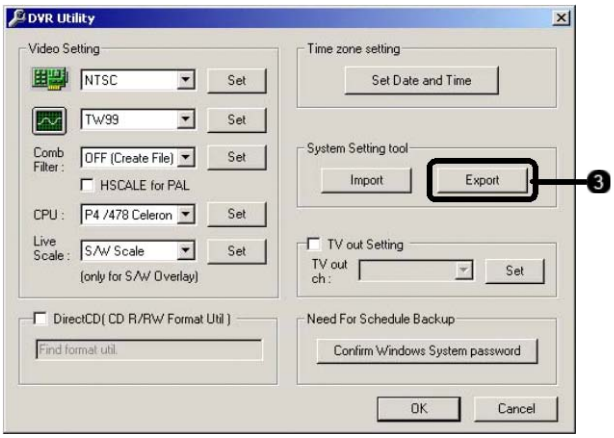
DVRs that are different models.

When upgrading from certain software versions. You cannot use this feature when upgrading from v1.x to v2.x

1 Exit to Windows by clicking the EXIT button from the Main Display Screen and selecting Restart in Windows Mode. (See the Display Screen section later in this chapter)

2 Click Start > Programs > Digital Watchdog > VFormat

3 Click the Export button in the System Settings tool section.



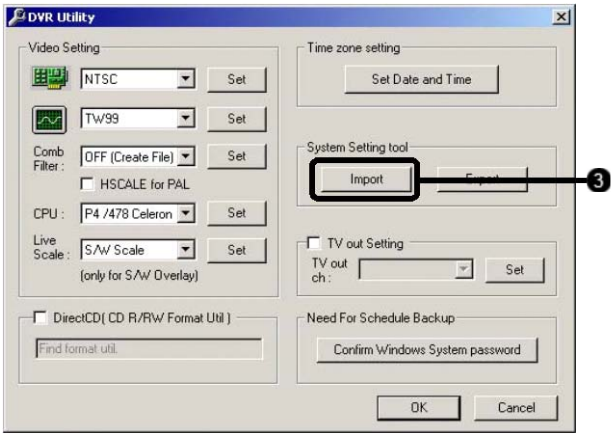
4 Select a location to save the settings file and click Save. The DVR Utility will export the DVR settings and automatically close.

4.5 IMPORTING DVR SETTINGS

1 Exit to Windows by clicking the EXIT button from the Main Display Screen and selecting Restart in Windows Mode. (See the Display Screen section later in this chapter)

2 Click Start > Programs > Digital Watchdog > VFormat

Click the Import button in the System Settings tool section.



Select the location of the settings file to import and click Open. The DVR Utility will import the DVR settings and automatically close.

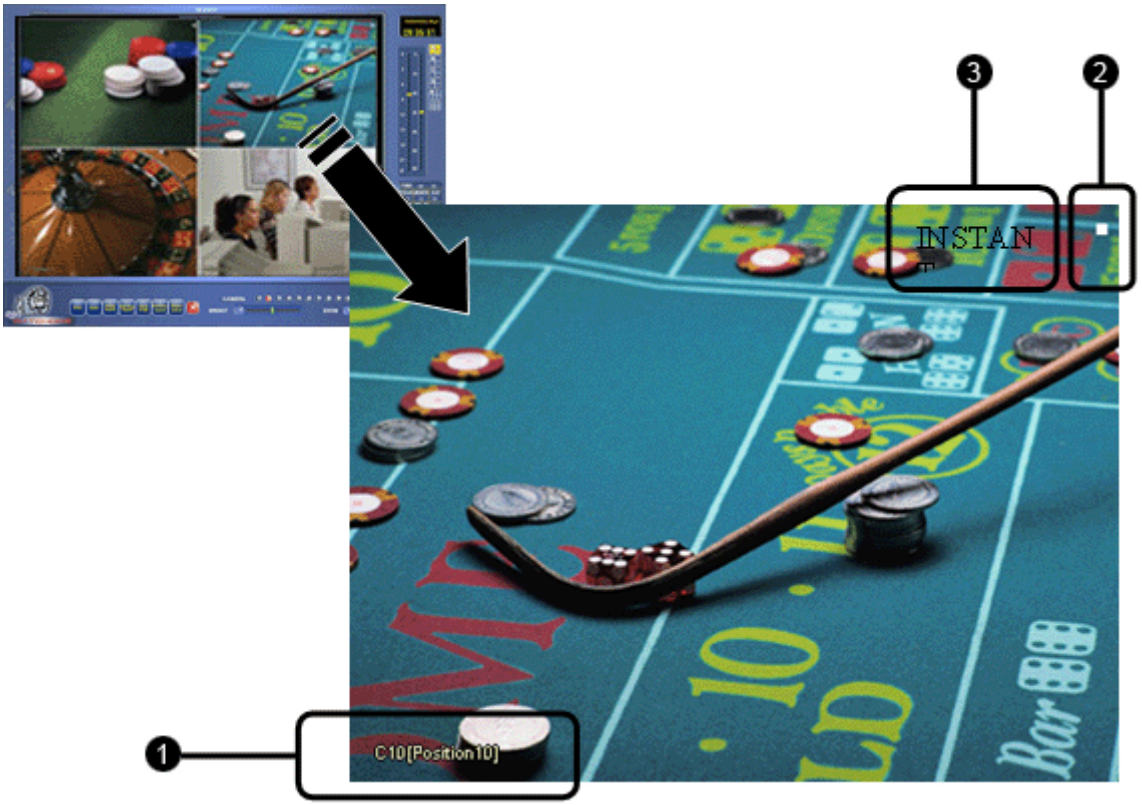
4.6 DISPLAY SCREEN

Each time the DVR is restarted, the program defaults to the Display screen. The following diagram outlines the buttons and features used on the Display screen. You should become familiar with these options as this is the screen that will be displayed the majority of the time.

1	Date/Time	Displays current date and time. This date and time is stamped onto the recorded video and is displayed whenever the video is played back.
2	Search	Displays search features that allow for searching through previously recorded video.
3	Setup	Displays Setup menu, from which all customizable settings can be edited.
4	Screen Division Buttons	Allows the view of one or more sets of cameras at a time. They are organized in several different groups such as 1x1, 4x4, and 8x8.
5	Loop	Toggles looping cameras options on or off.
6	Backup	Displays the Backup option.
7	PTZ	Opens Pan/Tilt options for controlling PTZ-enabled cameras.
8	Exit	Displays several options, including Logout, Shut Down, Restart, and Restart in Windows Mode.
9	Storage Capacity	The Storage Capacity Usage Indicator displays the total free storage space available to the DVR unit. When the Storage Capacity reaches 100%, the DVR unit begins to rewrite over the older, saved video.
10	Alarm Status Bar	Displays Alarm Status for each Sensor Inputs.
11	Relay	The Digital Output Relay button fires the Output Relay. The output relays can be hooked up to external alarms, set to trigger a phone call, etc.
12	Current User	Displays the name of the user currently logged onto the DVR.
13	Remote Client Status	Displays users connected remotely to the DVR unit.

4.7 CAMERA VIEW

The Cameral status for each camera is displayed next to the Camera number (or name) on the Video Display Area. The following are



1	Camera Number and Name	Displays the camera number and the custom name given to the camera.
2	Recording Status	Displays the current recording status of the camera using symbols.
3	Special Recording	Displays text relating to the type of recording that is occurring.

4.8 RECORDING STATUS INDICATOR

The Cameral status for each camera is displayed next to the Camera number (or name) on the Video Display Area. The following are the different states for each camera:

	Recording	A red light is displayed when the camera is currently being recorded to the DVR unit.
	Motion Detection	A green light is displayed when a camera (set up for motion detection) detects motion.
	Display	This is displayed when the camera is currently not being recorded to the DVR unit.

There are several different types of DVR™ 'Special Recording'. When this happens text is displayed on the camera indicating what kind it is. are as follows These:

SENSOR	Sensor is displayed when a sensor, associated with a given camera, is activated.
INSTANT	Instant Recording is a manual activation of the recording for the selected camera. Regardless of the recording method, Instant Recording will start the camera recording and also flag the video for future searches using the Index Search feature. INSTANT is displayed when a user activates the instant recording option. Double Right-Click to activate and deactivate the Instant Recording option.

4.9 SCREEN DIVISION MENU

The Screen Division menu allows you to view cameras in groups such as two by two, three by three and four by four. The button options are shown below.

1st Four Cameras View – Displays cameras 1-4 in the Video Display Area. To return to a different Multi-Camera View, select a different Screen Division option from the Screen Division menu.

2nd Four Cameras View – Displays cameras 5-8 in the Video Display Area. To return to a different Multi-Camera View, select a different Screen Division option from the Screen Division menu.

3rd Four Cameras View – Displays cameras 9-12 in the Video Display Area. To return to a different Multi-Camera View, select a different Screen Division option from the Screen Division menu.

4th Four Cameras View – Displays cameras 13-16 in the Video Display Area. To return to a different Multi-Camera View, select a different Screen Division option from the Screen Division menu.

1st Nine Cameras View – Displays cameras 1-9 in the Video Display Area. To return to a different Multi-Camera View, select a different Screen Division option from the Screen Division menu.

2nd Nine Camera View – Displays cameras 8-16 in the Video Display Area. To return to a different Multi-Camera View, select a different Screen Division option from the Screen Division menu.

Multi-Camera View – Displays a group of cameras within the Video Display Area.

All Camera View – Displays all 16 cameras within the Video Display Area.

Multi-Camera View – Displays a group of cameras within the Video Display Area.

Multi-Camera View – Displays a group of cameras within the Video Display Area.

Full Screen – The Full Screen Option allows you to view the Video Display Area using the entire viewable area on the monitor. When this is selected, no menu options are visible. You can activate the Full Screen Option by clicking on the Full Screen Button within the Screen Division Menu. You can deactivate Full Screen mode by right clicking on the screen.

Auto Sequence – Sequences through the Screen Divisions sets. For example, selecting the 1A and then the Loop button will sequence through 1A,2A,3A,4A and then repeat. This option is not available for the 7,10 and 13 screen divisions.

NOTES:

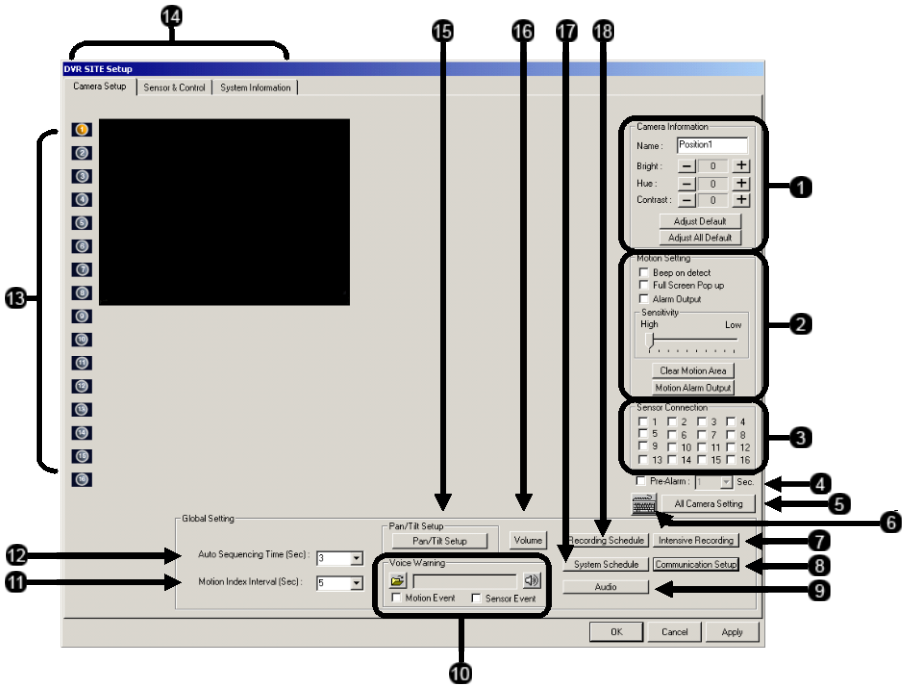
5 SETUP OPTIONS

5.1 SETUP OVERVIEW

The Setup options allow you to optimize your DVR unit by adjusting things like camera names, reboot schedules, recording schedules and more. It is extremely important that you setup your DVR correctly for several reasons.

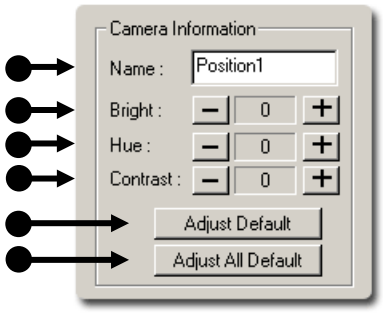
Recording Schedules	Increase the amount of pertinent recorded video that is saved on the DVR by optimizing the recording schedule. Optimize the type of recording done by adding motion detection to this as well, again increasing the amount of useful video.
DVR Access	By setting up the access passwords you can tightly control the types of access an individual may have. This ensures the security and integrity of the DVR unit.
Camera Naming	By naming each camera the location can be easily identified and any other pertinent information that may be helpful simply by viewing it on the Video Display Area.
Adjusting Camera Color	Optimize the clarity and detail that is recorded by adjusting each camera's color settings.

5.2 SETUP SCREEN OVERVIEW



1	Camera Information	Allows you to adjust the name and color settings for each camera.
2	Motion Settings	Displays options for editing each camera's Motion Detection settings.
3	Sensor Connections	Allows you to attach one or more sensor connections to each camera.
4	Pre-Alarm	Allows you to record a section of video just prior to Motion or Sensor activation.
5	All Camera Settings	Selecting this option copies the settings for the selected camera to all the cameras.
6	Onscreen Keyboard	Clicking this button brings up an onscreen keyboard.
7	Intensive Recording	Opens the Intensive Recording window which allows you to specify the Pictures per Second to be recorded.
8	Communication Setup	Opens the Communication Setup window which contains options and settings for allowing remote access, Internet Broadcasting and more.
9	Audio	Opens the Audio ENABLE/DISABLE options.
10	Voice Warning	Allows you to use an audible warning (.wav Sound Clip) for when Motion or Sensors are activated.
11	Motion Index Interval	Specifies the amount of time to record once Motion has been activated
12	Auto Sequencing Time(s)	When the Loop button is activated, the Auto Switching Time specifies the amount of time that elapses before switching to the next Screen Division group.
13	Camera Settings	Selects the current camera to be edited.
14	Setup Options	Allows you to toggle between the 3 setup screens.
15	Pan/Tilt Setup	These options setup a PTZ camera to the DVR unit and allow you to create Presets and Tours. (Refer to PTZ Chapter in this manual)
16	Volume	Opens the Volume Control menu for the DVR unit.
17	System Schedule	Opens the System Schedule window which allows you to specify the time and dates to record and the type of recording which is to be done (Motion, Continuous, etc).
18	Recording Schedule	Opens the Recoding Schedule window which allows you to adjust the Pictures per Second for each camera.

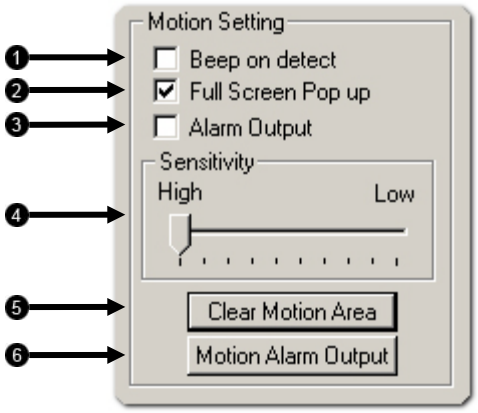
5.3 CAMERA INFORMATION



1	Name	Allows you to specify a name for each camera
2	Bright	Adjusts the Brightness of the selected camera.
3	Hue	Adjusts the Hue of the selected camera.
4	Contrast	Adjusts the Contrast of the selected camera.
5	Adjust Default	Adjust the color settings for the selected camera back to the System default.
6	Adjust All Default	Adjusts the color settings for ALL cameras to the System default.

5.4 MOTION SETTING

The DVR unit allows you to adjust several different Motion Settings.



1	Beep on Detect	When motion is detected an alarm is sounded.
2	Full Screen Pop-Up	When Motion is detected, the camera is brought up in full screen mode.
3	Alarm Output	Enables the Alarm Output. The Alarm Output is always defaulted to Control Output #16. Control Output #16 is System designated default for an external alarm.
4	Sensitivity	Adjusts the sensitivity within the designated Motion Area.
5	Clear Motion Area	Clears all Motion Areas for the selected camera.
6	Motion Alarm Output	Opens the MOTION & CONTROL window which allows setting of record and delay times as well as setting outputs on motion activation.

5.4.1 CREATE A MOTION AREA

1 Place the mouse pointer at the upper left hand corner of the area you want to designate, press and hold down the left mouse button, drag the mouse. Let go of the button when the Motion Area is the size you want it to be.

2 Continue creating as many Motion Areas as you wish. You can resize them and move them by dragging the sides and corners of the Motion Area.

5.4.2 CLEAR MOTION AREA

To remove the motion areas of a camera, click 

5.4.3 MOTION ALARM OUTPUT

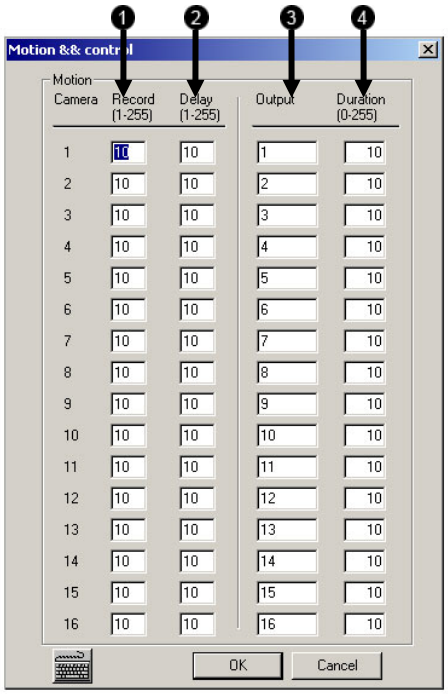
The MOTION & CONTROL menu allows record times, delays in resuming motion sensing, and outputs to be defined per camera.

