GeoVision inc
The Vision of Security

GV-Compact DVR V2

User's Manual
Firmware V1.03

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

Every effort has been made to ensure that the information in this manual is accurate. GeoVision is not responsible for printing or clerical errors.

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Contents

Chapter 1 Introduction

The GV-Compact DVR V2 is a mobile video recorder. It can simultaneously display real-time images from four cameras. The recording frame rate of each channel is adjustable up to 30 / 25 fps at the resolution of 720 x 480 (NTSC) / 720 x 576 (PAL). You can access the four video channels either in the quad mode or single channel mode.

The Anti-Vibration model of the GV-Compact DVR V2 has already been tested to withstand severe levels of shock and vibration in mobile environments. It is perfect to be installed in any vehicles, such as buses and vans, for surveillance and recording.

The special design of the GV-Compact DVR V2 enables you to link up with TV, VGA and spot monitors simultaneously for direct display. The GV-Compact DVR V2 offers many features that you can expect to have.

1.1 Features

- Vibration and mechanical shock protection (Anti-Vibration model)
- 4-channel video and audio recording and playback
- Up to 720 x 480 (NTSC) / 720 x 576 (PAL) recording resolution
- Up to 120 images per second recording rate at D1 resolution
- VGA output in high resolution (1024 x 768)
- Independent channel resolution, quality and frame rate settings
- Video signal auto detection
- On-screen menu and Web-based control
- Display video on TV, VGA and Spot Monitor simultaneously
- Continuous, motion scheduled and input-triggered recording
- Motion detection function with 3 sensitivity values adjustable on each channel
- 4 alarm inputs, 4 relay outputs
- Buzzer alarm on video lost, input triggered, motion detected and disk full
- Retrieve video by date, time and event
- Remote playback
- Support one 3.5” or 2.5” SATA HDD (2.5” to 3.5” HDD converter required)
- Support two external USB mass storage devices
- Support USB DVD-RW for video backup
- GPS tracking (GPS module required)
- Support mobile broadband (HSDPA, UMTS, EDGE, EVDO, etc.)
- 3G Mobile Phone Surveillance
- Support central monitoring systems Center V2, VSM and Control Center
- Support geographic information system GV-GIS

1.2 Models

The GV-Compact DVR V2 has the following models:

- **Standard Model (GV-LX4C2)**

- **Anti-Vibration Model (GV-LX4C2V)**

  The GV-Compact DVR V2, equipped with vibration absorbers, can withstand severe levels of shock and vibration in mobile environments.

Caution: The standard and anti-vibration models have different internal designs. It is forbidden to connect the standard model to the vehicle power supply.

Note: The hard disk is not included in the packing list.

1.3 Packing List

If any of the items are missing or damaged, contact your dealer to arrange a replacement.

- **Standard Model (GV-LX4C2)**

• D-Type Video Cable x 1 	• D-Type Audio/TV/Spot Monitor Cable x 1 
• 1 to 4 Camera Power Cable x 1 	• Power Adaptor 12V, 5.0A x 1 • AC Power Cord x 1 • Lock Key x 2 • GV-Compact DVR V2 Remote Control x 1 • GV-Compact DVR V2 Software DVD x 1 • GV-Compact DVR V2 User's Manual x 1

- **Anti-Vibration Model (GV-LX4C2V)**

• D-Type Video Cable x 1 	• D-Type Audio/TV/Spot Monitor Cable x 1 

• 1 to 4 Camera Power Cable x 1 	• Cigarette Lighter Power Adapter x 1 
• Lock Key x 2 • GV-Compact DVR V2 Remote Control x 1 • GV-Compact DVR V2 Software DVD x 1 • GV-Compact DVR V2 User's Manual x 1	

The optional accessories contain the following items:

• External IR Receiver 	• GV-GPS 232 Receiver 
• Power Adaptor 12V, 5.0A (Optional for Anti-Vibration Model) • AC Power Cord 110-125V, 10A (Optional for Anti-Vibration Model) • 2.5" to 3.5" HDD Converter	

1.4 Options

Optional devices can expand your GV-Compact DVR V2's capabilities and versatility. Contact your dealer for more information.

External IR Receiver	The external IR receiver, with a 5-meter cable (16.4 feet), allows long-distance remote control of the GV-Compact DVR V2.
GV-GPS 232 Receiver	GV-GPS 232 Receiver, with RS-232 interface, is a Global Position System receiver. It can be applied to vehicle tracking and location verification.
2.5" to 3.5" HDD Converter	The HDD converter allows you to install a 2.5'' SATA HDD into GV-Compact DVR V2.
GV-Relay V2	Working with this module, GV-Compact DVR V2 can drive the loads of relay outputs over 5 volts.

Chapter 2 Physical Description

This section identifies the various components of the GV-Compact DVR V2, and provides the overview of the remote control.

2.1 Front Panel

Figure 2-1

No.	Name	Description
1	USB Port	The two USB ports can connect the USB storage device, Wireless LAN adaptor and/or mobile Internet device.
2	System LED	• **Power LED:** Turns on when the power is supplied. • **Ready LED:** Turns on when the unit is ready for use. • **SATA LED:** Turns on when the HDD is reading or writing data. • **Disk Full LED:** Turns on when the HDD is full.
3	IR Receiver	Receives data from the infrared remote control.
4	Reset Button	Reboots the unit, and keeps all current configurations.
5	Default Button	Sets all configurations to their factory settings. See *8.4 Restoring to Factory Default Settings*.
6	Storage Removal Button	Stops recording and removes the HDD from the system. If the unit is installed in a vehicle, ensure to press the button before turning off the ignition to protect the recorded data.
7	HDD Drive Bay	Installs the SATA hard drive for recording.
8	HDD Power LED	Turns on when the power is supplied.
9	Key Lock	Locks and unlocks the HDD drive bay.
10	HDD Activity LED	Blinks when the HDD is reading or writing data.

2.2 Rear Panel

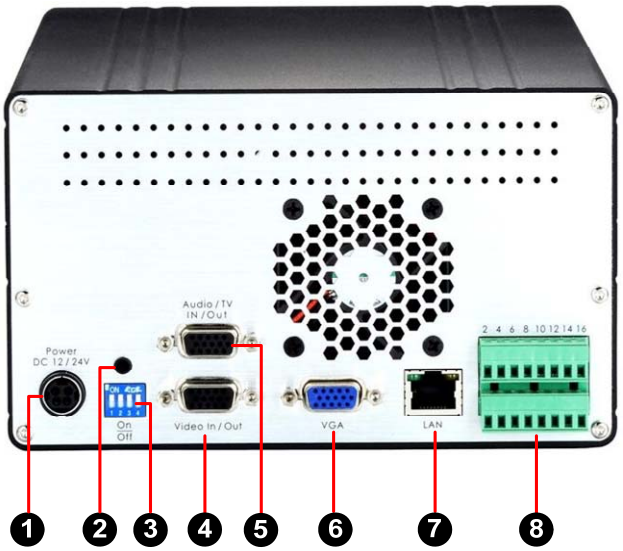


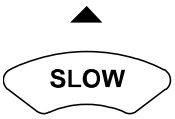
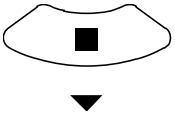
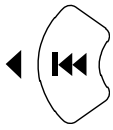
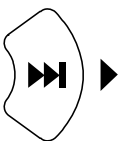
Figure 2-2

No.	Name	Description
1	DC Power Input (12V)	Connects to power supply.
2	External IR Receiver Port	Connects to the optional External IR Receiver.
3	75 Ω	When using the Loop function, please switch to Off. The default setting is On.
4	Video In/Out	• **Inputs (4 Blue Connectors/CH1-4)**: Connects to cameras. • **Outputs (4 Black Connectors/CH1-4):** Loops out each camera input to monitors.
5	Audio/TV In/Out	• **TV Output (1 Black Connector/QUAD):** Connects to a TV monitor. • **Spot Monitor Output (1 Black Connector/MUX):** Connects to a spot monitor to display video sequentially from each video input. • **Audio Inputs (4 White Connectors/MIC1-4):** Connects to microphones. • **Audio Output for playback (1 Red Connector/ SPK-OUT):** Connects to speakers. Note the audio output only works during playback or when receiving callback audio.
6	VGA Monitor Port	Connects to a PC monitor.
7	LAN Port	Connects to the network.
8	I/O Terminal Block	Connects to input and output devices, PTZ cameras, GPS module and etc. For details see *Chapter 10 The I/O Terminal Block*.

2.3 Remote Control

The GV-Compact DVR V2 Remote Control is provided to configure and operate the GV-Compact DVR V2.

Figure 2-3

Button	Description
	Stops recording.
	Starts recording.
	**OSD menu:** Moves the focus upward to the desired item. **Playback:** Decreases the speed of playback.
	**OSD menu:** Moves the focus downward to the desired item. **Playback:** Stops playback.
	**OSD menu:** Moves the focus leftward to the desired item; moves to the previous page. **Playback:** Plays the video backward at different speeds (2x, 4x, 8x, 16x and 32x).
	**OSD menu:** Moves the focus rightward to the desired item; moves to the next page. **Playback:** Plays the video forward at different speeds (2x, 4x, 8x, 16x and 32x).

	**OSD menu:** Enters the menu option and confirms the selection. **Playback:** Plays or pauses video.
	Switches to Channel 1 or I/O device 1.
	Switches to Channel 2 or I/O device 2.
	Switches to Channel 3 or I/O device 3.
	Switches to Channel 4 or I/O device 4.
QUAD 	Switches to the screen of 4 divisions.
ZOOM 	Zooms in or out.
SEARCH 	Calls up the menu of SEARCH/PLAYBACK.
 ENTER	Confirms the menu selection.
MENU 	Calls up the main menu.
 CANCEL	Quits the menu selection or exits the menu.
A / B / C **Device Type**	Switches the device type for the control of GV-Compact DVR V2. To set the device type of the GV-Compact DVR V2, see *IR TYPE*, *4.8.4 Display Settings*.

Chapter 3 Getting Started

Getting started with the GV-Compact DVR V2 consists of the following steps:

3.1 Connection

Install the video display devices to the unit.

3.2 Installing Hard Drive

Install a hard drive for video recording.

3.3 Turning on and off the Power

Turn on and off the unit.

3.4 Formatting Hard Drive

Format the hard drive before recording.

3.5 Main Screen Overview

Access the system information on the main screen.

3.6 Basic Operation

3.1 Basic Connection

The following instructions describe the basic connection to the GV-Compact DVR V2.

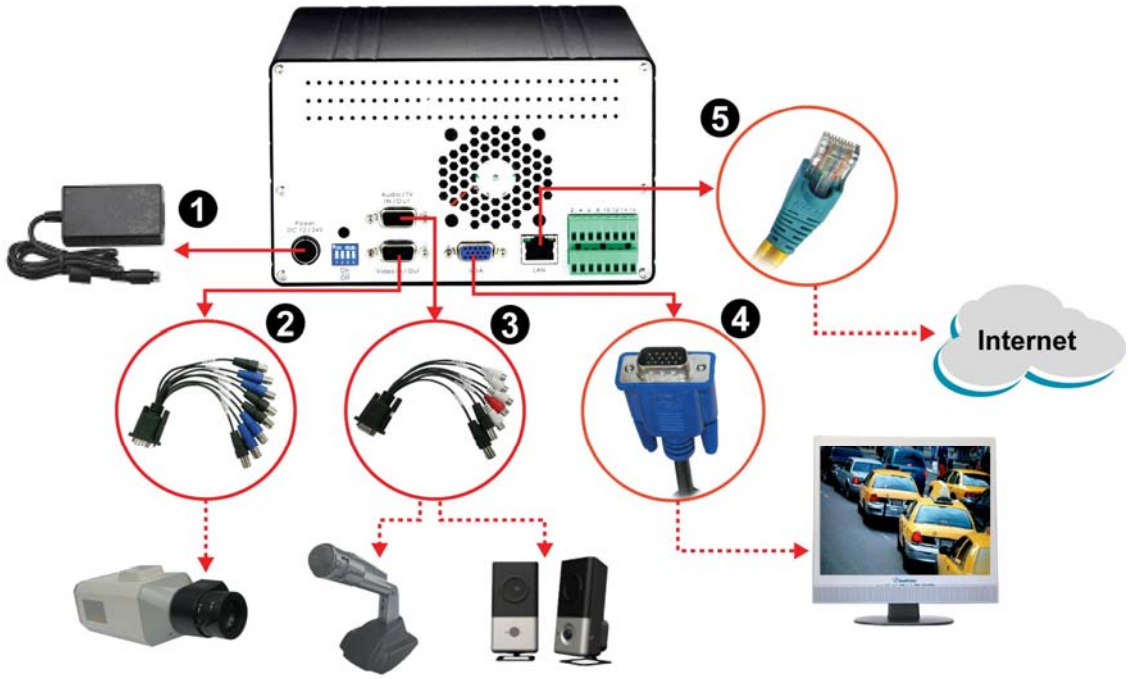


Figure 3-1

1. Connect power. Using the supplied power adaptor, connect to the power.
2. Connect video input. Using the blue connectors of the supplied D-Type Video Cable, connect to cameras.
3. Connect audio input and output. Using the supplied D-Type Audio/TV/Spot Monitor Cable, connect to microphones and a speaker. Connect microphones to the four white connectors of the cable, and a speaker to the red connector.
4. Connect video output. There are two options:
   - Using the black connector (QUAD) of the supplied D-Type Audio/TV/Spot Monitor Cable, connect to the **TV monitor**.
   - Using the VGA cable supplied by the monitor manufacturer, connect to the **VGA monitor** (as illustrated in the figure).
5. If networking the system, use the standard RJ-45 cable to connect to the unit.

