User Manual
8/4 Channel Mobile DVR

Table of Contents

Safety warnings

To avoid any damage, please consider the following safety warnings:

Never place the DVR near heaters, furnaces, in direct sunlight, or near other heat sources.
Place the the DVR where is can operate at a temperature range between 0°C~40°C.
Be sure that the DVR ventilation slots are not covered or obstructed.
Before cleaning, ensure the DVR is unplugged and use only a damp cloth without acid based or flammable detergent.
Install the DVR only in a dry, dust-free location. The DVR must be protected against any liquid penetration.
Ensure that no foreign artifacts enter the DVR, particularly through the Ventilation Slots.
Do not open the DVR yourself. In case of a malfunction, contact your local installer or dealer. Unauthorized opening of the device may void the warranty.
Ensure the DVR is operating in a location without risk of vibration or mechanical shock.
Avoid unplugging the DVR during playback or recording operation. Shutdown the DVR from the Menu before disconnecting power.

	The DVR is designed and manufactured with high quality materials and components which can be recycled and reused.
	This symbol means that electrical and electronic equipment, at the end of their life should be disposed of separately from your household waste.
	Dispose of this equipment at your local community waste collection/recycling centre.
	In the European Union there are separate collection systems for used electrical and electronic product.

	ATTENTION! This is a class A product which may cause radio interference in a domestic environment; the user is urged to take adequate measures.
	This Product is RoHS compliant.

FC	15.19 This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The information in this manual is current upon publication. The manufacturer reserves the right to revise and improve this products. All specifications are subject to change without prior notice. Misprints reserved.
Please read this manual carefully before installing and using this product. Be sure to keep it handy for later reference.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

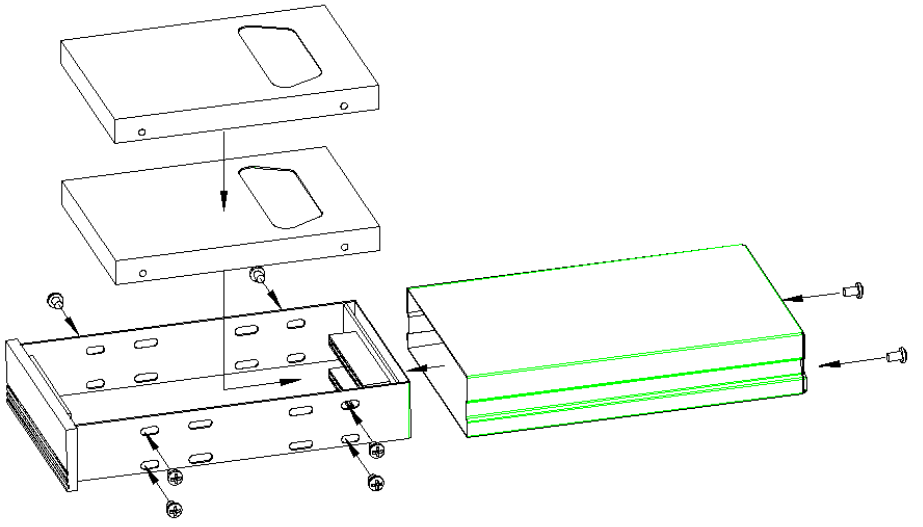
This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Package Contents

Digital Video Recorder
User Manuals and Software CD-ROM
Dual 2.5” Hard Drive Caddy

Hard Disk installation



Assembly instructions for Hard Disk Caddy

ATTENTION: Only “Seagate” and “Western Digital” SATA series HDD have been tested.

Introduction

This introduction is the help familiarize you with the your new SR1 hard drive based Digital Video Recorder (DVR).

Features

Configurable MPEG-4 compression
Variable recording rate up to 120 D1 images per second
Configurable per-channel Motion Detection with 22x15 detection zones
Space for 2 internal 2.5" Hard Drives
10/100/1000baseT Network Port
802.11B/G Wireless Networking option
RS-485 interface for PTZ Keyboard and Camera control
Infrared receiver for use with the provided IR Remote Control
IR Remote Control Extension Cable option
Multilingual on-screen display
Real-time live display
Simple video export to USB Mass Storage
Network and E-mail Alarm Notification
Built-in diagnostics for temperature, fan speed, and Hard Drive condition

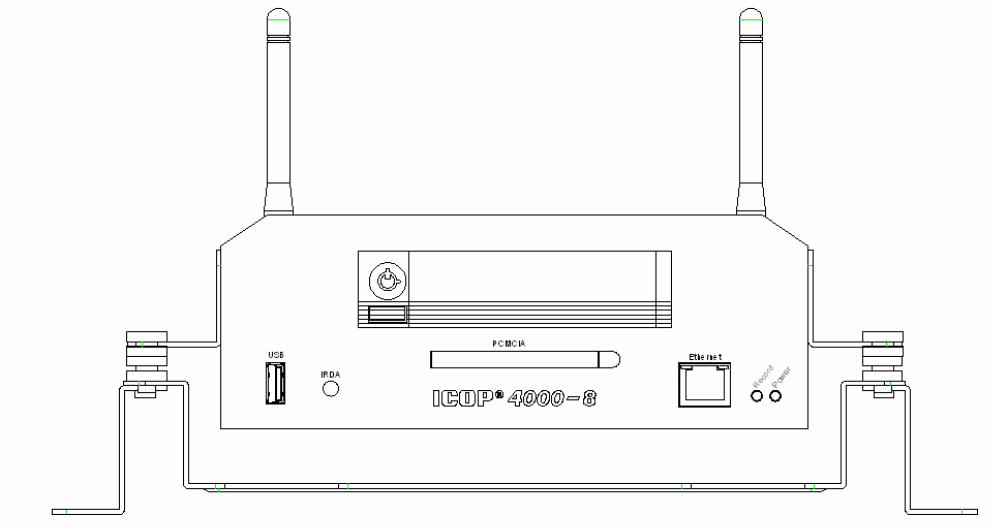
Technical Data

Product Line	4/8 Channel Digital Video Recorder	
Part Number	4 CH	8 CH
Display	Full, 4, 8, PIP and 2x2 Zoom for live and playback	
Video Input	4 Vpp FBAS, Single Molex Connector, 75Ohm	8 Vpp FBAS, Dual Molex Connectors, 75Ohm
Video Output	Main monitor: 1 Vpp FBAS, BNC at 75 Ohm , 1 VGA 640x480, 60 Hz	
Audio Input	4 Channel, Single Molex Connector	8 Channel, Dual Molex Connector
Record Resolution/Rate	120 NTSC / 100 PAL(D1)	240 NTSC / 100 PAL(D1)
Playback Rate	120 NTSC / 100 PAL(D1)	240 NTSC / 100 PAL(D1)
Dual Streaming	Yes	
Compression	MPEG-4	
Alarm In	4x NO/NC	8x NO/NC
Alarm Out	2 x relay contacts 100 V DC max., 0, 3 ADC max., 5W max.	
Motion Detection	Adjustable per channel with 9 sensitivity steps and 22x15 sensor fields	
Internal/External HDD	2* 2.5" SATA HDD/eSATA	
Archive Devices	USB 2.0	
Network Interface	Ethernet 10/100/1000Base-T	
Network Protocol	TCP-IP/DHCP/PPPoE/DDNS	
Control	RS-485 RS-232	
Real-time Clock	Internal with network synchronization support (NTP server)	

Image Export	USB 2.0 interface, internal DVD-RW
Power Consumption	40 W max.
Power Source	12 VDC
Ambient Temperature	0°C ~ +40°C
Remote Control	Optional: IR remote control, RS-485 keyboard

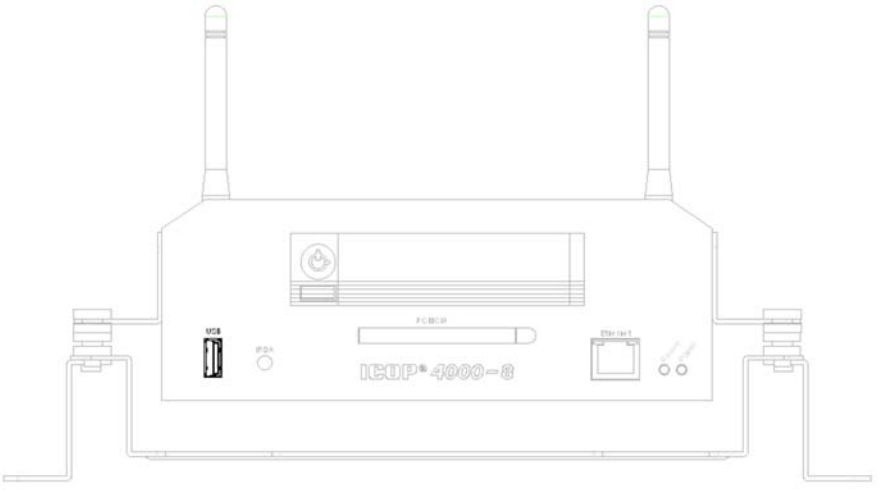
Front Panel

Your primary interaction with your new DVR will be through the included Remote Control. Take a moment to learn where the keys are as the remainder of the manual will refer to them often.



DVR Front Panel

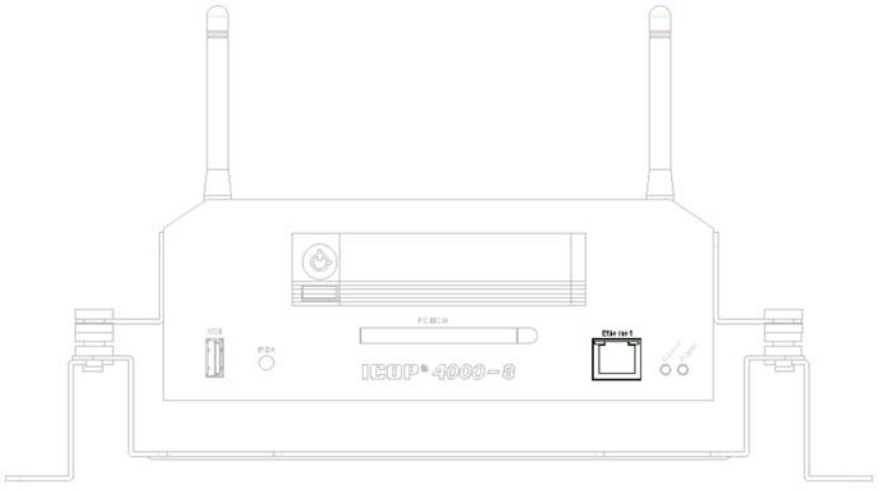
USB



USB Connectors for use with External Storage for Export

The USB connectors are where you plug in a USB mouse to aid in setup or any USB mass storage you wish to use for exporting video from the DVR.

Ethernet

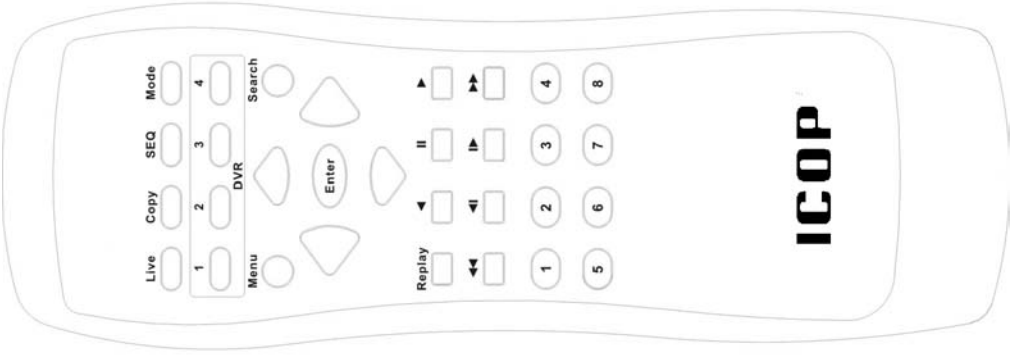


Ethernet RJ-45

The Ethernet puts your DVR on a standard TCP/IP network and allows you to perform many functions of the unit remotely. In addition to configuration you can also review live and recorded video.

Remote Control

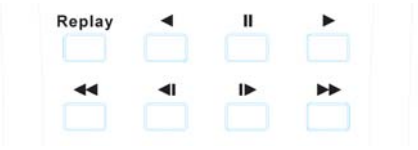
Your DVR can also be controlled by the provided InfraRed Remote Control.



Remote Control Unit

The Remote Control provided allows the user to control up to four different DVRs, and perform most of the same functions as can be performed from the Front Panel.

Playback Keys



Playback Keys

The Playback keys are used when you are reviewing previously recorded video.

Key	Function
REPLAY	Quickly rewinds the video a configured amount of time during playback.
<<	Rewind
<	Play backwards
<I	Frame backwards
II	Pause
I>	Frame forward
>	Play normally
>>	Fast Forward

DVR ID Keys

DVR ID Keys

The DVR Keys allow the user to control more than one DVR with a single remote. Each DVR must be configured in advance for a unique Remote ID.

Key	Function
1	DVR 1
2	DVR 2
3	DVR 3
4	DVR 4

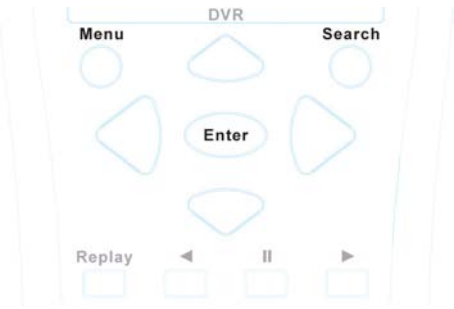
Compound Keys

Compound Keys

The Compound Keys are used to change modes on the DVR such as between Live video and Playback video, exporting video, and also to control the layout of video panels on the Main (primary) and Call (secondary) monitors.

Key	Function
LIVE	Return the screen to Live video
COPY	Presents the video export menu. In playback mode, the current playback position is stored as image export start position
SEQ	Start Sequencing the video channels on the active monitor
MODE	Change the display mode from Full Screen to 4-UP, 9-UP, 16-UP, and back to Full Screen

Control Keys



Control Keys

The control keys are used inside Menus and Pop-ups to select values and change them.

Key	Function
SEARCH	opens on-screen display for playback search
MENU	Brings up the Setup Menu
UP, DOWN, LEFT, RIGHT	Up/Down, Left/Right
ENTER	Enter key for input confirmation

Channel Keys

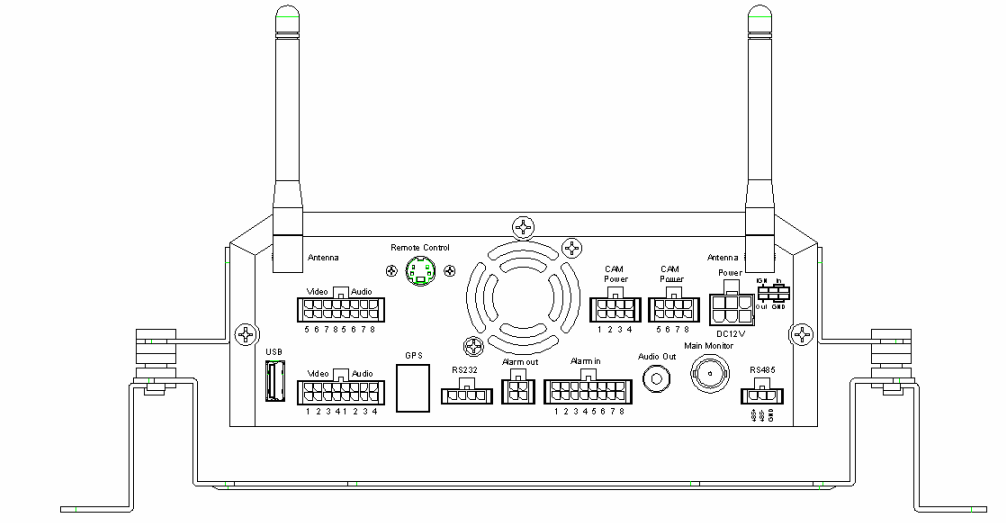
Channel Keys used to select a single camera for Full Screen display[1]

The Channel Keys are used to change either the Main or Call monitors directly to full screen mode for the Channel you have pressed.

[1] The IR Remote can control multiple DVRs and provides channel keys for 16 channels. The number of functioning channel keys corresponds to the model of DVR purchased. The 4 Channel model uses keys 1 to 4, and the 9 Channel model uses keys 1 to 9.

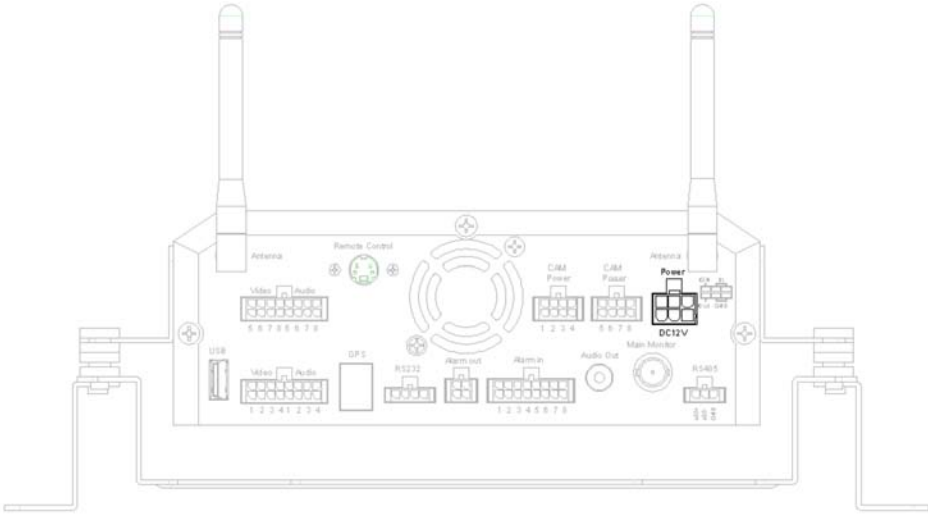
Back Panel

During initial setup you will be connecting your DVR to multiple input and output devices. This is done through the back panel.



DVR Rear Panel

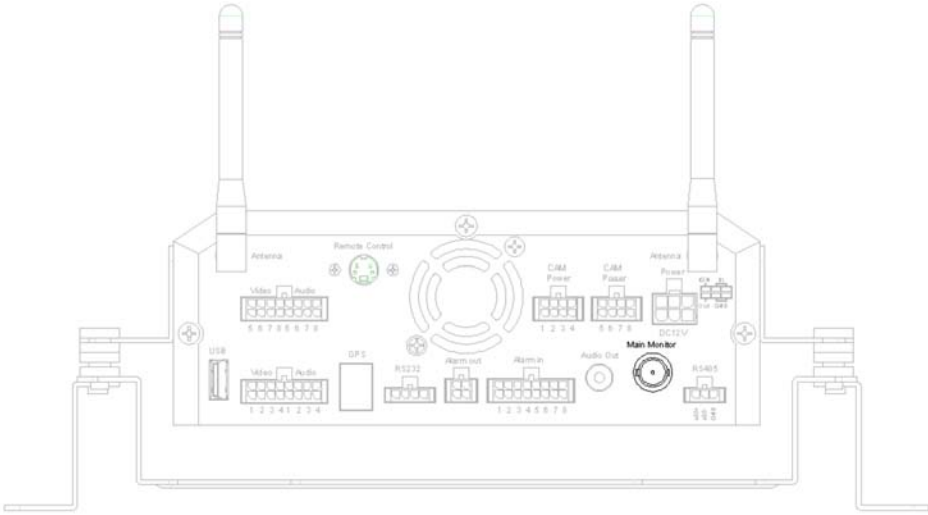
Power Socket



Locking Power Socket for 12 VDC Power Source

The power connector provided with your DVR is a locking connector. Be sure the connector is securely locked to ensure your DVR does not accidentally lose power due to the cable coming loose.