1 **Record** Sets duration of time recorded when motion is sensed.

2 **Delay** Sets delay in resuming motion detection after previous activation.

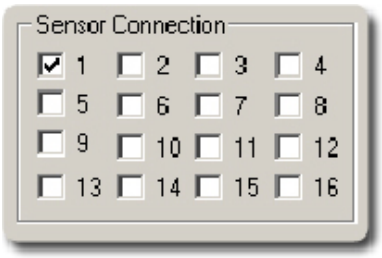
3 **Output** Sets Control Output associated with camera.

4 **Duration** Sets duration of signal sent over selected Control Output.



5.5 SENSOR CONNECTION

You can connect one or more Sensors to the selected camera by checking the box next to the sensor(s). Connecting a sensor to the camera allows you to activate both Standard Recording and Intensive Recording.



5.6 INTENSIVE RECORDING OVERVIEW

The Intensive Recording Option allows you to increase the Pictures Per Second and the resolution of any camera recording using sensor activation. When the intensive recording is activated, the resolution of the remaining cameras is immediately reduced to 360x240 and the Pictures per second to a user specified level. This is done to guarantee that the Pictures Per Second and Resolution will be set correctly and not exceed the DVR limitation.

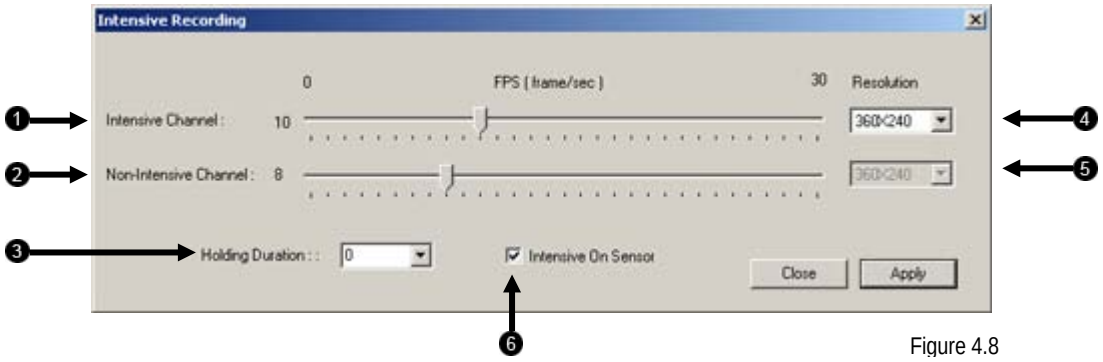


Figure 4.8

1	Intensive Channel	Adjusts the Frame Rate for the Intensive Channel.
2	Non-Intensive Channel	Adjusts the Frame Rates for the Non-intensive Channels (the channels will drop their current settings and be forced to use this setting).
3	Holding Duration	Adjusts the amount of time to hold the Intensive Recording active.
4	Intensive Channel Resolution	Adjusts the Resolution for the Intensive Channel.
5	Non-Intensive Channel Resolution	The DVR automatically adjusts the Non-Intensive Channels down to the system default. This setting cannot be changed.
6	Intensive On-Sensor	This setting enables the association of Intensive Recording to sensors.

5.6.1 HOW TO USE INTENSIVE RECORDING

The Intensive Recording option is setup as an 'All or Nothing'. This means that once enabled (associated with sensors), all cameras that are associated with sensors will activate the Intensive Recording.

To activate the Intensive Recording option, follow these steps.

1 Inside Setup, select the camera you wish to use and then enable the appropriate sensor you wish to associate to it.

2 Open the Intensive Recording Options. Enable the Intensive-On-Sensor option and then select the desired Pictures Per Second for both the Intensive and Non-Intensive Channels. You can also adjust the Resolution and the holding duration for the Intensive Channel.

3 Close the Intensive Recording window by selecting the APPLY button.

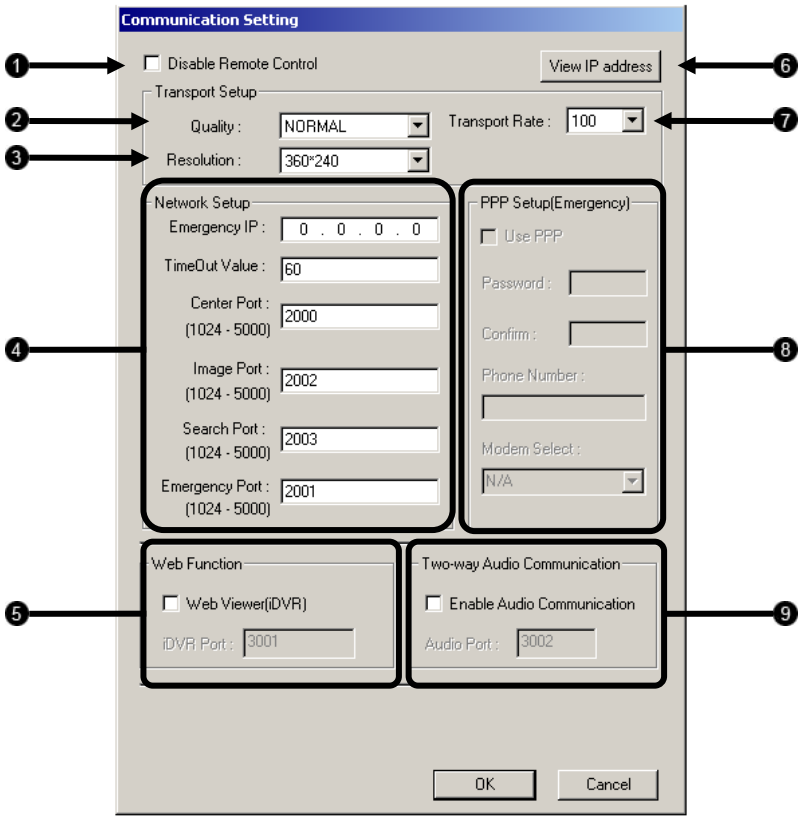
4 Open the Sensors and Outputs window.

5 Enable the sensor you associated with the Intensive Recording by placing a check in the box next to it.

6 Press the APPLY button and exit out of setup

5.7 COMMUNICATION SETUP

The Communication Setup allows you to adjust settings such as Ports, Emergency Agent IP Addresses, IDVR Users and NDMS identification.



1	Disable Remote Control	This setting enables or disables access to the DVR from remote connections.
2	Quality	Adjusts the resolution quality when transferring video to a remote client.
3	Resolution	Adjusts the resolution of the images being sent to remote clients. By setting the resolution low, the images will be sent faster, however, the image quality will be reduced considerably.
4	Network Setup	Specifies the Ports to use when transferring data, as well as defines the Emergency Agent IP Address.
5	Web Function	Enables the use of the IDVR Web interface.
6	View IP Address	This option allows you to view the IP configuration of the DVR.
7	Transport Rate	Transport Rate is essentially a bandwidth throttle. This throttle is based on percentage of free network.
8	PPP Setup (Emergency)	Defines the modem and PPP information to dial to a remote client when the Emergency Agent is activated.
9	Two-way Audio Communication	Enables

5.8 AUDIO

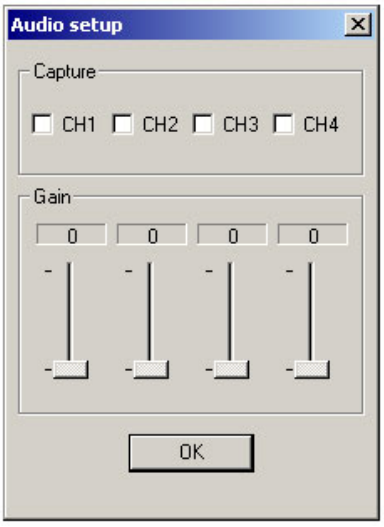
The Digital Watchdog DVR is capable of recording up to 4 channels of audio.

AUDIO FEATURES:

- 8000 Hz playback in Live Mode
- Up to 48000 Hz playback in search mode
- Mono Sampling

DATA SIZE (Per channel)

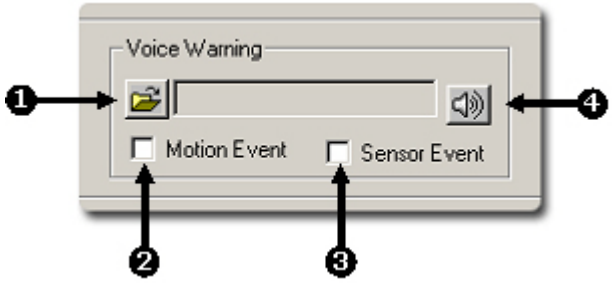
- 1 Second: 1625 bytes
- 1 Minute: 97,500 bytes
- 10 Minute: 975,000 bytes
- 1 Hour: 5,850,000 bytes
- 1 Day: 140,400,000 bytes (Approx 140MB)



Simply click the Audio Capture Channels boxes to enable recording and adjust the Gain to the desired level.

5.9 VOICE WARNING

The DVR unit allows you to play a sound file when either a Motion event or Sensor event occur. This file can be a custom created sound file that is unique to your application. The selected WAV file is played through speakers attached to the DVR unit.



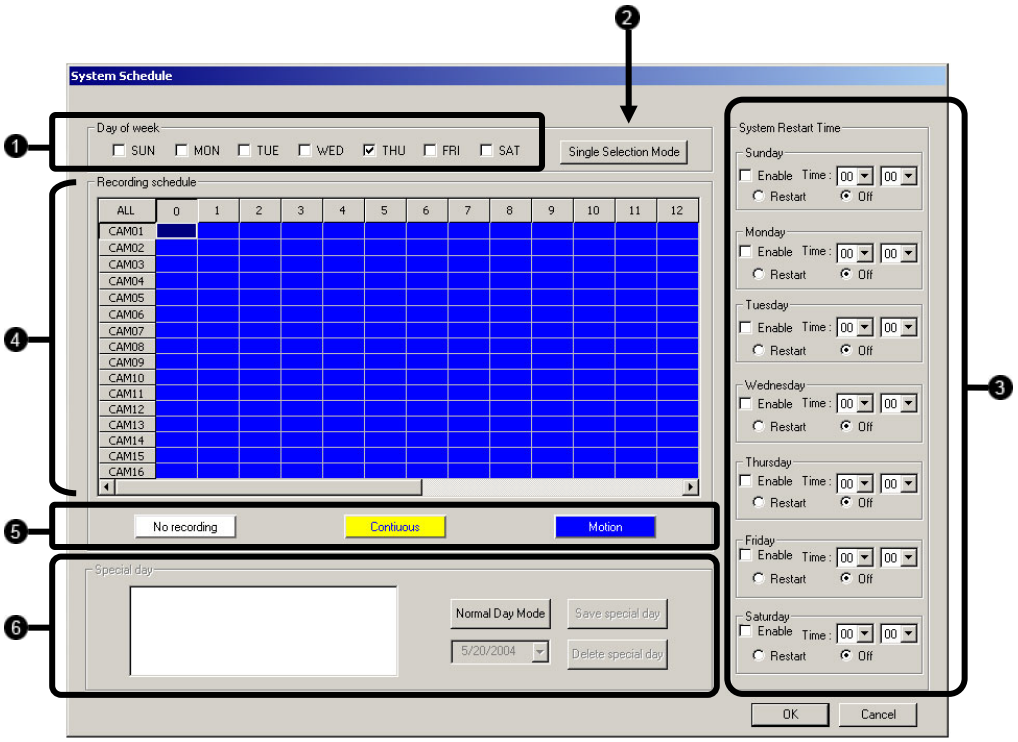
1	Open	Allows you to select the location of the WAV file to use.
2	Motion Event	Enables the Voice Warning on Motion Events.
3	Sensor Event	Enables the Voice Warning on Sensor Events.
4	Play Selected WAV	Plays the selected WAV file.

5.10 PAN/TILT SETUP

The Pan/Tilt Setup Window allows enabling of PTZ cameras, creation of Presets, creation of Tours, and adjustment of camera speed settings. Many options listed here are features only available on selected cameras. Refer to the PTZ chapter in this manual for further information on setting up PTZ cameras and setting PTZ options.

5.11 SYSTEM SCHEDULE

The Recording Schedule Window allows you to create different recording schedules based on the day, time, and type of recording you wish to use. In addition this window also contains the System Restart options that allow you to perform basic system maintenance by automatically scheduling the DVR to restart itself periodically.



1	Day of the Week	Selects the day of the week for the schedule being made.
2	Single Select Mode	Selects all days of the week at once.
3	System Restart Time	Displays the restart options. The DVR unit allows you to specify the unit to be automatically restarted one or more days a week.
4	Recording Schedule Window	Displays and allows you to edit the current Recording Schedule.
5	Recording Mode	Selects the Recording Mode. The Recording Modes are 'NO RECORDING' 'CONTINUOUS RECORDING' and 'MOTION RECORDING'
6	Special Day Recording	Allows you to create special recording schedules for specific days.

5.11.1 CREATE A RECORDING SCHEDULE

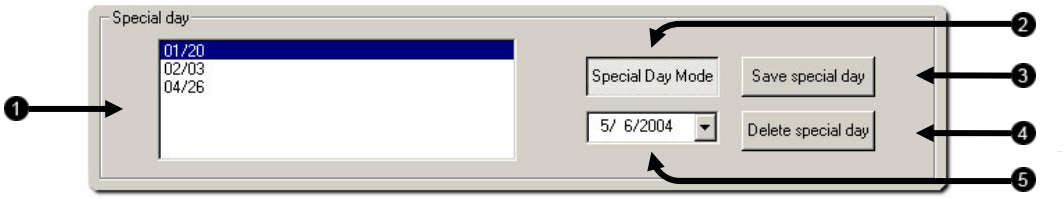
1 Select a day to begin creating the schedule for -or- Select the SINGLE SELECTION MODE button to create the schedule for all the days of the week at once.

2 Highlight the time-blocks within the Recording Schedule Window for the camera(s) you wish to schedule. Once the desired Time-Blocks are highlighted, press a RECORDING MODE button. The Time-Blocks should now appear Blue for Motion, Yellow for Continuous and White for No Recording

Leave Cameras that will be recording with Sensor Detection set to 'No Recording' for the specified time block(s).

5.11.2 SPECIAL DAY SCHEDULE

You can create days that have a unique recording schedule. You may wish to create these on days that are 'not typical' such as Holidays, Special Events, etc.



1	Special Day Schedule	Displays the current saved Special Days.
2	Special Day Mode	Enters / Exits the Special Day Mode. Once in Special Day Mode you can create, edit and delete Special Days.
3	Save Special Day	Saves the selected Special Day Schedule.
4	Delete Special Day	Deletes the selected Special Day Schedule.
5	Date Bar	Displays the current day of scheduling and allows selection of Special Day date.

5.11.2.1 CREATING/EDITING A 'SPECIAL DAY' SCHEDULE

1 Press the 'NORMAL DAY MODE' button to enable the 'SPECIAL DAY MODE'.

2 Select a day by clicking on the downward pointing arrow to the right of the Date Bar.

3 Highlight the time-blocks within the Recording Schedule Window for the camera(s) you wish to schedule. Once the desired Time-Blocks are highlighted, press a RECORDING MODE button.

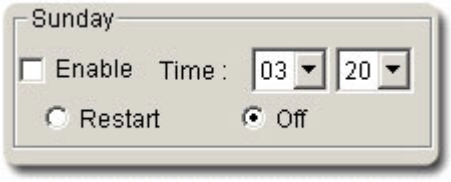
4 When you have finished creating the schedule press the 'SAVE SPECIAL DAY' button. The special day should now appear as a date within the Special Day Schedule.

5.11.2.2 DELETING A 'SPECIAL DAY' SCHEDULE

1 Select a Special Day from the Special Day Schedules List and press the 'DELETE SPECIAL DAY' button.

5.11.3 SYSTEM RESTART TIME

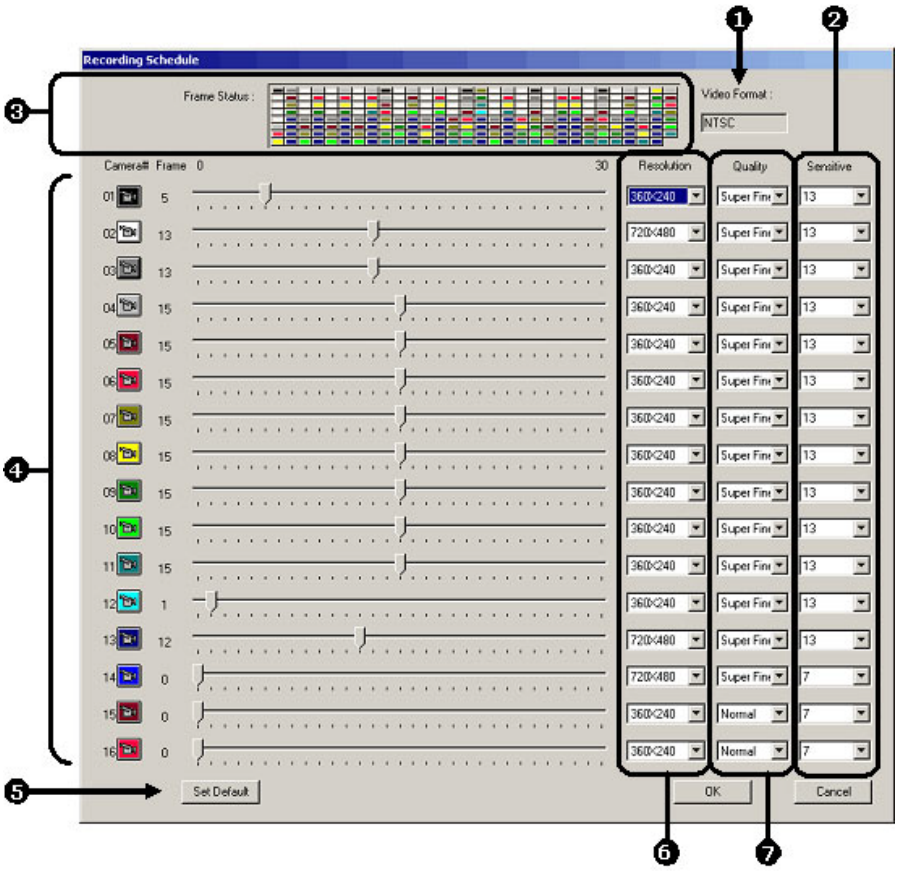
Allowing the DVR unit to automatically restart itself can be an important part of basic maintenance. When the DVR unit restarts, memory, cache, and other DVR systems are flushed and renewed. This creates an overall better functioning system.