Note:

1. To set the video resolution on the VGA monitor, see VGA SETTINGS, *4.8.4 Display Settings*..
2. The GV-Compact DVR V2 cannot work with the microphone that acquires power from the unit. Use the microphone that has external power supply.

3.1.1 Connecting Vehicle Power Supply

The connections described here are for the anti-vibration model. Using the supplied Cigarette Lighter Power Adaptor, connect one end to the DC power input on the GV-Compact DVR V2 and the other end to a car's cigarette lighter socket. The car battery will supply power to the unit.

You can also use the supplied Camera Power Cable to power on your cameras through the vehicle power supply. For details on connecting the Camera Power Cable to the I/O terminal block on the unit, see *12.3 Camera Power Supply*.

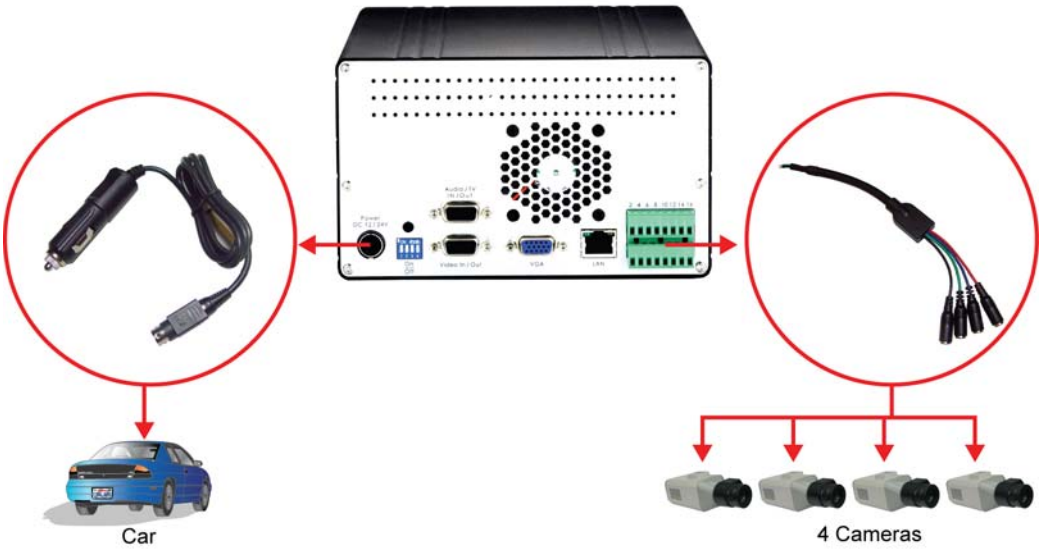


Figure 3-2

Note:

1. The standard and anti-vibration models have different internal designs. It is forbidden to connect the standard model to the vehicle power supply.
2. The Camera Power Cable can also be applied on the standard model.

3.1.2 Connecting Optional Video Output Devices

The GV-Compact DVR V2 offers the looping video output for 4 monitors. The GV-Compact DVR V2 also offers the spot monitor output to display video sequentially from each video input.

For the settings of the spot monitor, see *4.8.5 Spot Monitor Settings.*

Note: To loop out videos, turn the 75 Ω switch to OFF position. See No. 2, Figure 2-2.

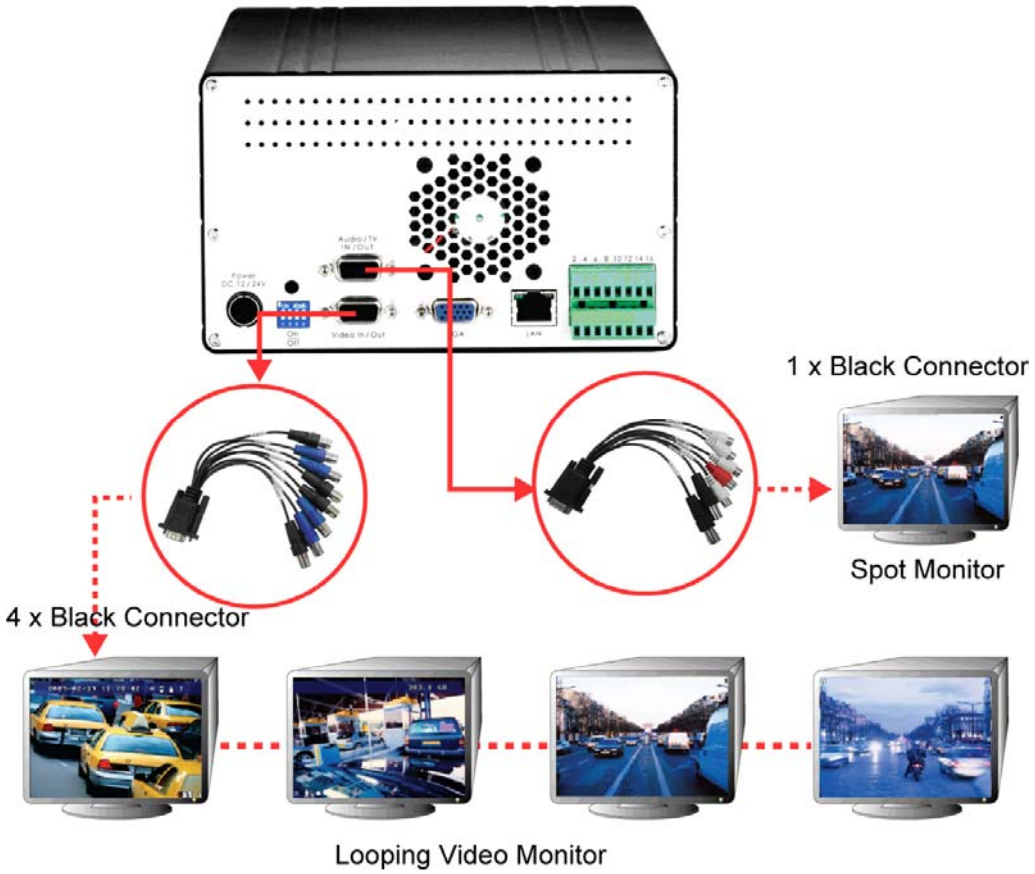


Figure 3-3

3.2 Installing Hard Drive

The GV-Compact DVR V2 comes equipped with a 3.5” SATA hard drive bay for video recording. Follow these steps to install the hard drive.

1. Make sure the unit is powered off.
2. For users of the **standard** model, open the door of drive bay, push the hard drive inside, and close the door.

Figure 3-4

3. For users of the **anti-vibration** model, pull out the drive drawer, insert the hard drive in the drawer, secure the hard drive with the 4 supplied screws, and push the drawer back in the drive bay of the unit.

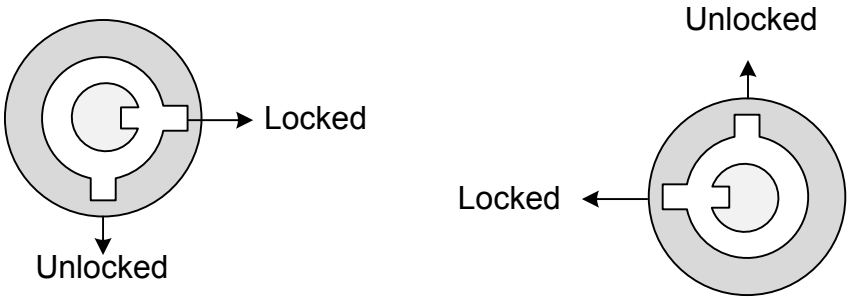
Figure 3-5

4. For users of the **2.5” SATA hard drive**, you need the optional accessory of a HDD Converter to enclose your 2.5” hard drive.

Figure 3-6

- For users of the standard model, push the Converter installed with a 2.5” hard drive back in the drive bay of the unit, and close the door.
- For users of the anti-vibration model, insert the Converter installed with a 2.5” hard drive into the pull-out drive drawer, secure the Converter with the 4 supplied screws, and push the drive drawer back in the drive bay of the unit.

5. Lock the drive bay with the supplied key.



Standard Model **Anti-vibration Model**

Figure 3-7

Note:

1. The product does not support hot swap. Please power off the unit before removing the hard drive.
2. Please remove the hard drive only after power was shut off for more than 60 seconds. This would protect and extend the operating life of the hard drive.

3.3 Turning On / Off the Power

3.3.1 Turning On the Power

1. Connect the GV-Compact DVR V2 to the power. Both the **Power LED** and **HDD Power LED** should turn on.
2. The system starts initializing for several seconds. After this, the **Ready LED** will turn to green and the main screen with 4 channels will be displayed.

If the GV-Compact DVR V2 is connected to a vehicle power supply, the unit will automatically start once you turn on the vehicle ignition. Power is supplied to the unit as long as the vehicle ignition is on.

Note: If any video is lost after startup, the buzzer will start beeping. To stop beeping, press any button on the Remote Control.

3.3.2 Turning Off the Power

Before unplugging the power cable, ensure both the **SATA LED** and **HDD Activity LED** turn off; otherwise, the recorded data may be lost.

If the GV-Compact DVR V2 is installed in a vehicle, you can press the **Storage Removal** button on the front panel for five seconds to stop recording and remove the hard drive from the system.

3.4 Formatting Hard Drive

The GV-Compact DVR V2 is a Linux-based system. You must follow the steps below to format the hard drive before recording.

1. Press the **Menu** button on the Remote Control to enter the main menu.
2. Select **ADVANCED**, select **STORAGE SETTINGS**, and then select **STORAGE MANAGEMENT**. The model name of the connected hard drive appears.

Figure 3-8

3. Move the focus to **DETAIL**, select **FORMAT** and press the ⏯ button. You will be prompted to confirm the action.
4. Select **YES** and press the ⏯ button to start formatting. The format progress will appear in the top right of the screen, e.g. “PART 1: 94/100”. When the format is complete, the amount of free disk space will be displayed.

Note:

1. The maximum space of one partition is 200 GB.
2. The connected USB mass storage device must also be formatted according to above instructions before use.

3.5 Main Screen Overview

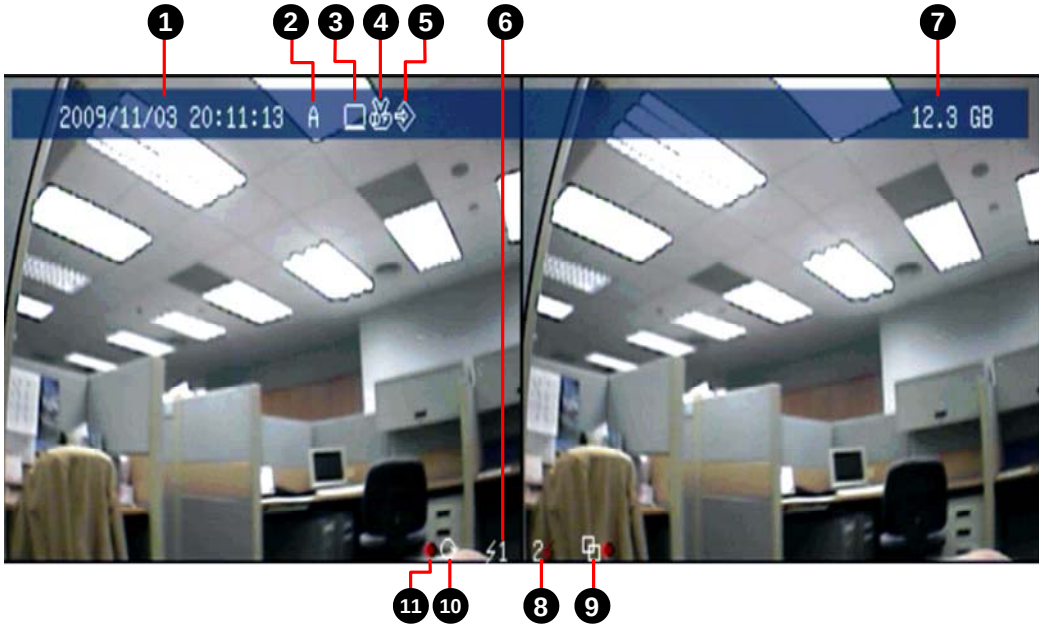


Figure 3-9

1. **Date and time:** Indicates the current date and time when viewing live video.
2. **A / B / C:** Indicates the type of device defined for the GV-Compact DVR V2.
3. **Monitoring icon** : Appears when the monitoring is activated.
4. **Manual recording icon** or **Schedule recording icon** : Appears when the recording is started manually or by schedule.
5. **Input icon** : Appears when the input device is installed and activated.
6. **Channel number/Camera name:** Displays the camera number or name.
7. **Hard disk status:** Indicates the amount of free space on the hard disk. When the disk is full, the status will turn to red.
8. **Motion icon** : A red icon indicates movement occurs in the video image. A white icon indicates no movement detected.
9. **Motion detection mode icon** : Appears when the camera is set to the recording mode of motion detection.
10. **Round-the-clock mode icon** : Appears when the camera is set to the recording mode of round-the-clock.
11. **Recording icon** : Appears when the monitoring is started. A red icon indicates the image of the camera is being recorded.