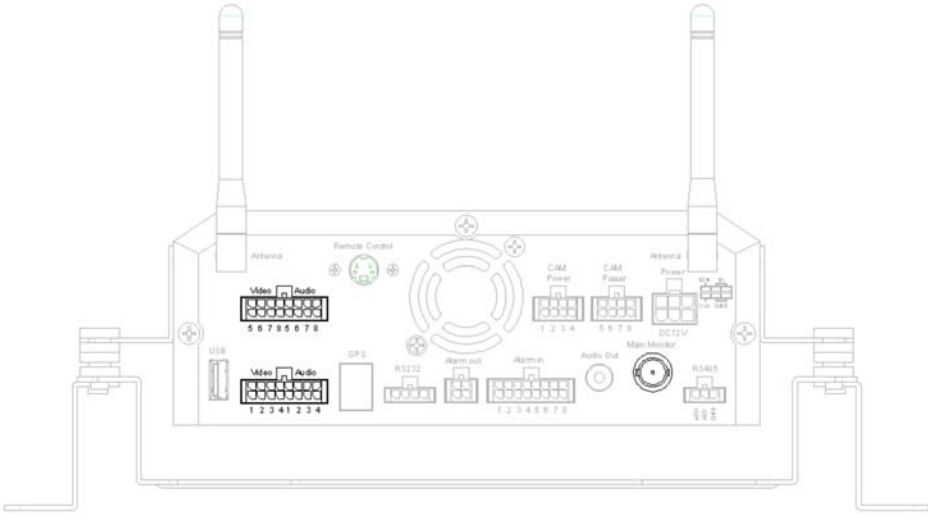
Monitor Outputs



Composite Main Output

Your Main monitor can be connected using a standard BNC co-axial cable.

Video and Audio Inputs



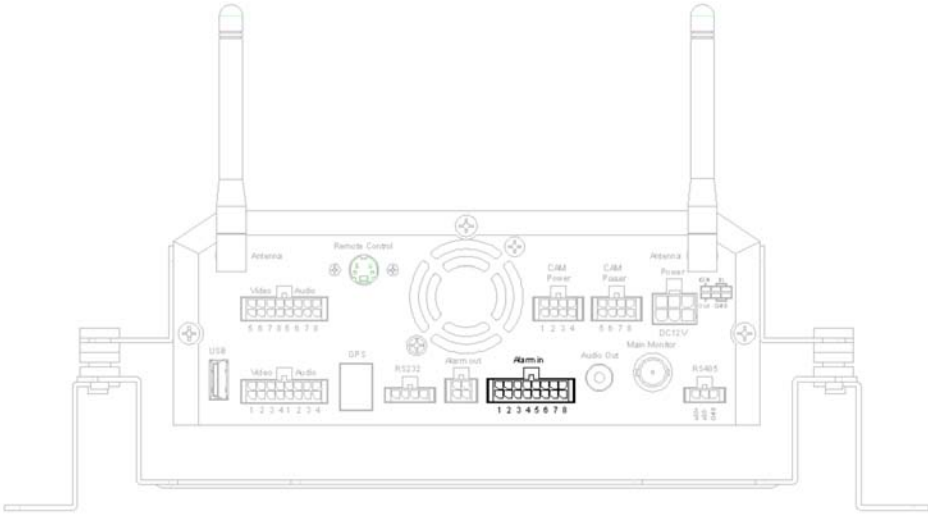
Looping Self-Terminating BNC Input Connectors for Video Input[2]

Depending on the model DVR you purchased, you will have up to 8 video and audio input connectors on the back panel. For each group of 4 inputs one Molex connector is provided.

Your DVR is designed to record audio with the video channels. Audio will playback through the Audio Out from the actively selected video channel. Consult your professional security installer for best practices and any legal issues in your area regarding recording audio.

[2] The number of video inputs corresponds to the model of DVR purchased. The 4 Channel model contains 4 video inputs, and the 8 Channel model contains 8 video inputs

Alarm Contacts

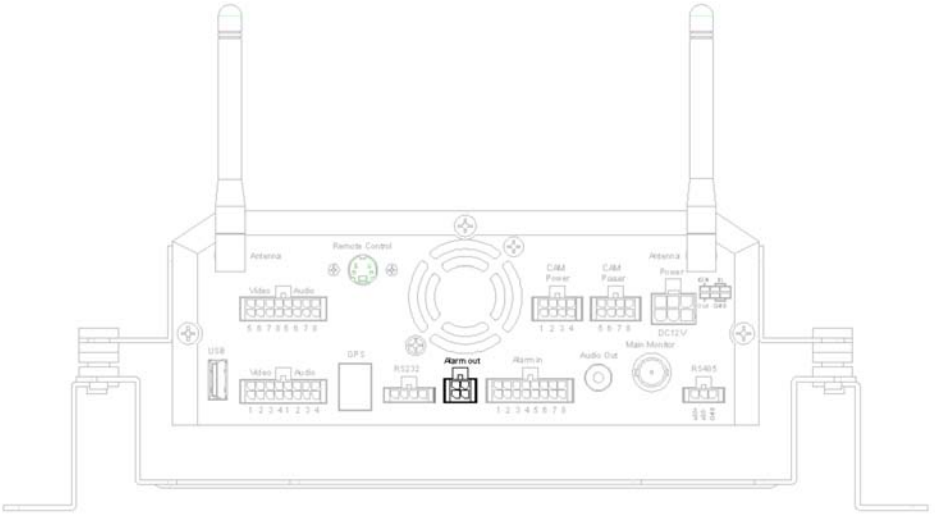


Alarm Input Dry Contacts[3]

The Alarm contacts are what you can use to connect the DVR to other physical security sensors such as trip beams, glass break detectors, IR motion sensors, door sensors, switches, or an alarm panel. Each input con be configured to be either Normally Open (NO), or Normally Closed (NC). See Advanced Recording for more information.

[3] The number of Alarm Contacts corresponds to the model of DVR purchased. The 4 Channel model contains 4 Alarm Contacts, and the 9 Channel model contains 9 Alarm Contacts

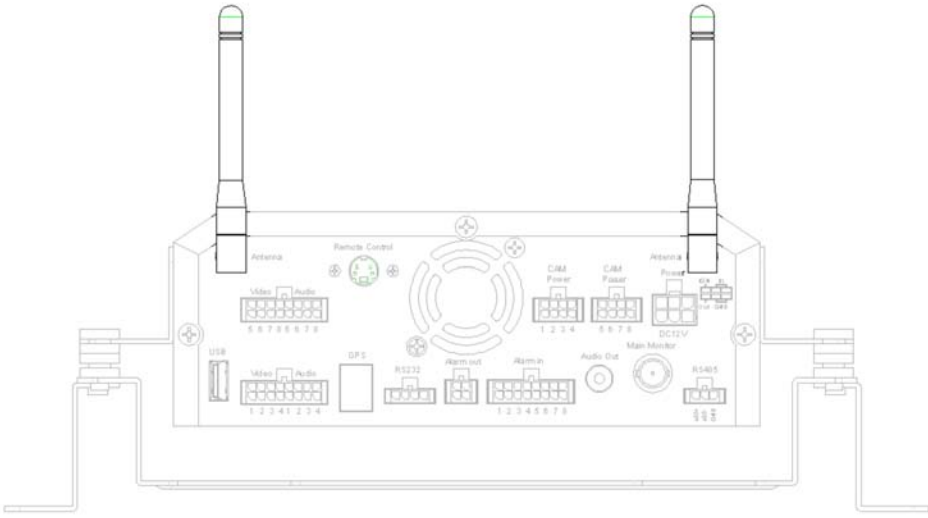
Alarm Relays



Alarm Relays supporting both Normally Open (NO) and Normally Closed (NC) output

The Alarm Relays are used when the DVR is sent into Alarm Mode to signal some other security device. You can use these relays in any number of ways to better secure your environment, consult your professional security installer for best practices in this way.

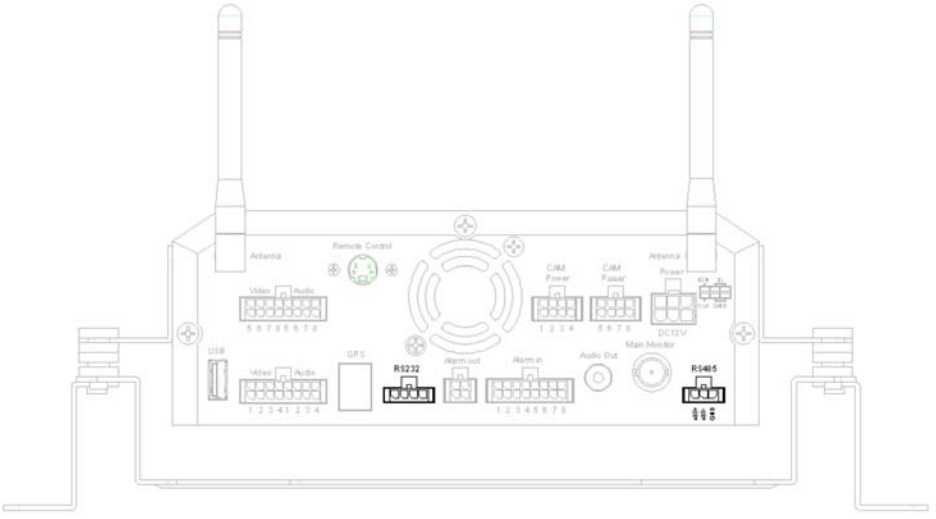
Wireless Ethernet



Wireless Ethernet Antennae

The Wireless Ethernet puts your DVR on a standard 802.11 B/G TCP/IP network and allows you to perform many functions of the unit remotely. In addition to configuration you can also review live and recorded video.

Serial Communication Ports



RS-232 9-pin D-Sub port and RS-485 Bus connector ports

The Serial Ports allow you to connect your DVR to other devices that pass messages to one another. Examples include receiving the text of a receipt printer connected to a cash register, or transmitting commands to move a Pan/Tilt/Zoom camera.

Installation

ATTENTION Installation should only be performed by qualified personnel. Finish all other aspects of the physical installation before connecting the power source.

Video connection requirements

To ensure a good quality video signal, cameras and monitors must be connected with 75 Ohm video cable and suitable BNC plugs only (e.g. RG-59, RG-12.)
All connected video sources must provide a 1 Vpp PAL/CCIR standard video signal.
When interconnecting transmission lines (twisted pair, fibre optics, radio) to the video inputs, ensure the integrity of the video signal across the transmission medium before connection to the DVR.
For local DVR operation a Main monitor is required. Use of a Call monitor is optional.

Alarm input / output installation

The DVR Alarm Inputs and Outputs allow for the configuration of the unit to react to unscheduled situations. The DVR can start to record if not doing so normally, record at a different frame rate, mark video with an Alarm Tag for easier searching, and trigger the relay which can be connected to additional devices.
To indicate that an Alarm has occurred the DVR can be configured to provide both a local and remote notification. Locally the DVR can change the active display to show the camera associated with the Alarm for easier monitoring of the situation, trigger the internal buzzer as well as turn on the Alarm Status Indicator. Remotely the DVR can send an email over SMTP.
The DVR provides an equivalent number of Alarm Inputs to Video Channels. All Alarm Inputs can support both Normally Open (NO) and Normally Closed (NC) trips. This behavior is configurable per Alarm Input. All inputs must be switched through dry contacts.
All DVR models provide 4 Alarm Relays. The Alarm Relays provide both NO and NC sites for connection, this is to prevent the unit from accidentally triggering an alarm during a power outage or at startup.
All settings are programmed in the ALARM menu.

USB Mouse Installation

The DVR may optionally be controlled using a USB mouse. The mouse must be connected before system start-up.
When using a mouse only the left click will operate the DVR. Advanced features of the mouse including scroll wheels and additional buttons are not supported.

Network connection

The DVR uses a standard RJ-45 network interface to provide 10/100/1000baseT Ethernet. TCP/IP settings are configured through the Setup Menu.
Connection to a network switch using a standard patch cable as well as direct connection to a computer using a cross over cable are both supported.

Power connection

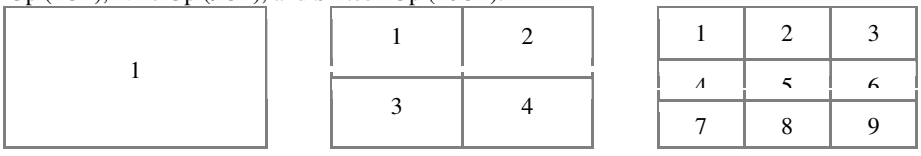
Connect the DVR to the power source.
To ensure the continuous operation of the DVR, the use of an Uninterruptible Power Supply (UPS) is recommended.

The Display

The Main monitor display is your primary interface with the DVR. From this display you can see Live video from all your attached cameras, playback recorded video from those cameras, and access the Setup Menu to configure the system.

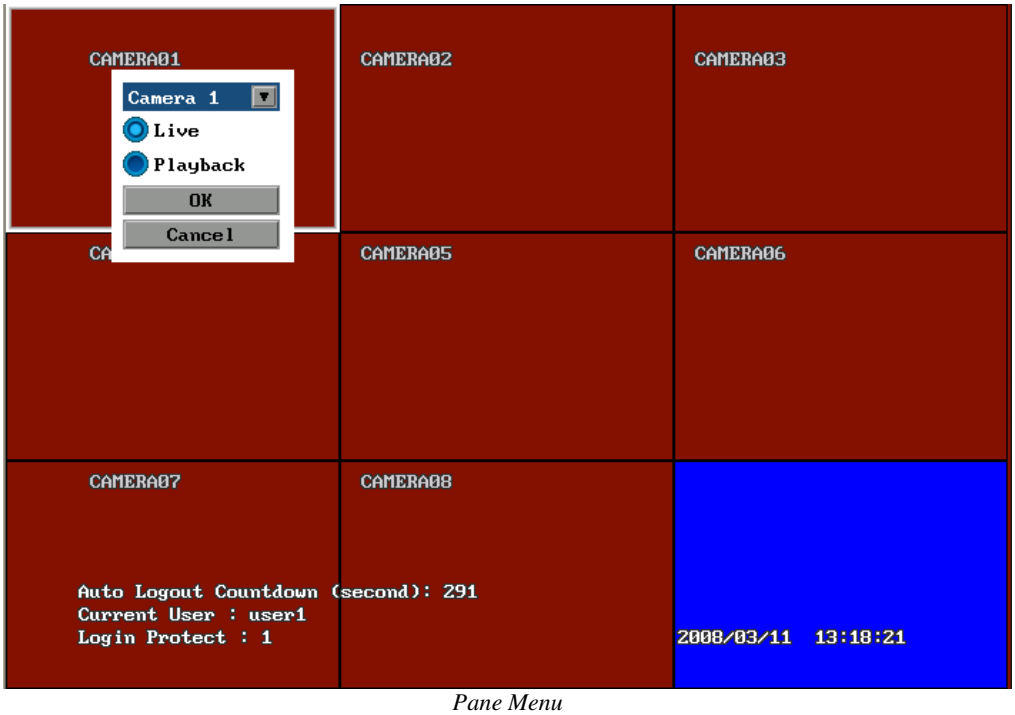
Live Video

Your system displays Live video from your attached video cameras in one of four Modes: Full Screen, Four Up (4UP), Nine Up (9UP), and Sixteen Up (16UP).



Full Screen, 4UP, 9UP

Pressing the **MODE** button toggles the display from 16UP, 9UP, 4UP, back to 16UP.
Press a **CHANNEL KEY** to switch the display to the Full-Screen for that channel.
In Full Screen, press **SEQ** to begin sequencing channels. The amount of time that the sequence displays a particular Channel is configured in the Camera Setup menu (see Basic Recording).
When you are in 4UP, 9UP, or 16UP you will see 4, 9 or 16 Panes respectively. One of these Panes is the active Pane and will be highlighted by a bright border. Press the **ENTER** key to bring up the Pane Menu.

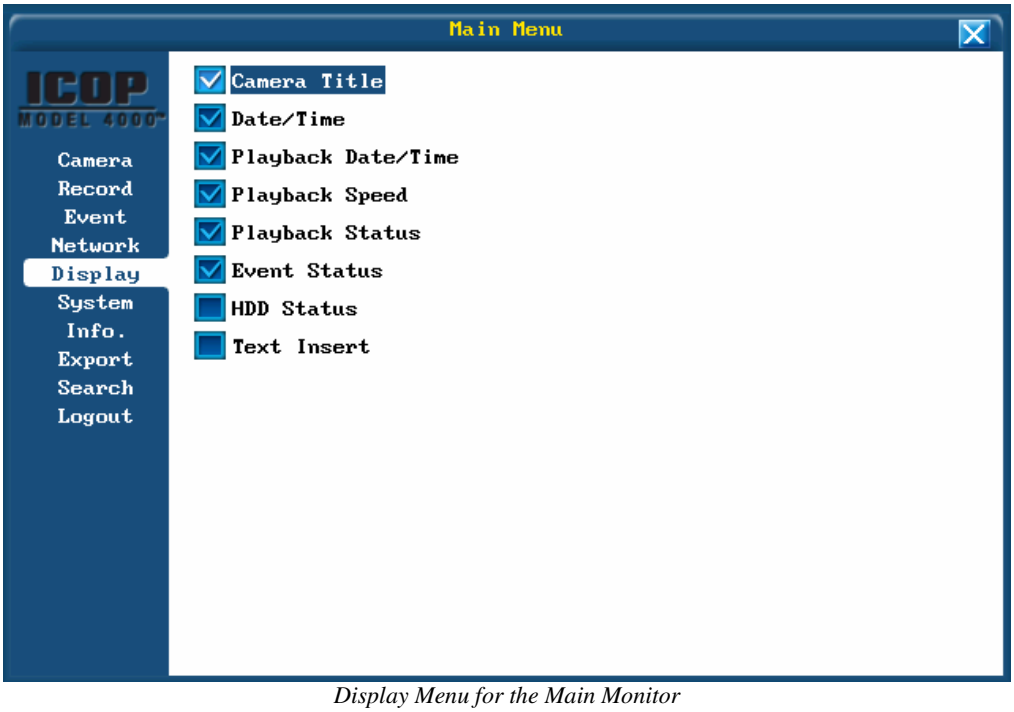


Pane Menu

From the Pane Menu you can access the Main Menu, Search Menu, Archive Menu, Logout if you have previously logged in, change the Channel viewed in that Pane, or change a Pane from Live to Playback.

Onscreen Text

In addition to the video Channels themselves, the screen also provides overlaid feedback about the status of channels, the current date and time and information about Playback. Configuring which items appear on screen, or hiding items you don't want to see is done in the Display Menu from the Main Menu.



Display Menu for the Main Monitor

The Display Menu allows you to control the onscreen overlay for Main Monitor and Call Monitor.

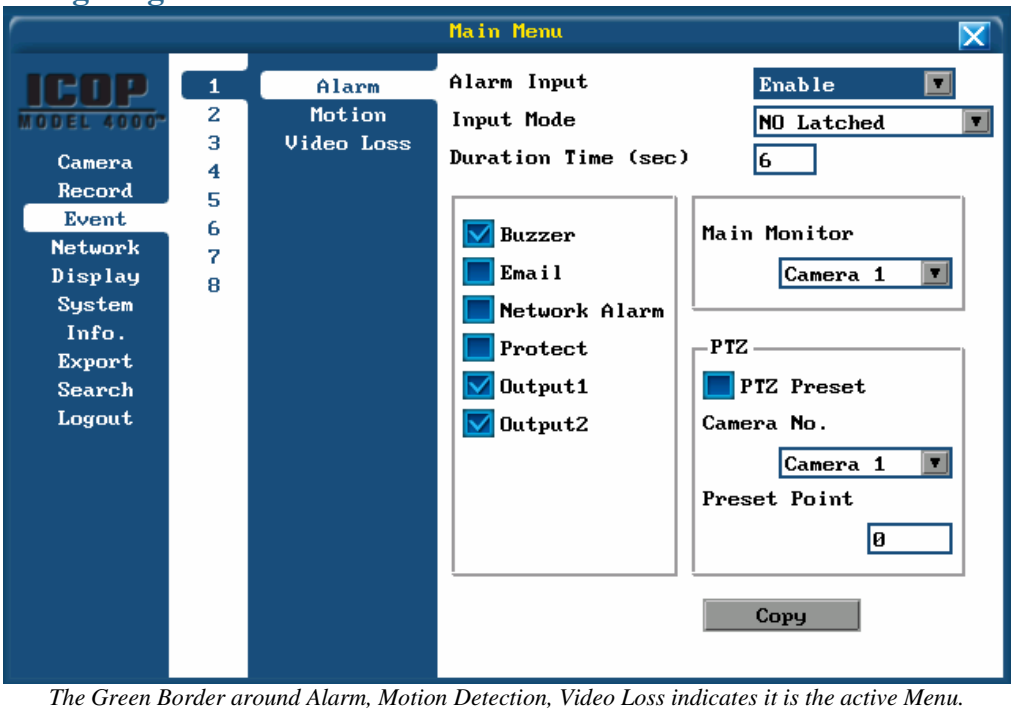
> Note: None of the Display Settings modify the video as it is recorded. All overlays are for informational purposes only and do not compromise the integrity of the video for evidence purposes.