1	Day of the Week	Displays the Day for the settings being adjusted.
2	Enable	Enables the DVR to shut down the computer at the time specified. This option alone does NOT restart the DVR, it just simply turns it off.
3	Restart / OFF	Enables the DVR to restart itself once it has been shut down.
4	Time	Specifies the time to Shut Down or Restart the DVR unit.

5.12 RECORDING SCHEDULE

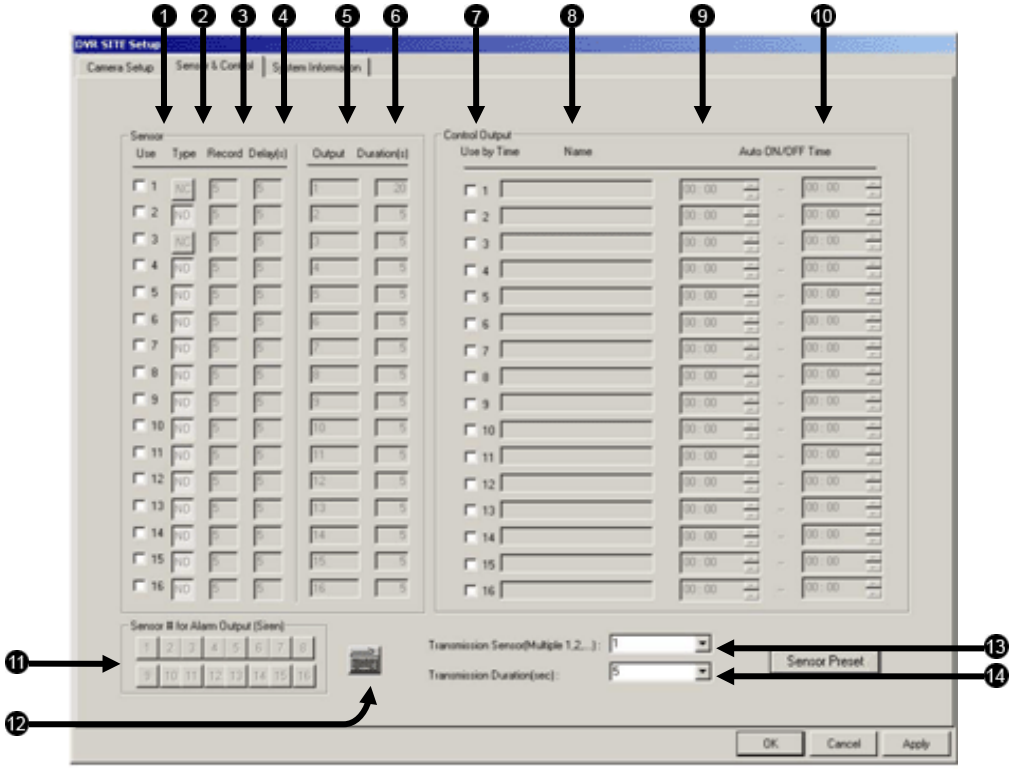
The Channel Setup option allows you to turn cameras on/off as well as rename them to an identifiable name or number.



1	Video Format	Displays the Video Format (NTSC/PAL).
2	Sensitivity	The Sensitivity adjusts the rate at which the Keyframe refreshes. This option directly affects the codec being used to record the video. Adjusting this setting can have drastic negative effects on the quality of the video. It is highly recommended that this setting always be left at the default setting unless so instructed by a system administrator.
3	Frame Status	Displays the layout and order of the frames being recorded. The Frame Status represents a One Second period of time with 240 colored blocks inside. Each block represents one frame and each color represents a camera. (See Camera Number) The layout shows the recording order for each second.
4	Camera Number	The cameras are given different colors to help distinguish themselves when viewing the Frame Status. You can adjust the recorded Frames per Second by sliding the bar to the left and right.
5	Set Default	Selecting this option resets all camera Frames and resolutions to the default settings.
6	Resolution	Displays the available Resolution options.
7	Quality	This setting affects the quality of the video. Increasing the quality of the camera can reduce the amount of pixilation within the image considerably, but also increases the file size.

5.13 SENSOR AND OUTPUT

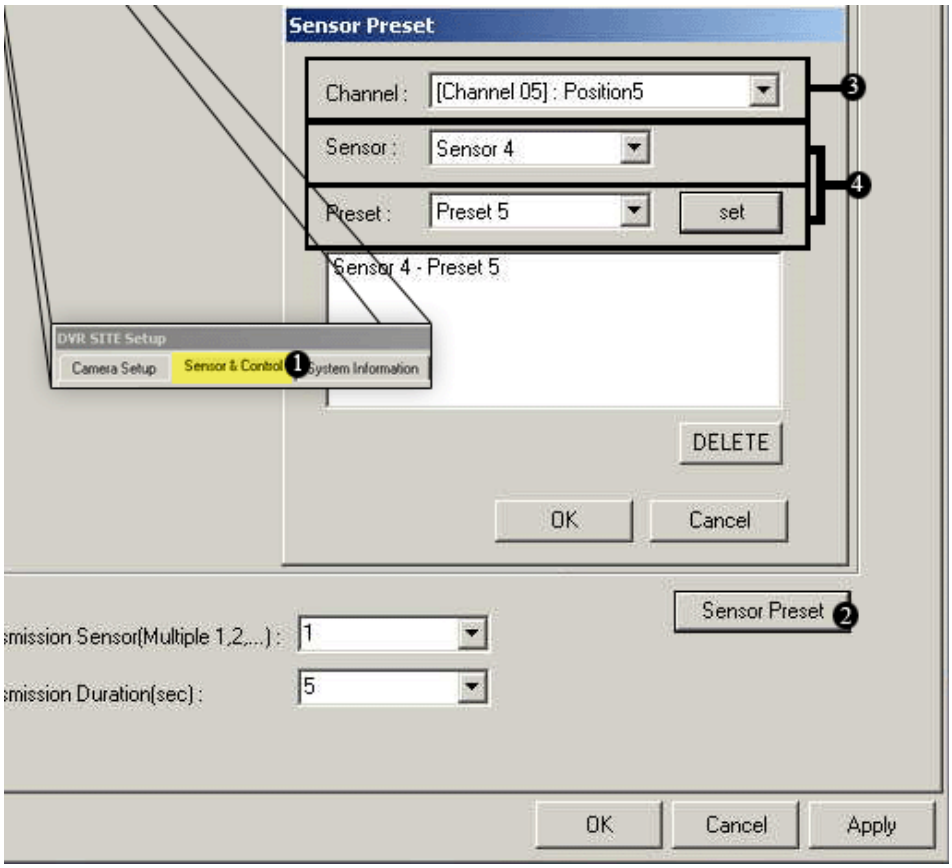
The Sensor and Output Window allows you to enable, disable and configure Sensors and Control Outputs as well as adjust Emergency Agent options.



1	Use	Enables/Disables the Sensor for use.
2	Type	Selects whether the Sensor will be Normally Open (NO) or Normally Closed (NC).
3	Record	Specifies the time period (in seconds) to record once the Sensor is tripped.
4	Delay(s)	Adjusts the amount of time (in seconds) to ignore the sensor if it is continuously activated.
5	Output	Selects the Control Output to activate once the Sensor has been tripped. You can select multiple Control Outputs by placing a comma between numbers.
6	Duration	Adjusts the amount of time (in seconds) that the Control Output will remain activated.
7	Use by Time	This option Enables/Disables the Use by Time feature. When activated the Use by Time feature allows you to specify a time period that the Control output will be operational. For example you could disable the control output during work hours so that alarms will not go off when a door is opened and a sensor is tripped.
8	Name	This option allows you to assign a meaningful name to the Control Output. (ex. Warehouse Siren)
9	Auto ON	The time at which the Control Output will be available for use.
10	Auto Off	The time at which the Control Output will be disabled and not available for use.

11	Sensor Number for Alarm Output	Associates the selected Sensor to the Siren (Control Output #16). When the sensor is tripped the Siren is immediately activated.
12	Onscreen Keyboard	Clicking this button brings up an onscreen keyboard.
13	Transmission sensor	Specifies which sensors will activate the Emergency Agent software. You can specify more than one sensor by separating them with commas. (ex. 2,4,13,15,16)
14	Transmission duration	Specifies the amount of time (in seconds) to transmit the video in the Emergency Agent Software.

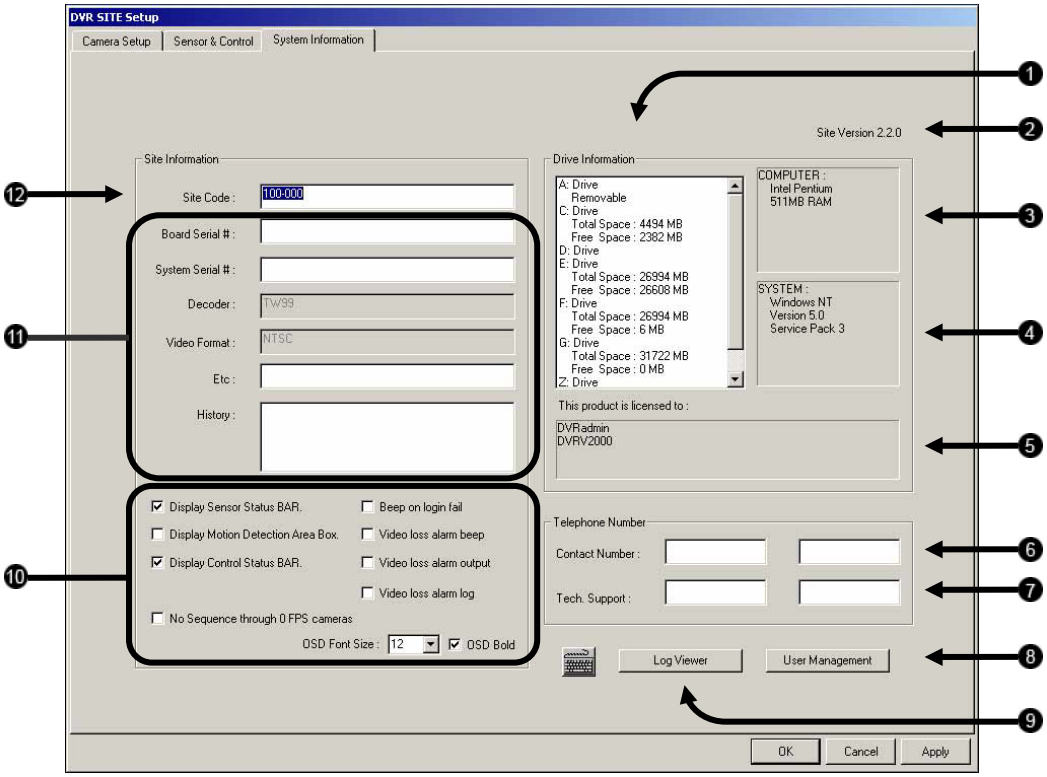
5.13.1 SENSOR PTZ TRIGGER



1	Sensor & Control	Go to sensor & control tab
2	Sensor Preset	Select the sensor
3	Channel	Select your camera
4	Sensor / Preset	Select your PTZ preset

5.14 SITE INFORMATION

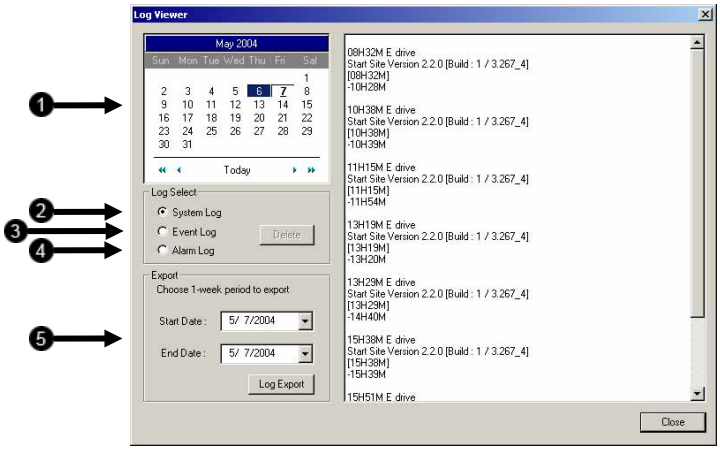
The Sensor and Output Window allows you to enable, disable and configure Sensors and Control Outputs as well as adjust Emergency Agent options.



1	Drive Information	Displays the Total Space and Free Space of the Drives installed in the DVR.
2	Site Version	Displays the DVR Software version.
3	Computer	Displays the Processor and Memory that are installed inside the DVR.
4	System	Displays the Operating System version installed on the DVR.
5	This Product is Licensed to	Displays the licensing information for the DVR unit.
6	Contact Number	Displays a user specified Contact Phone Number.
7	Tech Support	Displays the Tech Support Phone Number.
8	User Management	This option opens the User Management Window. User Management allows you to create, edit and delete DVR user accounts.
9	Log Viewer	This option opens the Log Viewer Window which allows you to view the DVR System Logs.
10	Display / Alarm Settings	Allows configuration of basic Display and Alarm settings.
11	Site Information	Displays misc. information about the DVR.
12	Site Code	A user-specified unique identification name that is used by other DVR software to connect to the DVR. (Remote, Emergency Agent, NDMS)

5.14.1 LOG VIEWER

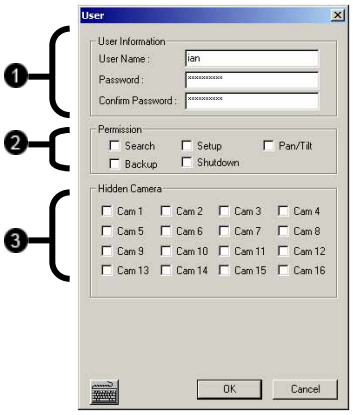
The Log Viewer displays detailed information about the DVR, including Shut Down and Restart information, User Logins and Recording problems and failures. This can be a valuable tool to Administrators



1	Calendar	Displays the days with Log information in a bold format
2	System Log	Displays the Hardware Log file information which includes Scan Disks, and system recording successes and failures.
3	Event Log	Displays information pertaining to Logins, reboots and non system events.
4	Alarm Log	Displays information pertaining to Alarm events.
5	Export	Allows the log files to be exported in week increments.

5.14.2 USER MANAGEMENT

The User Management Console allows you to create, edit, and delete user accounts. Each user account can be assigned different privileges to limit the usage of the DVR system. Users can be given administrator privileges by enabling all rights, however only the true administrator account can log into the User management Console.



1	User Information	Enter the User Information, and Password.
2	Permission	Allows you to specify the features a given user may access on the DVR.
3	Hidden Camera	The Hidden Camera feature allows an administrator to hide certain cameras from a user. The user will not be able to view the cameras in Live Mode.

5.14.3 CHANGING THE ADMINISTRATOR PASSWORD

1 Inside Setup, click the User Management button. When the login screen appears

click 

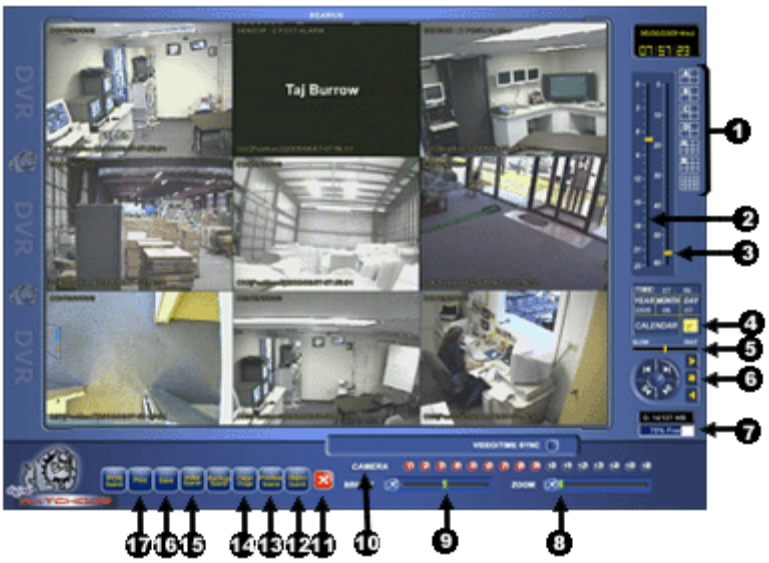
2 Enter the new password in the prompt that appears and click OK.

6 SEARCH OPTIONS

6.1 SEARCH OVERVIEW

The DVR unit has several options that allow you to easily search through, and find, a particular section of video. From Motion indexing and Sensor indexing to calendar views showing which days have recorded video, the DVR unit is equipped to help you quickly find what you're looking for.

The following chapter will describe in detail how to use the DVR Search features.