3.6 Basic Operation

This section describes the basic operation of the GV-Compact DVR V2.

3.6.1 Date/Time Adjustment

It is recommended that you enter the current date and time before start recording so that the correct date and time is associated with all videos.

- To adjust the date and time, press the **Menu** button on the Remote Control, select **ADVANCED** and then select **DATE AND TIME**. For details, see *4.8.1 Date and Time*.

3.6.2 Recording Operation

Before start recording, configure the recording settings properly according to your needs.

- To start recording, press the **REC** button on the Remote Control to record video onto the hard drive with the corresponding programmed recording settings. The RED recording icon  will appear on the corresponding camera screen. The **SATA LED** and **HDD Activity LED** lights will be blinking, indicating the GV-Compact DVR V2 is in recording mode.

- To stop recording, press the **Stop** button on the Remote Control at any time.

To	Steps
Set the recording mode	**Press the Menu button and select MONITORING SETTINGS.**
Activate the audio recording	1. Press the **Menu** button, select **CHANNEL SETTINGS**, press one **Channel** button (Ch1 - CH4), and select **VIDEO/AUDIO SETTINGS**. 2. Select **AUDIO RECORDING**, change OFF to **ON**.
Set the recording schedule	1. Press the **Menu** button, select **RECORDING SCHEDULE**, and select one of scheduling methods. See *4.5 Recording Schedule.* 2. To start scheduled recording, press the **Menu** button, select **MONITORING SETTINGS**, change MONITORING MODE to **SCHEDULE,** and then select **START**.
Set the pre-recording and post-recording	**Press the Menu button, select CHANNEL SETTINGS, press one Channel button (Ch1 - CH4), and select ALARM SETTINGS.**

3.6.3 Search/Playback Operation

To access the recorded video for playback, press the **Search** button to have several search and playback options. For details, see *4.6 Search/Playback*.

3.6.4 PTZ Operation

To install the PTZ camera, press the **Menu** button on the Remote Control, select **CHANNEL SETTINGS**, press one **Channel** button (CH1 - CH4), and then select **PTZ Settings**. For details, see *4.1.7 PTZ Settings*.

To control the PTZ movement, press the **Channel** button to display the PTZ channel, and use directional buttons to control the PTZ.

3.6.5 Channel Number and Camera Name

To display the channel number or camera title, see *4.8.4 Display Settings*. To change the camera name, *see 4.1.1 Channel Name*.

Chapter 4 OSD Menu Configurations

The GV-Compact DVR V2 is configured through a series of menus on screen by using the Remote Control. This section describes the functions and options in the on-screen display (OSD) menus. To enter the main menu, press the **Menu** button on the Remote Control. Eight submenus will appear as shown below.

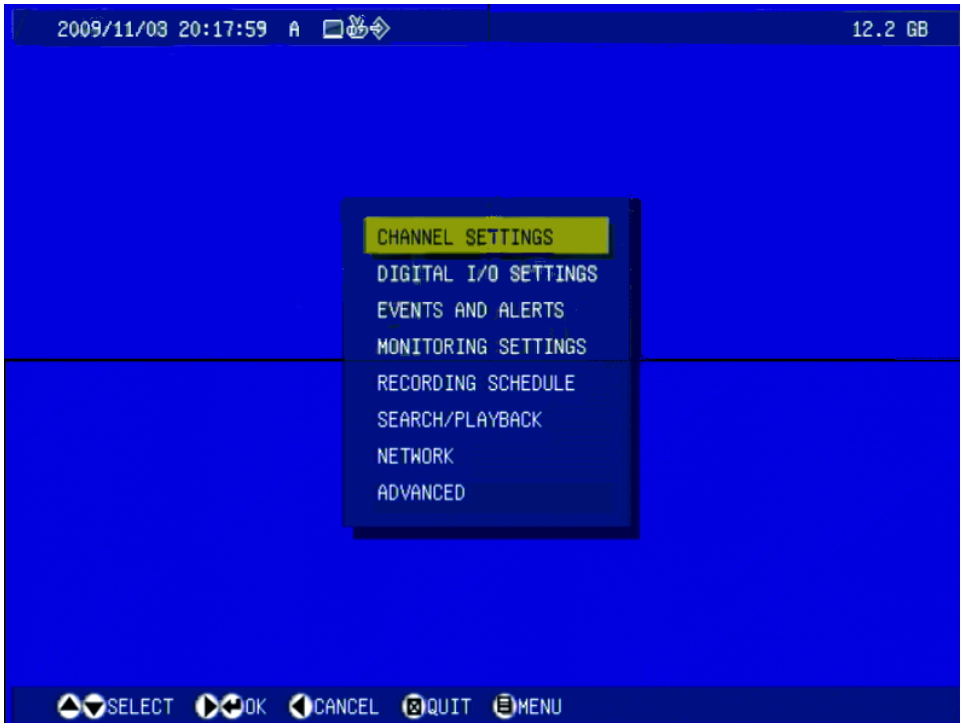


Figure 4-1

Note: A few of functions are only available in web-based configurations. For the functions of IP filtering and Visual Automation, see *Chapter 6 Remote Configurations*.

List of Main Menu Options

Find the topic of interest by referring to the section number prefixed to each option.

4.1 Channel Settings

In Channel Settings, you can adjust the device settings for each channel.

To set up a channel, press the **Menu** button on the Remote Control, select **CHANNEL SETTINGS**, press one **Channel** button, and select one of the setting options. These setting options are described in the following.

4.1.1 Channel Name

Enter a descriptive name for the channel by using the on-screen keypad. Select **OK** from the on-screen keypad to save your settings.

Figure 4-2

4.1.2 Video/Audio Settings

You can adjust the audio and video settings for the selected channel. Select **APPLY TO ALL** to apply the same settings to all four channels.

Figure 4-3

- **VIDEO RESOLUTION:** Select the video resolution from 720 x 480, 720 x 240, 360 x 240, 360 x 240 3GPP v7 for NTSC format; or 720 x 576, 720 x 288, 360 x 288 and 360 x 288 3GPP v7 for PAL format.
- **VIDEO FRAME RATE:** Select the frame rate from 2, 3, 5, 7.5, 10, 15 and 30 fps.
- **VIDEO QUALITY:** Select the recording quality at 3 different levels from FAIR, GOOD and EXCELLENT.
- **AUDIO RECORDING:** Enable the audio recording.
- **AUDIO VOLUME:** Select the audio volume from 0 to 14. Volume 7 is the default value.

4.1.3 Motion Detection

Motion detection is used to generate an alarm whenever movement occurs in the video image. You can configure up to 8 areas of different sensitive values for motion detection.

1. Select **MOTION DETECTION**. This screen appears. The default sensitivity value is 2 for the whole area.

Figure 4-4

2. To start motion detection settings, press the ⏯ button.
3. To clear the default settings, press the **Stop** button. The message “NO BOXES EXIST” appears.
4. To define one detection area in the image, press the ⏯ button.

Figure 4-5

5. Press the directional buttons to place the detection area, and press the ⏯ button.
6. Press the directional buttons to modify the size of the detection area, and press the ⏯ button.

Figure 4-6

7. Select **SENSITIVITY** value from Low (1), Medium (2) and High (3), and press the ⏯ button. The higher the value, the more sensitive the detection area is to motion.

Figure 4-7

8. Press the **REC** button to save the settings.
9. To define another detection area with a different sensitivity value, select **MOTION DETECTION** again, press the ⏯ button, press the **Enter** button, and repeat Steps 4-8.

4.1.4 Motion Trigger Output Settings

The alarm output can be triggered simultaneously when motion is detected. To activate the output settings, you must also start monitoring manually or by schedule. See *4.4 Monitoring Settings*.

Figure 4-8

4.1.5 Alarm Settings

You can capture images before and/or after a motion and an I/O event happens.

Figure 4-9

- **PRE-ALARM BUFFER:** Activate video recording before an event occurs. Set the recording time to 1 or 2 seconds.
- **POST-ALARM RECORDING:** Activate video recording onto the hard disk after an event occurs. Set the recording time from 1 to 30 seconds.
- **SPLIT INTERVAL:** Set the time length between each event file from 1 to 5 minutes.

4.1.6 Camera Settings

You can modify the video attributes of brightness, contrast, saturation and hue.

Figure 4-10

4.1.7 PTZ Settings

Through the RS-485 interface on the I/O terminal block, you can connect up to 4 PTZ cameras. To set up the baud rate, speed and address, consult your PTZ documentation.

Figure 4-11

Note: Currently the GV-Compact DVR V2 does not support the PTZ camera with RS-232 interface.

4.1.8 PTZ Control

After setting up the PTZ camera, you can press the **Channel** button on the remote Control to display the PTZ channel. Use the directional buttons to control the PTZ movement. Press the **Menu** button to access advanced functions. The availability of certain PTZ functions depends on different models. For details, consult your PTZ documentation.

Figure 4-12

4.2 Digital IO Settings

The I/O terminal block, on the rear panel of the GV-Compact DVR V2, provides the interface for the applications of digital input, relay output and GPS.

4.2.1 Digital Input Settings

The GV-Compact DVR V2 can connect up to 4 input devices. To select one input device for setup, press the desired **Channel** button on the Remote Control.

Figure 4-13

- **STATE:** Enable the selected input.
- **NAME:** Enter a descriptive name for the input device.
- **NORMAL STATE:** Set the input state to OPEN CIRCUIT (normally open) or GROUNDED CIRCUIT (normally closed).
- **LATCH MODE:** Enable this mode to have a momentary output alarm.
- **TRIGGER RELAY:** Select the output(s) to be triggered once the input is activated.
- **RECORD:** Select the camera(s) to start recording once the input is activated.
- **CV2 Alert:** Select the camera(s) to send their images to Center V2 when the input is triggered.

Also see *6.2.2 Input/Output Settings* of the web-based configuration which provides more information and features of the digital input settings.

4.2.2 Digital Output Settings

The GV-Compact DVR V2 can connect up to 4 output devices. To select one output device for setup, press the desired **Channel** button on the Remote Control.

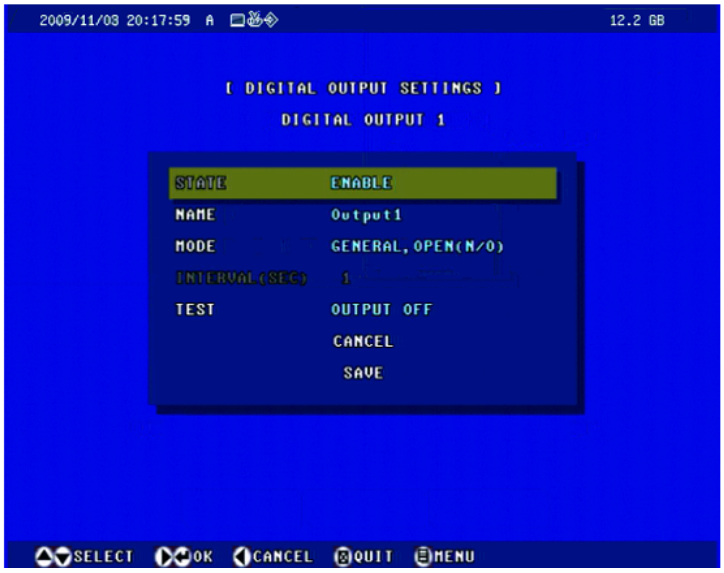


Figure 4-14

- **STATE:** Enable the selected output.
- **NAME:** Enter a descriptive name for the output device.
- **MODE:** Set the output mode to GENGERAL, OPEN (N/O); GENERAL, GROUNDED (N/C); TOGGLE, OPEN (N/O); TOGGLE, GROUNDED (N/C); PULSE, OPEN (N/O); PULSE, GROUNDED (N/C).
- **INTERVAL:** Specify the pulse duration for the pulse mode from 1 to 60 seconds.
- **TEST:** After finishing the above settings, select this option to see if the output device has response.

Also see *6.2.2 Input/Output Settings* of the web-based configuration which provides more information and features of the digital output settings.