The Display Menu for the Main Monitor also contains the Output Type setting. Output Type is used to optimize the Text Overlay on the Main Monitor for either VGA or analogue BNC/S-Video.

Menu Conventions

Within the Menus of your DVR there is a standard way of navigating between settings and changing their values. Understanding these conventions will make your use of your DVR much more productive.

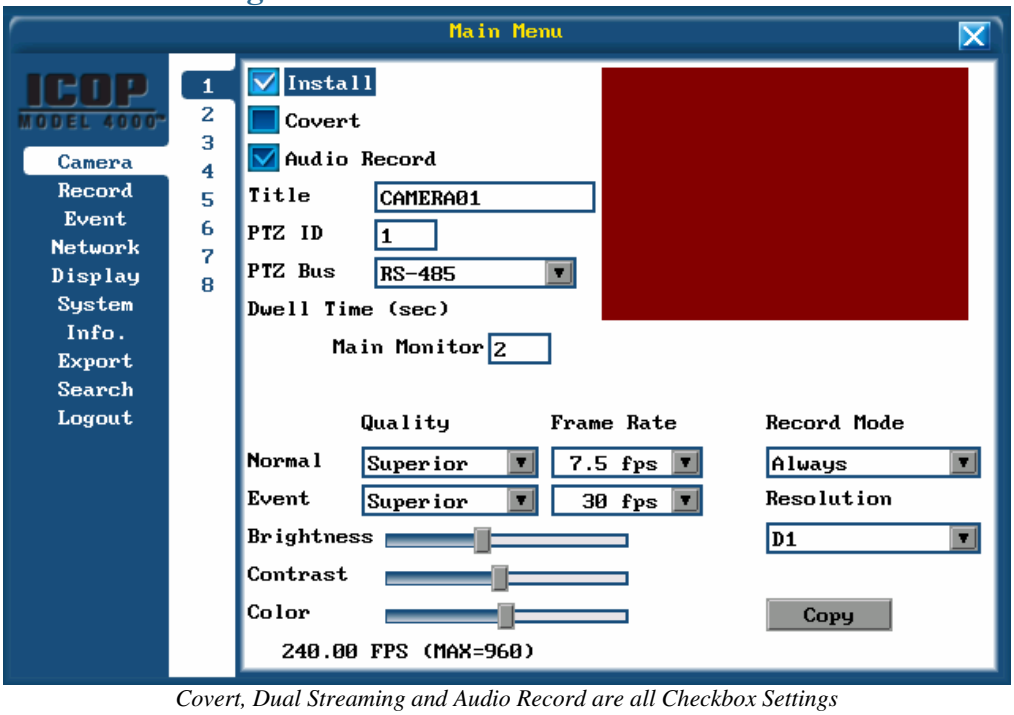
Navigating



The Green Border around Alarm, Motion Detection, Video Loss indicates it is the active Menu.

To go down a level of detail in a Menu press the **ENTER** button or **RIGHT**.
To return to a higher level Menu, press the **MENU** button or **LEFT**.
Use the **UP** and **DOWN** keys to move between settings in a Menu.

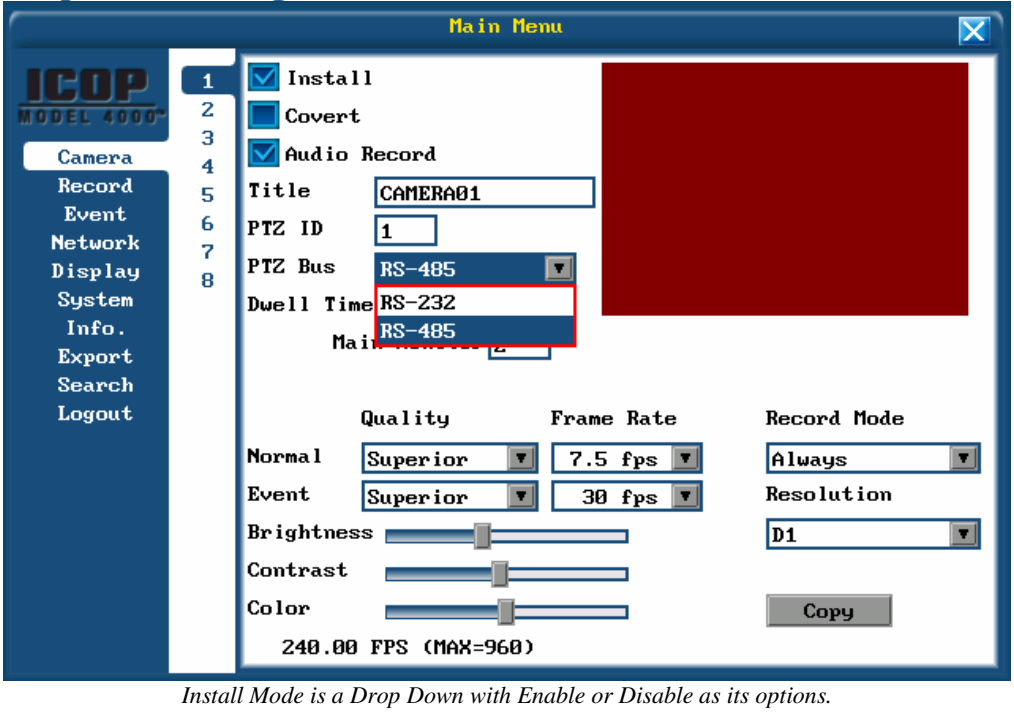
Checkbox Settings



Covert, Dual Streaming and Audio Record are all Checkbox Settings

Pressing **ENTER** toggles the setting. If a check mark is present in the Checkbox, the setting is enabled.

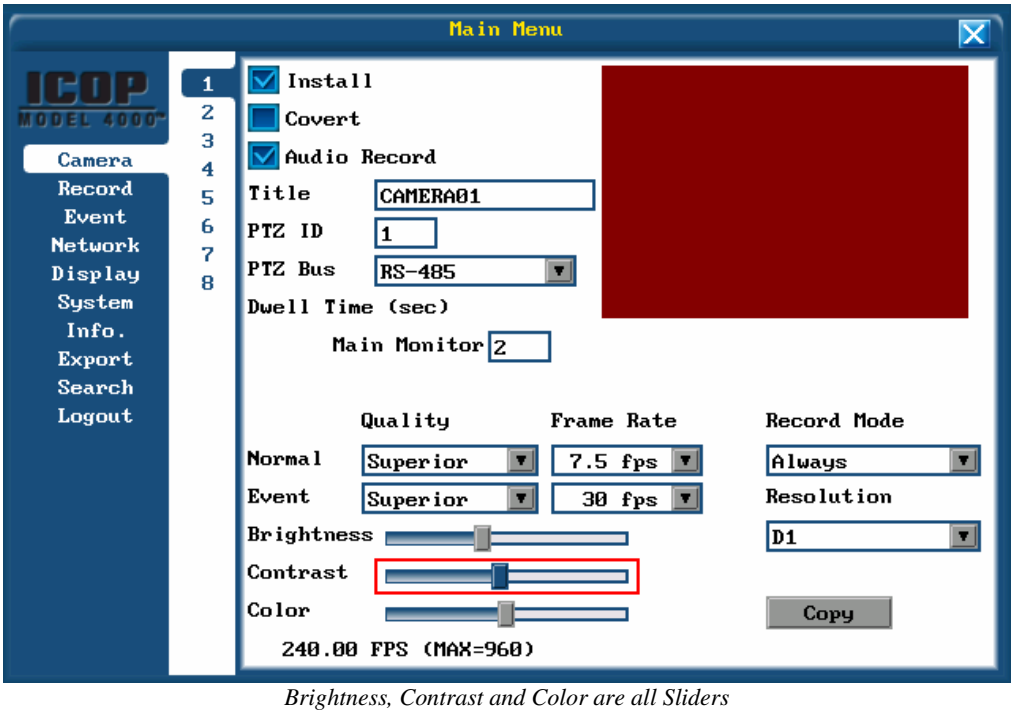
Drop Down Settings



Install Mode is a Drop Down with Enable or Disable as its options.

To change the value of a drop down, select the setting, press **ENTER** to open the drop down. Use **UP** and **DOWN** to select the desired option, then press **ENTER** to confirm the setting.

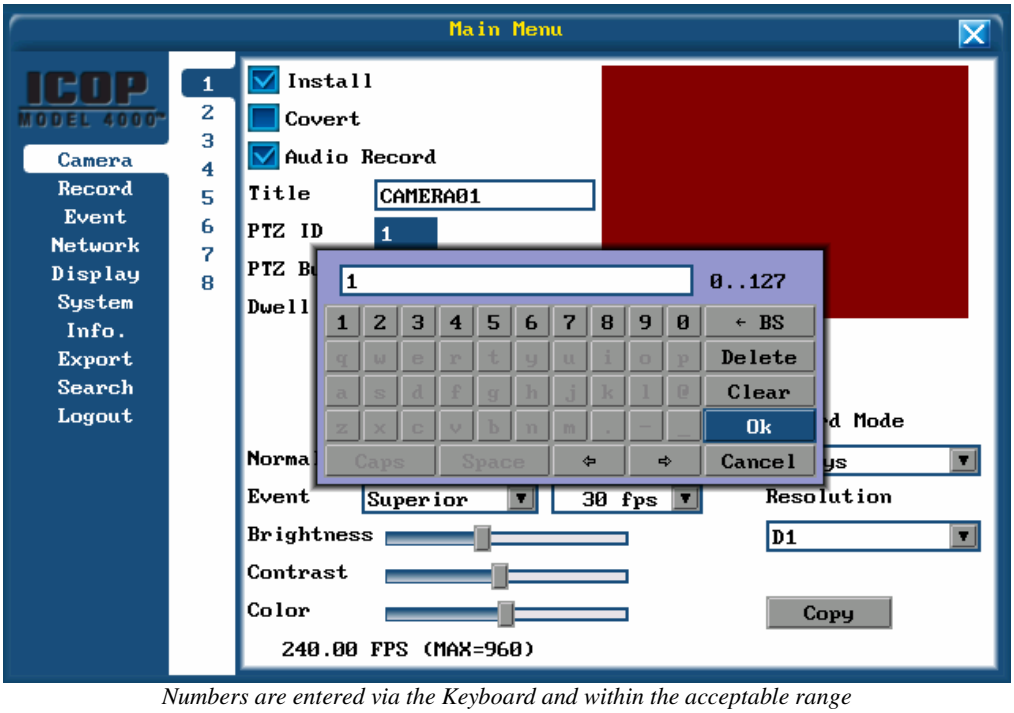
Sliders



Brightness, Contrast and Color are all Sliders

Sliders are used for settings that are more subjective such as Brightness. To change a Slider select the Slider and press **ENTER**. Now use **LEFT** and **RIGHT** to adjust the Slider.

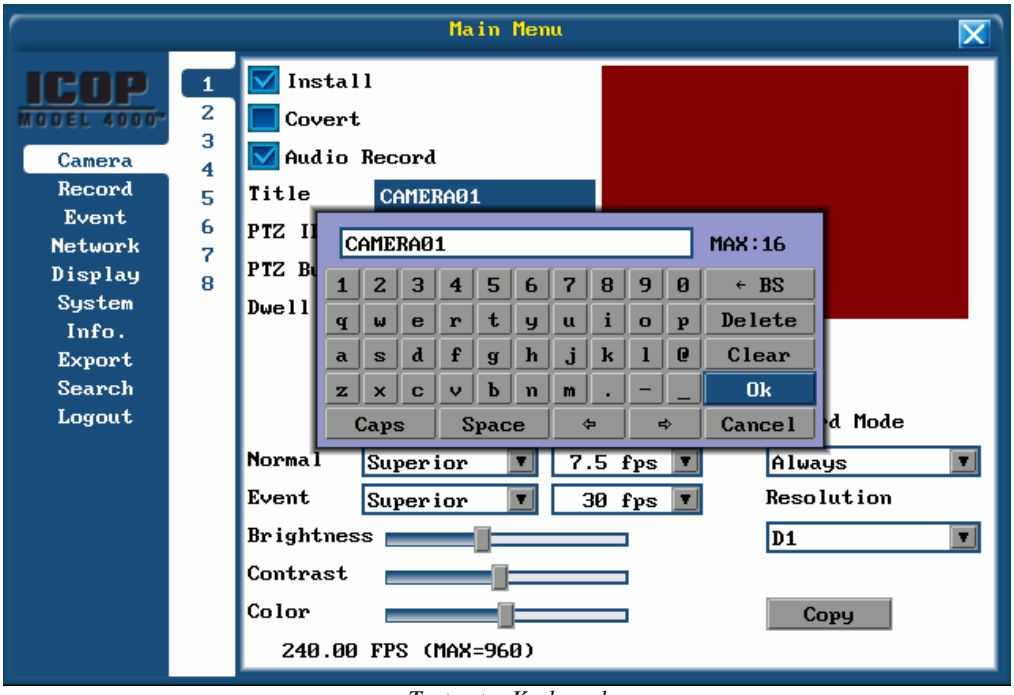
Numbers



Numbers are entered via the Keyboard and within the acceptable range

Numbers are used for a variety of settings including times, IP addresses, and bus addresses. To enter a Number select the setting and press **ENTER**. This will bring up the onscreen keyboard, but note that only the 0 through 9, arrows and edit keys are available. In addition, a check is performed on the Number to ensure that it is within the valid range. Use the **DIRECTION KEYS** to select the numbers you wish, pressing **ENTER** to type them out. To commit the Number, select Ok. If the Number is not valid – if it is outside the acceptable range – you will not be able to press Ok.

Text



Text entry Keyboard

Text is a free form field, normally used for identifiers such as titles, domain names and server names, and email addresses. To edit Text select the setting you wish to change and press **ENTER** to bring up the on-screen keyboard. Is the **DIRECTIONAL KEYS** to input the text string. To commit the text select Ok.

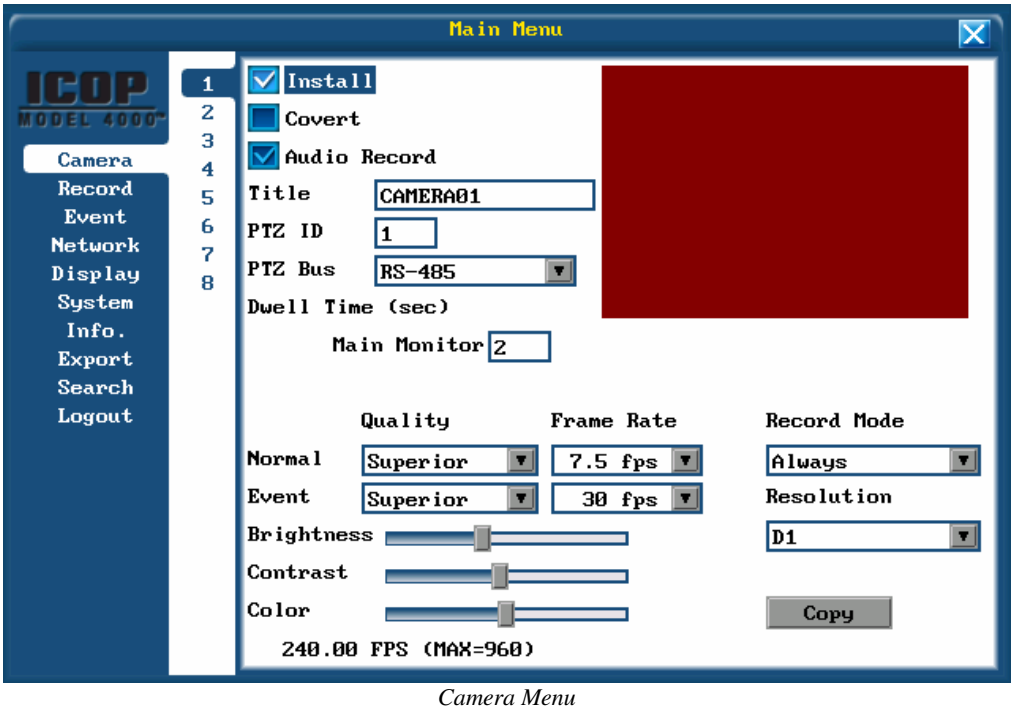
Basic Recording

Your DVR is setup at the factory to begin recording video as soon as it is powered on. To change the recording options enter the Main Menu either by pressing the **MENU** button, or selecting Main Menu from the Pane Menu.

If you have not previously logged in, or if your previous login has timed out, you will need to log in to the system. The default user is User1, with a default password of **11111111**

Login Screen

The Login Screen allows you to choose your Language from the available languages, choose a Username to login as, and enter a Password for that Username.



Camera Menu

The Camera Menu is where you will set the majority of your basic Recording options.

Install Mode

The Install Mode determines whether recording will occur on a channel or not. If the Install Mode is set to disabled, no recording will occur on that channel. Install Mode does not automatically detect is a camera is present on the channel, it must be manually configured. Even if you do not wish to record all the time, the Install Mode should be set to enabled.

Record Mode

The Record Mode determines is video will be recorded continuously, or if video will only be recorded when some external event occurs. Events can include external sensors, motion detection, or text input from point of sale system (see Serial Peripherals for more information).
Configuring Event Only Recording is covered in Advanced Recording.

Resolution

Resolution is the size of the image being recorded. A normal full size TV image is call D1, an image that is half that size is called Half D1, and an image one quarter of the size of a TV image is called CIF. Since D1 contains more information and is a larger picture, more disk space will be used for a recording that is the same length of time as on that is recorded at Half D1 or CIF. Consider your security goals when determining what resolution to record at. If you want to capture people's faces, we recommend recording at D1. If you are primarily interested in observing movement or actions but details are less important, you can save disk space or increase your recording time by using CIF.

Note: Recording at high resolution cannot overcome poor source quality. Be sure you have a strong video signal, that you camera is appropriate for your lighting conditions, and that it has been properly focused for the area you wish to monitor.

Frame Rate

Frame Rate is how often an image is recorded and stored on the hard drive. Frame Rate is another way to control how much disk space your recording takes; the fewer Frames you record in a second, the longer you will be able to record for. Frame Rate is measured in Frames Per Second or FPS.
Full motion video is currently recorded at a rate of 30FPS for NTSC (the standard in North America) and 25 FPS for PAL (the Standard for Europe). The lower you set the Frame Rate, the more the picture will seem to jump from one image to the next.

Balancing Frame Rate and Resolution

Frame Rate and Resolution share a dependency between them which limits which configurations are valid due to the Maximum Recordable Images Per Second for the DVR. If you wanted to record all channels at D1 resolution you would not be able to record at a Frame Rate greater than 7.5 FPS. This is equivalent to recording all channels at CIF resolution with a Frame Rate of 30 FPS.

Luckily the DVR does all this calculation for you. If you select a resolution, only Frame Rates that are available will be displayed. If you want to increase the Frame Rate, decrease the Resolution.

You can also decrease the Resolution and Frame Rate on some channels to allow higher Resolutions with higher Frame Rates on other channels.