1	Screen Division Buttons	The Screen Division buttons allow you to view one or more sets of cameras at a time. *(See Screen Division Buttons in the DVR Basics chapter).*
2	Hour Control Bar	The Hour Selector displays the hours for a given day 0 to 24. Move the Slide Bar Selector to select an hour you wish to view.
3	Minute Control Bar	The Minute Selector displays the minutes for a selected hour 0 to 60. Move the Slide Bar Selector to select the time in minutes you wish to view.
4	Date Box	Displays the date and time off the current video being viewed and allows selection of a new date to be searched.
5	Speed	Move the Slide Bar to increase and decrease the playback speed of video.
6	Play Controls	These options allow you to control playback of video being viewed.
7	Storage Capacity	The Storage Capacity Usage Indicator displays the total free storage space available to the DVR unit. When the Storage Capacity reaches 100%, the DVR unit begins to rewrite over the older, saved video.
8	Zoom	Increases the size of the image (up to full screen).
9	Bright	Adjusts the brightness of the selected camera.
10	Camera	Allows you to enable (or disable) selected cameras to perform searches on.
11	Exit	Exits search and returns to the Main Menu page.
12	Object	The Object Search allows you to specify a region on an image and perform a search based on any motion that has occurred within that region.
13	Preview	The Preview search is a Search option that allows you to narrow down recorded video in a 24 Hour period. It breaks down a single day into 24 images, one image for each hour of the day (The images are taken from the first second of each hour). When an image is selected, the 'hour' chosen is then broken down into 6 images, one image for every 10 minute increment. Finally when another image is selected, 10 images are displayed, one for

		every minute within the 10 minute period. From this point, the selected image can be applied to the Main Search.
14	Clean Image	Often times, extensive motion can create a 'digital blur' that can interfere with the quality of an image. By selecting the Clean Image option, two frames are interwoven to create a smooth, detailed image.
15	Index	Allows you to perform a search based on Motion detection and Sensor activation. This search allows you to quickly narrow down large amounts of recorded video based on that criterion.
16	Save	Allows you to save a selected image as a JPG file or to save a video clip in an AVI format.
17	Print	Outputs a selected image to an attached printer.

6.1.1 PLAY CONTROLS

1	Play	Plays video.
2	Stop	Stops video playback.
3	Rewind	Rewinds video
4	Back Frame	Moves video back one frame.
5	Forward Frame	Moves video forward one frame.

6.2 ADJUST THE BRIGHTNESS OF AN IMAGE

1. Select an image to adjust by double-clicking on the desired image. Multiple images cannot be adjusted at one time.
2. Move the Bright slide bar to the right or left to adjust the brightness.
3. Reset the Brightness by moving the slider back to the center of the bar.

6.3 ZOOMING IN ON AN IMAGE

1. Select an image to adjust by double-clicking on the desired image. Multiple images cannot be adjusted at one time.
2. Move the Zoom slide bar to the right or left to zoom in or out of an image.
3. Reset the Zoom by moving the slider back to its original position on the bar.

6.4 ZOOMING IN ON A PORTION OF AN IMAGE

1. Using the mouse pointer, point to the area of interest on the image and press the right mouse button.
2. Keep pressing the right mouse button to zoom in further.
3. Continue clicking the right mouse button and the image zoom will cycle back to the original size.

6.5 PERFORMING A BASIC SEARCH

There are several different types of searches that can be performed on the DVR unit. The most basic involves simply selecting the date, the time, the camera, and pressing play.

1. Select a date using the calendar button  in the Date Box.
2. Select a time by adjusting the hour and minute slide bars.
3. Select one or more cameras.
4. Press Play. Video can be played forwards, backwards, or frame-by-frame.

6.6 TIME SYNC

The Time Sync option synchronizes a single channel of video to playback in real time. Ordinarily the video may playback slower or faster depending on several factors, including how many PPS recorded and number of cameras playing at the same time.

1. Select a single image to synchronize by double-clicking on an image.
2. Press the Time Sync button. The video will now playback in real time.

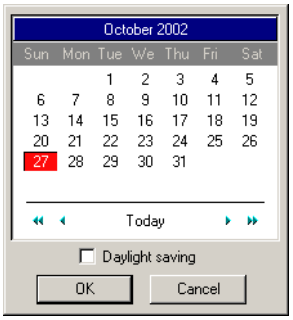
6.7 CLEAN IMAGE

The DVR unit is capable of recording video using one of three different resolutions. When using the 720 x 480 resolution, two fields are mixed. Because of the timing gap between the two fields, according to the standardized image rules, after image might occur to high speed moving images. The Digital Watchdog DVR unit allows you to remove this by pressing the CLEAN IMAGE button.

The images below demonstrate the filtered screen.

6.8 DAYLIGHT SAVINGS TIME

The DVR automatically adjusts for Daylight Savings Time changes. When the hour "jumps forward" no video is lost because an hour is simply skipped. However when the hour "falls back" there is a duplicated hour that under normal circumstances would be recorded over. The Digital Watchdog DVR actually records both hours and allows you to select which hour to play if the need arises.



To access the "lost hour":

1 From the Search screen, select the Select Date button.

2 Select the date when Daylight Savings time "lost" an hour. An option appears which says "Daylight Savings Time."

3 To play back the "lost" hour, select the Daylight Savings option.

4 Select OK to confirm the date and begin playing the video using standard search features.

6.9 SAVE TO JPG OR AVI

The DVR unit can export single images in the JPG file format and save video clips in an AVI format. Both JPG and AVI file formats are the most commonly used graphical formats today. Virtually every computer offers some type of support for these file formats which make them the most ideal formats to use.

JPG: The format (.jpg) is optimized for compressing full-color or grayscale photographic images. JPG images are 24-bit (16.7 million color) graphics. JPG is used to export a single image or frame.

AVI: AVI image data can be stored uncompressed, but it is typically compressed using a Windows-supplied or third party compression and decompression module called a codec. AVI files save a video clip.

1	JPG File	Export a single image or frame.
2	AVI File	Export a video clip.
3	AVI Duration	Enter duration (in seconds) for recording the AVI file. Although 100 is the longest displayed, a manual time may be entered.
4	Image Quality	It may be necessary to reduce the overall size of an AVI file; for example, to email to someone. AVI file sizes can be reduced by reducing the image quality. However, reducing the image quality causes the AVI video to appear more pixilated. When size is not an issue, setting quality to 100 is highly recommended.
5	Export	The Export button begins the saving process. (Cancel Exits without exporting.)

6.10 PRINTING AN IMAGE

1 Using the Search screen select locate frame you wish to print. Double-click the image. NOTE: Only one camera can be selected at a time for this function to work.

2 Click the **Print** button. A Print Options window appears. Depending on the printer being used, there may be several printing options available. Refer to the printer manual for more information.

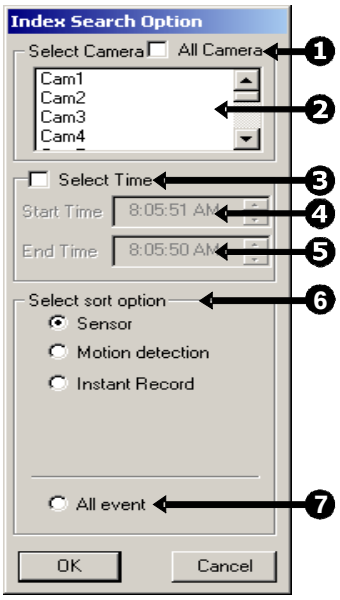
3 Click the **Print** button to print the selected images.

NOTE: The message "NO DEFAULT PRINTERS INSTALLED" will display if no printer is installed.

6.11 INDEX SEARCH

Using the **Index Search** can greatly decrease the amount of time spent searching through saved video. The Index Search allows a user to perform a search based on criterion such as Sensor, Motion and Instant Record events

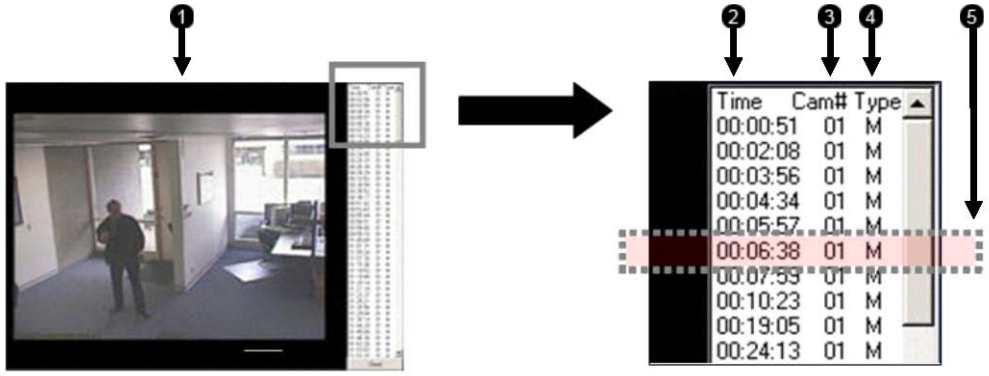
1	Select All Cameras	This option selects all cameras.
2	Multiple camera search	Select one or more cameras to search.
3	Select Time	The default search time is 24 Hours. If this option is selected, a Start Time and End Time must be entered.
4	Start Time	Specifies the Start Time for the Index Search.
5	End Time	Specifies the End Time for the Index search.
6	Sort Option	Searches by the selected event: Sensor, Motion Detection or Instant Record.
7	All Event	Searches on all events (sensor, motion, instant recording) for the selected camera(s).



6.12 PERFORMING AN INDEX SEARCH

1. Select the **Index Search** button. The Index Search Option box will open.
2. Select a single camera or check the All Cameras option.
3. Select an event to search (sensor, motion, instant record) or select the All Event option.
4. Click **OK**. There may be a delay while results are returned.
   Results will be displayed in a column on the left side of the screen.
   If no results are found, "NO IMAGE FOUND" will appear in the column.
5. Once the results are displayed, double-click on any one to search through them.
6. Once the desired image is found, apply it to the Main Search by selecting the **Close** button at the bottom of the results column.

6.12.1 INDEX SEARCH RESULTS DISPLAY



1	Image Display Area	Where Search result images are displayed.
2	Time	Time of the result.
3	Camera Number	Camera number of the returned result.
4	Type	Displays event type: M – Motion S – Sensor IR – Instant Record
5	Search Results	Displays the results of the search. Each line represents a segment of video.

6.13 PREVIEW SEARCH

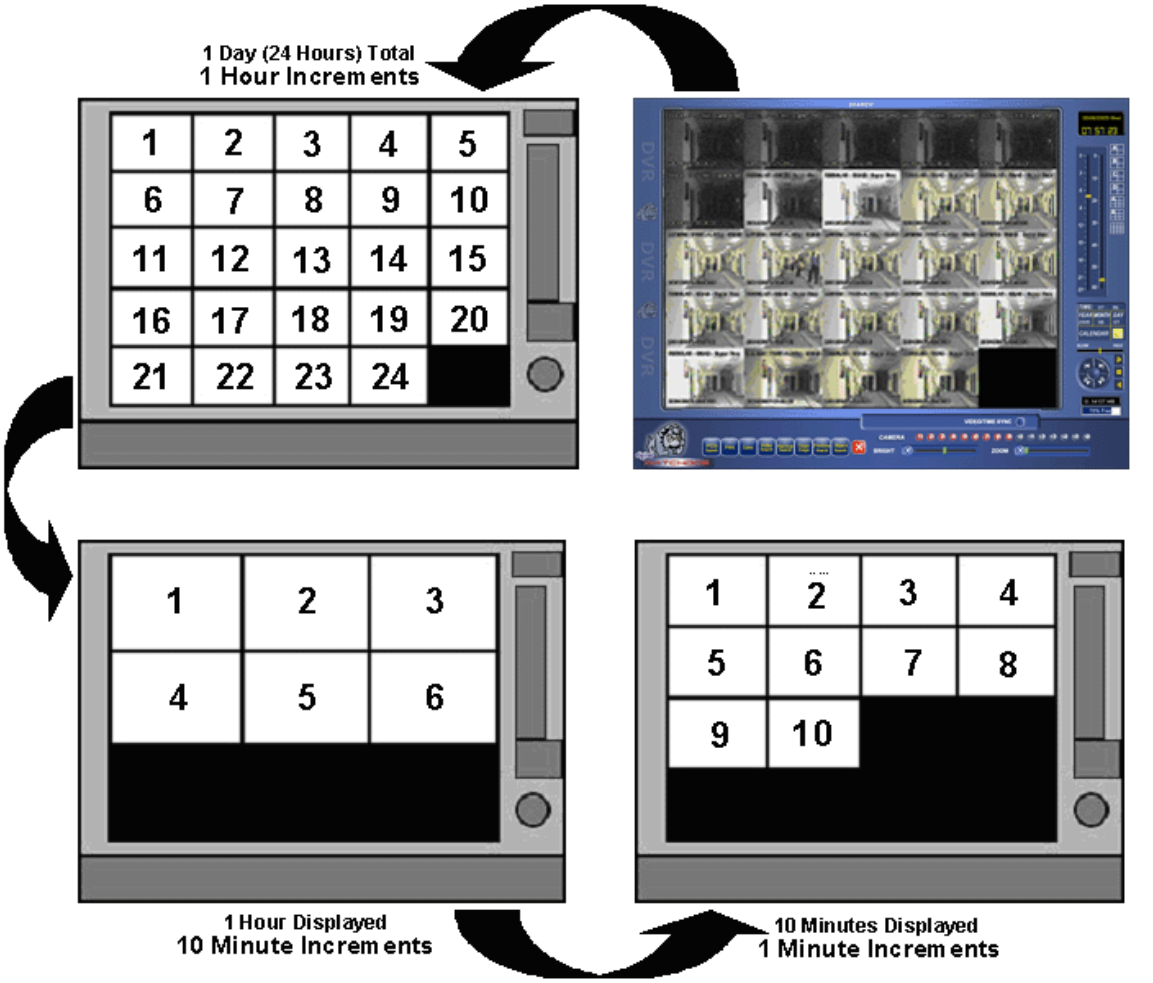
Preview Search can be used in a number of circumstances to quickly find an exact moment where an event, such as a theft, occurred. The Preview Search gives a 24 Hour visual overview of a single camera by separating a 24 hour period (1 day) into 24 images, one image for each hour of the day. The search can then be further narrowed down into ten minute increments and one minute increments by selecting one of the images displayed.

These example images show how the Preview Search functions.

The first screen that appears has 24 images displayed. Each image represents the first second of each hour. If there is no image recorded during that period then nothing will be displayed.

When an hour is selected (by double clicking on the image), a new screen appears with 6 images. Each of these images represents a 10 minute segment of video within the selected hour.

Once a 10 minute segment is selected (by double-clicking on the image) the final screen appears which breaks down that 10 minute segment into 1 minute increments (10 images).



6.13.1 PERFORMING A PREVIEW SEARCH

1 Select a single camera, either by turning off all cameras but one or by double-clicking a displayed image.

2 Select the Preview Search button. 24 images display. If there is no recorded video during a portion of the day, "No Image" will be displayed where the image should be.

3 Refine the search by double-clicking on an image to select it. 6 images display. If needed, return to the previous 24 image view by right-clicking on an image.

4 Refine the search by double-clicking on an image to select it. 10 images display. If needed, return to the previous 6 image view by right-clicking on an image.

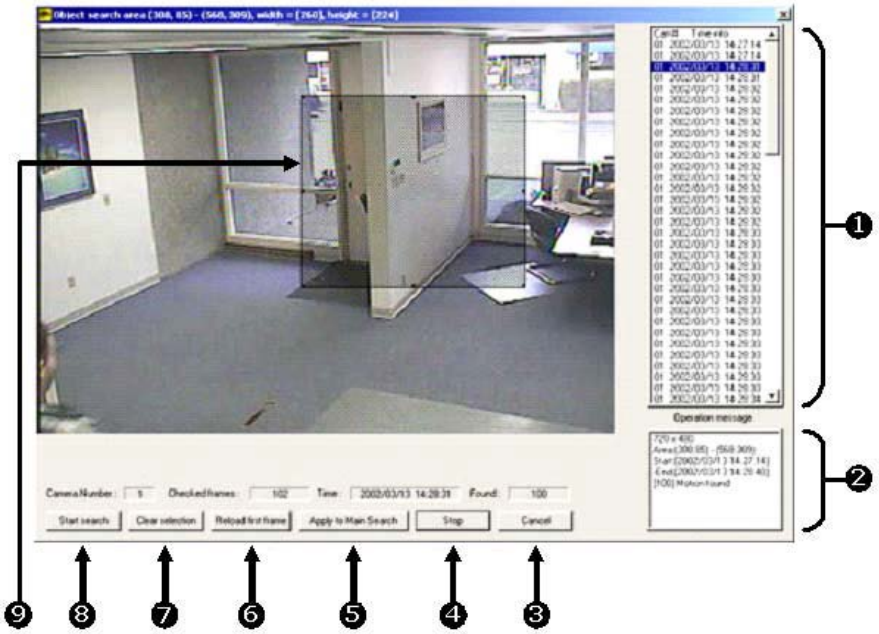
5 Double-click an image to select the 1-minute segment of video to play. A single image displays. If needed, return to the previous 10 image view by right-clicking on an image.

6 Use the Play controls to play the video of the selected segment.

7 To exit out of the Preview search with the current image still selected, deselect the Preview Search button.

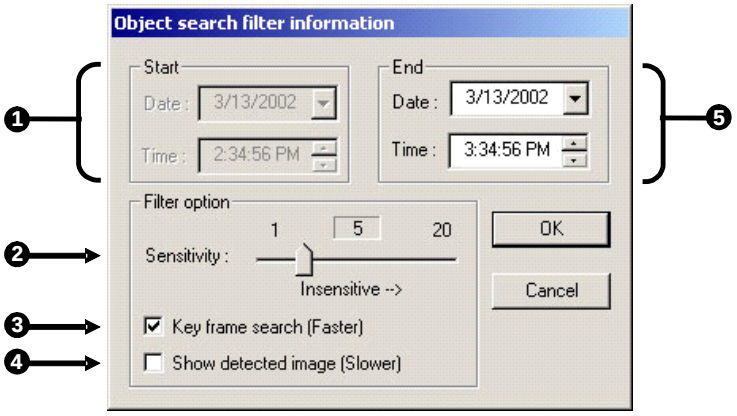
6.14 OBJECT SEARCH

Object Search is a powerful Search utility that is used to search a region on the video for any motion changes. Results are neatly displayed and can be viewed quickly.