4.2.3 GPS Settings

The GV-Compact DVR V2 supports the Global Position System (GPS) for active vehicle tracking and location verification. The vehicle location will be tracked on Google maps.

Figure 4-15

- **STATE:** Enable the GPS function.
- **BAUD RATE:** Two baud rate options are available: 4800 and 9600. By default the value is 9600.
- **UPDATE PERIOD:** Set the update frequency in seconds for GPS data.

Also see *6.2.3 GPS* of the web-based configuration which provides more information and features of the GPS settings.

4.3 Events and Alerts

For the events of motion detection or I/O trigger, you can set up these trigger actions:

1. Send a captured still image by e-mail or FTP.
2. Notify Center Monitoring Station, Center V2, VSM or GV-GIS, by video or text alerts.

To have above trigger actions, you must also set the following features:

- Motion Detection (See *4.1.3 Motion Detection)*---optional
- Input Setting (See *4.2.1 Digital Input Settings*)
- For e-mail and FTP alerts, it is required to start monitoring (see *4.4 Monitoring Settings*)

Note: The Motion Detection function is an optional setting since it is activated by default.

4.3.1 E-mail

After a trigger event, the GV-Compact DVR V2 can send the e-mail to a remote user containing a captured still image.

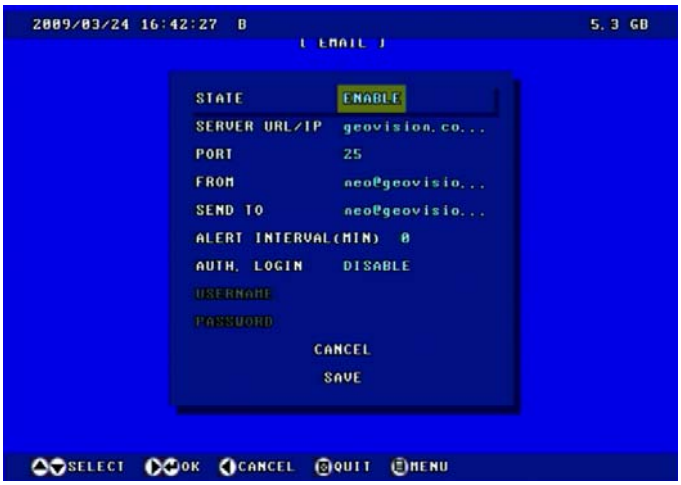


Figure 4-16

- **STATE:** Enable the e-mail function.
- **SERVER URL/IP:** Enter the URL or IP address of the SMTP server.
- **PORT:** Enter the SMTP server's port number. Or keep the default value 25.
- **FROM:** Enter the sender's e-mail address.
- **SEND TO:** Enter the e-mail address(s) you want to send alerts to.

- **ALERT INTERVAL:** Enter the interval between e-mail alerts. The interval can be between 0 and 60 minutes. The option is useful for the frequent event condition. It will ignore any event triggers during the interval period.
- **AUTH LOGIN:** If the SMTP server needs authentication, enable this option and enter the valid username and password.

Also see *6.3.1 E-mail* of the web-based configuration which provides more information and features of the e-mail settings.

4.3.2 FTP

You can also send the captured still image to a remote FTP server for alerts.

Figure 4-17

- **FTP CLIENT MODE:** Enable the FTP function.
- **SERVER URL/IP:** Enter the host name or IP address of the FTP Server.
- **PORT:** Enter the port number of the FTP Server. Or keep the default value 21.
- **USERNAME:** Enter a valid user name to log into the FTP Server.
- **PASSWORD:** Enter a valid password to log into the FTP Server.
- **REMOTE DIR:** Enter the name of the storage folder on the FTP Server.
- **FTP SERVER MODE:** Enable the GV-Compact DVR V2 to act as a FTP Server, allowing users to download the AVI files.
- **PORT:** Modify the port of the built-in FTP Server. Or keep the default value 21.

Also see *6.3.2 FTP* of the web-based configuration which provides more information and features of the FTP settings.

4.3.3 Center V2

After a motion or an I/O triggered event, the central monitoring station Center V2 can get notified by live videos and text alerts. For the monitoring through Center V2, you must already have a subscriber account on Center V2.

Figure 4-18

- **ACTIVATE LINK:** Enable the monitoring through Center V2 for alert events.
- **HOSTNAME/IP:** Enter the host name or IP address of Center V2.
- **PORT:** Enter the port matching the **Port 2** on Center V2. Or keep the default value 5551. Refer to *11.1 Center V2.*
- **USERNAME:** Enter a valid user name to log into Center V2.
- **PASSWORD:** Enter a valid password to log into Center V2.

Also see *6.3.3 Center V2* of the web-based configuration which provides more information and features of the Center V2 connection.

4.3.4 VSM

After a motion or an I/O triggered event, the central monitoring station VSM can get notified by text alerts. For the monitoring through VSM, you must already have a subscriber account on VSM.

Figure 4-19

- **ACTIVATE LINK:** Enable the monitoring through VSM for alert events.
- **HOSTNAME/IP:** Enter the host name or IP address of VSM.
- **PORT:** Enter the port matching the **Port 2** on VSM. Or keep the default value 5609. Refer to *11.2 VSM*.
- **USER NAME:** Enter a valid user name to log into VSM.
- **PASSWORD:** Enter a valid password to log into VSM.

Also see *6.3.4 VSM* of the web-based configuration which provides more information and features of the VSM connection.

4.3.5 GV-GIS

Through the Internet connection, the GV-Compact DVR V2 equipped with the GPS device can send GPS data and live video to the GV-GIS (Geographic Information System) for the services of vehicle tracking, location verification and live monitoring.

Figure 4-20

- **ACTIVATE LINK:** Enable the monitoring through GV-GIS.
- **HOSTNAME/IP:** Enter the host name or IP address of GV-GIS.
- **PORT:** Enter the port matching that on GV-GIS. Or keep the default value 5609.
- **USER NAME:** Enter a valid user name to log into GV-GIS.
- **PASSWORD:** Enter a valid password to log into GV-GIS.

Also see *6.3.5 GV-GIS* of the web-based configuration which provides more information and features of the GV-GIS connection.

4.3.6 GV-Video Gateway

You can send the video images to the GV-Video Gateway.

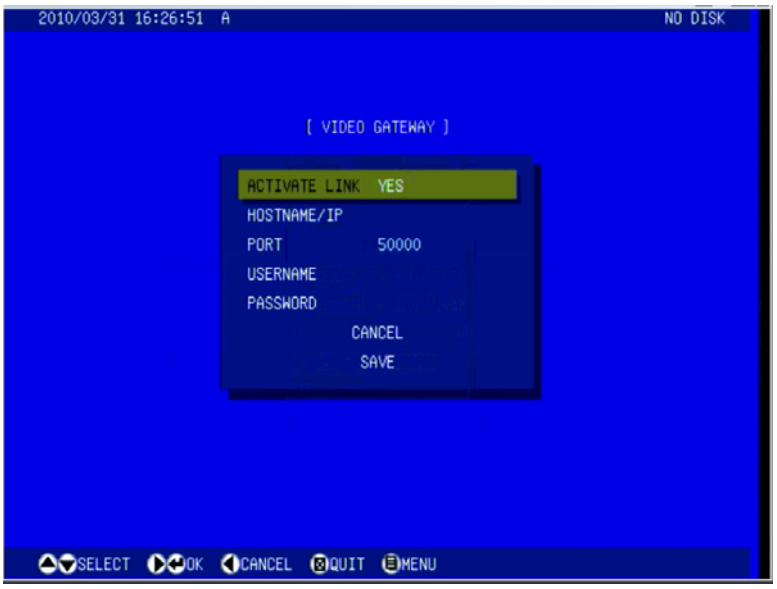


Figure 4-21

- **Activate Link:** Enable the connection to the GV-Video Gateway.
- **HOSTNAME/IP:** Enter the host name or IP address of GV-Video Gateway.
- **PORT:** Enter the port matching that on GV-Video Gateway. Or keep the default value 50000.
- **USER NAME:** Enter a valid user name to log into GV-Video Gateway.
- **PASSWORD:** Enter a valid password to log into GV-Video Gateway.

Also see *6.3.6 GV-Video Gateway* of the web-based configuration which provides more information and features of the GV-Video Gateway connection.

4.3.7 Remote Playback

You can remotely access the recorded files saved at the GV-Compact DVR V2 and play video back with the ViewLog player.

Select **YES** to activate the remote playback server built in the unit. Keep the default port 5552 or modify it if necessary. For details on the remote playback, see *7.2.2 Playback over Network*.

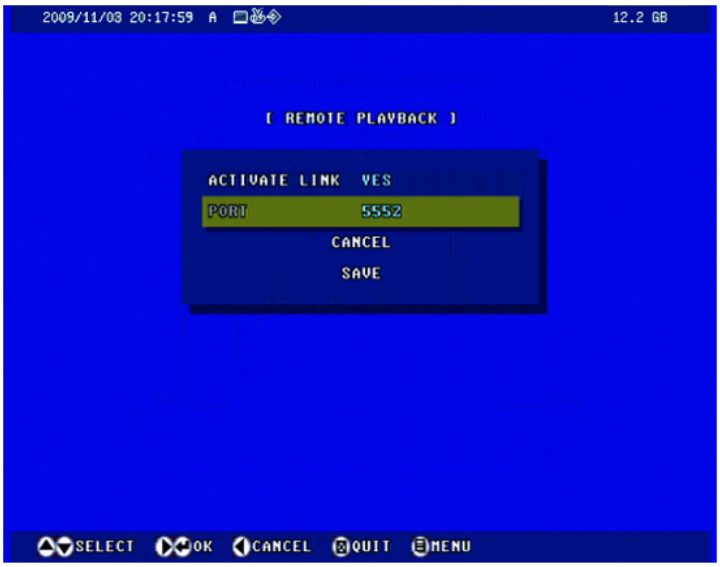


Figure 4-22

4.3.8 3GPP

The 3GPP server enables video and audio streaming to your 3G-enabled mobile phone. After enabling the 3GPP server, you can receive live video streaming from the GV-Compact DVR V2 by entering the IP address (domain name) and password of the GV-Compact DVR V2 on the 3G-enable mobile phone. See *Chapter 9 Mobile Phone Surveillance*.

Figure 4-23

- **ACTIVATE LINK:** Enable the 3GPP service.
- **RTSP/TCP PORT:** Keep the default value 8554, or modify it if necessary.
- **RTP/UDP PORT:** Keep the default range from 17300 to 17319, or modify it if necessary. The number of ports for use is limited to 20.
- **MAX CONNECTION:** Set the maximum number of connections to the GV-Compact DVR V2. The maximum value is 20.

Note: Currently the 3GPP application doesn't support the remote playback function.

4.4 Monitoring Settings

You can start recording manually, by schedule or by input trigger.

Figure 4-24

- **MONITORING MODE:**
  - Select **MANUAL** to manually start recording or I/O monitoring. If you choose this option, configure the following item **CHANNEL (CH 1 – CH 4)** or **INPUT**.
  - Select **SCHEDULE** to start recording and I/O monitoring by the schedule you set up. To configure recording schedule, see *4.5 Recording Schedule*.
- **CHANNEL (CH 1 - CH 4):** Available only in MANUAL monitoring mode. Select the desired channel, and set its recording mode to motion detection or round-the-clock. You can also select to turn off the channel.
- **INPUT:** Available only in MANUAL monitoring mode. Select **ON** to start I/O monitoring manually. When the input is triggered, its associated cameras and outputs will also be enabled for recording and alerting. For input settings, see *4.2.1 Digital Input Settings*.
- **START MONITORING BY:** Start monitoring with a triggered input. When the assigned input is triggered, the system will response based on your settings in either **MANUAL** or **SCHEDULE** monitoring mode.
- **STOP MONITORING BY:** Stop monitoring with a triggered input. When the assigned input is triggered, the system will stop monitoring.

To start monitoring or recording:

- Select **START**. The unit will start monitoring based on your above settings: record immediately, only record on the scheduled time, or record by an input trigger.. –OR-
- Select **SAVE** to save the monitoring settings. Then press the **REC** button on the Remote Control at any time to start your monitoring settings.

Also see *6.4 Monitoring* of the web-based configuration which provides more information and features of the monitoring settings.

4.5 Recording Schedule

The schedule is provided to activate recording and I/O monitoring on a specific time each day.

4.5.1 Specific Day

The system will operate automatically on the specific days you have scheduled. Press the ⏯ button on the Remote Control to start setting and then use the directional buttons to define the days. To enable the camera and I/O monitoring on the defined days, see **SPECIFIC DAY** options in *4.5.2 Channel Schedule* and *4.5.3 I/O Monitoring Schedule*.