Quality

Picture quality is the third way to control the amount of space used by video during recording. Video compression losses some small amount of picture detail by its very nature. Quality give you the ability to determine how much of that detail will be lost at in favor of small video files that take less disk space. Quality does not effect how smoothly video is recorded like Frame Rate, nor does it determine how much of the screen information is recorded like Resolution. Quality effects subtle details such as being able to see wrinkles in a jacket, or a gradual change in color across a dress.

Because quality is subjective you should review video at each of the four possible levels to determine which best suits your needs.

Note: Your choice of cameras more deeply effects your picture quality than the recording setting. If none of the Quality settings produce a satisfactory result, review the quality of the source image and make any necessary adjustments there. Even with a well focused High Resolution Camera, the signal from the Camera to your DVR can become poor due to electrical interference, improper co-axial cable type, or excessive distance. Your professional security installer can help you with your Cameras to ensure the best possible source image for your DVR.

Picture Settings: Brightness, Contrast, Color

After you have connected your cameras you will most likely notice that not all the Channels are the same. Some channels will appear brighter, others seem more washed out. You can use Brightness, Contrast and Color to adjust the picture that is recorded and displayed for a better viewing experience.

Brightness adjusts how dark the black sections of the picture appear. If details appear to be lost in the shadows or darker regions try increasing the Brightness. If the channel appears to saturated, or the colors appear overwhelmed by glare try decreasing the Brightness.

Contrast adjusts the total amount of light output from the display. Increasing the contrast will increase the light output of non-black areas of the picture. If details are lost or lines appear distorted, try decreasing the contrast.

Color effects the amount of color information in the picture. Setting Color to zero will produce a black and white image. Setting color too high will make the image look unrealistic, and is usually seen with reds that bleed or are too bright. Find a level where colors are still vibrant without overpowering the image.

> Note: If you have a strong light source facing the camera, such as the sun coming through a window, you may need to use a camera with a Wide Dynamic Range to overcome limitations of standard cameras in dealing with the difference in Brightness and Contrast from these sources.

Playback

As soon as you your DVR has recorded video you can review it in Playback. Playback allows you to review the video at your leisure, pausing, moving forward or backward, quickly or slowly. In addition to picking an arbitrary time to begin watching video from, the DVR provides you with some additional tools to help you find the important video you are looking for.

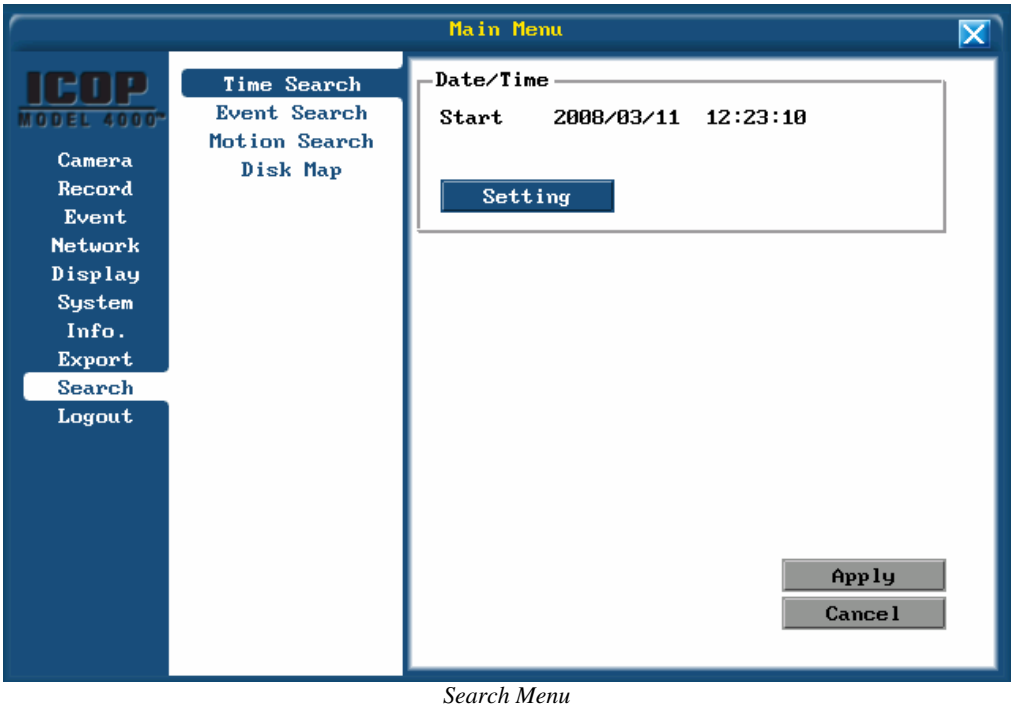
Playback Mode

Every channel of video can be either Live or in Playback. If multiple channels are in Playback, they will all be playing from the same point in time.

Your DVR provides onscreen indicators that it is in Playback both in the Channel Titles of the Panes in Playback and by displaying the Playback Counter at the bottom of screen above the current date and time.

By default you must be logged into the system to Playback video (see Security). There are three ways to enter Playback.

To change all Panes to Playback simple press **PLAY**.



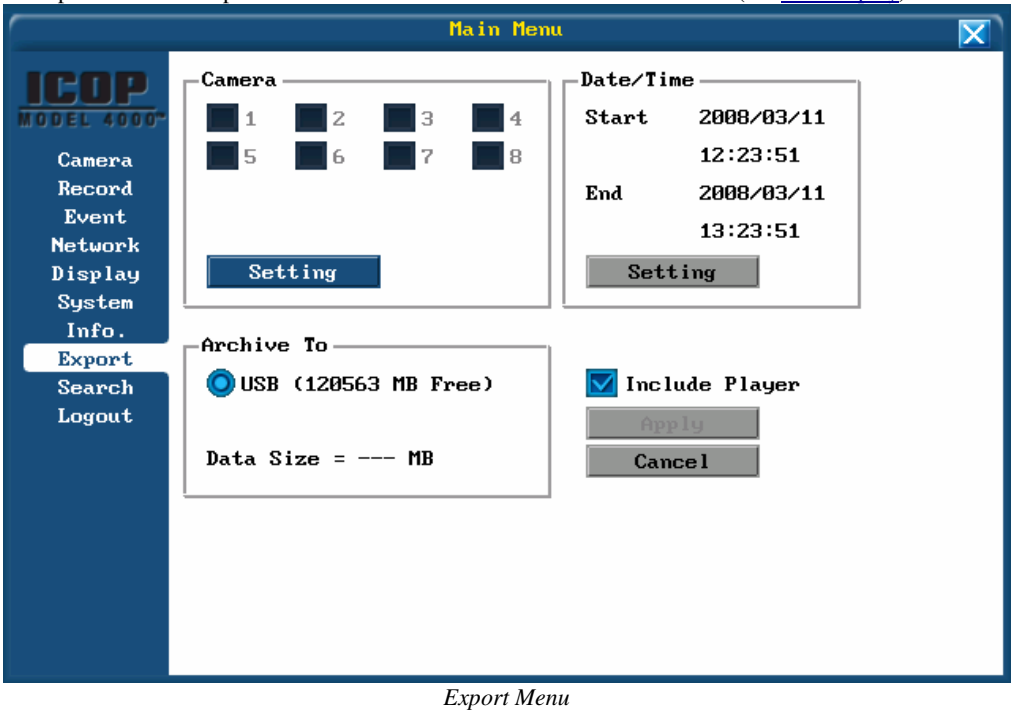
Search Menu

To go to a specific time or Event use the Search Menu and review the results of the search in Playback (see Search)

Video Evidence

In the event that your DVR records video that can be used for evidence, you have several options for exporting the video. You can export video to a FAT32 formatted USB Mass Storage device such as a USB Flash Memory Drive, or a USB Hard Drive. Your DVR also contains a built-in DVD burner which allows you to write CD-R, CD-RW, DVD±R and DVD±RW.

To export video either press **COPY** or choose Archive from the Pane Menu (see The Display).



Export Menu

To export video using the Archive Menu four groups parameters are required.

Camera	Select which video channels are to included in the export.
Date and Time	Select the start time and end time of the channels to be exported.
Archive to	Select the destination, either USB or the built in DVD Burner.
Include Player	Include the option video player that is specifically designed to play the exported segments of video.

Before selecting Apply, be sure to insert your media. Click Apply and your DVR will perform the export. If the Media is too small for the amount of video you wish to export you will be notified by an error message.

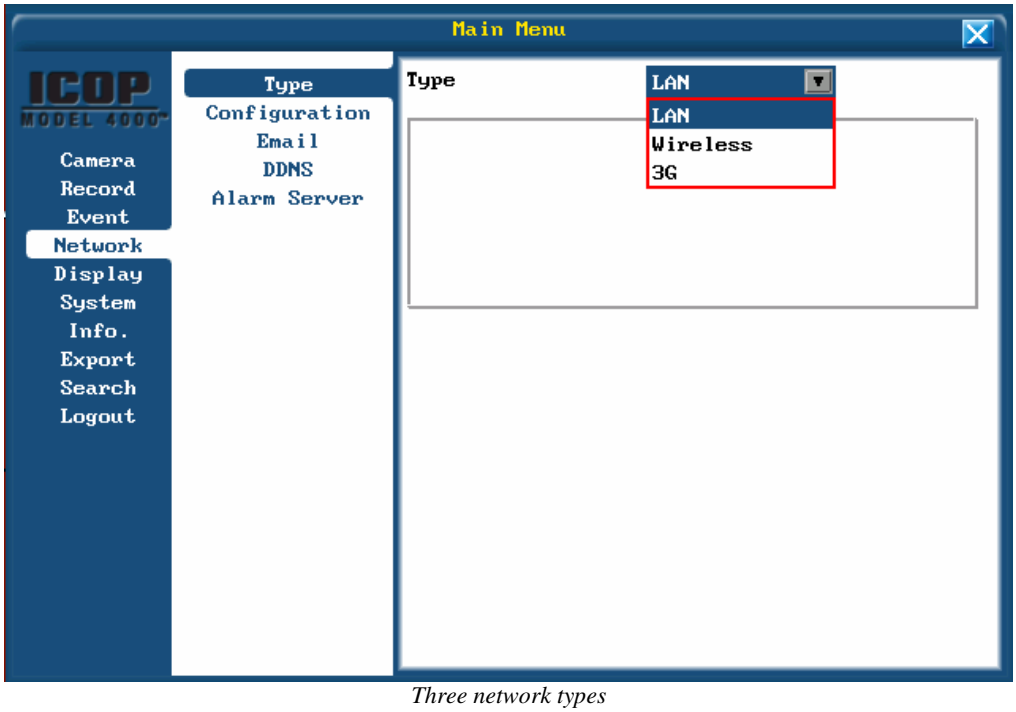
Note: Each Channel you export will be stored in a separate movie clip.

Basic Networking

Your DVR contains a built in Gigabit Ethernet Network adapter with an RJ-45 connector. You can connect your DVR directly to your PC, to your Local Area Network (LAN), or to a Wide Area Network (WAN). For a direct PC connection use a CAT-5 cross-over cable; for other connections a standard CAT-5 Ethernet patch cable.

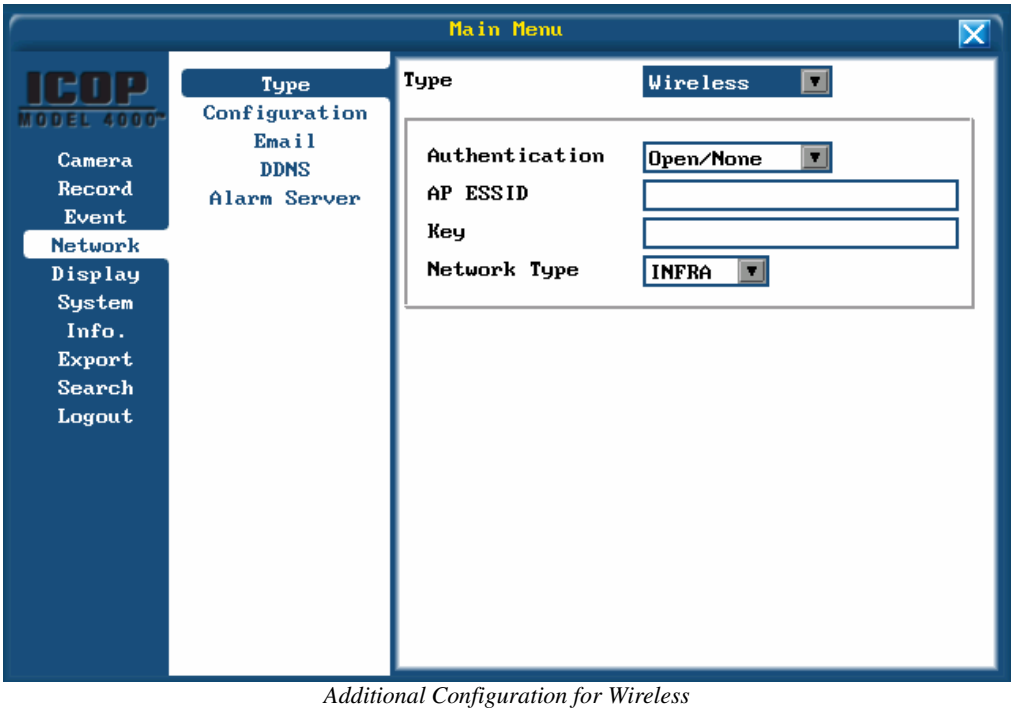
There are three ways to configure your DVR to connect to the network, manually entering a Static IP address, automatically receiving an IP address via DHCP, or by authenticating against with PPPoE.

To connect your DVR to the network from the Main Menu select Network Menu, then Configuration. Use the Network Type setting to choose either Static, DHCP or PPPoE network settings.



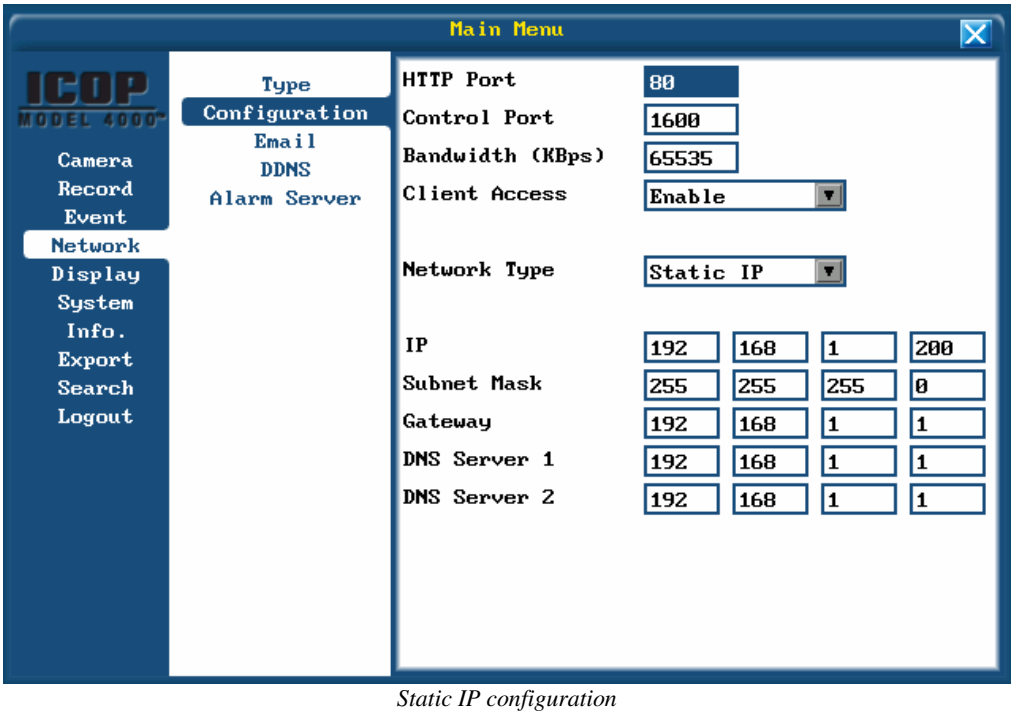
Three network types

Your unit can be configured for either a direct LAN connection, Wireless 802.11 B/G connection Modem connection.



Additional Configuration for Wireless

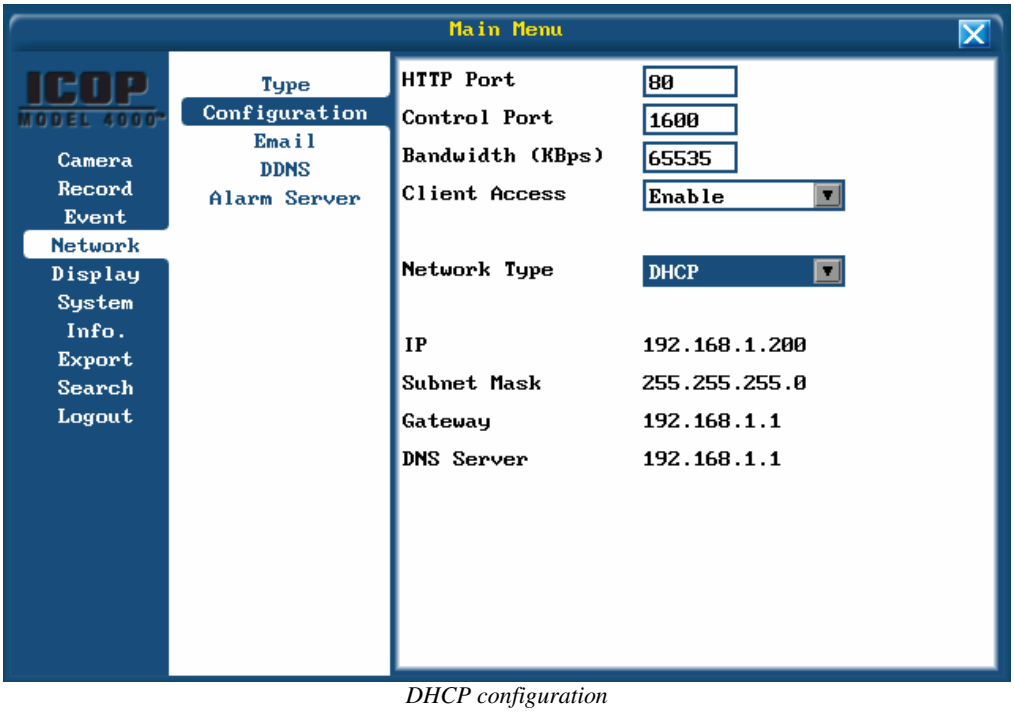
If you have a wireless connection you will need to provide the additional connection settings such as the network ESSID as well as configure any security used on your wireless network.



Static IP configuration

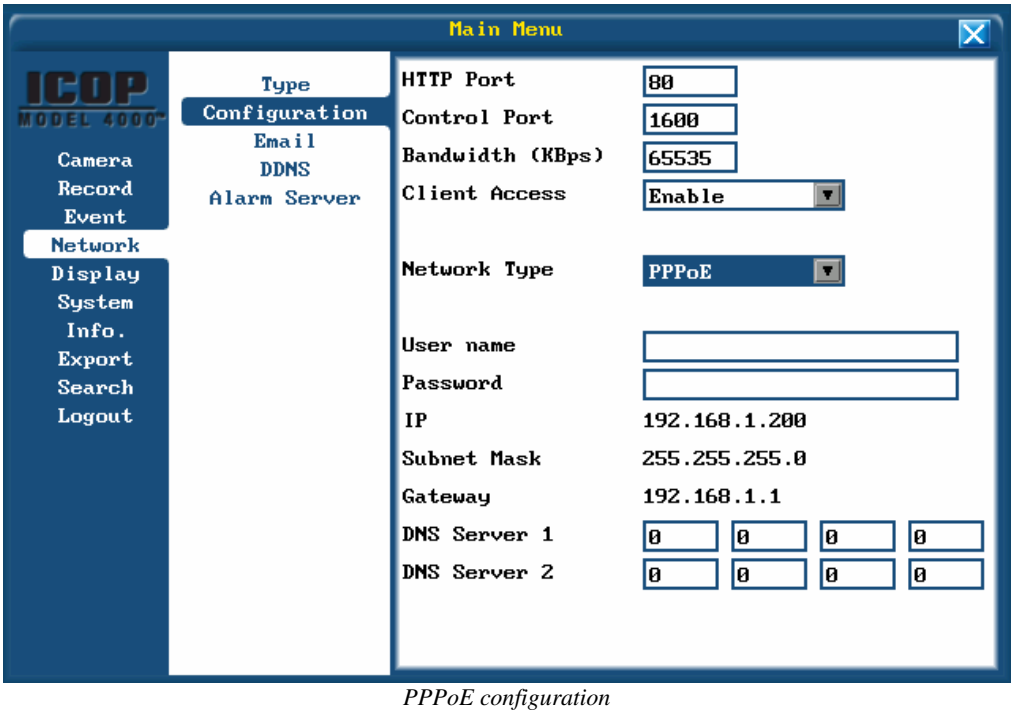
After selecting Static IP address the menus will change to allow you to input the IP Address, Subnet Mask, Gateway and DNS Servers.