1	Search Results	Search results are displayed in this column and listed by date and time. When the search is complete, results can be viewed by double-clicking on one of the results or by using the ↑ and ↓ arrow keys on the keyboard.
2	Search Information	Displays brief information on the overall search.
3	Cancel	Exits the Object Search.
4	Stop	Stops the current search.
5	Apply to Main Search	Exits the Object Search but takes the selected result (currently displayed image) and displays it inside the Main Search. From that point, play controls can be used.
6	Reload First Frame	Reloads the initial key frame image (the image used to start the search).
7	Clear Selection	Clears the current motion region box from the key frame image.
8	Start Search	Begins the search.
9	Motion Region Box	The user-defined area of the key frame image. Create the motion region box by clicking inside the image and dragging the mouse. The motion region box can be resized by pulling on the small square boxes located on the outer perimeter of the box.

6.14.1 OBJECT SEARCH FILTER INFORMATION



1	Start	Displays the time and date of the initial key frame.
2	Sensitivity	Used to control sensitivity of the motion to be detected. Poor lighting conditions can often be interpreted as motion; the sensitivity setting can compensate for this.
3	Key Frame Search	Searches by key frame.
4	Show Detected Image	Displays the results as they are found. Using this option slows the search process slightly and therefore may not be ideal when searching large periods of time.
5	End	Used to designate an end time. (Default is 1 hour.)

6.14.2 PERFORMING AN OBJECT SEARCH

1. Select a single camera, either by turning off all cameras but one or by double-clicking a displayed image.
2. Select the Object Search button.
3. Create a motion region box on the image by clicking inside the image and holding down the left mouse button while dragging the pointer. When the desired shape is created, let go of the mouse button. Only one motion region box can be created. To delete the motion region box, press the Clear Selection button.
4. Press the Start Search button. The Object Filter Search information should open.
5. Select an end time. One hour is the default setting.
6. Adjust the sensitivity if necessary.
7. Click OK to begin the search. When results are found, they will be displayed in the column to the right. If no results are found, the search will end and "No Images Found" will display in the column. Press Stop to stop a search.
8. When the search has ended, double-click on one of the results. Use the up and down arrows to scroll through the results quickly.
9. When the desired image is found, select Apply to Main Search to use the play controls.

6.15 AUDIO PLAYBACK

Audio is played back at 48,000Hz.

To play audio with the video:

1 Select a single camera by turning off all cameras but one using the **Camera Select** buttons. The audio buttons will be displayed.

2 Select a single audio channel to play. When an audio channel is selected, the **Time Sync** button will automatically be selected.

3 Press **Play**.

NOTES:

7 PAN / TILT / ZOOM

7.1 PAN / TILT / ZOOM OVERVIEW

The PTZ controls within the DVR unit allow for powerful control over the cameras. This can be extremely beneficial by increasing the usefulness of the recorded video. Using the PTZ controls you can create custom preset configurations that can continuously sweep across large areas.

7.2 SETTING UP A PTZ CAMERA

Setting up a PTZ Camera is simple. The DVR unit comes preassembled with an internal PTZ adapter. The cabling may be run up to 4,000 ft using 22 Gauge Twisted Pair.

It is important to understand how the PTZ connects to the DVR. The DVR outputs an RS-232 signal and converts in to an RS-422/485 signal which is then sent to the PTZ camera.

NOTE: The RS-232 connection cable must be attached before the PTZ camera will be controllable by the DVR.

7.2.1 ATTACHING THE RS-232 ADAPTER

Locate the RS-232 adapter from the contents shipped within the DVR.

Connect the RJ-11 end to the RJ-11 jack on the back of the DVR and the other end to the Serial Port on the back of the DVR

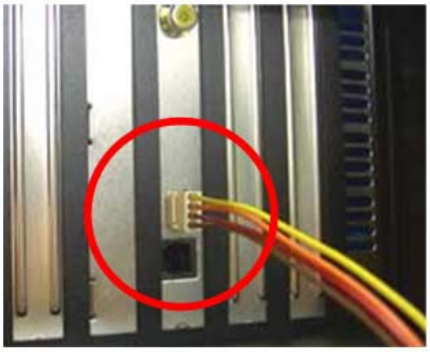
7.2.2 ATTACHING THE RS-422 ADAPTER

Locate the PTZ adapter.

For DW-Pro 7000 (shown) connect the two wires of the PTZ adapter to the PTZ camera. The red wire on the adapter should connect to the TX+ on the PTZ and the brown wire should connect to the TX-.

For DW-Pro 9000 connect the two wires of the PTZ adapter to the PTZ camera. The red wire on the adapter should connect to the TX+ on the PTZ and the white wire should connect to the TX-.

Connect the other end of the adapter to the DVR unit as shown. Both 7000 & 9000 have similar connections except the 9000 has only two wires.



Assign the PTZ camera an ID number that coincides with the number assigned to it by the DVR unit.

Example: If the camera is plugged into input number 5, set the PTZ unit to ID number 5.

Inside the DVR PTZ setup, select the PTZ camera using the Camera Channel drop down menu:

1 Enable the PTZ functions of the camera by placing a check in the Pan/Tilt Connection checkbox.

2 Select the appropriate Protocol and set the PTZ Driver Address and Serial Port Settings (See Advanced PTZ Setup in the chapter).

NOTE: Protocols are a set of instructions written by the manufacture of the PTZ cameras that allow software programs such as this DVR to control their functions. The majority of the major PTZ manufacture protocols are included in this software

3 Click Apply and exit Setup.

4 From the Main Display Screen select the PTZ button (See the chapter on DVR BASICS) The PTZ Control options will open.

5 Select the PTZ camera to control by clicking on its video on the main display screen. The camera number will appear inside the PTZ controls.

6 Using the PTZ controls, you should now be able to move the PTZ around.

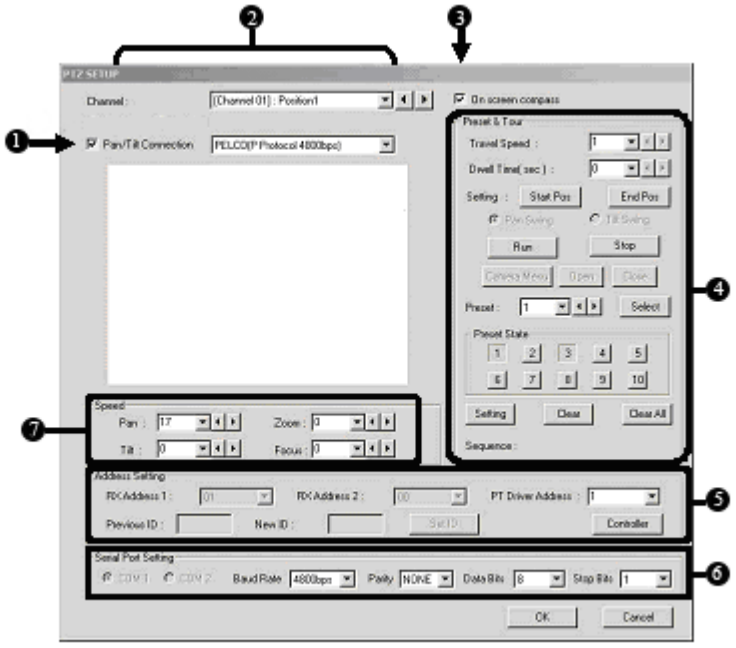
7.2.3 SUPPORTED PROTOCOLS

Protocols are added frequently. The supported list may contain new protocols that are not listed here.

The current supported protocols are:

Ademco Rapid Dome
American Dynamics
CBC (GANZ)
C-BEL
Chiper CPT (V9KR Series)
CNB-AN102
CNB-PTZ100
Computar
Dennard
DMP23-H2
Dong Yang Unitech (DRX-502A)
DVRX-100
DY-255RXC
Dynacolor
Ernitec
Fastrax II
FillTech
Fine System (CRR-1600)
Focvision (KD1602)
HMS-250
HSCP
Honeywell (HSD-250)
Inter-M(VRX-2101)
Javelin (Orbitor)
Kalatel (Cyber Dome)
KDC
LG (LVC-A70x's)
LG SD-110
LG (LPT-A100L)
Merit LI-LIN
Merit LI-LIN V6
NiceCam
Panasonic
Pelco D
Pelco (P protocol 4800bps)
Philips (TC8560 & TC700)
SAE
Samsung (DRX-502A)
Samsung (SCC-641)
SANTACHI
Sensormatic SpeedDome
SPD-2500P
SungJin (SJ2819RX)
Toshiba (P protocol 4800bps)
Ultrak (KD6)
VCL
VCL- LEGACY
Vicon
Vicon Speeddome
Vicon Surveyor 2000
Videoalarm
Vision Tech
WonWoo

7.3 ADVANCED PTZ SETUP



1	Enable Pan/Tilt	Enables the DVR to control the PTZ camera.
2	Select Camera	Selects the current camera to be edited.
3	On-Screen Compass	Allows On-Screen control of a PTZ camera.
4	Preset and Tour	Used to create Presets and Tours for the PTZ camera. Since each camera creates these in a different way, there can be multiple methods.
5	Address Setting	Only available on select PTZ cameras. These options need to be set when there are more PTZ cameras connected together than there are inputs on the DVR. Setting these options allows for attaching several DVRs to the PTZ chain.
6	Serial Port Settings	Defines the specific settings to transmit to the PTZ.
7	Pan Speed	Increases or decreases the Pan speed.
	Tilt Speed	Increases or decreases the Tilt speed.
	Zoom Speed	Increases or decreases the Zoom speed.
	Focus Speed	Increases or decreases the Focus speed.

7.4 CREATING AND VIEWING PRESET POSITIONS

A **Preset Position** is a user-defined location where the camera can be pointed, zoomed in, and focused. Preset positions can be defined and labeled if the camera supports this.

7.4.1 CREATING A PRESET

1 Inside Setup, select the PTZ setup option and select the camera wish to edit.

2 Move the selected camera to the desired position using the Pan/Tilt/Zoom/Focus controls.

3 Inside the Pan Tilt Detail Setup choose a Preset (1-10) using the Preset Select buttons and click Select.

7.4.2 VIEWING A PRESET

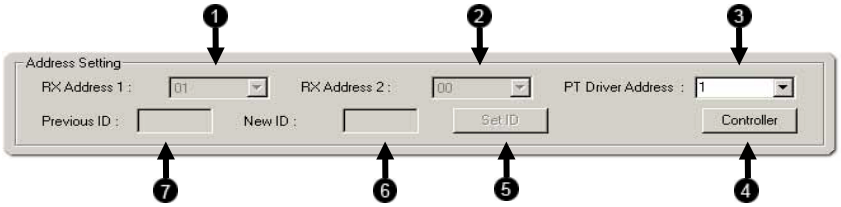
1 From the Main Display Screen select the PTZ camera by clicking on it.

2 Using the keyboard press the number keys corresponding with the Preset Positions.

The Camera will move to the saved Preset.

7.5 PTZ ADDRESS SETTING

Some protocols support software address settings. The following section explains these settings.



1	RX Address 1	This option was added for a particular line of receivers that support 2 ID addresses. This is the first RX address.
2	RX Address 2	This option was added for a particular line of receivers that support 2 ID addresses. This is the second RX address.
3	PT Driver Address	This option is for specifying the PTZ ID address that the PTZ is set to. This option must be set correctly in order for the DVR to communicate with the PTZ. This option can be beneficial when large amounts of PTZ are chained together.
4	Set ID	This option was added for a particular line of receivers that support 2 ID addresses. This option is for setting the new RX address.
5	Controller	Brings up the Graphical PTZ Controller.
6	New ID	This option was added for a particular line of receivers that support 2 ID addresses. This option is for entering a new RX address ID.
7	Previous ID	This option was added for a particular line of receivers that support 2 ID addresses. This option displays the current RX address ID.

7.6 ACCESSING PTZ MENUS

Some protocols support the ability to access the Internal PTZ Onscreen Menu

1	Close	This option closes the PTZ Onscreen menu.
2	Left / Right	The Left and Right buttons on the PTZ controller move through the PTZ menu options and/or highlight options.
3	Up / Down	The Up and Down buttons on the PTZ controller move through the PTZ menu options.
4	Camera Menu	This is the PTZ Camera menu.
5	Presets	This option selects a preset item on the DVR.

Since every PTZ camera is different, the functions of these options can vary slightly.

The Digital Watchdog DVR provides an easy way to access the cameras options. For explanations of what those options are please refer to the manual that came with your camera

7.7 CONTROLLING A PTZ CAMERA

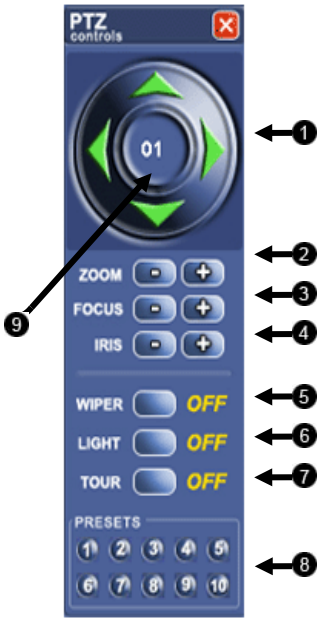
The Digital Watchdog DVRs provide control for the PAN/TILT camera in two different ways.

The first method is to use the Graphical PTZ Controller that appears when the PTZ button is pressed on the main screen.

The second method is to use the mouse to control the camera directly from the live video display.

7.7.1 USING THE GRAPHICAL PTZ CONTROLLER

1	PTZ Controls	There are 8 directions buttons that move the PTZ.
2	Zoom	This option Zooms the camera in and out.
3	Focus	This option focuses the PTZ camera.
4	Iris	This option adjusts the Iris on the PTZ.
5	Wiper	This option activates a Wiper on the PTZ camera.
6	Light	This option activates the Light on the PTZ.
7	Tour	This option activates the Tour function.
8	PTZ Presets	These buttons activate the corresponding PTZ Preset.
9	Camera Number	This displays the camera number you are currently controlling. To change the camera, simply click on the video of the camera you wish to control.



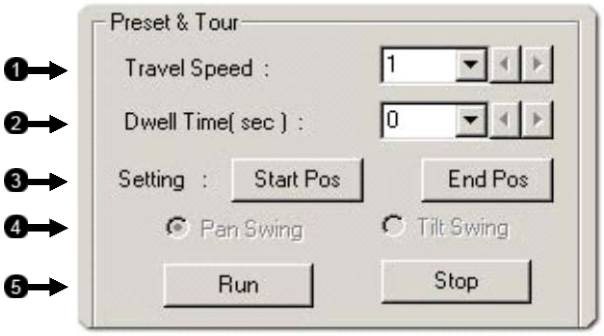
NOTE: Only 4 of the PTZ Controls buttons work for all protocols (UP, DOWN, LEFT, RIGHT). 8 Directions are available only for select protocols.

7.7.2 USING THE ONSCREEN COMPASS

1 Press the PTZ Button on the main screen.

2 Control the PTZ by dragging the mouse on the screen in the desired direction. A green line will appear to show the direction the PTZ will move. The shorter the line the less the PTZ will move. The longer the line the more the PTZ will travel in the specified direction.

7.8 UNDERSTANDING TOURS



1	Travel Speed	This option defines the speed at which a PTZ moves from one Preset position to the next (when using Preset Tour 2).
2	Dwell	This option defines the length of time (in seconds) that a PTZ Tour stays on a Preset Position. Moves from one Preset position to the next (when using Preset Tour 2).
3	Setting – Start Pos / End Pos	These options describe how to define a Mimic Tour. The Start Position button begins the 'recording' process. The Stop Position button ends it.
4	Pan Swing / Tilt Swing	This option enables the Horizontal (Pan) or Vertical (Tilt) 'Guard Tours'.
5	Run / Stop	Runs the selected Pan or Tilt Tour.

NOTES:

8 BACKING UP TO A CD-RW DRIVE

8.1 BACKUP OVERVIEW

The DVR unit can easily backup important video to an internal or external media location. The most commonly used are CD-RW drives and Hard Drives. Since the DVR unit comes standard equipped with a CD-RW drive, this section covers backing up using the CD-RW drive as well as by using a Hard Drive.

The DVR unit backs up using a proprietary compression format that can only be read by the DVR Backup program. This ensures the integrity of the data. In addition the CD-RW also uses a proprietary format in which it stores the information. This format, called UDF, can only be read by a Computer which has the UDF reader software installed. A copy of Roxio® UDF Reader is on the Software Installation CD shipped with the DVR unit. A copy is also available for download from Roxio® direct (http://www.roxio.com).

During the backup process the DVR unit will never stop recording. The DVR unit is a multiplexing unit that can perform virtually all functions without having to stop the recording process.

In addition, you can now backup to multiple CDs when the file sizes exceed the size of one CD. Also, you can specify multiple locations to save to. For example you can save 1/3 the data to a CD, 1/3 the data to the local Drive and 1/3 the data to a network drive.

8.2 DIRECTCD® FORMAT UTILITY

The Digital Watchdog DVR unit uses DirectCD® 5.0 to save the data to a CD-RW Drive. This allows the DVR to use the CD-RW just as it would any other attached Hard Drive, both reading and writing to it. CD-R and CD-RW discs must be formatted in the DirectCD 5.0 UDF standard for the DVR unit to recognize them. It is recommended that CD-R discs, NOT CD-RW discs, be used in the DVR unit only because of the format time and cost difference between the two. It can take 45 minutes to an hour to format a CD-RW disc but only 15 to 30 seconds to format a CD-R disc. In addition, CD-R discs are generally considerably less expensive than CD-RW discs.

There are two ways to open the DirectCD format utility. The first is by exiting to windows. The second is by opening the Backup Window and pressing the Format CD button.

CAUTION: Although many features are available within DirectCD, it is highly recommended that you do NOT use any features other than those necessary for the standard exportation of video as outlined in this section, otherwise loss of information or software instability could result.