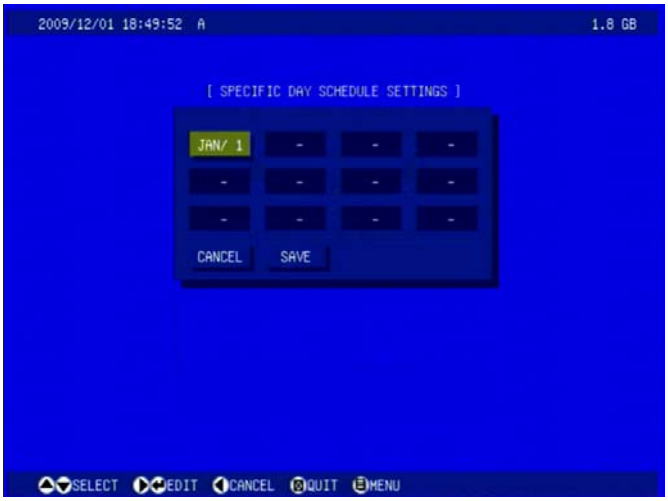


Figure 4-25

4.5.2 Channel Schedule

You can set up different monitoring schedules for each camera. Press the **Channel** button on the Remote Control to select one channel for setup.

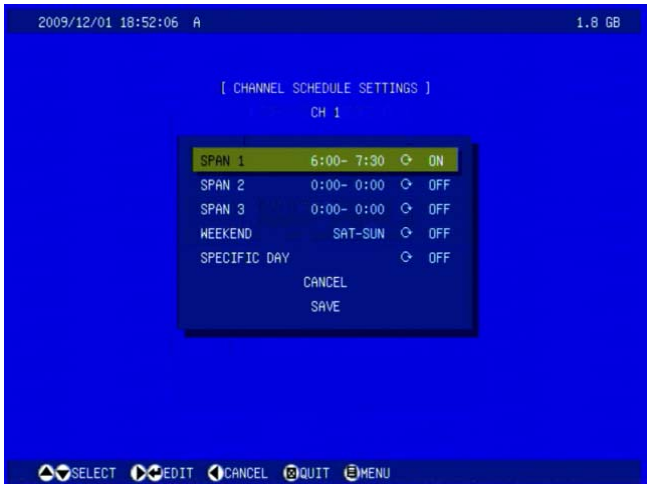


Figure 4-26

- **Span 1- Span 3:** Sets different recording modes for each time frame during the day. Each day can be divided into 3 time frames, represented by Span 1 to Span 3.
- **Weekend:** If you want to have the camera monitoring all day during the weekend, enable this option and select the recording mode to be used on the weekend. Define whether your weekend includes Saturday and Sunday (SAT-SUN) or Only Sunday (SUN).
- **Recording mode:** round-the-clock icon  , motion detection icon  .
- **Specific Day:** Enable the camera monitoring only on the specified days. To set the specific days, see *4.5.1 Specific Day*.

To start the scheduled recording, you must set the monitoring mode to be **SCHEDULE**. See *4.4 Monitoring Settings*.

Note: The recording mode you set will be indicated in the main screen when the monitoring is started. For details, see *3.5 Main Screen Overview*.

4.5.3 I/O Monitoring Schedule

You can set up the schedule for I/O monitoring to start.

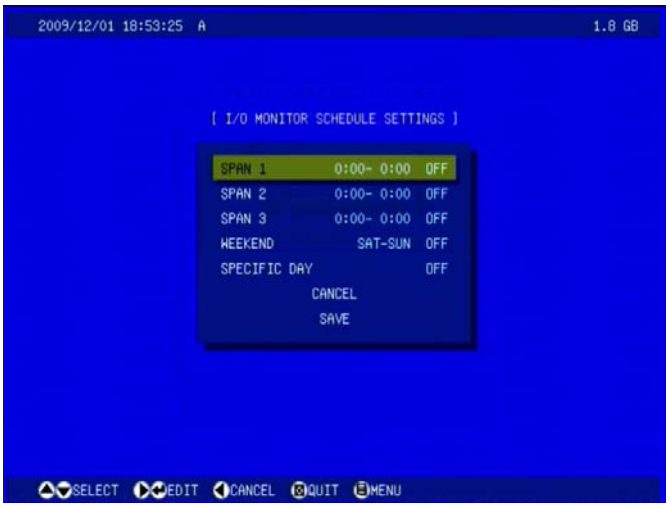


Figure 4-27

- **Span 1- Span 3:** Set different time frames during the day to enable I/O monitoring. Each day can be divided into 3 time frames, represented by Span 1 to Span 3.
- **Weekend:** If you want to have the I/O monitoring all day during the weekend, enable this option and define whether your weekend includes Saturday and Sunday (SAT-SUN) or Only Sunday (SUN).
- **Specific Day:** Enable the I/O monitoring only on the specified days. To set the specific days, see *4.5.1 Specific Day*.

To start the scheduled recording, you must set the monitoring mode to be **SCHEDULE**. See *4.4 Monitoring Settings*.

4.6 Search/Playback

You can retrieve the recorded video by date, time and event. To access the SEARCH/PLAYBACK menu, press the **Menu** button or the **Search** button on the Remote Control.

4.6.1 Time Map List

The Time Map List provides an overview of the recorded videos in the form of a calendar.

1. On the calendar, dates for which there are recorded videos are green. Use the directional buttons on the Remote Control to move the focus, and select the desired Year, Month and Day. Then press the ⏯ button.

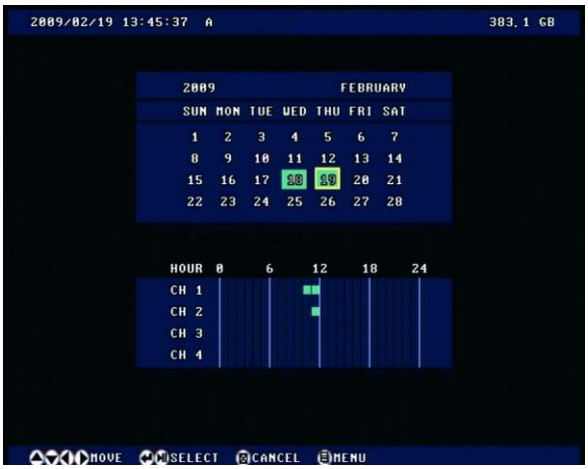


Figure 4-28

2. In the HOUR section, hours for which there are recorded videos are green. Each column represents 1 hour. Select the desired hour and press the ⏯ button.

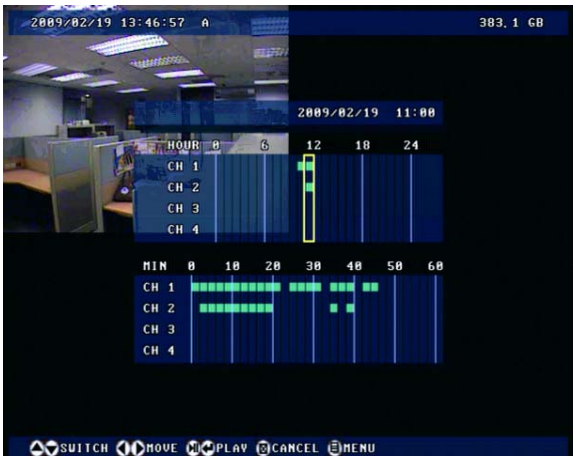


Figure 4-29

3. In the MIN section, minutes for which there are recorded videos are green. Each column represents 2 minutes. Select the desired minute and press the ⏯ button to start playback.

4.6.2 List All

The list displays a complete list of recorded videos. To move the list screen up and down one page, press the right and left directional buttons on the Remote Control. To start playback, highlight the desired video and press the button.

4.6.3 Manual Recording List

The list displays a complete list of manually recorded videos. To move the list screen up and down one page, press the right and left directional buttons on the Remote Control. To start playback, highlight the desired video and press the button.

4.6.4 Alarm Recording List

The list displays a complete list of recorded videos on input trigger. To move the list screen up and down one page, press the right and left directional buttons on the Remote Control. To start playback, highlight the desired video and press the button.

4.6.5 Motion Recording List

The list displays a complete list of recorded videos on motion detection. To move the list screen up and down one page, press the right and left directional buttons on the Remote Control. To start playback, highlight the desired video and press the button.

4.6.6 Time Search

You can locate the recorded videos within a certain date and time. Enter **START TIME** and **END TIME** for the time search. Then define how to display the found videos. Select **LIST** to display a list of found videos, or **PLAY** for immediate playback.

4.6.7 Advanced Search

You can limit your search by defining search criteria.

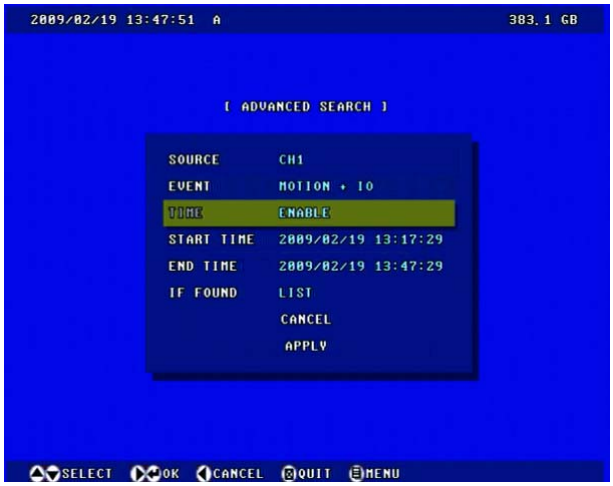


Figure 4-30

- **SOURCE:** Search the recorded video from the selected channel or all channels.
- **EVENT:** Select the type of recorded videos with the options of MOTION + IO, MOTION, ALL IO, IO 1, IO 2, IO 3 and IO 4.
- **TIME:** Enable this option to define a period of time.
- **START TIME:** Set the starting time of the video search.
- **END TIME:** Set the ending time of the video search.
- **IF FOUND:** Set how to display the found videos. Select **LIST** to display a list of found videos, or **PLAY** for immediate playback.

4.7 Network

The GV-Compact DVR V2 allows you to use a Web browser to remotely view and manage the system. For remote access, configure the related network settings in this section.

To assign an IP address to the Compact DVR V2, see *Chapter 5 Remote Viewing Using A Web Browser.*

4.7.1 Network Status

The Network Status displays the current network settings of GV-Compact DVR V2.

Figure 4-31

4.7.2 Connection Settings

According to your network environment, select among Static IP, DHCP and PPPoE.

Figure 4-32

- **CONNECTION:** According to the network environment, select **WIRED** or **WIRELESS**. Before enabling WIRELESS, configure **WIRELESS SETTINGS** which is explained in the following section.
- **GAIN IP:**
  - **FIXED:** Assign a static IP or fixed IP to the GV-Compact DVR V2. Enter the GV-Compact DVR V2's static IP address, subnet mask, gateway, primary DNS and secondary DNS.
  - **DHCP:** Assign a dynamic IP by the DHCP server. If this option is enabled, you must check the current IP assigned by the DHCP server at the **Network Status** screen every time before logging in the unit. Otherwise, you may enable the DDNS function that links a domain name to the unit's changing IP address.
  - **PPPoE:** The Network environment is xDSL connection. Enter the username and password provided by ISP to establish the connection. If you use the xDSL connection with dynamic IP addresses, it is highly suggested to enable the DDNS function that links a domain name to the unit's changing IP address.

For details on the DDNS function, see *4.7.6 DDNS Settings*.

4.7.3 Wireless Settings

To use the wireless function, a wireless LAN USB Adaptor is required. For supported wireless LAN adaptors, see *Appendix A*.

Figure 4-33

- **NETWORK TYPE:** Select AD HOC or INFRASTRUCTURE for the network mode.
  - **AD HOC:** A Peer-to-Peer mode. This mode connects to other computer with the WLAN card, and does not need the Access Point to connect to each other.
  - **INFRASTRUCTURE:** Via the Access Point to connect to the Internet. This mode further gives wireless access to the Internet or data sharing under a previously wired environment.
- **ACCESS POINT SURVEY:** Search all the available Access Points (Infrastructure mode) and wireless stations (AD-Hoc mode) within the range of your WLAN card.
- **NAME (SSID):** The SSID (Service Set Identity) is a unique name that identifies a particular wireless network. Enter SSID of the Wireless LAN group or Access Point you are going to connect to.
- **AUTH. TYPE:** Select one of these network authentication and data encryption: DISABLE, WEP, WPASPSK-AES, WPA2PSK-TKIP or WPA2PSK-AES.
  - **WEP:** Abbreviated for Wired Equivalent Privacy, this is a type of data encryption. Type up to 4 WEP keys in HEX or ASCII format. Note that if you use HEX format, only digits 0-9, letters A-F and a-f are valid.
  - **WPASPSK-AES** or **WPA2PSK-AES:** Type WPA-PSK (Pre-Shared Key) for data encryption.
  - **WPA2PSK-TKIP:** Type WPA-PSK (Pre-Shared Key) for data encryption.

Note: Your encryption settings must match those used by the Access Points or wireless stations with which you want to associate.