If you are connecting directly to your PC, use an IP address in the private 192.168.x.x space for both the PC and DVR, set the Subnet Mask to 255.255.0.0, and the gateway to 192.168.1.1. Leave the DNS Servers as 0.0.0.0



DHCP configuration

After selecting DHCP the DVR will seek out a DHCP server and automatically obtain the IP configuration information.

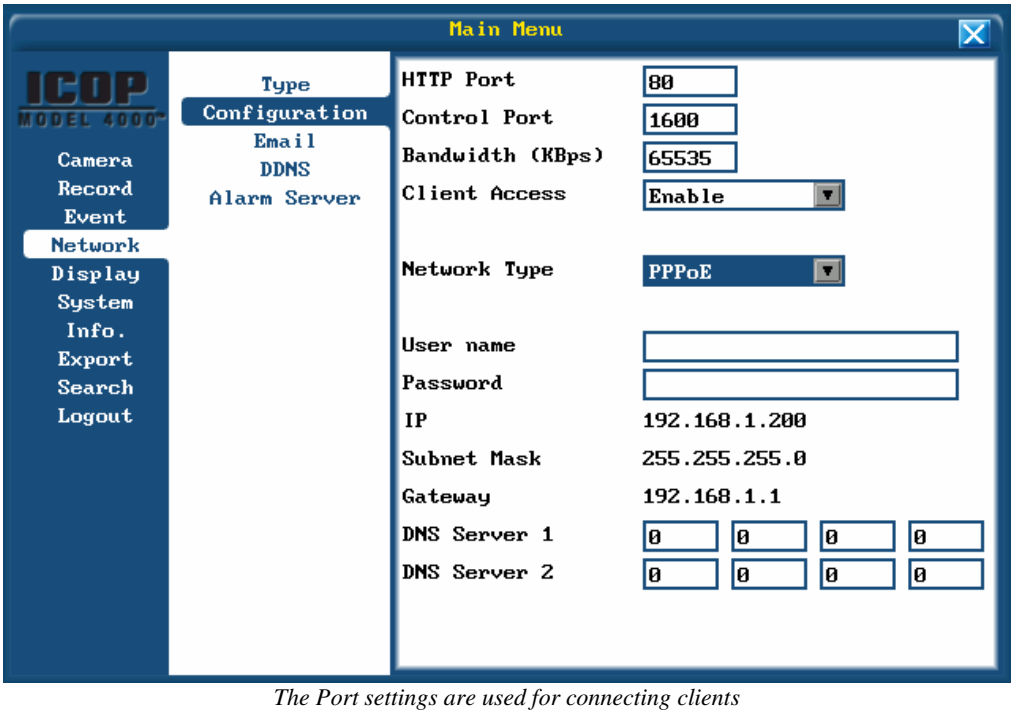


PPPoE configuration

After selecting PPPoE the menus will change to allow you to enter the authentication information. In addition to entering the Username and Password, you will also need to enter the DNS server information.

Connecting form the Network

After successfully configuring the DVR with an IP address you can now connect to it using a Web Browser.



The Port settings are used for connecting clients

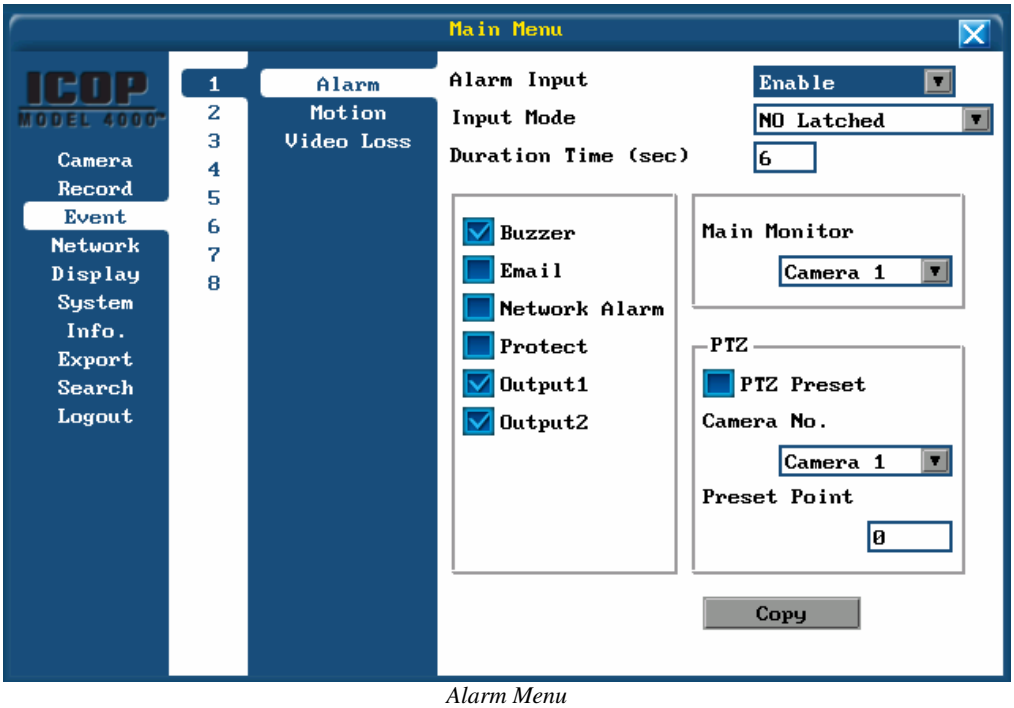
In order to connect with a Web Browser the Client Access setting must be enabled.

By default, the Web Client is accessed using the standard HTTP Port 80. To increase security you can reassign the port to another unused port.

Advanced Recording

In Basic Recording we alluded to more advanced recording settings. These advanced recording options fit into two categories, Event based recording, and Schedule based recording. These two categories are also complementary, meaning you can use Event based recording in your Schedules.
Your DVR can be configured for three types of Events; Alarm Events, Motion Detection, and Video Loss.

Alarms



Alarm Menu

For each video input there is a corresponding Alarm input on the back panel. To enable the input use the Alarm Input setting.
The Input Mode determines how the unit will react to signals received on the Alarm Input. The following table describes NO, NC, Latched and Transparent.

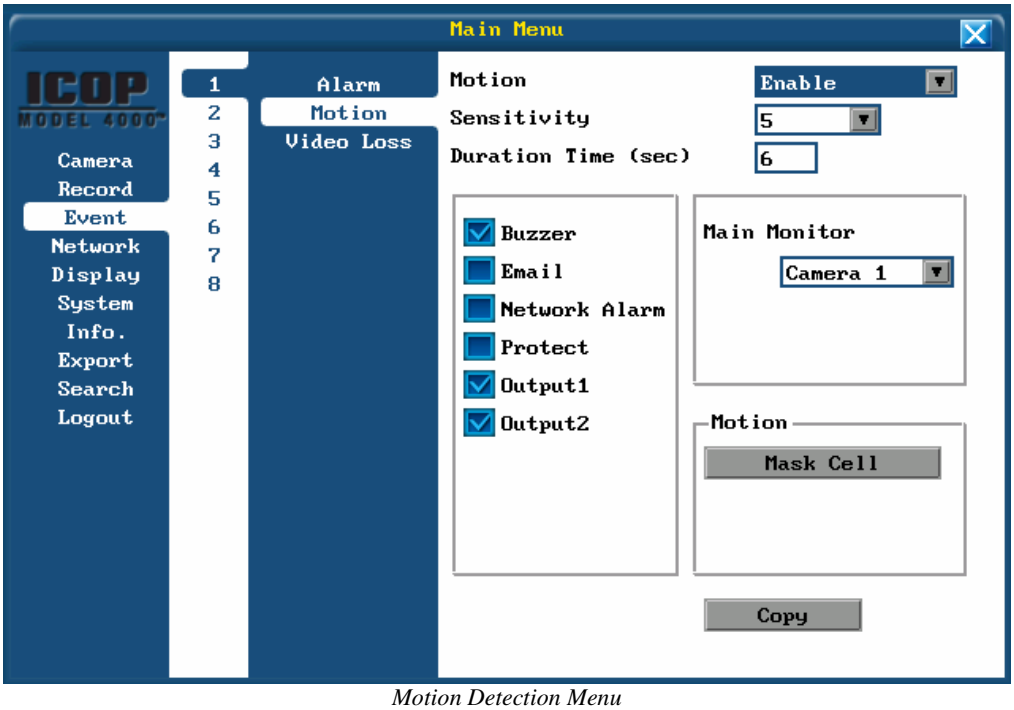
Condition	Response
Normally Open (NO)	NO triggers the alarm when the circuit closes.
Normally Closed (NC)	NC triggers the alarm when the circuit is broken.
Transparent	A Transparent alarm only stays active so long as the alarm circuit remains closed for NO, open for NC.
Latched	A Latched input stays in Alarm until the alarm is acknowledged either on the DVR or remotely.

The Duration TImeout established how long the DVR will remain in Alarm mode after the Alarm has been cleared.

The remaining settings determine additional actions the DVR will perform for an Alarm. These are configured on a per channel basis.

Output	Response
Buzzer	Sounds the DVR's internal buzzer.
Email	Send an email to all recipients configure in the email list (see Advanced Networking)
Network Alarm	Send a small message to the Alarm Server (see Advanced Networking)
Protect	Tags the video to prevent it from being automatically overwritten when the disk fills.
Output 1 and 2	Triggers the relays on the back of the DVR to signal some additional security device.
Main Monitor	Change the channel displayed on the Main Monitor to the setting shown.
PTZ Preset	Send a message to the selected PTZ camera to move to the specified Preset

Motion Detection



Motion Detection Menu

Motion Detection is a special type of event where the video is monitored for changes that indicate something is moving in the frame.

To begin set the Motion Detection setting to Enable.

Choose a Sensitivity of 5 as a starting point. When you have configured your Motion Grid, experiment with the sensitivity to achieve your desired result. 8 is the most sensitive, 0 is the least.

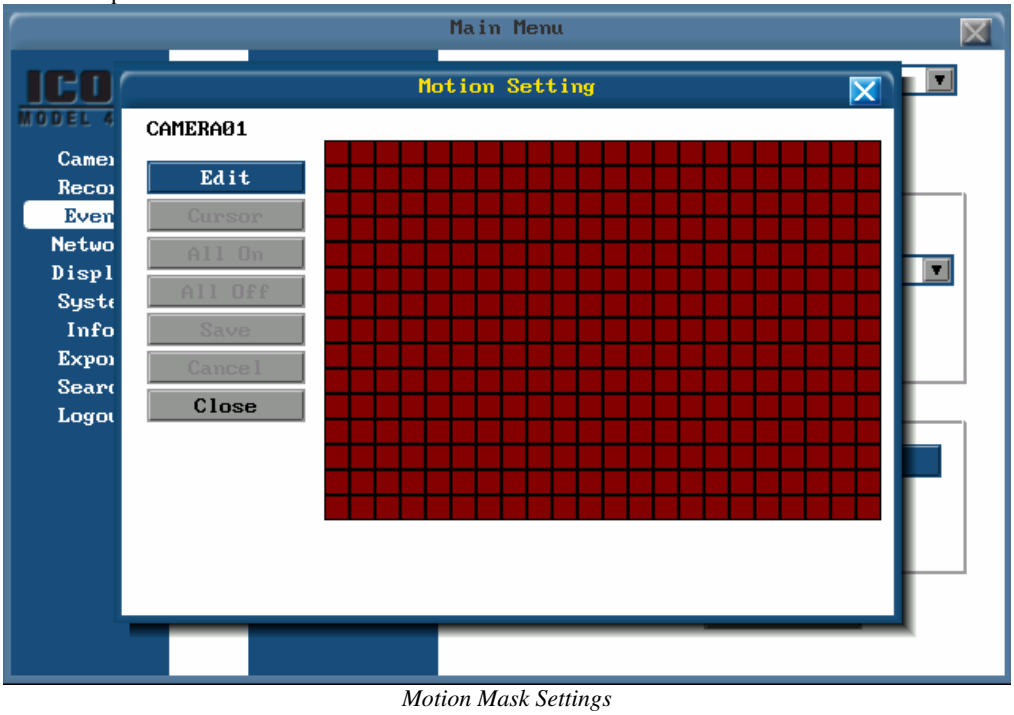
The Actions for Motion Detection are similar to those for Alarm.

Output	Response
Buzzer	Sounds the DVR's internal buzzer.
Email	Send an email to all recipients configure in the email list (see Advanced Networking)
Network Alarm	Send a small message to the Alarm Server (see Advanced Networking)
Protect	Tags the video to prevent it from being automatically overwritten when the disk fills.
Output 1 and 2	Triggers the relays on the back of the DVR to signal some additional security device.
Main and Call Monitor	Change the channel displayed on the Main or Call Monitor to the setting shown.

Output	Response
PTZ Preset	Send a message to the selected PTZ camera to move to the specified Preset

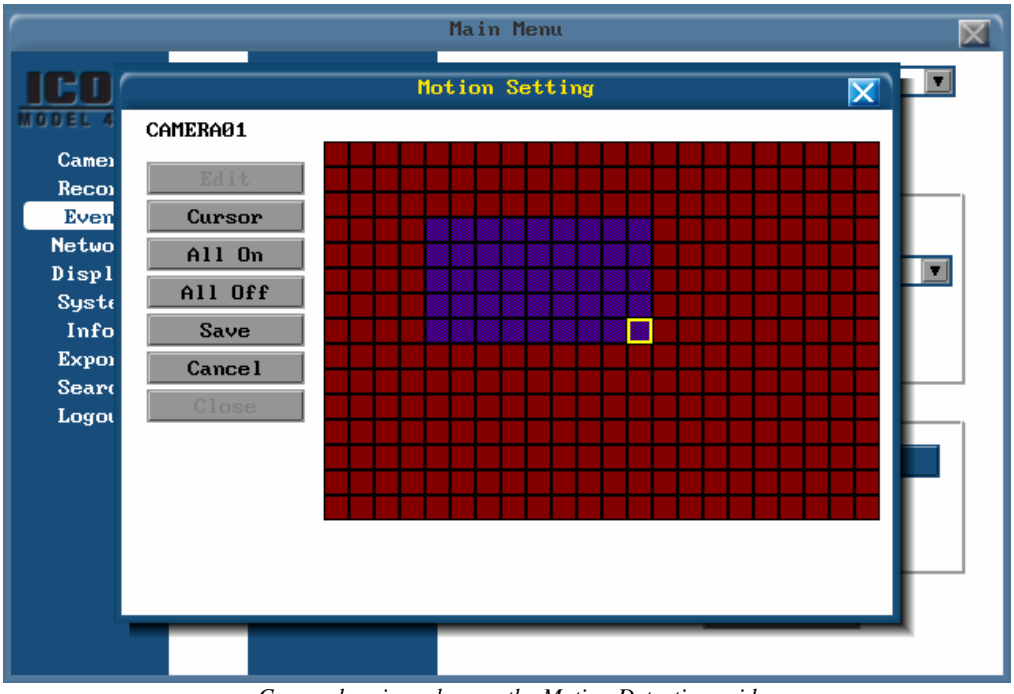
The Motion Grid

To configure what areas of the Frame you are interested in looking for motion select the Mask Cell button and press ENTER.



Motion Mask Settings

The default setting for Motion Detection is All On. To change the grid choose Edit. Your cursor will now be moved to the grid.

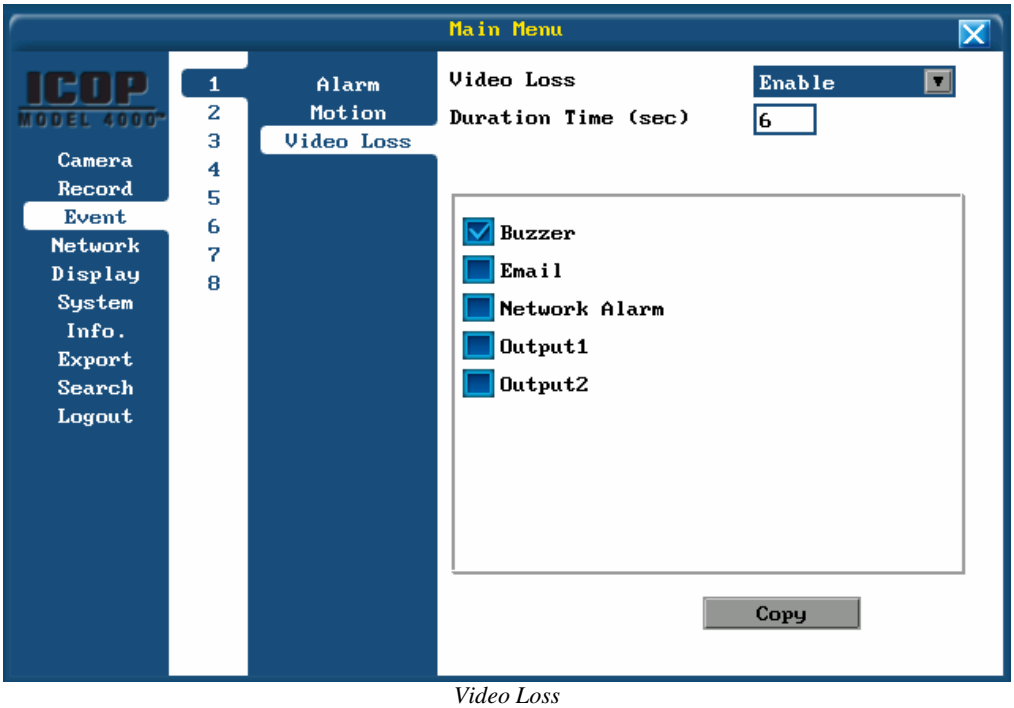


Cursor drawing a box on the Motion Detection grid

To toggle an area from On to Off select the first grid block of a rectangle that is On. Press **ENTER** and then use the **DIRECTION KEYS** to expand the rectangle. Press **ENTER** again to toggle the selection to Off. To toggle an area on repeat the same process, but choose a starting block that is already off.

When you have finished defining the regions of the screen that will detect motion, press menu to return to the side menu, and choose Save to commit your changes. At this time you should review your sensitivity setting to ensure you are detecting only the motion you want.

Video Loss



Video Loss

Video Loss is when your DVR detects that you are no longer receiving a valid video signal from a camera. While it is obvious that you can no longer record video that isn't there, other cameras may capture important video that can be used as evidence.