1	Windows Control Buttons	Calls the Help screen. Minimizes the window. Closes the DirectCD application
2	CD Select	Use the dropdown box to choose the CD-RW drive attached to the DVR. Generally, this defaults to the correct CD-RW drive.
3	CD Utilities	Used to perform repairs on CDs that have become unstable or failed completely.
4	Format CD	Used to format a CD or CD-RW so that it can be read by the DVR.
5	Eject CD	Used to remove the CD from the drive after specifying how to end the recording session.
6	Options	Used to adjust options pertaining to the operation of DirectCD.

7	Help	Opens the DirectCD help file.

8.3 FORMATTING A CD-R

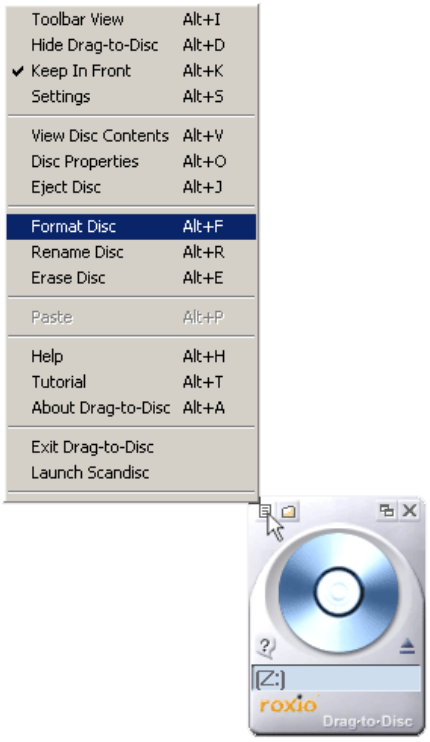
8.3.1 FORMATTING A CD-R FROM BACKUP

1 Insert a blank CDR or CD-RW disc into the CD-RW drive.

2 Enter **Backup** and click the 

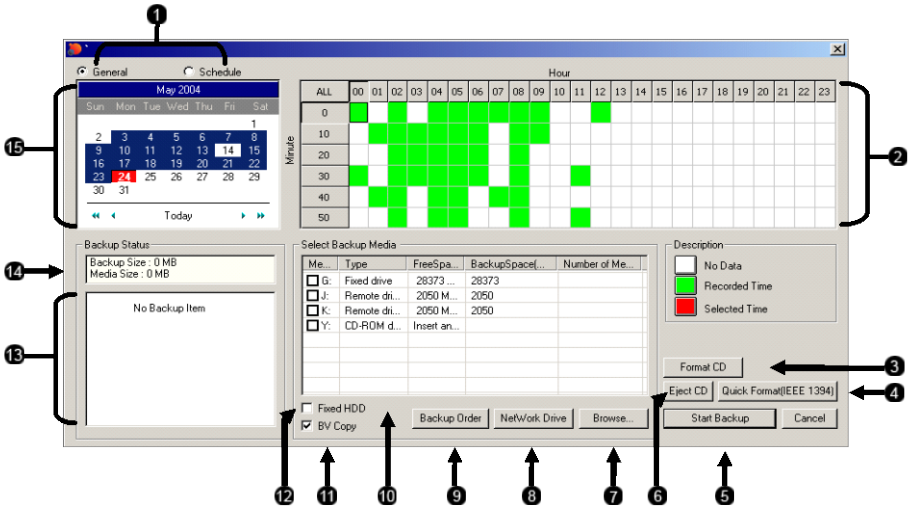
button. (See 8.4 item 3).

3 Then Right-click the Drag to Disk window and select "Format Disk"
This will take a few moments to format..



8.4 BACKUP OPTIONS OVERVIEW

The BACKUP OPTIONS window allows you to select the video you wish to save and also the location of where to save it.

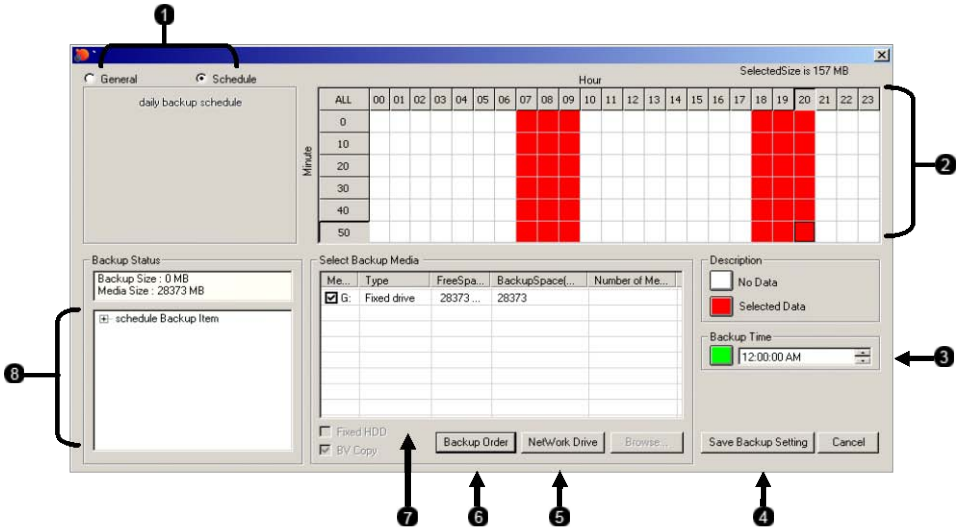


1	General / Schedule	Switches between the General Backup window and the Scheduled Backup window.
2	Hour/Minute	Displays a 24 hour time period in 10 minute increments. Color coded boxes represent "No data," "Recorded data," or "Selected data." Select a time by clicking on one of the boxes; deselect it by clicking on it again.
3	Format CD	Opens the CD formatting Utility (see the Formatting a CD-R or CD-RW section in this chapter).
4	Quick Format IEEE (1394)	Performs a quick format of the attached IEEE (1394) device.
5	Start Backup	Once the location and video have been selected, this button begins the backup process.
6	Eject CD	Ejects the CD from the connected CD Burner.
7	Browse	Used to select a location for saving the video.
8	Network Drive	Used to connect to a drive over a network.
9	Backup Order	Used to specify the order in which multiple drives are used to record backup video to.
10	Select Backup Media	Displays available storage drives. Use this window to select the drive you wish to save video files to.
11	BV Copy	Copies the proprietary viewer onto the CD-R and makes the CD autoplay.
12	Fixed HDD	By checking this box, all available hard drives (including mapped drives) will be displayed inside the SELECT BACKUP MEDIA box.
13	Backup Items	Displays the dates and times of events currently selected to backup.
14	Backup Space	Displays the currently available drive space for backup and the current file size of items selected for backup.
15	Select Day	Provides a calendar used to select the day. If video is recorded on a given day, the day will be highlighted. The current day is always highlighted in red.

8.5 SCHEDULED BACKUP OPTIONS OVERVIEW

The SCHEDULED BACKUP OPTIONS window allows the creation of a scheduled daily backup of selected times to a specified storage location.

NOTE: Available storage locations exclude CD-R and CD-RWs and are limited to hard disks specifically identified as backup space (see the specifying scheduled backup drives section in this chapter).



1	General / Schedule	Switches between the General Backup window and the Scheduled Backup window.
2	Hour/Minute	Displays a 24 hour time period in 10 minute increments. Color coded boxes represent “No data,” “Recorded data,” or “Selected data.” Select a time by clicking on one of the boxes; deselect it by clicking on it again.
3	Backup Time	Specifies at what time the Backup Schedule is executed.
4	Save Backup Setting	Saves the current settings for scheduled backup. The current recording schedule if any will now be executed daily.
5	Network Drive	Used to connect to a drive over a network.
6	Backup Order	Used to specify the order in which multiple drives are used to record backup video to.
7	Select Backup Media	Displays available storage drives. Use this window to select the drives you wish to save video files to.
8	Backup Items	Displays the dates and times of events currently selected to backup.

8.6 SPECIFYING SCHEDULED BACKUP DRIVES

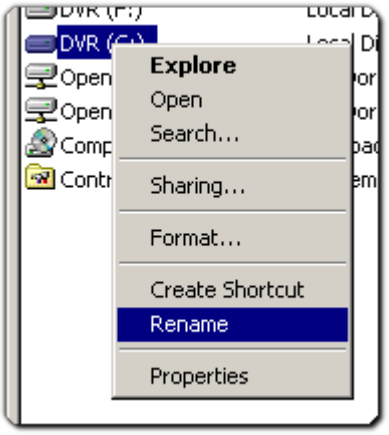
In order to use the Scheduled Backup feature one or more storage drives or partitions connected to the DVR must be labeled as a backup drive.

1 Exit and restart in Windows mode.

2 Double click the My Computer icon on the DVRs desktop. A file menu will be displayed.

3 Right click on the drive you wish to specify as a backup drive for Scheduled Backup and select rename. Rename the drive to 'Backup'. Repeat this process for all drives you wish to use for Scheduled Backup. To remove a drive from use for Scheduled Backup change its name back to DVR.

4 Restart the DVR and return to the Scheduled Backup window.



8.7 CREATING A SCHEDULED BACKUP

1 Enter Backup and select the Schedule radio button at the top of the window.

2 Select the times to backup by clicking on the desired blocks. The blocks will turn red when selected. Click a block again do deselect it.

3 Set the time to run Scheduled Backup in the provided space under Backup Time.

4 Specify the drive or drives to save the backup video to and set backup order.

5 Click Save Backup Setting. The window will automatically save and close.

NOTE: Only one daily Scheduled backup is allowed. To overwrite the existing schedule simply reenter the Scheduled Backup window set a new schedule and save.

8.8 BACKING UP TO A CD-RW DRIVE OR HARD DRIVE

1 From the Main Display Screen select the BACKUP button.
The Backup Options window displays.

2 From the Backup Options window, use the calendar to select a date.

3 Select the time(s) to backup by clicking on the desired blocks.
The blocks will turn red when selected. To deselect the blocks, click on them again.

4 To backup to CD media, insert a blank CD and follow the instructions for formatting a blank disk outlined in this chapter. Click on the corresponding CD-R/W drive that is displayed inside the Select Backup Media box and when prompted indicate the number of CDs needed to store the backup video (e.g. 980MB of video / 600MB of storage per disk = 1.63 so 2 disks would be needed). Click the Start Backup button.

To backup to a hard drive, check the box for Fixed HDD. Select the correct hard drive from the Select Backup Media box, and then press the Start Backup button.

If the amount of video exceeds the storage capacity of the media being used then an error message will be displayed inside the error message box. If this happens, reduce the amount of video that is being exported, increase the compression, select another media device, or span the file over multiple disks/drives.

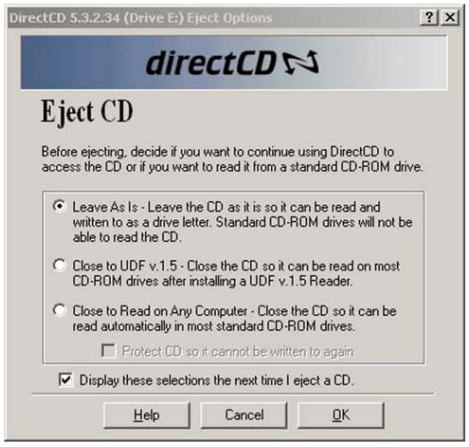
Once the Start Backup button is pressed, the Backup Options window will close.

The status of the recording process can be monitored by viewing the Backup Progress bar. This can be seen on the Main Display screen.

The Backup will be completed successfully when the Backup Progress Bar disappears from the Main Display Screen.

8.9 REMOVING THE DISC FROM THE CD-RW DRIVE

1 Press the Open button on the CD-RW drive. The Eject CD Window should appear on the screen.



2 Select the Leave As Is option to continue using the CD for future backups by the DVR unit. You may not be able to read the disk in other CD-ROM drives if this is selected.

Select the Close To UDF v 1.5 to view the data in standard CD-ROM Drives.

The host computer that will be viewing the data must have Roxio UDF Reader installed to view the data. When this option is selected, a copy of the UDF reader is automatically placed onto the CD so that if the host computer does not have the UDF reader installed, it can be installed from the same CD that has the data.

Do not select CLOSE TO READ ON ANY COMPUTER. This option does not allow the CD to be playable on most PC's and may require a new CD to be made.

3 Click OK to eject the CD. Select Cancel to exit the Eject CD dialog box without ejecting the CD.

4 Once the CD-RW drive door opens, remove the CD and place it in a protective sleeve or case.

NOTES:

9 LAN / ISDN / PSTN CONNECTIONS

9.1 LAN OVERVIEW

The DVR unit can easily be connected to a Local Area Network (LAN) and uses Microsoft's® powerful and secure Windows® 2000 operating system. This allows for easy and well-documented instructions on setting up LAN connections no matter what type of LAN you want to use.

A LAN is a group of computers and other devices dispersed over a relatively limited area and connected by a communications link that allows one device to interact with any other on the network. Local Area Network is also called LAN.

Examples of LAN connections include Ethernet, Token Ring, cable modems, DSL, FDDI, IP over ATM, IrDA (Infrared), wireless, and ATM-emulated LANs. Emulated LANs are based on virtual adapter drivers such as the LAN Emulation Protocol.

There are a vast amount of reasons why using Microsoft® Windows® 2000 is far superior to other platforms when running on a LAN. The number one reason is security. Windows 2000 is based on NT technology, which, historically has boasted the most reliable and secure Operating System in the world. Running the DVR on a secure network is important to prevent unwanted users from gaining access to confidential information. Unwanted users can compromise the integrity of the confidential data being stored and viewed, and in extreme circumstances can cause irreparable damage to the network.

Since connecting the DVR unit to a network can be extremely complex (depending on the network), this Digital Watchdog DVR manual will cover only the basics. It is suggested that you consult your Vendor or IT Administrator before attempting to create or connect to a LAN.

9.2 CONNECTING TO A LAN USING TCP/IP

The networking options of the DVR unit can create and edit all Network settings available on Windows 2000. The DVR unit comes equipped with a 10/100 Network Interface Card (NIC). This card uses a standard RJ-45 connector.

9.2.1 CONFIGURING TCP/IP SETTINGS

1 Exit and restart in Windows mode.

2 Right-click on the My Network Places icon located on the desktop and select Properties. The Network and Dial-Up Connections window opens.

3 Right-click Local Area Connections and select Properties.

The Local Area Connection Properties window opens.

4 Select the Internet Protocol (TCP/IP) by clicking on it once. Once it is highlighted, select the Properties button. The Internet Protocol (TCP/IP) Properties window opens.

5 Select Use the Following IP Address option. Enter the IP Address and Subnet mask appropriate for your network. It is recommended to contact your Network Administrator for appropriate IP settings.

Example: Common IP addresses are 10.0.0.25

Common Subnet masks are 255.255.255.0

NOTE: In order to connect to the DVR unit through a remote LAN connection, a static IP address must be assigned. If the network assigns the IP address automatically (DHCP), contact the Network Administrator for help assigning a static IP address.

6 If the network requires you to specify your DNS information, enter it now by selecting the appropriate DNS options.

7 When finished configuring the TCP/IP settings close the Internet Protocol (TCP/IP) Properties window by clicking the OK button.1

8 Close the Local Area Connection Properties window by clicking the OK button.

9 It may be required to restart Windows for the changes to take effect.

Restart windows by selecting START on the desktop and selecting Restart.

9.2.2 CONNECTING THE DVR TO A LAN

Using a standard RJ-45 cable, plug one end into a Hub (or Network Jack ultimately connected to a hub) and the other end into the DVR unit.

NOTES:

10 DIGITAL SIGNITURE VERIFIER

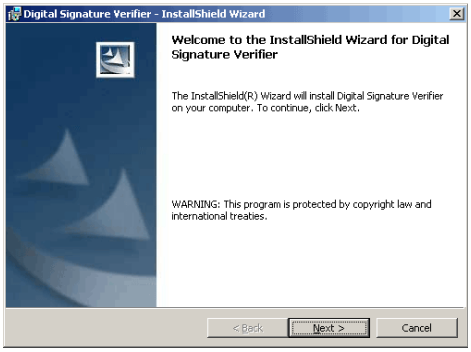
10.1 DIGITAL VERIFIER

JPG images and AVI video files that are exported from the Digital Video Recorder are automatically embedded with a Digital Signature. Digital Signatures are a way to verify the authenticity of the images to ensure that they have not been tampered with or edited in any way. Included on the Software Installation CD supplied with the DVR unit is the Digital Signature verification program. This program can be installed on any computer and simply loads an image in question.

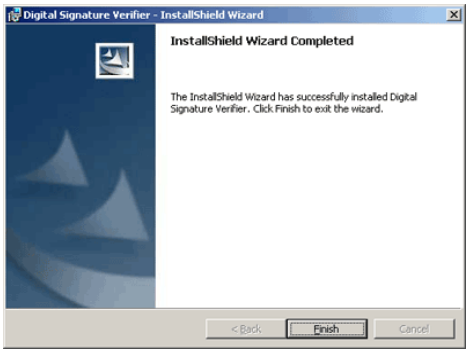
10.2 INSTALLING THE DIGITAL VERIFIER

1 Insert the Software Installation CD into the CD-ROM. (Do not install on the DVR unit.)

2 Select the Digital Verifier option to begin installation. When the **Welcome** screen appears, click **Next**.



3 When the **Setup Complete** window appears click **Finish**. Setup is now complete.



10.3 USING THE DIGITAL VERIFIER

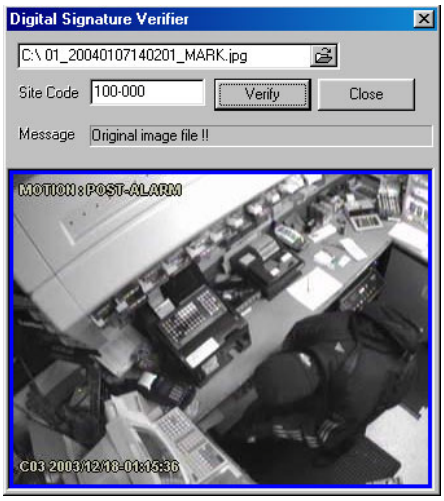
1 Open the Digital Verification program by selecting
Start → Programs → DVR → Digital Verifier → Digital Signature Verifier.