4.7.4 Advanced TCP/IP

You can set up the advanced TCP/IP settings, including DDNS server, HTTP port, streaming port and UPnP.

Figure 4-34

- **HOST NAME:** Enter a descriptive name for the GV-Compact DVR V2.
- **HTTP PORT:** The HTTP port enables connecting the GV-Compact DVR V2 to the web. For security integration, the Administrator can hide the server from the general HTTP port by changing the default HTTP port of 80 to a different port number within the range of 1024 thru 65535.
- **STREAMING PORT:** The port enables connecting the GV-Compact DVR V2 to the GV-System. The default setting is 10000.
- **UPNP:** UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among networking equipment, software and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. It means that they are listed in the network devices table for the operating system (such as Windows XP) supported by this function. Enabling this function, you can connect to the GV-Compact DVR V2 directly by clicking on the GV-Compact DVR V2 listed in the network devices table.

4.7.5 UMTS Settings

After a mobile broadband device (supporting UMTS, HSDPA and etc) is attached to the USB port on the GV-Compact DVR V2 and the UMTS function is enabled, the GV-Compact DVR V2 can have Internet connectivity. For the supported mobile broadband devices, see *Appendix B*.

Figure 4-35

- **STATE:** Enable the UMTS function.
- **PIN NUMBER:** Enter the PIN number that is provided by your network operator.
- **APN:** Enter the Access Point Name (APN) that is provided by your network operator.
- **USERNAME:** Enter a valid username to enable the UMTS service from your network operator.
- **PASSWORD:** Enter a valid password to enable the UMTS service from your network operator.
- **MTU:** Enter the Maximum Transfer Unit (MTU). The default vale is 1500.
- **IP Address:** The IP address of the GV-Compact DVR V2 will be displayed after the UMTS service is enabled. The next time when you want to log in the GV-Compact DVR V2, you need to enter the IP address into your browser. If you use the UMTS connection with dynamic IP addresses, it is highly suggested to enable the DDNS function that links a domain name to the unit's changing IP address. For details on DDNS, see *4.7.6 DDNS Settings.*

Also see *6.7.4 UMTS/ZigBee* of the web-based configuration which provides more information and features of the UMTS connection.

4.7.6 DDNS Settings

DDNS (Dynamic Domain Name System) provides a convenient way of accessing the GV-Compact DVR V2 when using a dynamic IP. DDNS assigns a domain name to the unit, so that the Administrator does not need to go through the trouble of checking if the IP address assigned by DHCP server or ISP (in xDSL connection) has changed.

Before enabling the DDNS function, the Administrator should apply for a Host Name from the DDNS service provider's website. There are 2 providers listed in the GV-Compact DVR V2: **GeoVision DDNS Server** (http://ns.dipmap.com/register.aspx) and **DynDNS.org** (http://www.dyndns.com/).

Figure 4-36

- **STATE:** Enable the DDNS function.
- **PROVIDER:** Select the DDNS service provider you have registered with.
- **HOSTNAME:** Enter the host name used to link to the GV-Compact DVR V2. For the users of GeoVision DDNS Server, it is unnecessary to fill the field because the system will detect the host name automatically.
- **USERNAME:** Enter a valid user name used to enable the service from the DDNS.
- **PASSWORD:** Enter a valid password used to enable the service from the DDNS.

4.7.7 Multicast Settings

The multicast provides a mechanism for sending a single video and audio stream to a group of hosts. Only the hosts that have joined a multicast group can send and receive the multicast streams. The multicast streams are only sent to the hosts on a local network.

Figure 4-37

- **STATE:** Enable the Multicast function.
- **HOST NAME:** Name the GV-Compact DVR V2 in a multicast group.
- **INFO UPDATE PERIOD:** Enter the time length between each update of multicast streams.
- **DATA IP:** Enter the IP address used for multicasting. The default IP address is 224.1.1.2.
- **DATA PORT:** Enter the port used for multicasting. The default value is 8300.
- **MULTICAST VIDEO:** Select the camera to send its video through multicasting.
- **MULTICAST AUDIO:** Select the audio to send its audio through multicasting.
- **ENCRYPTION KEY:** Enter an Encryption Key to secure multicast streams. The hosts in the multicast group will need to enter the Key to access the video and audio streams.
- **AUDIO CALLBACK:** Enable this option to receive audio broadcasting from the hosts in the multicast group. Specify the IP address and port number to receive the audio broadcast. The default IP address is 224.1.1.3 and port number is 8400

Also see *6.1.1 Multicast* and *6.7.5 Multicast* of the web-based configuration which provides more information and features of the Multicast function.

4.7.8 Web User Account Info

You can change the login name and password of Administrator, Guest and FTP Server User.

- The default Administrator login name and password are **admin**.
- The default Guest login name and password are **guest**.
- The default FTP Server login name and password are **ftpuser**.

Figure 4-38

4.8 Advanced

In this section, you can configure the settings of date and time, storage device, screen display, and system password. In addition, you can view and upgrade the firmware.

4.8.1 Date and Time

The date and time settings are used for date and time stamps on the image.

Figure 4-39

- **SET BY:** Select **MANUAL** to adjust the data and time by yourself, or **NETWORK** to synchronize the date and time with a time server. If you select **NETWORK**, then the option of **SERVER** appears. Use the on-screen keypad to enter the IP address of the time server.
- **DAY LIGHT SAVING:** Automatically adjust the GV-Compact DVR V2 for daylight saving time. Enter the Start and End time of daylight saving.
  Also see *7.2.5 Playback of Daylight Saving Time Events*.

4.8.2 Firmware Settings

GeoVision will periodically release the updated firmware on the website. The new firmware can be simply loaded into the GV-Compact DVR V2 by using the USB storage device.

For the details on upgrading the unit over the network, see *Chapter 8 Advanced Applications*.

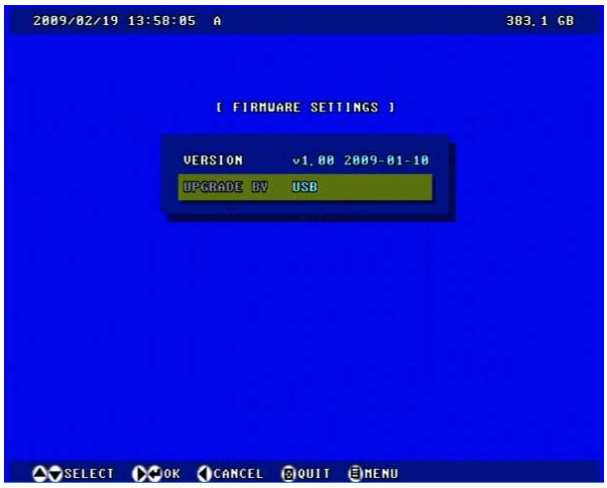


Figure 4-40

4.8.3 Storage Settings

You can configure the settings of the connected hard disk drive.

Figure 4-41

- **STORAGE STATUS:** Display the total size and space usage of the hard drive.
- **STORAGE MANAGEMENT:** This option allows you to format the hard disk. For details, see *3.4 Formatting Hard Drive.*

- **RECYCLING:** If the option is enabled, the system will either write the data to another device or overwrite the oldest recorded files when the disk space is lower than the specified space limit. If the option is disabled, the system will stop recording when the specified space limit is reached.
- **CAPACITY WARNING:** Specify the space limit to be warned about. The space limit options include 256MB, 512MB, 1G, 2G and 5G.
- **KEEP DAYS:** Specify the days to store the files from 1 day to 255 days. When both **Keep days** and **Enable Recycle** are selected, the system applies whichever condition comes first. For example, if the specified smallest amount of storage space comes earlier than the designated keep days, then recycle is applied first.

Note:

1. If **RECYCLING** is enabled, the available space of the hard disk must be higher than the space you specified at the **CAPACITY WARNING** option. Otherwise no video will be recorded.
2. When the disk is full, the Disk Full/Fault LED on the front panel will turn on and the information of hard disk status on the top right top of screen will turn to red.

4.8.4 Display Settings

You can show or hide the time, date, disk space, camera information and specific cameras appearing on the screen.

Figure 4-42

- **INFO DISPLAY SETTINGS:** Show or hide the information of date and time, hard disk space, channel number and camera name on the image. The **INSTRUCTIONS** option allows you to show or hide the legend at the bottom of the screen.
- **OSD SETTINGS:** Change the look of OSD menu on the screen.
  - **OSD THEME: SKY** is the default setting.
  - **3D EFFECT:** Select YES to emboss the menu options.
  - **BORDER:** Show or hide the borders among the 4-split channels.
  - **OSD TIMEOUT:** When the OSD menu remains stationary for the specified time, it will close automatically. The options include 3 MIN, 7 MIN, 15 MIN and NEVER.
  - **IR TYPE:** Set the unit to be Type A, B, or C device. The setting allows you to control multiple GV-Compact DVR V2s with one Remote Control. Use the **A, B, C Device Type** buttons on the Remote Control to switch among devices.
- **VGA SETTINGS:** Select the video resolution on the VGA monitor. The option includes 800 x 600, 1024 x 768 and 1280 x 1024.
- **VIDEO SOURCE SETTINGS:** Assign the video input to the desired video channel for display.
- **VIDEO COVERT:** Hide the selected camera on the screen but keep on recording video from the camera.
- **TIME FORMAT:** Select one of the four display formats.

4.8.5 Spot Monitor Settings

You can configure the settings when a spot monitor is connected to the GV-Compact DVR V2.

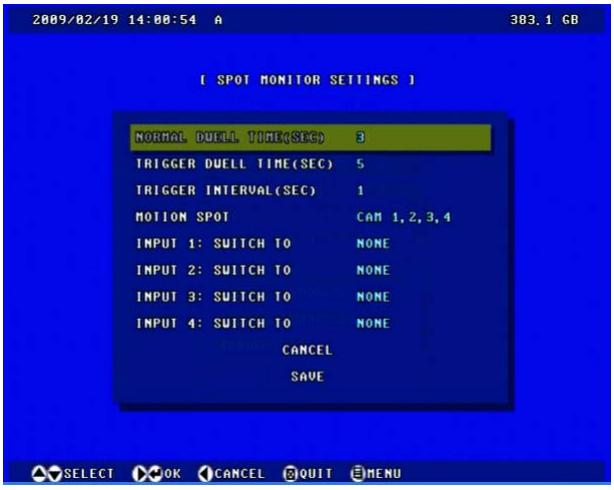


Figure 4-43

- **NORMAL DWELL TIME:** Select the amount of time that each video remains on the spot monitor before the GV-Compact DVR V2 switches to the next video in a rotation. The dwell time can be between 1 and 5 seconds.
- **TRIGGER DWELL TIME:** Select the amount of time that the video remains on the spot monitor after the motion or I/O triggered event occurs. The triggered dwell time can be between 1 and 5 seconds.
- **TRIGGER INTERVAL:** Select the interval between triggered events from 1 to 5 seconds. During the specified length of time, all the triggered events will be ignored. The triggered event after the interval will be displayed on the spot monitor.
- **MOTION SPOT:** Select the cameras to be displayed upon motion events.
- **INPUT 1 - INPUT 4:** Select the associated camera to be displayed when an input is triggered.

4.8.6 Alert Settings

The system buzzer can be activated automatically under these conditions: video lost, input device triggered, motion detected, disk full and disk write error. The duration of buzzing sounds is definable. When the buzzer starts beeping, pressing any button on the Remote Control can stop it.

Figure 4-44

4.8.7 System Settings

You can set up video format, change the system password and reset the configurations.

Figure 4-45

- **CAMERA FORMAT:** Select the video format to be **NTSC** or **PAL**; or select **AUTO** for automatic detection.
- **SYSTEM PASSWORD:** Set up the system password. Once the password is set up, you will be prompted for a password when you enter the main menu.
- **RESTORE DEFAULT SETTINGS:** Return the system to default settings.
- **REBOOT:** Restart the system.

4.8.8 System Log

You can view and save the events logged on the GV-Compact DVR V2. To back up the log, connect a USB mass storage device to the unit. Then press the **REC** button on the Remote Control to start the backup. The performance of log backup will also be recorded in the system log.

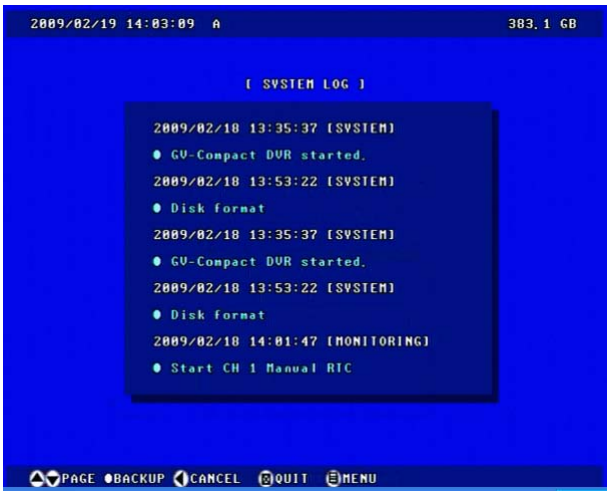


Figure 4-46

4.8.9 Backup

You can back up video files of the specified time and channels to the USB mass storage device, or to CD/DVD by using the USB DVD-RW drive.