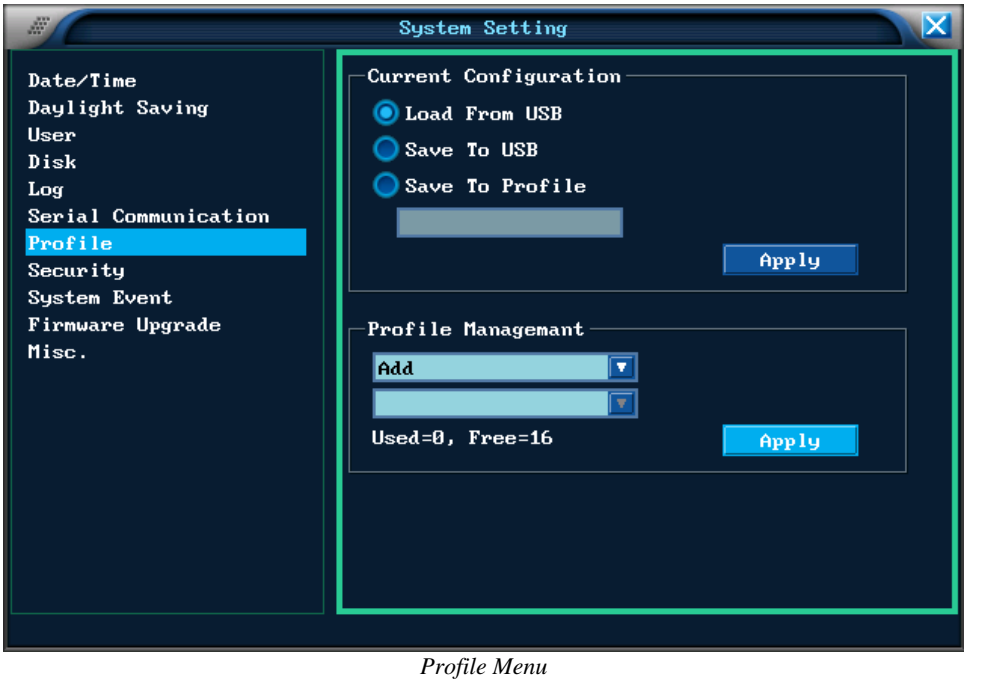
The Actions for Video Loss are a smaller set of those for Alarm and Motion Detection.

Output	Response
Buzzer	Sounds the DVR's internal buzzer.
Email	Send an email to all recipients configure in the email list (see Advanced Networking)
Network Alarm	Send a small message to the Alarm Server (see Advanced Networking)
Output 1 and 2	Triggers the relays on the back of the DVR to signal some additional security device.

Scheduled Recording

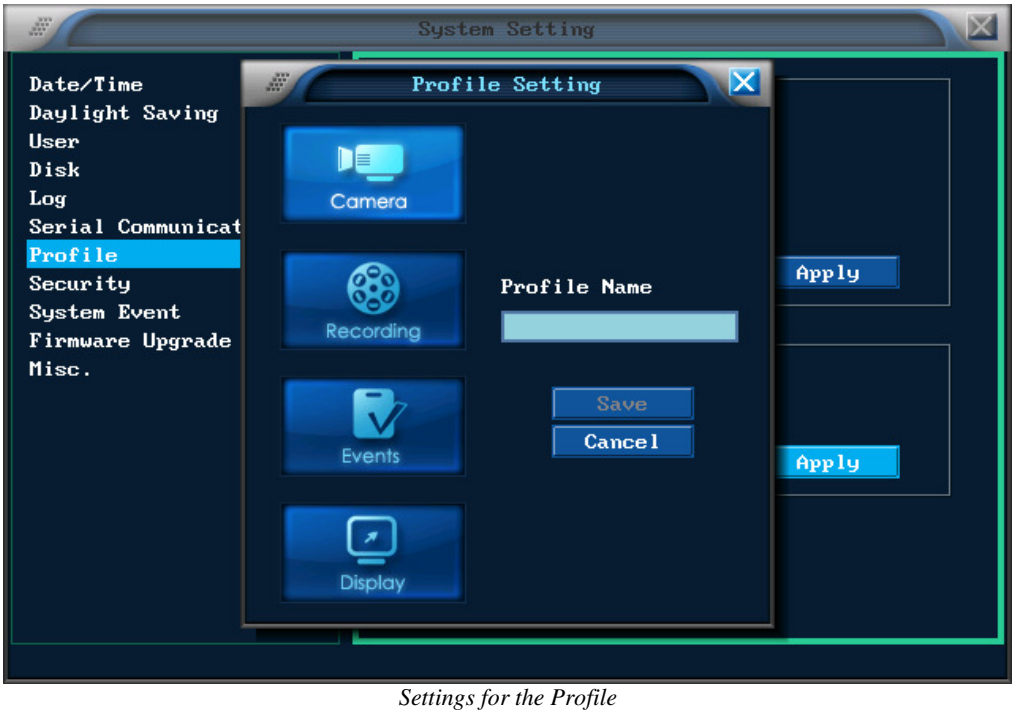
Your DVR has the ability to change recording settings on a schedule, giving you the ability to maximize your recording time by reducing Frame Rates, Resolution or Quality during off hours. Setting up scheduled recording is a two part process. First you must define all the settings you want to use at one time in a Profile, then you can choose which profiles will run at which times in the Schedule.

Profiles



Profile Menu

Profiles are located in the System Menu. To add, remove or change a Profile choose the appropriate option from the drop-down menu in the Profile Management section. If editing or removing a profile, select the profile from the second drop down. Then click apply.



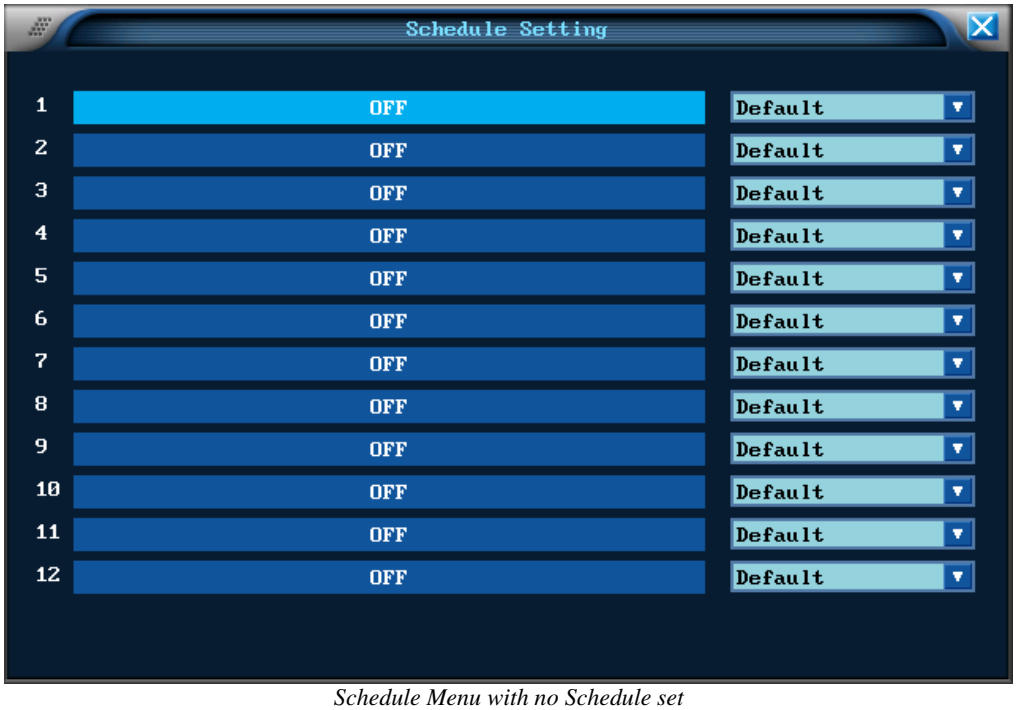
Settings for the Profile

If you are adding a profile or editing an existing profile you will now be taken to the Profile Setting Menu. From this menu you can set the Camera, Recording, Events and Display settings you wish to have in effect when this profile is active. Be sure to name to Profile for easy reference later.

> Note: Using profiles does not change your initial setup of the DVR which is stored in the *default* profile.

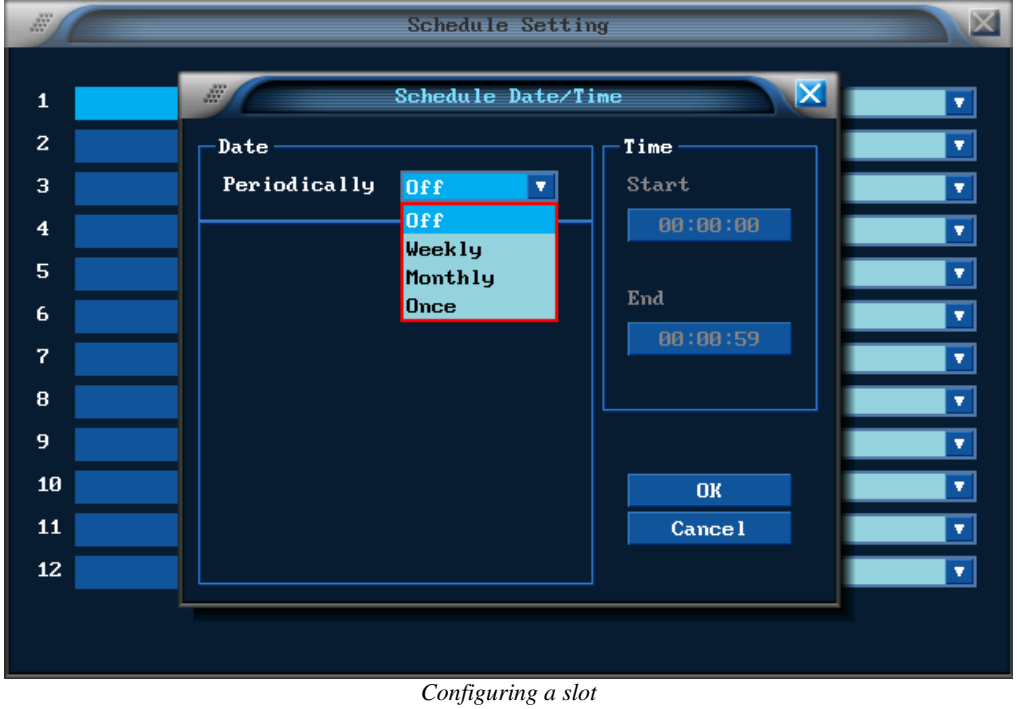
Schedule

After you have put all of the configuration variation you wish to use on in your schedules into Profiles, you can now move to the Schedule Menu.



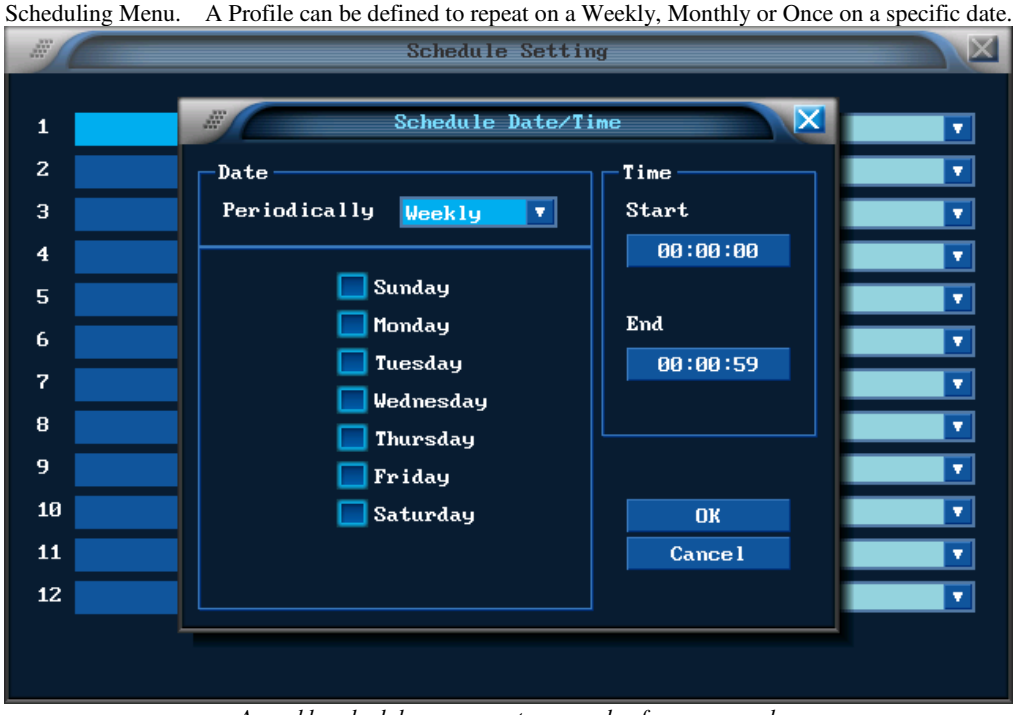
Schedule Menu with no Schedule set

The Schedule Menu gives you twelve priority slots in which to put your schedules. Priority slots are designed to avoid settings conflicts when two schedules overlap; when this occurs the lower numbered schedule item takes priority. To best use priority slots use the high number slots for your regular schedule, and the lower number slots for special profiles such as holidays.



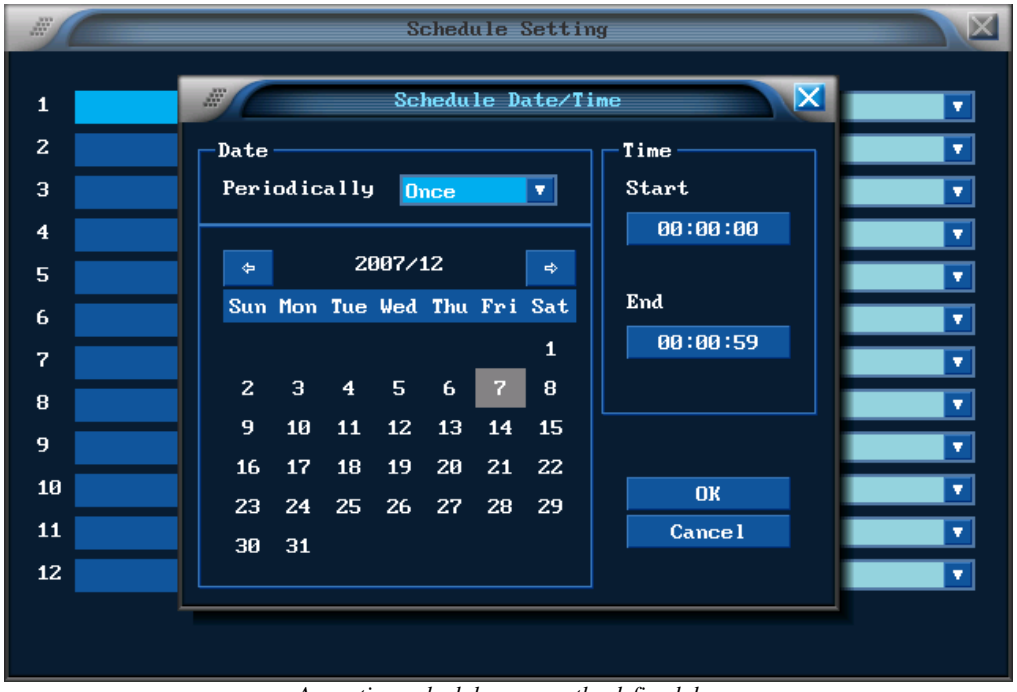
Configuring a slot

Slots contain two parts; the first defines when and how often the Profile is to be run; the second lists selects which Profile to use.
To set the frequency of the schedule, press **ENTER** in the first column of the slot row to bring up the Scheduling Menu. A Profile can be defined to repeat on a Weekly, Monthly or Once on a specific date.



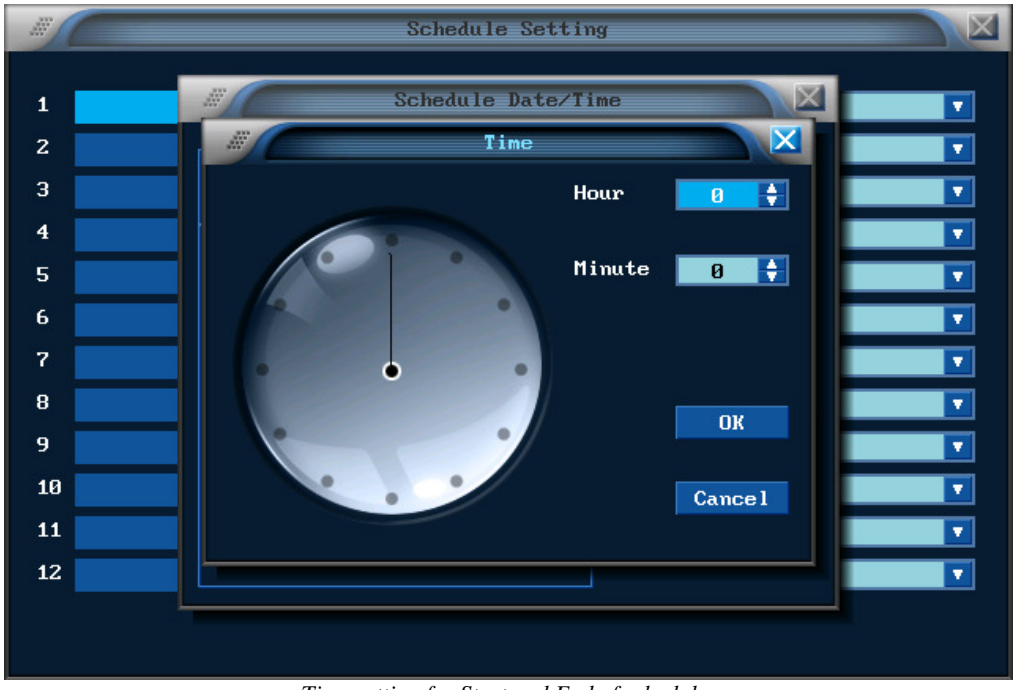
A weekly schedule can repeat on any day for every week

A monthly schedule can repeat on the same day of the month



A one time schedule runs on the defined day

After selecting the day the schedule is to begin on, next select the start and end times.



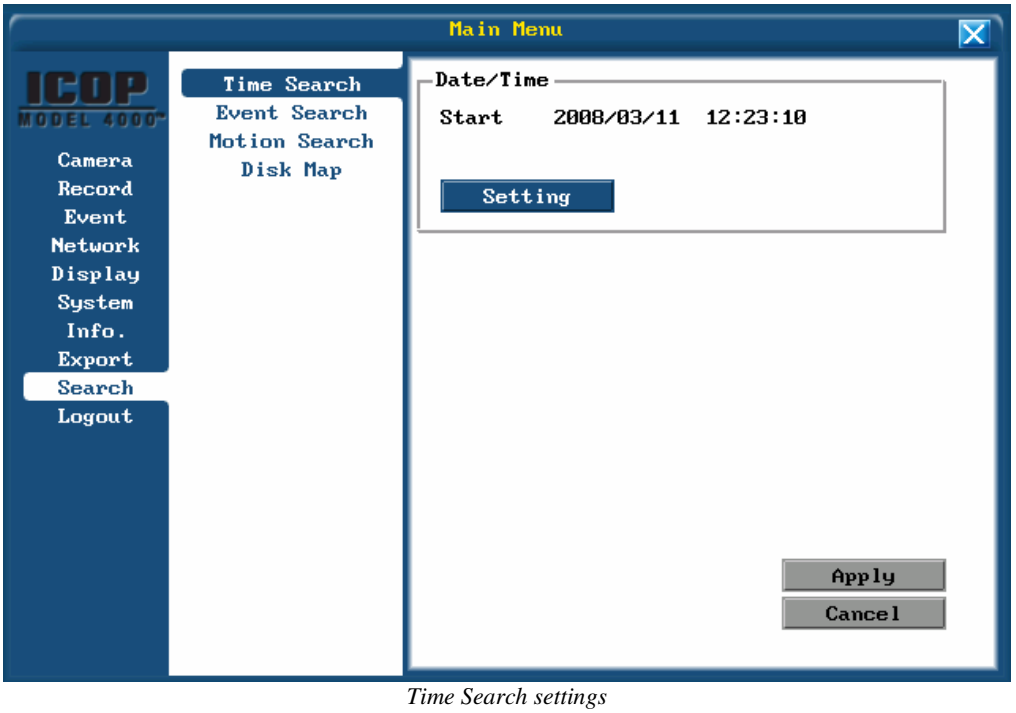
Time setting for Start and End of schedules

After confirming the Period, Start and Stop times select the OK button to confirm the schedule. Next, using the drop down to the right of the schedule column choose the Profile to run during the scheduled period.