2 Click the **Browse** button to load the JPG image.

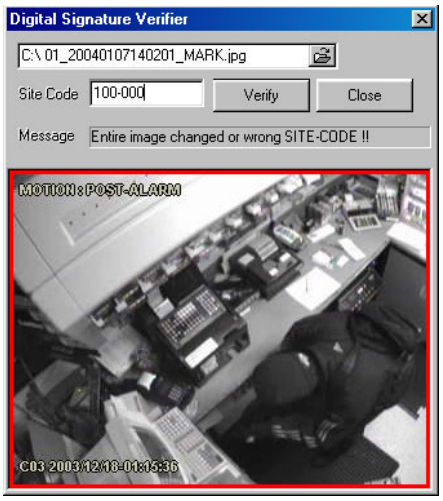
3 Enter the **Site Code** of the DVR unit that the image was originally extracted from.

4 Click the **Verify** button to continue or **Close** to close the window without verifying.

If the image has not been tampered with, a blue square will appear around the image with the message "**Original image file.**"



If the image has been tampered with, a red square will appear around the image with the message "**Entire image changed or wrong** SITE CODE."



NOTES:

11 PROPRIETARY VIEWER

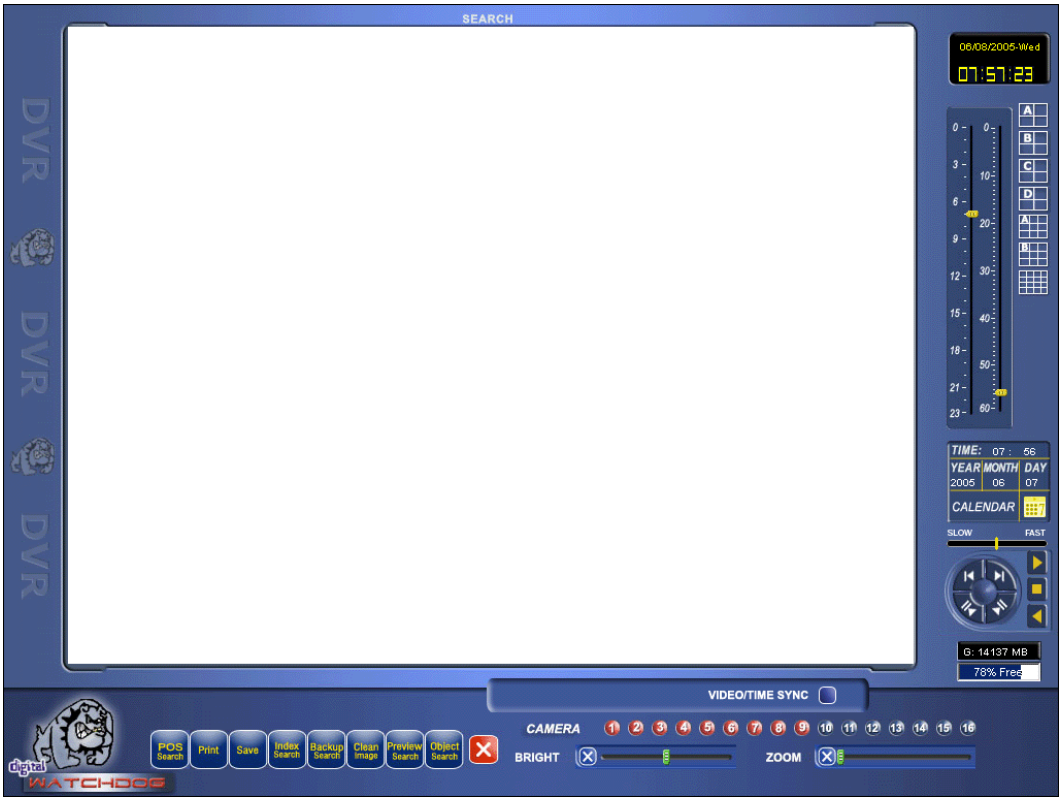
11.1 PROPRIETARY VIEWER OVERVIEW

The Proprietary Viewer allows you to play back the exported video in its proprietary format. Video saved in this format is extremely difficult to tamper with and therefore is the ideal solution when law enforcement and the legal department are involved.

This video cannot be read by any other viewer.

The Proprietary Viewer is essentially the Search portion of the DVR software.

For detailed explanations of these functions, refer to the Chapter on Search Options in this Manual.

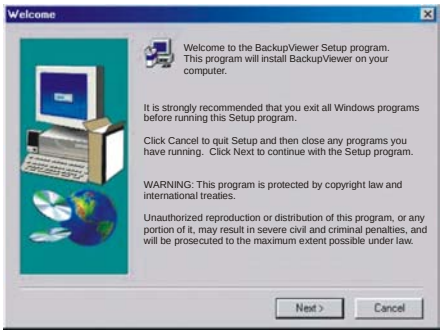


11.2 INSTALLING PROPRIETARY VIEWER

1 Insert the Software Installation CD into the CD-ROM.
(Do not install on the DVR unit.)

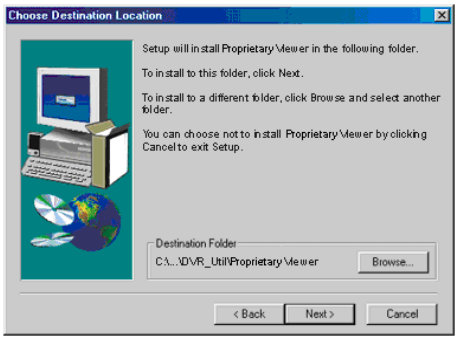
2 Select the Proprietary Viewer option to begin installation.

When the **Welcome** screen appears, click **Next**.

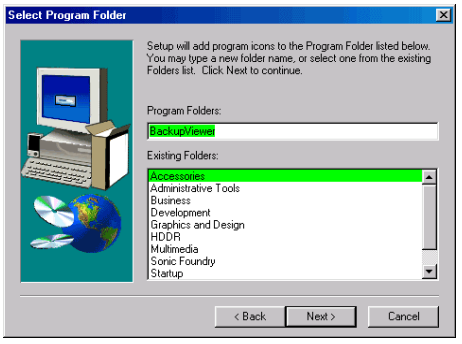


3 When the Choose Destination Location window appears click Next.

This will install Proprietary Viewer in the default destination folder.

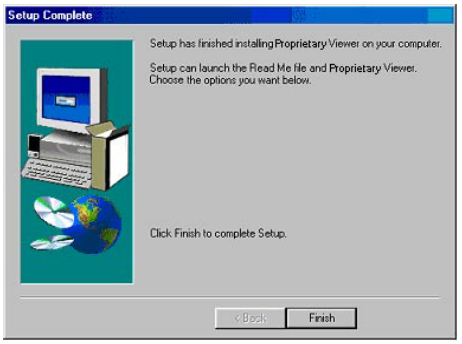


4 When the **Select Program Folder** window appears click **Next**.



5 When the **Setup Complete** window appears click **Finish**.

Setup is now complete.



11.3 LOADING VIDEO FROM CD-ROM OR HARD DRIVE

1 Open the BackupViewer program by selecting Start → Programs → DVR → Proprietary Viewer → Proprietary Viewer.

2 Select Backup Search. The Choose time to Search window will open.

3 For CD-ROM data, select the appropriate CD-ROM drive letter from the Backup Media box.

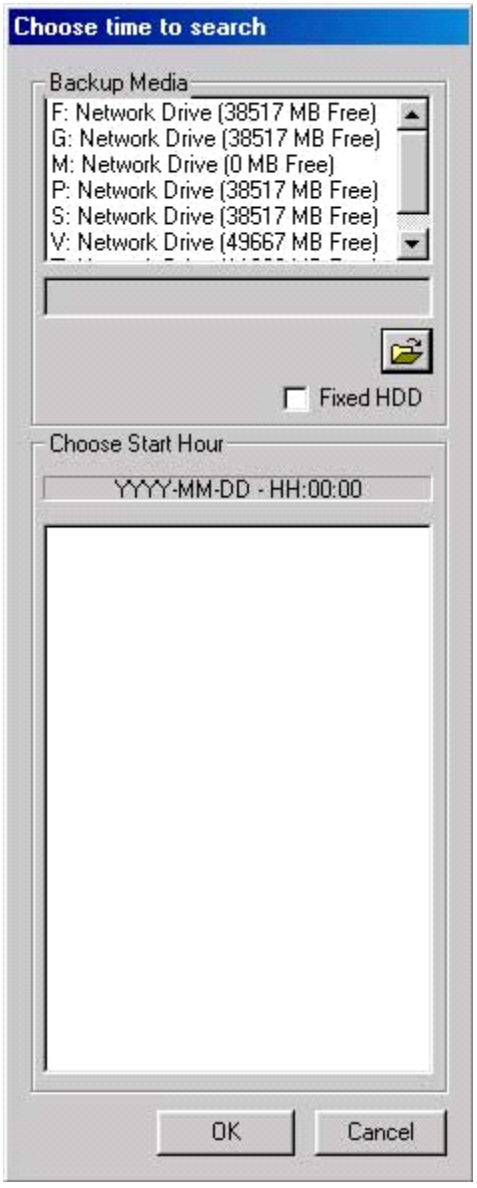
For hard drive data, select either an attached hard drive from the Backup Media box or select the Open Folder icon which allows you to browse to the specified directory.

Once selected, any available video data will be displayed in the Choose Start Hour box.

4 Click on the desired time to select it.

5 Press OK.

The video will now load into the Proprietary Viewer.



12 EMERGENCY AGENT

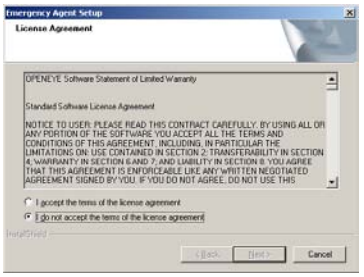
12.1 EMERGENCY AGENT OVERVIEW

The Emergency Agent software is a utility that streams video across a Local Area Network to a Client PC when an alarm is detected on the DVR unit. The video that streams across can be stopped, played forwards and backwards, in slow motion or real speed.

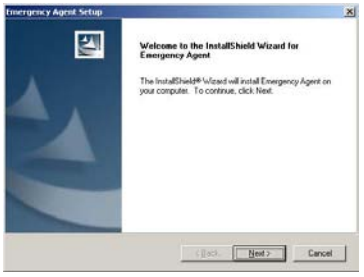
The utility is loaded at startup and placed in the taskbar. It constantly monitors for a signal from the DVR unit. When an alarm signal is detected the Emergency Agent Image Viewer window opens and starts playing the video from the camera associated to the alarm.

12.2 INSTALLING THE EMERGENCY AGENT

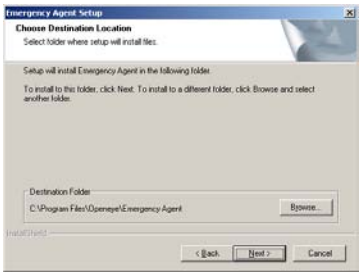
1 Insert the Software Installation Disc into the CDROM. (Do not install on the DVR unit) Select the Emergency Agent option to begin installation and accept the license agreement.



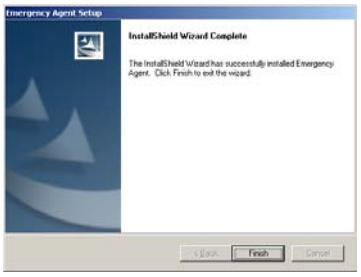
2 When the WELCOME screen appears, click NEXT.



3 When the CHOOSE DESTINATION LOCATION window appears click NEXT.



4 When the SETUP COMPLETE window appears click FINISH.

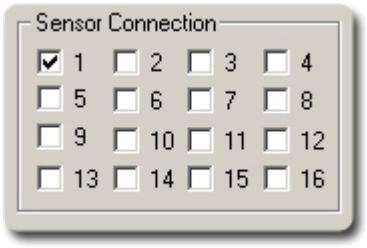


12.3 CONFIGURING THE DVR

To enable the Emergency Agent on the DVR follow these steps:

1 Enter SETUP and confirm you are in the CAMERA SETUP menu.

2 Select a camera and then associate sensor(s) to that camera using the SENSOR CONNECTION checkboxes.



3 Click the Communication Setup button and make sure that DISABLE REMOTE CONNECTIONS is not checked in the Communication Setting menu.

4 The Emergency Agent uses one port to transfer the data through. The port can be adjusted inside the Communication Setting Menu if necessary . It is recommended that unless the port must be changed, that the default setting should be used.

5 Enter the IP Address of the computer running the Emergency agent software in the Emergency IP in the Network Setup section.

6 Click OK.

7 Select the Sensor & Control menu tab.

8 Enable the Sensor you wish to use.

9 Adjust the record, delay, output, and duration settings. (See the Sensor & Control section in the Setup Option Chapter for descriptions of these functions).

10 Click OK.

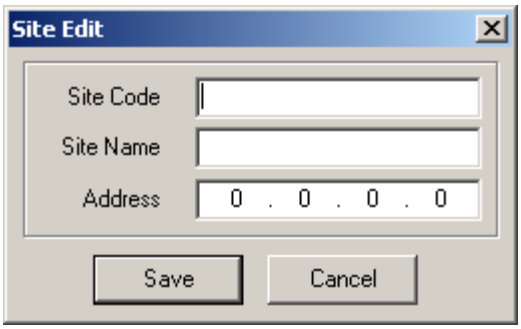
12.4 CONFIGURING THE CLIENT PC

All configuration takes place in the Emergency Agent Window on the Client PC for descriptions and locations of the buttons and features of the Emergency Agent window Refer to the Emergency Agent Window section later in this chapter.

1 Open the Emergency Agent window on the Client PC.

Start >Programs > Digital Watchdog > Emergency Agent > Emergency Agent

2 Click New in the DVR List and enter the site code, site name, and IP Address of the DVR you wish to connect to in the Site Edit window that opens. Click Save



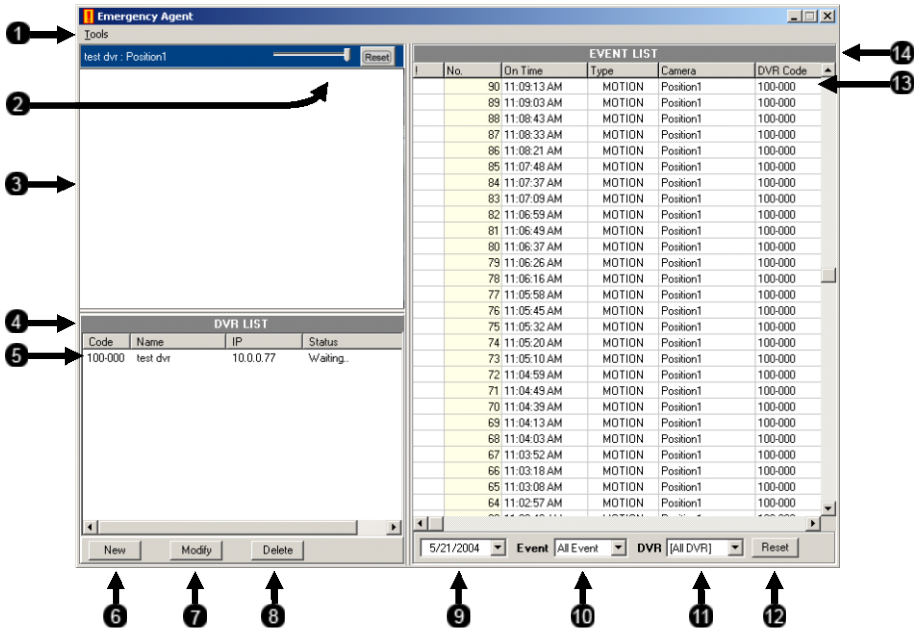
3 Click the Tools menu and select Setup.

4 Confirm that the Listen Port in the configuration Window is set to the same number as the Emergency Port in Communication Settings on the DVR. If the numbers are different adjust the Listen Port on the client PC to match the DVR.

5 Click Enter

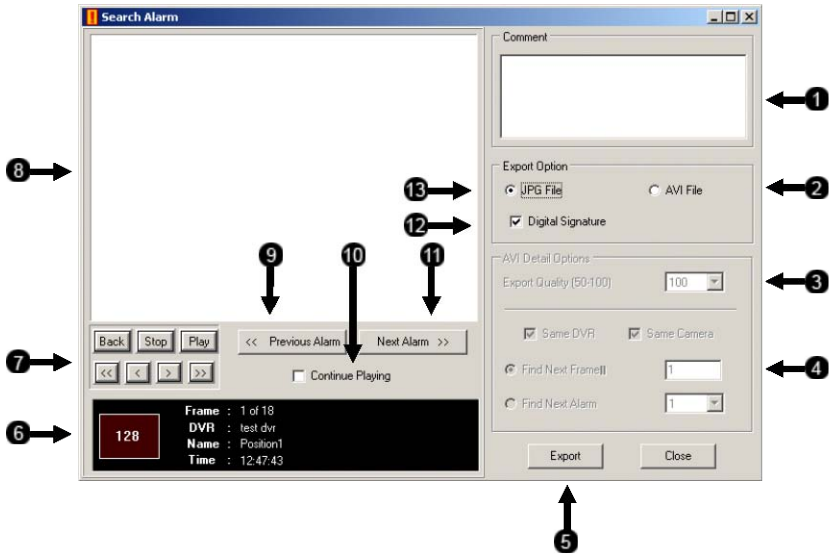
6 Reboot the Clint PC

12.5 EMERGENCY AGENT WINDOW



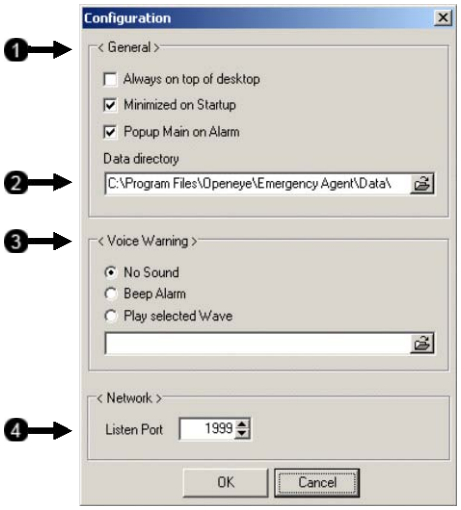
1	Tools Menu	Opens the Setup (Configuration) window and Opens or Closes the Event List.
2	Zoom	Zoom in and out of an image or reset to the default view.
3	Video Display	Displays the Video feed coming from the DVR.
4	DVR List	Lists all DVR units you have connected to the Emergency Agent.
5	DVR List Item	Individual DVR unit in DVR List with displayed settings.
6	New	Opens Site Edit window to connect new DVR to Emergency Agent.
7	Modify	Opens Site Edit to allow modification of selected DVR List Item.
8	Delete	Deletes selected DVR List Item.
9	Date	Selects date of events to display in the Event List.
10	Event	Selects type of Event to Display in the Event List.
11	DVR	Selects DVR to display in the Event List.
12	Reset	Resets Date, Event, and DVR fields to defaults.
13	Event List Item	Individual Event in Event List. Double-Clicking on an event opens the associated video in the Search Alarm window.
14	Event List	Lists all recorded events matching the Date, Event, and DVR settings.