Figure 4-47

Note: The GV-Compact DVR V2 only supports the FAT file system. Before connecting the USB mass storage device, make sure it is FAT formatted.

Chapter 5 Remote Viewing Using A Web Browser

Not only can the GV-Compact DVR V2 operate as a standalone, but also a networked device. Using the Internet Explorer, you can remotely access and manage the GV-Compact DVR V2.

5.1 Assigning an IP Address

Designed for use on an Ethernet network, the GV-Compact DVR V2 must be assigned an IP address to make it accessible. There are two ways to assign an IP address to the unit: Using OSD Menu and Connecting with a PC.

5.1.1 Using OSD Menu

Use the connection settings in the OSD menu to assign a static IP, and connect the GV-Compact DVR V2 to the Internet for remote operation.

1. Press the **Menu** button, select **NETWORK** and then select **CONNECTION SETTINGS**. Set a static IP, subnet mask, gateway, primary DNS and secondary DNS (optional), which are provided by your Internet Service Provider (ISP).

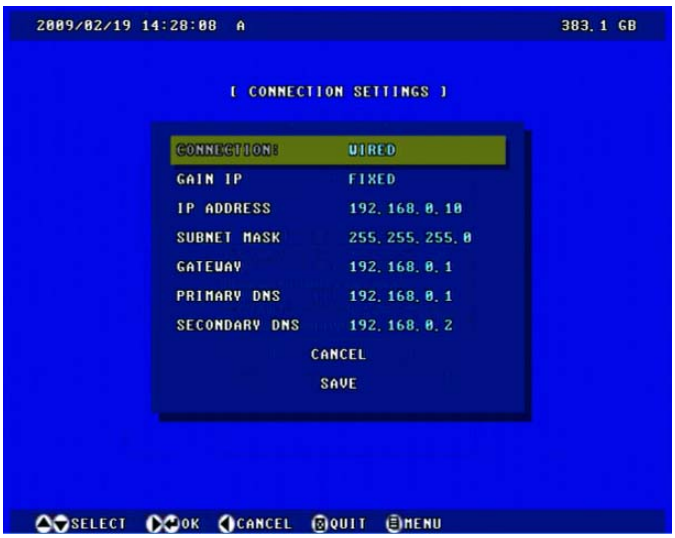


Figure 5-1

2. Using the network cable, connect one end to the LAN port on the rear panel of the unit, and the other end to the Internet. The GV-Compact DVR V2 is now accessible by entering the assigned IP on the browser.

5.1.2 Connecting with a PC

Use a computer on the same LAN with the GV-Compact DVR V2 to assign the IP address. The GV-Compact DVR V2 has a default address of 192.168.0.10. The computer used to set the IP address must be under the same IP and subnet sequence assigned to the unit.

1. Using the network cable, connect one end to the LAN port on the rear panel of the unit, and the other end to a hub or a switch on the LAN.
2. Open the browser on the computer, and type the default IP address http://192.168.0.10/.
3. In both Login and Password fields, type the default value **admin**. Click **Apply**.
4. In the left menu, select **Network** and then **LAN** to begin the network settings.

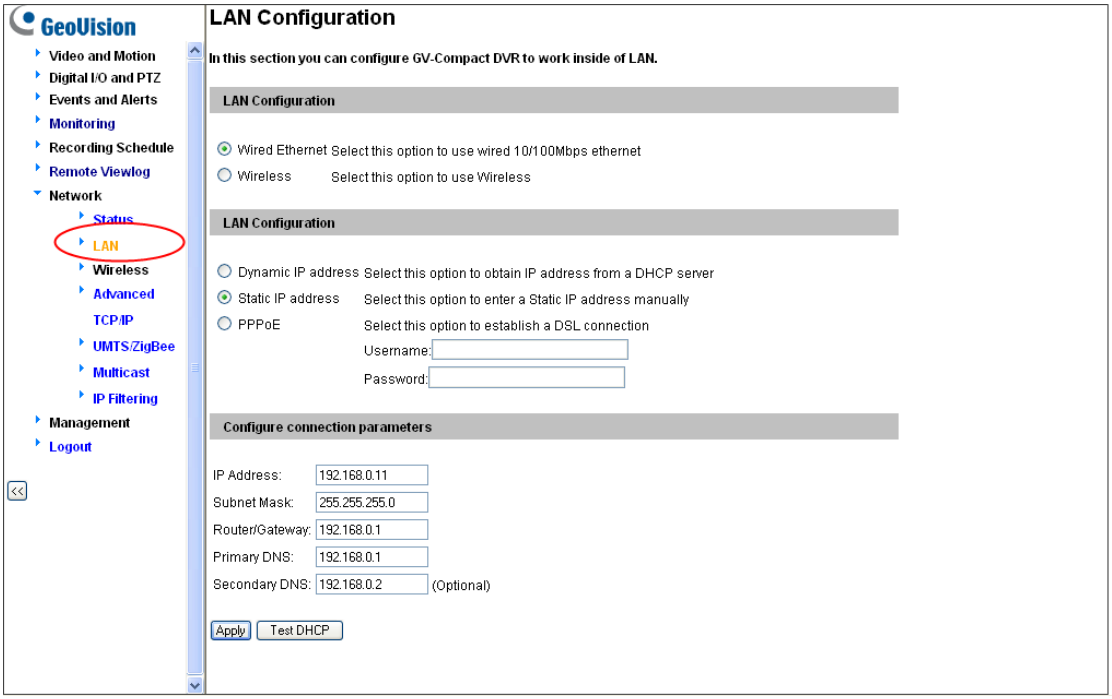


Figure 5-2

5. Select **Static IP address**. Type IP Address, Subnet Mask, Router/Gateway, Primary DNS and Secondary DNS in the **Configure connection parameters** section.
6. Click **Apply**. The GV-Compact DVR V2 is now accessible by entering the assigned IP address on the browser.

Important:

1. If **Dynamic IP Address** and **PPPoE** is enabled, your must check the current IP address from the OSD screen of **Network Status** (Figure 4-28) every time before logging in the unit. Otherwise, you may enable the DDNS function that links a domain name to the unit's changing IP address first.

   For details on Dynamic IP Address and PPPoE, see *6.7.3 Advanced TCP/IP.*

2. If **Dynamic IP Address** and **PPPoE** is enabled and you cannot access the unit, you may have to reset it to the factory default settings and then perform the network settings again.

   To restore the factory settings, see the **Reset** button in *2.1 Front Panel*.

5.2 Accessing Your Surveillance Images

Once installed, the GV-Compact DVR V2 is accessible on a network. Follow these steps to access your surveillance images:

1. Start the Internet Explorer browser.
2. Enter the IP address or the domain name of the GV-Compact DVR V2 in the **Location/Address** field of your browser.

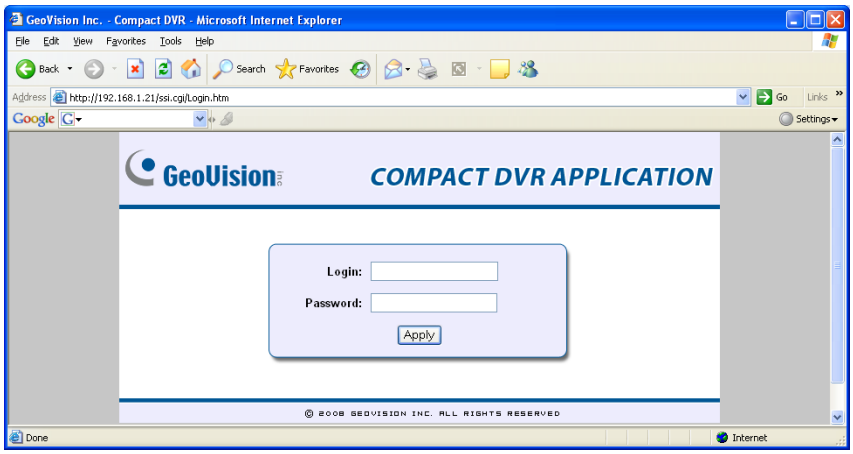


Figure 5-3

3. Enter the login name and password.
   - The default login name and password for Administrator are **admin**.
   - The default login name and password for Guest are **guest**.
4. Click **Apply**. A video image, similar to the example on Figure 5-4, is now displayed in your browser.

Note: To enable the updating of images in Internet Explorer, you must set your browser to allow ActiveX Controls and perform a once-only installation of GeoVision's ActiveX component onto your computer.

5.3 Functions Featured on the Main Page

Two types of users are allowed to log in the GV-Compact DVR V2: Administrator and Guest. The Administrator has unrestricted access to all system configurations, while the Guest has the access to live view and network status only. This section introduces the live view functions and the network status on the main page, which can be accessed by both Administrator and Guest.

Main Page of Guest Mode

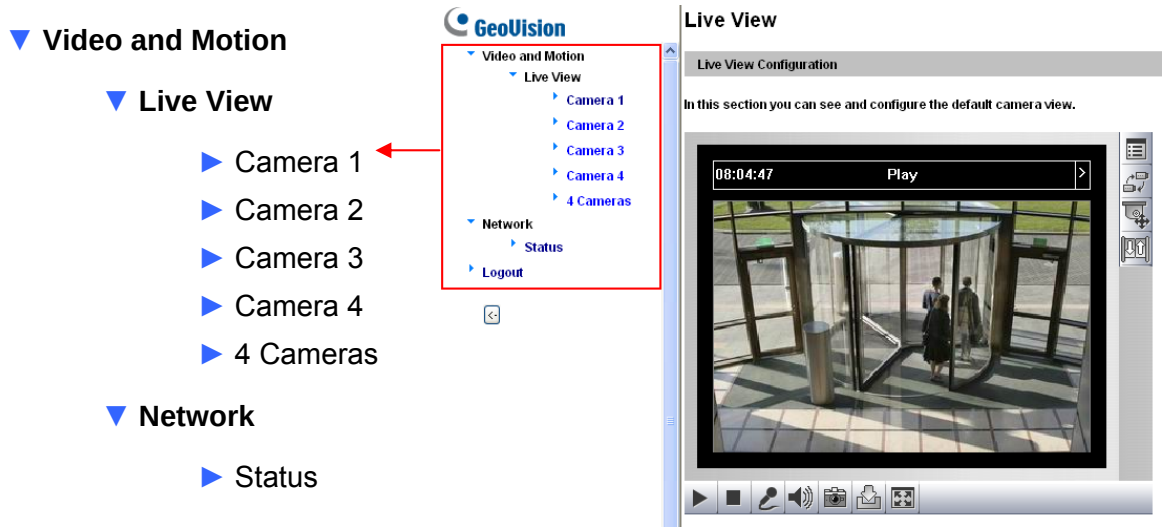


Figure 5-4

5.3.1 The Live View Window

In the left menu, click **Live View**, and then select **Camera 1**, **Camera 2**, **Camera 3**, **Camera 4** or **4 Cameras** to see the live video.

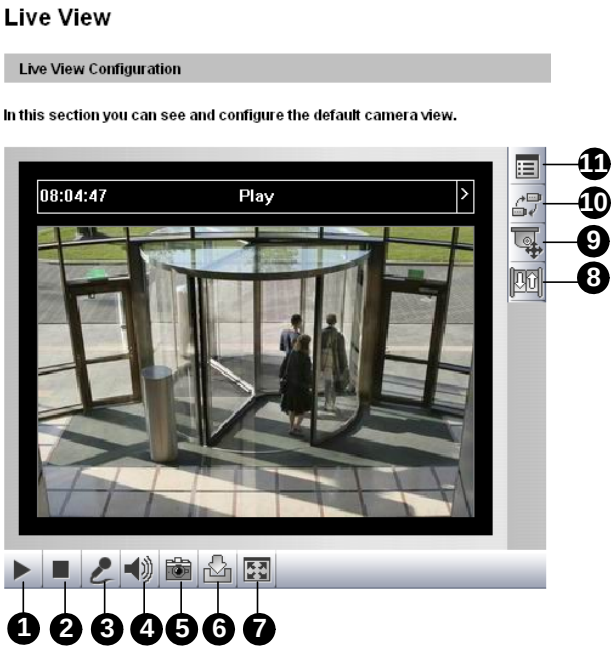


Figure 5-5

No.	Name	Function
1	Play	Plays live video.
2	Stop	Stop playing video.
3	Microphone	Talks to the surveillance area from the local computer.
4	Speaker	Listens to the audio around the camera.
5	Snapshot	Takes a snapshot of live video. --- See section 5.3.3.
6	File Save	Records live video to the local computer. --- See section 5.3.4.
7	Full Screen	Switches to full screen view. Right-click the image to have these options: **Snapshot**, **PIP**, **PAP**, **Zoom In** and **Zoom Out**. --- See section 5.3.5 for PIP and PAP Views.
8	I/O Control	Starts the I/O Control Panel and the Visual Automation. --- See section 5.3.13 and 5.3.14.
9	PTZ Control	Starts the PTZ Control Panel and the Visual PTZ. --- See section 5.3.11 and 5.3.12.
10	Change Camera	Sets the desired camera for display.
11	Show System Menu	Brings up these functions: **Alarm Notify**, **Video and Audio Configuration, Remote Config**, **Show Camera Name** and **Image Enhance**. --- See section 5.3.6, 5.3.7, 5.3.8, 5.3.9 and 5.3.10 respectively.