Search

Your DVR allows you to search in four unique ways. You can jump to a specific point in the video using the Time Search; review a list of Events that your DVR has recorded such as Alarms using Event Search; scan your existing video for specific motion using Motion Search; display a visual representation of all the video on your Hard Drives using Disk Map.

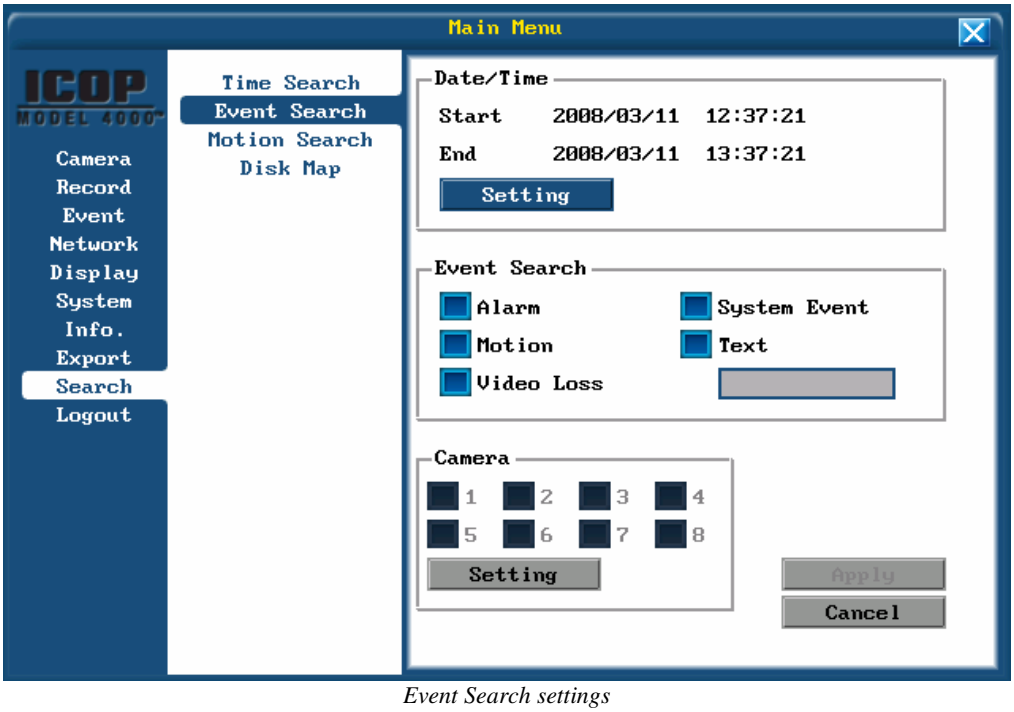
Time Search



Time Search settings

Time Search allows you to quickly jump to a time in your recorded video. Select Setting, enter the Start date and Time, choose Apply and playback will start at the date and time selected.

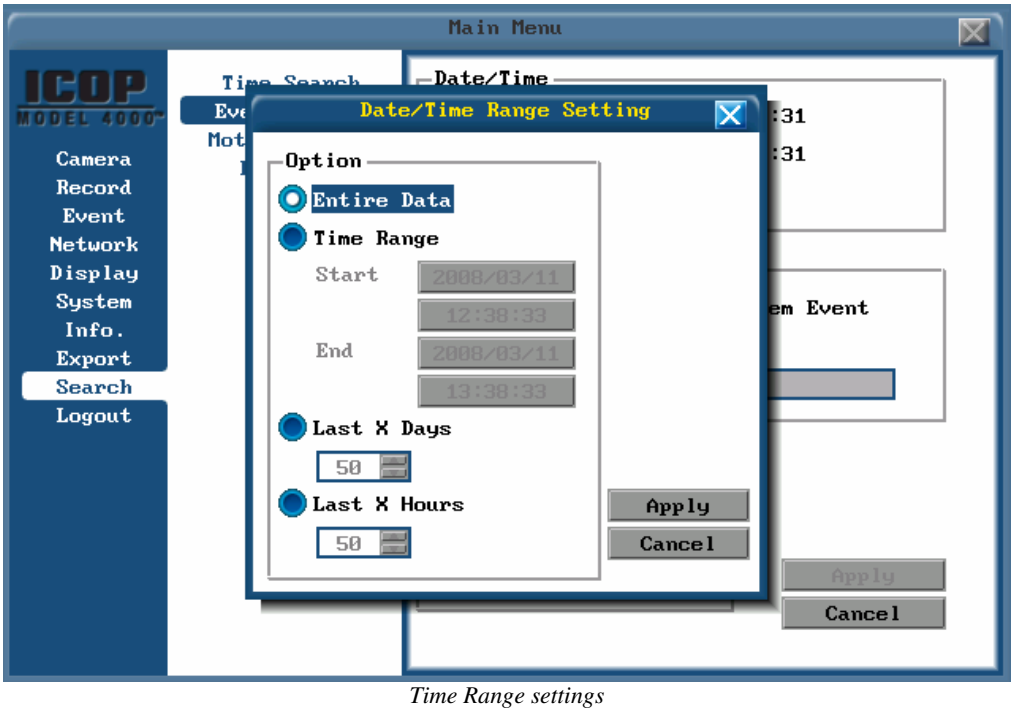
Event Search



Event Search settings

Having successfully configured your DVR to capture Events, you can use Event Search to quickly locate Events that are important to you. Event Search allows you to narrow down the list of Events to only those that you are interested in. Begin by setting the Time Frame you wish to search within.

Time Frame



Time Range settings

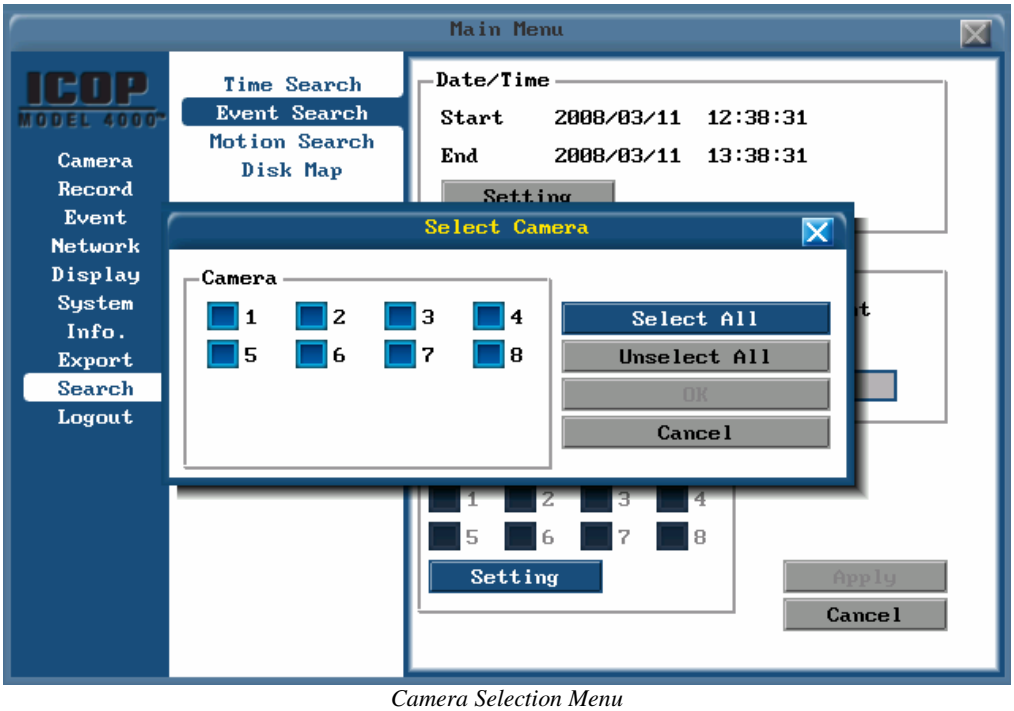
You can chose from four options for when to search. You can search all recorded video on the DVR with the Entire Data option. You can search between a specific start and end time with Time Range. You can limit your search to the last few days or the last few hours with Last X days and Last X hours respectively.

Event Search type

After you have selected the time period you want to search, next select which Events you want to search for.

Alarm	List all Alarm Input occurrence during the time frame.
Motion Detection	List all Motion Detected during the time frame
Video Loss	List all Video Loss occurrences during the time frame
System Event	List any System failures during the time frame
Text	List all Text Insertion occurrences that matches the input field. An empty input field means list all Text.

Camera selection

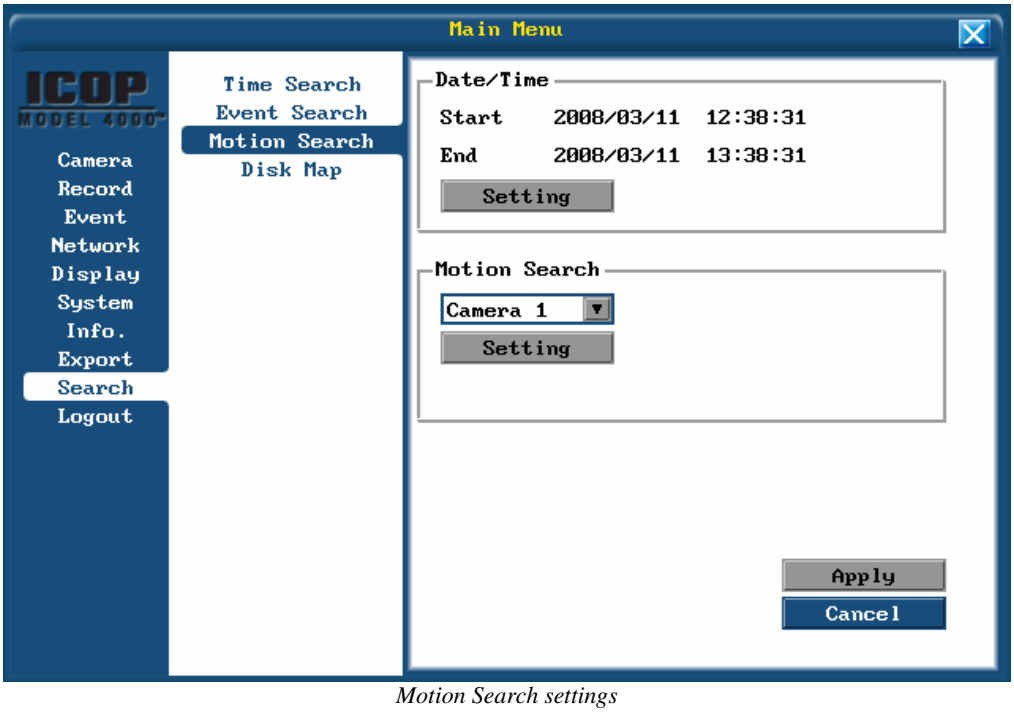


Camera Selection Menu

You can further narrow your search by selecting only some of the channels to search against. Select Setting in the Cameras section to open the Camera Selection Menu and check the camera channels you wish to search. System Events are not effected by the channel search.

After you have input all of your search criteria, choose Apply to begin your search and review your Search Results.

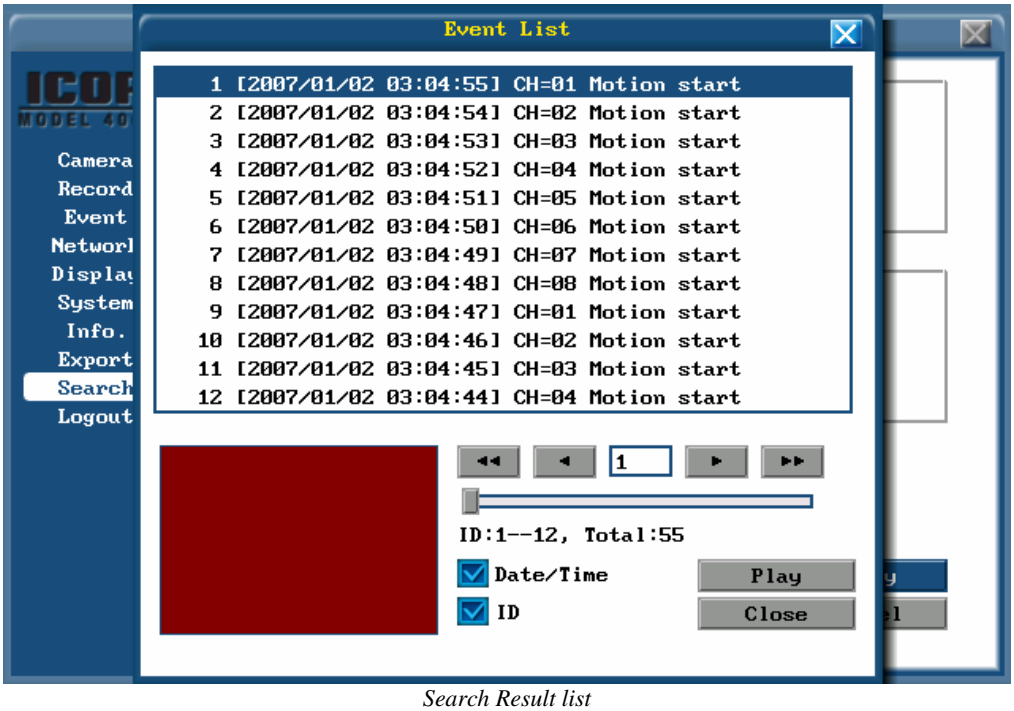
Motion Search



Motion Search settings

Motion Search allows you to search for motion in your video after it has been recorded. Start by selecting the Time Frame you wish to Search within.
Next choose the camera and setup the Motion Grid in Setting.
Choose Apply to start the search. Based on the length of time specified in the Time Range your search could take some time to return Search Results.

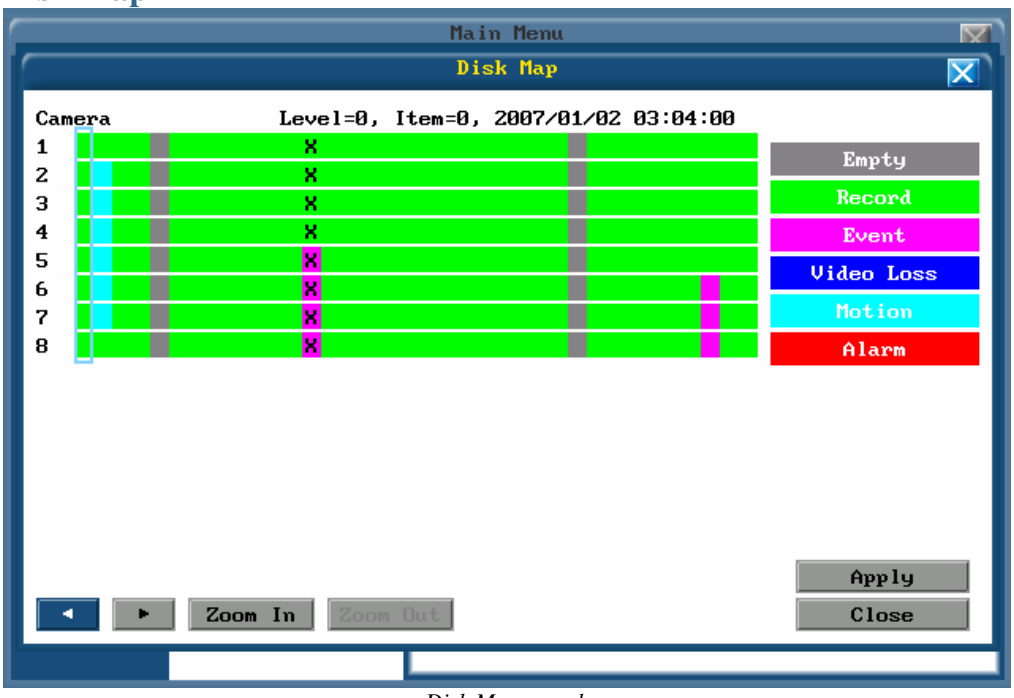
Search Results



Search Result list

For Event Search and Motion Search a results will will appear after you apply the search criteria. Press **ENTER** on the list to scroll through the entries shown. Your list may span several pages. Select Next Page or Prev Page to see more entries. When you have selected an entry from the list choose Play to begin video playback.

Disk Map



Disk Map search

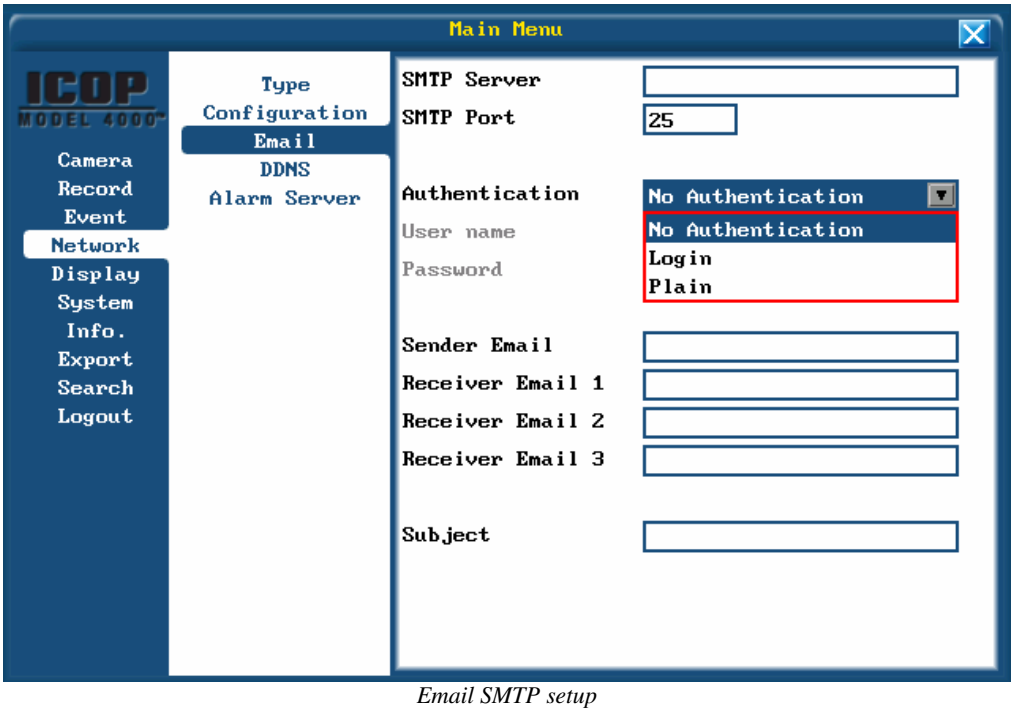
This Disk Map provides a quick graphical representation of all of the video on your DVR. Video is presented chronologically, with the earliest video on the left and most recent on the right. The legend will describe the status of the video at that particular time on a given channel. Use the Zoom feature to see more detail and find the precise start times of events shown at higher levels.

Note: The Disk Map has a limited resolution. Important video events such as alarms will be shown if they are contained in the time span represented by one slice of the Disk Map. Pressing Apply to play the video may not always begin playback at the start of the event.

Advanced Networking

Once your DVR is connected to the network you can take advantage of some more advanced network features.