12.6 SEARCH ALARM WINDOW



1	Comment	Provides space for user to add comments to video events.
2	AVI File	When selected a video clip exported when Export is clicked.
3	Export Quality	It may be necessary to reduce the overall size of an AVI file; for example, to email to someone. AVI file sizes can be reduced by reducing the image quality. However, reducing the image quality causes the AVI video to appear more pixilated. When size is not an issue, setting quality to 100 is highly recommended.
4	Export Options	These options are only available when AVI export is selected and relate to the export options of the AVI video.
5	Export	Exports AVI or JPG file to selected location.
6	Alarm Event Information Display	Displays the event number and pertinent recorded information related to the alarm event.
7	Playback Controls	The play controls allow you to play the video forward, backwards, and frame by frame.
8	Display	Displays video playback.
9	Previous Alarm	Moves to previous Alarm Event.
10	Continuous Playing	Plays through all alarm events when video playback is initiated. When not selected video playback stops at end of recorded event.
11	Next Alarm	Moves to next Alarm Event.
12	Digital Signature	Adds a digital signature to the exported JPG image for use with the Digital Signature Verifier to verify integrity of exported images and prevent tampering.
13	JPG File	When selected a JPG image is exported when Export is clicked.

12.7 CONFIGURATION WINDOW



1	General	Offers configuration of basic display options for the Emergency Agent window.
2	Data Directory	Sets the location that recorded video footage is saved.
3	Voice Warning	Offers several configuration settings for activating an audible indicator when the Emergency Agent receives an event.
4	Listen Port	Indicates the port which the Emergency Agent uses to listen for incoming events. This number should be changed to the same number as is set in the Emergency Port in Communication Settings on the DVR.

NOTES:

13 REMOTE SOFTWARE

13.1 REMOTE SOFTWARE OVERVIEW

The DVR unit was specifically designed to be fully operated and maintained remotely. It connects using the standard TCP/IP protocol thorough connection types such as DSL, Cable Mode, T1, ISDN, 56K Modem, LAN, and more. The Digital Watchdog Remote software allows you to view live video, search through archived video, export images and video clips and have virtually full Setup control.

Highlights:

Search archived video

View live video

Export images and video clips

Control relay outputs

Setup administration

Basics:

The DVR can have up to 5 Simultaneous remote Connections. Each user can perform functions on the DVR unit and will not affect the other users. The only exceptions to this are accessing Setup and controlling a PTZ camera. Only one user is allowed to access setup or control a PTZ camera at any given time. The Frames per Second passed to the Remote Client varies greatly depending on the connection type and speed.

In order to log in to the DVR server, a user account must be made for the user. This ensures that only authorized personnel are allowed to log in. In addition, each user can be assigned different privileges that allow them or deny them access to different functions. For example, a user can be denied Searching and Setup privileges and only granted access to view cameras 4, 8 and 16.

It is highly recommended that users not be granted Setup privileges since this can pose a security risk. Only properly authorized Administrators should have access to Setup.

The Remote software operates virtually the same way as the DVR itself. The appearance of it matches the DVR almost identically, however, there are a few minor differences. Some search features are not available (such as the Index and Object Searches) as well as some Setup options.

13.1.1 REMOTE CLIENT MINIMUM REQUIREMENTS

Intel® Pentium® III 750 or equivalent

32MB System Memory

DirectX 9 or higher

Compatible video card (ATI Preferable)

Internet or LAN Connection (56K, DSL, Cable Modem, T1, ISDN, etc.)

TCP/IP installed

Microsoft® Windows® 98, Me, 2000, or XP Operating System

1024 x 768 display resolution

16 Bit color depth or better

13.1.2 REMOTE CLIENT RECOMMENDED REQUIREMENTS

Intel® Pentium® IV 2.4+ or equivalent

512MB System Memory

DirectX 9 or higher

Compatible video card (ATI Preferable)

Internet or LAN Connection (DSL, Cable Modem, T1, ISDN, etc.)

TCP/IP installed

Microsoft® Windows® 2000 or XP Operating System

1024 x 768 display resolution

32 Bit color depth or better

13.2 REMOTE SOFTWARE SETUP

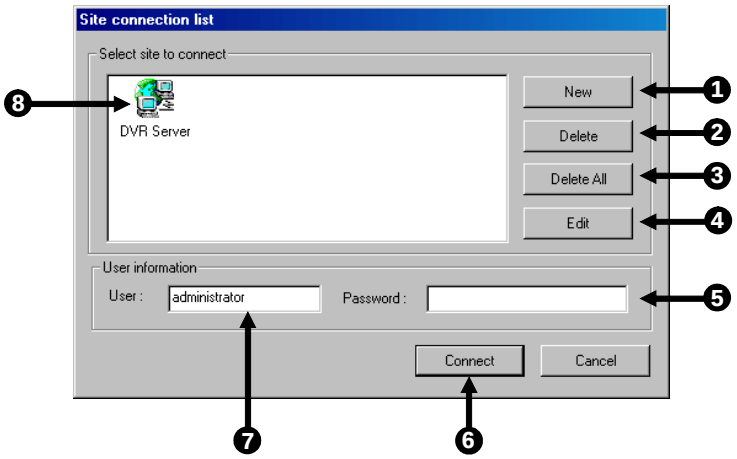
13.2.1 INSTALLING REMOTE SOFTWARE

1 On the Client computer, insert the Digital Watchdog Software CD into the CD-ROM. The CD should play automatically.

2 When prompted, select the Install Remote Software option. Follow the installation instructions carefully.

3 When the software finishes installing, close any open installation windows.

13.2.2 CREATE A NEW REMOTE CONNECTION



1	New	Creates a new site to connect to.
2	Delete	Deletes the selected site once it is selected from the list.
3	Delete All	Deletes all listed sites.
4	Edit	Used to edit a site once it is selected from the list.
5	Password	Enter the logon password.
6	Connect	Connects the Digital Watchdog Remote Client to the Server.
7	User	Enter the Login Username.
8	Site	Displays a list of pre-configured sites.

1 Select Start → Programs → DVR → Center → DVR Center.
The Digital Watchdog Center Software opens and a Site Connection List window opens.

2 Press New to open the Site Detail Information window.

3 Enter the Site Code and Site Name. The Site Code will be the name displayed inside the connection box to help you identify the unit.

4 Enter the IP Address of the DVR server. By default the DVR unit is set to connect using DHCP.

5 Enter the Center Port. This setting is specified on the server.

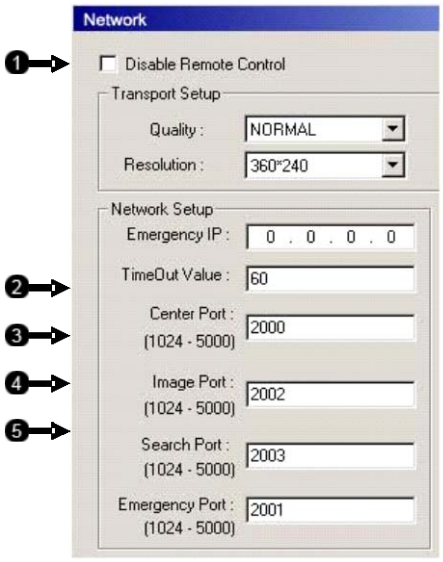
6 Press OK.

7 Click on the newly created connection and enter the login username and password.

8 Press Connect.

13.3 REMOTE SERVER SETUP

In order to access the DVR unit remotely, the DVR Server must be setup to allow remote connections.



1	Disable Remote	Enables/Disables acceptance of remote connections by the DVR server.
2	Time Out Value	Specifies a value (in seconds) to wait for a signal from the Digital Watchdog Remote Client. If a signal is not received by that time, the connection is dropped.
3	Center Port	Used by the DVR to transfer the connection data.
4	Image Port	Used by the DVR to transfer the image data.
5	Search Port	Used by the DVR to transfer the search data

13.3.1 CONFIGURING THE SERVER FOR REMOTE CONNECTION

1. Enter **Setup** on the DVR unit.
2. Click the **Communication Setup button** to open the Network menu.
3. Uncheck the **Disable Remote Control** option. You should now be allowed to adjust port settings if necessary.

   NOTE: If you are using a Firewall, it may be necessary to adjust the port settings on both the DVR and the Firewall. Contact your Network Administrator for more information.
4. Press **OK**.
5. Make sure a **User** account is created. Without a user account, the **Administrator** account must be used.

The DVR server is now ready to receive incoming connections.

NOTES:

14 WEB VIEWER

14.1 WEB VIEWER OVERVIEW

The DVR unit allows you to access video using Microsoft® Internet Explorer® Browser 5.5 and later

Highlights:

View Live Video from most computers

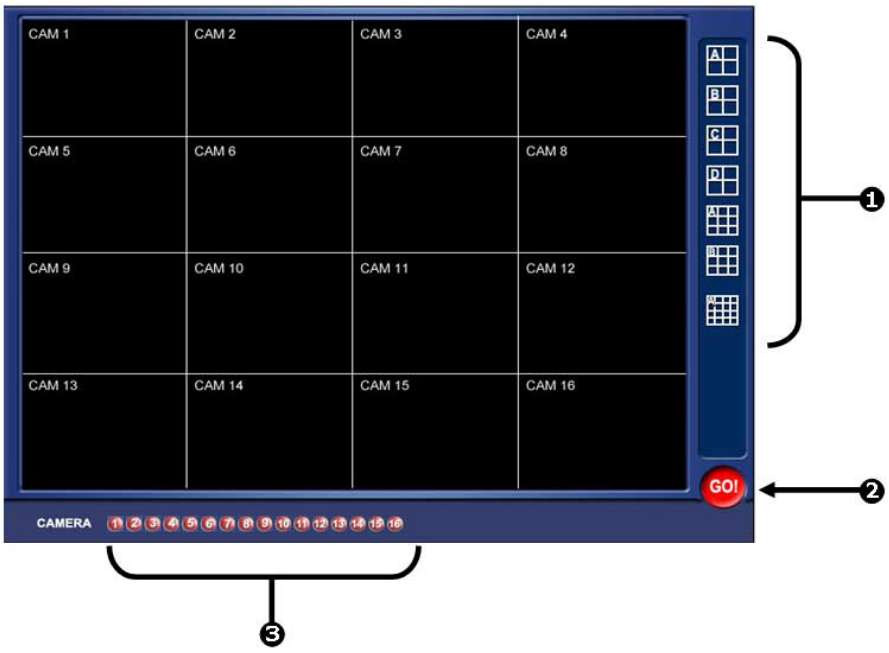
Username and Password protected

Easy to use graphical interface

Basics:

75 users can access the Web DVR simultaneously. The Web DVR is an easy secure way to view live video from virtually any computer with an internet connection using Microsoft Internet Explorer.

In order to log in to the DVR server, a user account must be made for the user. This ensures that only authorized personnel are allowed to log in. In addition, each user can be assigned different privileges that allow them or deny them access to different functions. For example, a user can be granted access to only view cameras 4, 8 and 16.



1	Screen Division Buttons	Allow you to view one or more sets of cameras at a time. They are organized in several different groups such as 1x1, 4x4, and 8x8.
2	GO!	Activates the commands
3	Camera Buttons	Enable or disable selected cameras for use when searching.

14.1.1 CONFIGURING THE SERVER FOR REMOTE CONNECTION

1 Enter Setup on the DVR unit.

2 Click the Communication Setup button to open the Network menu.

3 Uncheck the Disable Remote Control option. You should now be allowed to adjust port settings if necessary.

NOTE: If you are using a Firewall, it may be necessary to adjust the port settings on both the DVR and the

14.1.2 CONNECTING TO A DVR USING WEB VIEWER

1 Open Microsoft® Internet Explorer® 5.5 or later.

2 Enter the IP address of the DVR into the Address Bar.

3 When attempting this for the first time on a Computer a window will open and you will be asked to accept an Active X installation. Select Yes to this.

NOTE: If you receive a message saying your Internet Explorer® security settings do not allow you to download Active X components then you will need to adjust your browser security settings. One way to do this is to add the IP address of the DVR to your trusted sites list inside Internet Explorer® settings. Contact your System administrator for additional help with adjusting Internet Explorer® settings.

4 When the Web Viewer finishes loading select one or more cameras (or select a screen division button).

5 Press GO!.

6 A login window will appear. Enter a Username and Password that is authorized to access the DVR.

7 The cameras will now be displayed.

14.1.3 CLOSING THE WEB VIEWER

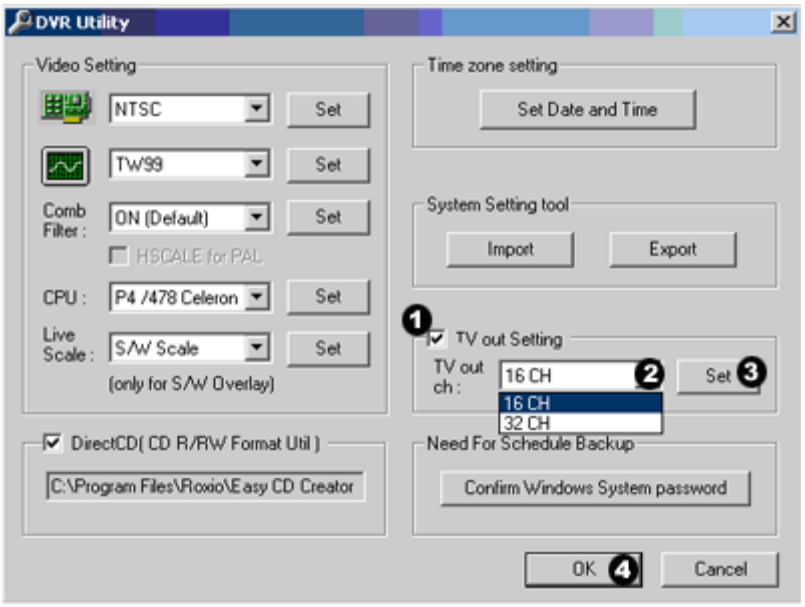
1 To exit the Web Viewer simply close Internet Explorer®.

15.1 OPTIONAL 4 CH SPOT MONITOR OVERVIEW

This optional feature allows programmable usage of multiple 4 spot monitors. If cameras are assigned without selection senor or motion as a trigger, any one camera may be assigned to an individual spot monitor on a continuous basis. Or several cameras may be assigned to any individual spot monitor. When more than one camera is assigned to a spot monitor the selected camera views will sequence at the selected hold-and-switch rates.

Sensor activation or motion detection may also be selected to switch a camera to any of the 4 spot monitors when sensor or motion is selected.

15.1.1 CREATE A NEW REMOTE CONNECTION



1 Check the “TV out Setting” box.

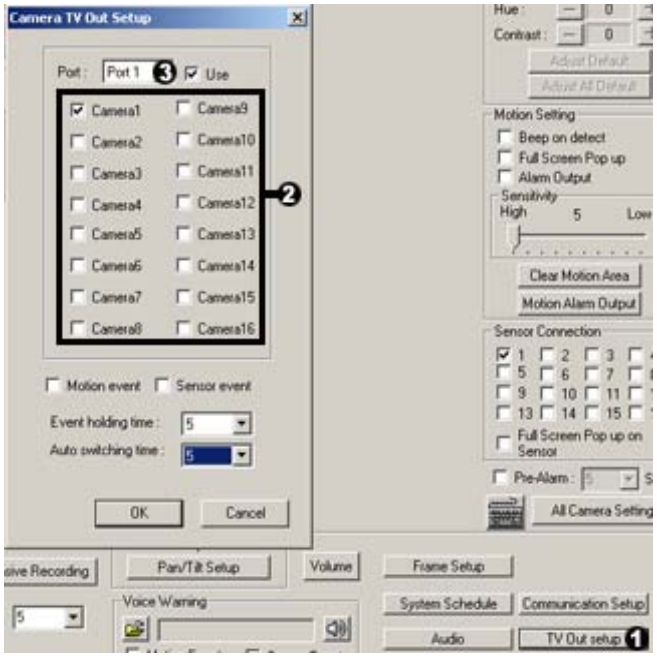
2 Click the “TV out ch:” drop down arrow and select the number of channels of your DVR. *DVRs with less than 16 channels will use the 16-channel setting.

3 Click the “Set” button once you have selected the number of channels.

4 Click “OK” in the Vformat window after you’ve done steps 1-3

NOTE: Click the OK button on all POP UP screens while using vFormat

15.1.2 CONFIGURING THE SPOT MONITOR OUT



1 Click the “TV Out Setup” button to open the “Camera TV Out Setup” window

2 Here you can select the cameras you wish to display on your spot monitor.

3 Here you can select the ports (1-4)

4 Once you have selected the ports and camera’s you want to activate click “OK” in the “Camera TV Out Setup” window. Now click “Apply” then “OK” in the bottom right hand corner of the “Setup” window.

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