Email



Email SMTP setup

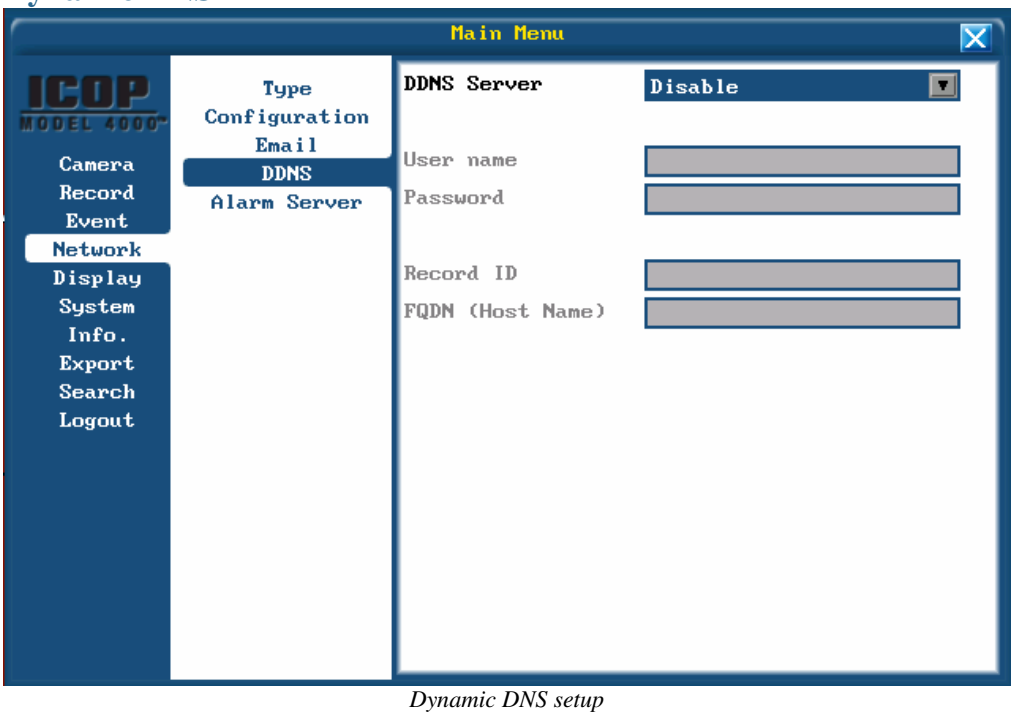
Your DVR can be configured to send email notification to up to three addressees. An SMTP server must be available to route the email.

Enter your SMTP server address in the SMTP Server setting. You have the option to change the SMTP port from the standard port 25.

Choose from one of three authentication levels; No Authentication, Login which uses Challenge-Response encryption, or Plain which sends credentials in clear text.

An optional Subject can be added which will appear on all notifications from the DVR.

Dynamic DNS



Dynamic DNS setup

In the event that the DVR is installed in a remote location, obtaining a static IP address for the unit may be difficult. Your DVR supports three Dynamic DNS service providers , DynDNS.org, TZO.com and sitelutions.com.

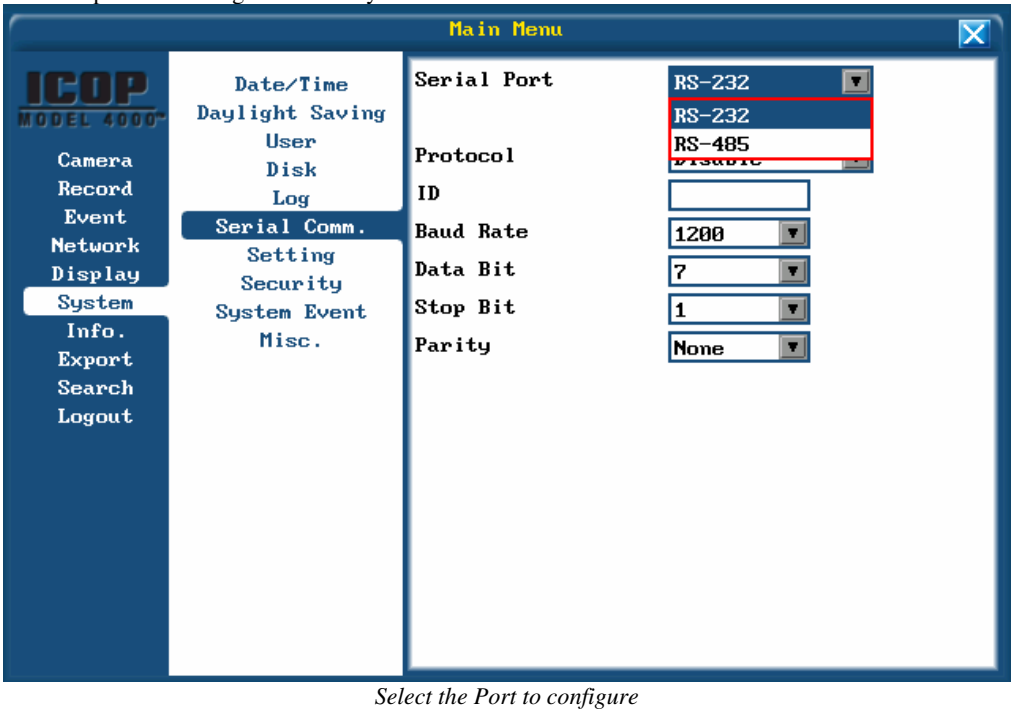
After creating your account with either of these service providers, select the provider from the DDNS Server setting, then configure the remaining settings with the details provided by your account.

Serial Peripherals

Your DVR has three serial interfaces that can be used for communication to and from the unit. The DVR has one RS-485 bus and one RS-232 port.

Settings

All three ports are configured in the System Menu under Serial Communications.



Select the Port to configure

Each port can run its own Protocol, Baud Rate, Data Bit, Stop Bit and Parity. For details on selecting the appropriate settings refer to the manual of the device you are connecting to the bus.

PTZ Dome Control

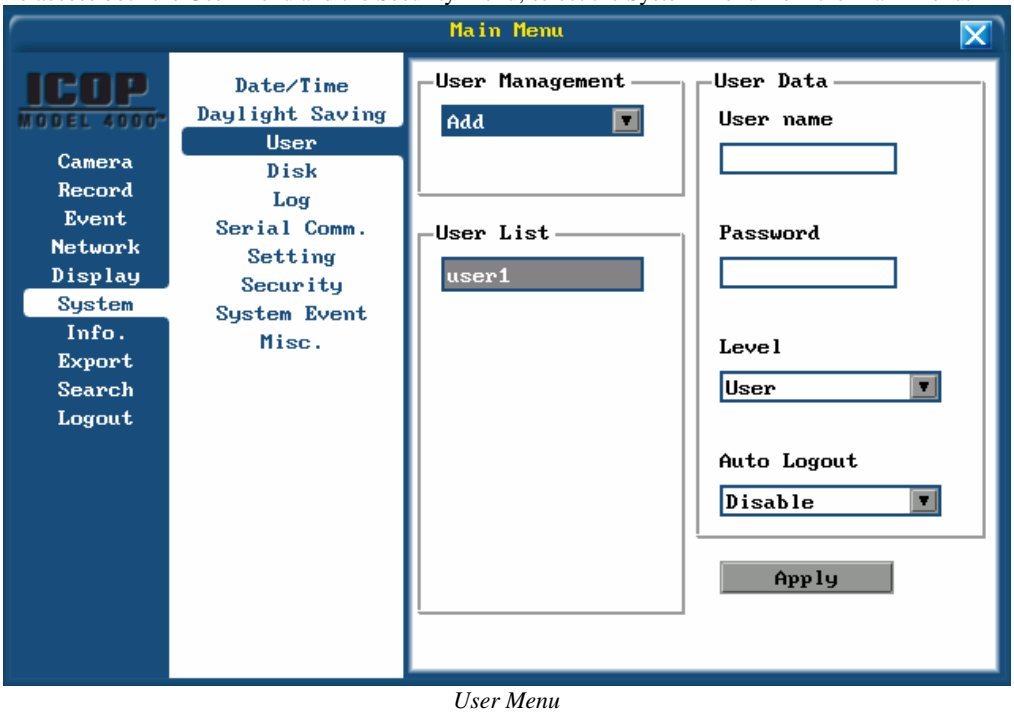
Support for controlling PTZ devices is available through both the web browser and the CMS software. This functionality is available without the use of a PTZ Keyboard on the RS-485 bus. Operating of PTZ devices is limited to basic control and does not provide for advanced programming of the PTZ device or access to controls beyond Pan, Tilt and Zoom.

To utilize this function all devices must be configured to receive commands using either the Pelco-D or Pelco-P protocols.

> ATTENTION: Some Pelco-D / -P protocol domes and receivers require an address offset of -1. If this is the case with your device the address entered in the DVR should be one less than the address configured on the device.

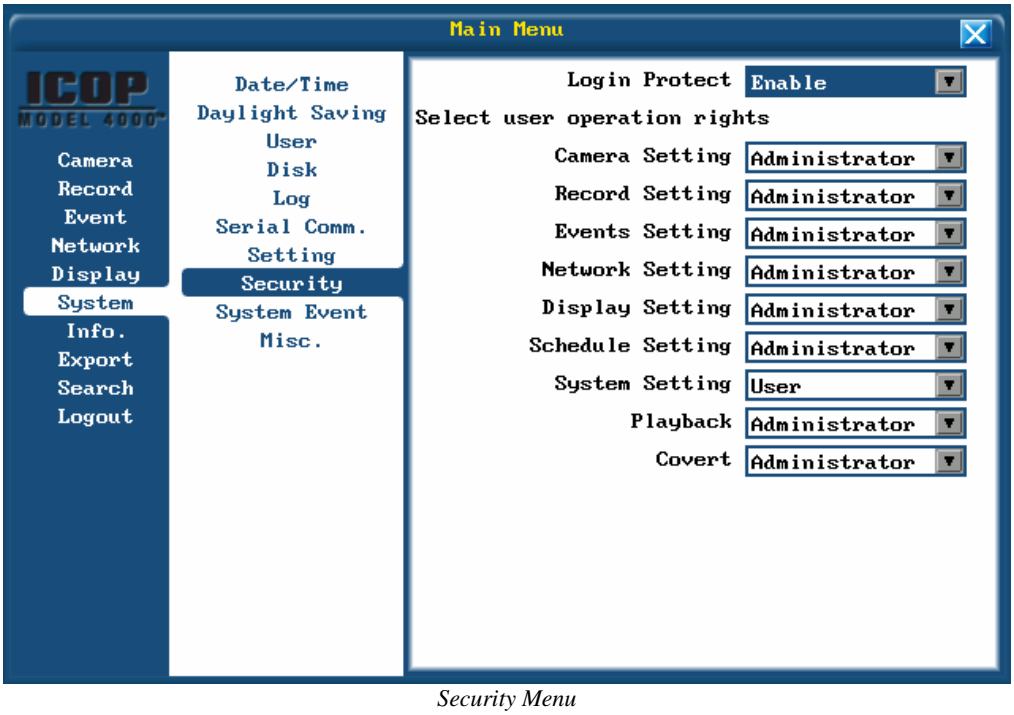
Security

Access to your DVR can be limited in two ways. The first is through User and Group accounts, the second through Access Controls to specific functions of the DVR based on Group permissions.
To access both the User Menu and the Security Menu, select the System Menu from the Main Menu.



User Menu

To Add, Edit or Disable a User, first select an operation from the User Management Drop Down. If you are adding a new user, proceed to the Username, provide the Username, Password, Security Level and an Auto-Logout time. Press Apply to add the user.
If you are editing a user, move to the user list, press **ENTER** to activate the list, scroll to the user you want to edit, confirm the selection, move to the Password, Level or Auto-Logout option to change them, pressing Apply when done to commit the changes.
If you are disabling a user, move to the user list, select the user to disable and then Apply.



Security Menu

The Security Menu allows you to determine what level of access is required to perform the listed operation. Security is determined by what Security Level a user must have to access the given menu or operation.

The three levels of User are User, Operator and Administrator. Administrator is the highest level, able to perform anything an Operator or User can. Operator is the next highest level, able to perform anything a User can. User is the most restricted level of access provided.

Permission levels effect a users ability to enter the following menus.

Camera	Individual Channel settings including recording resolution, frame rate, alarm and event record rates, and picture quality settings
Recording	Settings that apply across all channels such as marking the video or data deletion policies
Events	Setup for the behavior of Alarm Inputs, Motion Detection, and Video Loss on a per channel basis
Network	Network settings including TCP/IP setup, Email, DDNS and Port settings
Display	Toggles for what appears on the display monitors, both Main and Call, such as Camera Titles and Date & Time
Schedule	Create, review and activate Recording Schedules.

System	Configure Date & Time, Users, Serial Ports, Save and Load Settings, Factory Reset and Notifications about the operation of the DVR
Playback	Enter Playback mode and review video recorded on the DVR.
Covert	View Live and Playback channels that are set to Covert in the Camera Menu.

Web Client

Your new hard drive based Digital Video Recorder (DVR) contains a Web Server that hosts a remote client application. To use this application your DVR must be connected to the network, and your PC must meet the following system requirements.

System Requirements

	Requirement
Operating System	Windows 2000, Windows XP, or Windows Vista
Web Browser	Internet Explorer 6.0 or later
Network	LAN (10 Mbps minimum) for realtime viewing WAN (1.5Mbps and below) for time lapse viewing
System	Pentium 4 or later processor, minimum 512MB RAM
Storage	10 MB free disk space for ActiveX installation

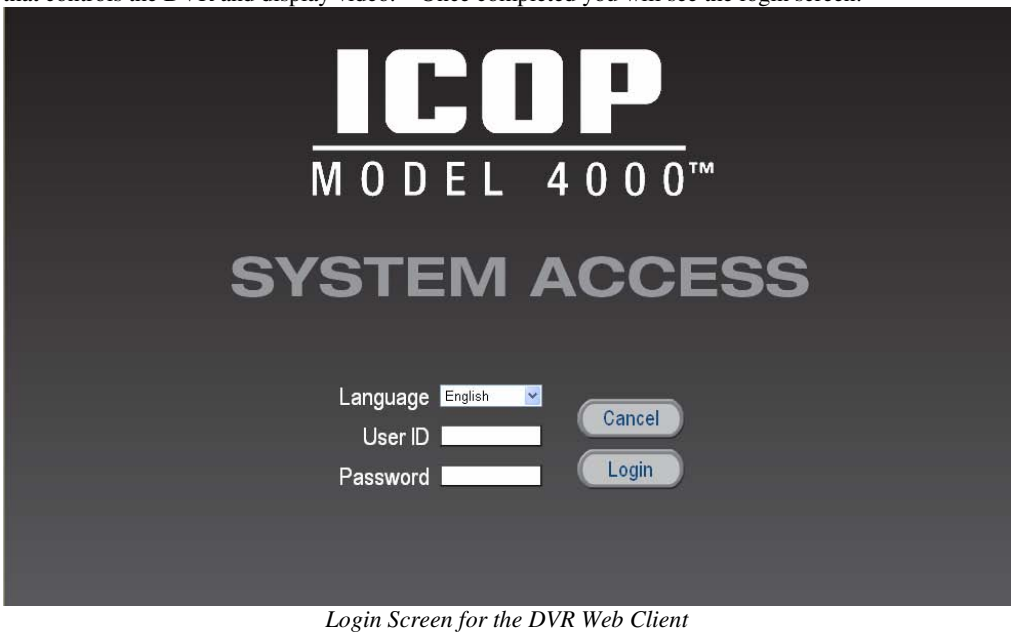
In addition, you must have sufficient permissions to install ActiveX components for use in Internet Explorer.

Note: Additional steps are required for installing ActiveX components under WIndows XP SP2 or later and Windows Vista. Please visit www.microsoft.com for details.

Recommendation: To improve the performance of network viewed video in either the Web Client or a separate application enable Dual-Streaming.

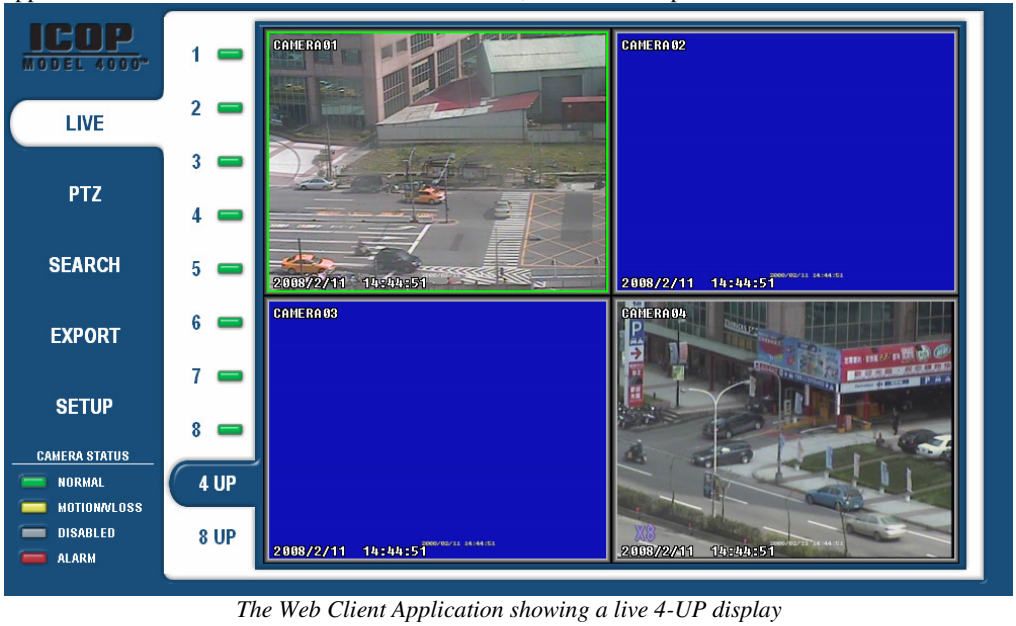
Operation

To connect to your DVR you must know the IP address assigned to it. If you are using DDNS with your DVR you can use the assigned domain name instead.
If this is your first time connecting to the DVR you will be prompted to install the ActiveX component that controls the DVR and display video. Once completed you will see the login screen.



Login Screen for the DVR Web Client

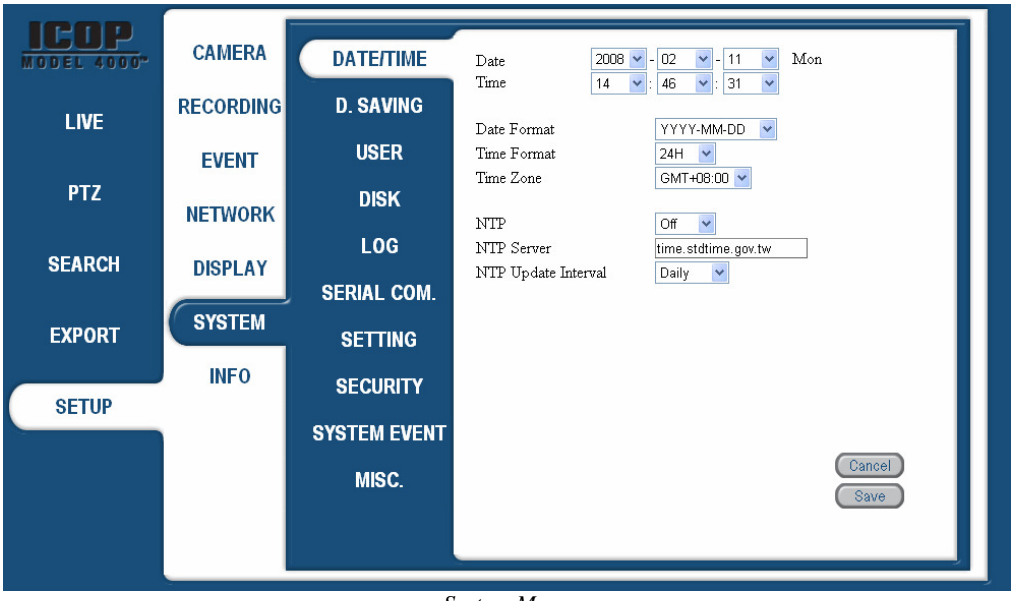
To log in enter a username and password that is in use on the DVR. If successful, the Web Client application will then load. The default user is User1, with a default password of **11111111**



The Web Client Application showing a live 4-UP display

Through the Web Client you can view live video, playback video, control PTZ cameras connected to the DVR, Search, Archive and configure the DVR through the Setup Menu.

The Web Client is designed to mimic control from the Front Panel. All menus follow the behavior of the menus on the DVR itself.



System Menu

The Web Client will also follow the Security Settings for each user account, preventing unauthorized users from modifying configuration information.

Note: Changes to settings through the Web Client effect the unit just as quickly as through the Front Panel. The one difference is that Web Client settings must be saved back to the unit from the active page. After changing settings click the Save button to commit the changes. Moving to a different section before clicking Save will cause changes to be lost.