5.3.2 The Control Panel of the Live View Window

To open the control panel of the Live View window, click the arrow button on top of the window. You can access the following functions by using the right and left arrow buttons on the control panel.

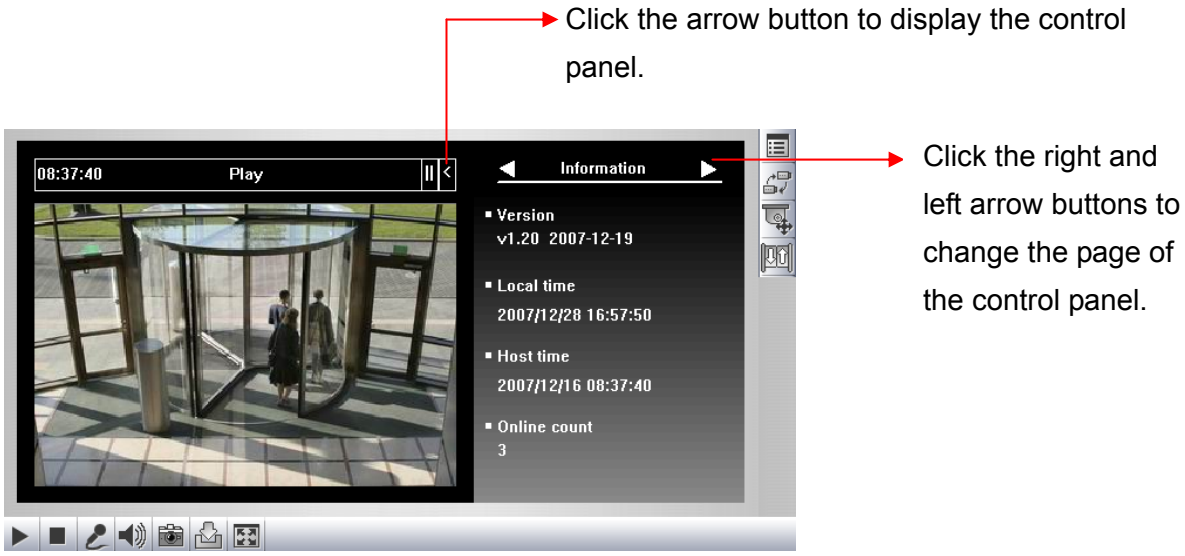


Figure 5-6

[Information] Displays the version of the GV-Compact DVR V2, local time of the local computer, host time of the GV-Compact DVR V2, and the number of users logging in to the GV-Compact DVR V2.

[Video] Displays the current video codec, resolution and data rate.

[Audio] Displays the audio data rates when the microphone and speaker devices are enabled.

[I/O Control] Provides a real-time graphic display of the input and output status. You can force the output to be triggered by double-clicking its icon.

[Alarm Notify] Displays the captured images by sensor triggers and/or motion detection. For this function to work, you must configure the Alarm Notify settings first. See *5.3.6 Alarm Notification*.

[Camera Adjustment] Allows you to adjust the image quality.

[GPS] For details see *8.3 GPS Tracking.*

[Download] Allows you to install the programs from the hard drive.

5.3.3 Snapshot of a Live Video

To take a snapshot of live video, follow these steps:

1. Click the **Snapshot** button (No. 5, Figure 5-5). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and select **JPEG** or **BMP** as **Save as Type**. You may also choose whether to display the name and date stamps on the image.
3. Click the **Save** button to save the image in the local computer.

5.3.4 Video Recording

You can record live video for a certain period of time to your local computer.

1. Click the **File Save** button (No. 6, Figure 5-5). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and move the **Time Period** scroll bar to specify the time length of the video clip from 1 to 5 minutes.
3. Click the **Save** button to start recording.
4. To stop recording, click the **Stop** button (No. 2, Figure 5-5).

5.3.5 Picture-in-Picture and Picture-and-Picture View

The full screen mode provides two types of close-up views: **Picture-in-Picture (PIP)** and **Picture-and Picture (PAP)**. The two views are useful to provide clear and detailed images of the surveillance area.

To access this feature:

- Click the **Full Screen** button (No. 7, Figure 5-5). Right-click the full screen to have the options of **PIP** and **PAP**.
- Right-click the live view to have the options of **PIP** and **PAP**.

Picture-in-Picture View

With the Picture in Picture (PIP) view, you can crop the video to get a close-up view or zoom in on the video.

Figure 5-7

1. Select **PIP**. An inset window appears.
2. Click the insert window. A navigation box appears.
3. Move the navigation box around in the inset window to have a close-up view of the selected area.
4. To adjust the navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
5. To exit the PIP view, right-click the image and click **PIP** again.

Picture-and-Picture View

With the Picture and Picture (PAP) view, you can create a split video effect with multiple close-up views on the image. A total of 7 close-up views can be defined.

Figure 5-8

1. Select **PAP**. A row of three inset windows appears at the bottom.
2. Draw a navigation box on the image, and this selected area is immediately reflected in one inset window. Up to seven navigation boxes can be drawn on the image.
3. To adjust a navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
4. To move a navigation box to another area on the image, drag it to that area.
5. To change the frame color of the navigation box or hide the box, right-click the image, select **Mega Pixel Setting** and select one of these options:
   - **Display Focus Area of PAP Mode:** Displays or hides the navigation boxes on the image
   - **Set Color of Focus Area:** Changes the color of the box frames.
6. To delete a navigation box, right-click the desired box, select **Focus Area of PAP Mode** and click **Delete**.
7. To exit the PAP view, right-click the image and click **PAP** again.

5.3.6 Alarm Notification

After input triggers and motion detection, you can be alerted by a pop-up live video and view up to four captured images.

Figure 5-9

To configure this function, click the **Show System Menu** button (No. 11, Figure 5-5), and select **Alarm Notify**. This dialog box appears.

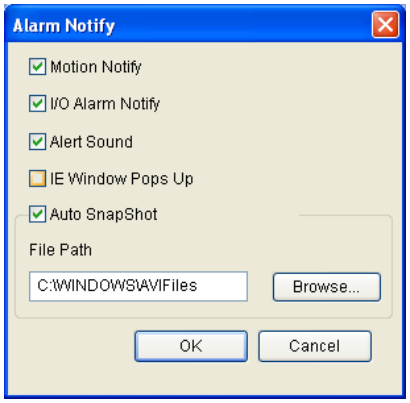


Figure 5-10

- **Motion Notify:** Once motion is detected, the captured images are displayed on the control panel of the Live View window.
- **I/O Alarm Notify:** Once the input device is triggered, the captured images are displayed on the control panel of the Live View window. For this function to work, the Administrator needs to install the input device properly. See *6.2.2 Input/Output Settings*.
- **Alert Sound:** Activate the computer alarm on motion and input triggered detection.
- **IE Window Pops up:** The minimized Live View window pops up on motion and input-triggered detection.
- **Auto Snapshot:** The snapshot of live video is taken every 5 seconds on motion and input triggered detection.
- **File Path:** Assign a file path to save the snapshots.

5.3.7 Video and Audio Configuration

You can enable the microphone and speaker for two-way audio communication and adjust the audio volume. To change audio configuration, click the **Show System Menu** button (No. 11, Figure 5-5), and select **Video and Audio Configuration.**

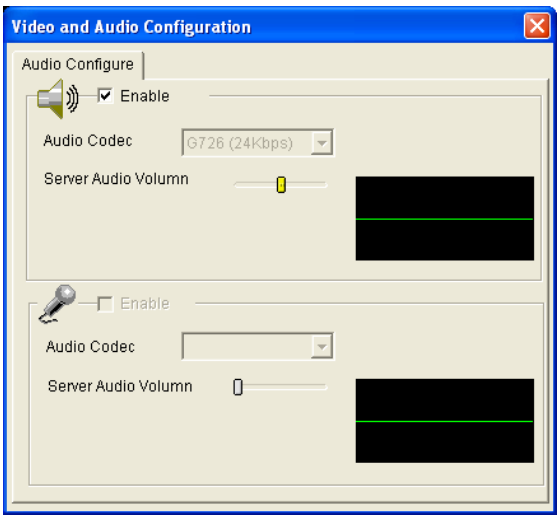


Figure 5-11

5.3.8 Remote Configuration

You can view the connection status of the central monitoring stations and upgrade firmware over the Internet. Click the **Show System Menu** button (No. 11, Figure 5-5), and select **Remote Config**. The Remote Config dialog box will appear.

[Status] In this tab, you can see the current status of the connection to Center V2 and VSM.

[Firmware Upgrade] In this tab, you can upgrade the firmware over the Internet. For details, see *Chapter 8 Advanced Applications*.

5.3.9 Camera Name Display

To display the camera name on the image, click the **Show System Menu** button (No. 11, Figure 5-5), and select **Show Camera Name**.

5.3.10 Image Enhancement

To enhance the image quality of live video, click the **Show System Menu** button (No. 11, Figure 5-5), and select **Image Enhance**. This dialog box appears.

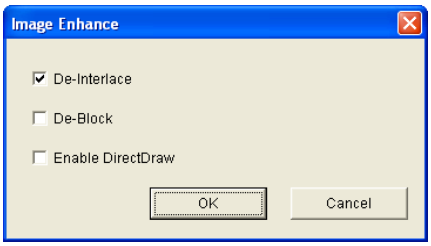


Figure 5-12

- **De-Interlace:** Coverts the interlaced video into non-interlaced video.
- **De-Block:** Removes the block-like artifacts from low-quality and highly compressed video.
- **Enable DirectDraw:** Activates the DirectDraw function.

5.3.11 PTZ Control

To open the PTZ control panel, click the **PTZ Control** button (No. 9, Figure 5-5) and select **PTZ Control Panel**. The features included in the **Option** button may vary depended on different PTZ devices.

This feature is only available when the PTZ is set ahead by the Administrator. For details, see *6.2.1 PTZ Settings.*

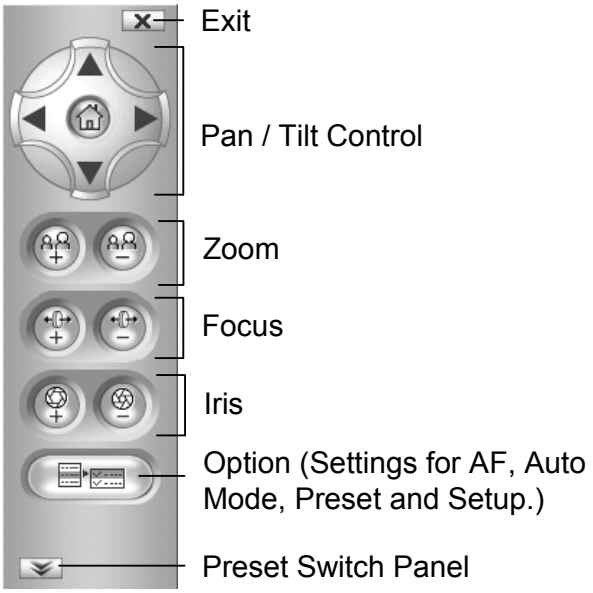


Figure 5-13

5.3.12 Visual PTZ

In additional to the PTZ control panel, you can display a visual PTZ control panel on the image. This feature is only available when the PTZ is set ahead by the Administrator. For details, see *6.2.1 PTZ Settings.*

Figure 5-14

- To access this feature, click the **PTZ Control** button (No. 9, Figure 5-5) and select **Visual PTZ**.
- To change the panel settings, click the green **PTZ** button on the top left corner. You will have these options:

  [PTZ Control Type]

  - **Type 1:** In this mode when you place the mouse arrow on the four directions, i.e. north, south, east, west, the speed indicator of five levels will appear. Click and hold on the required level of movement and the camera will move as per the specific speed.
  - **Type 2:** In this mode with the mouse click, the PTZ control panel will appear. The movement of the camera will depend on the speed of the mouse movement.

  [Configure]

  - **Set Color:** Changes the color of the panel. Three kinds of colors are available: **Red**, **Green** and **Blue**.
  - **Transparent Degree:** Adjusts the transparency level of the panel. Ten levels range from 10% (fully transparent) to 100% (fully opaque).

5.3.13 I/O Control

The I/O Control window provides real-time graphic displays of camera and I/O status, and alarm events. Additionally, you can force output to be triggered.

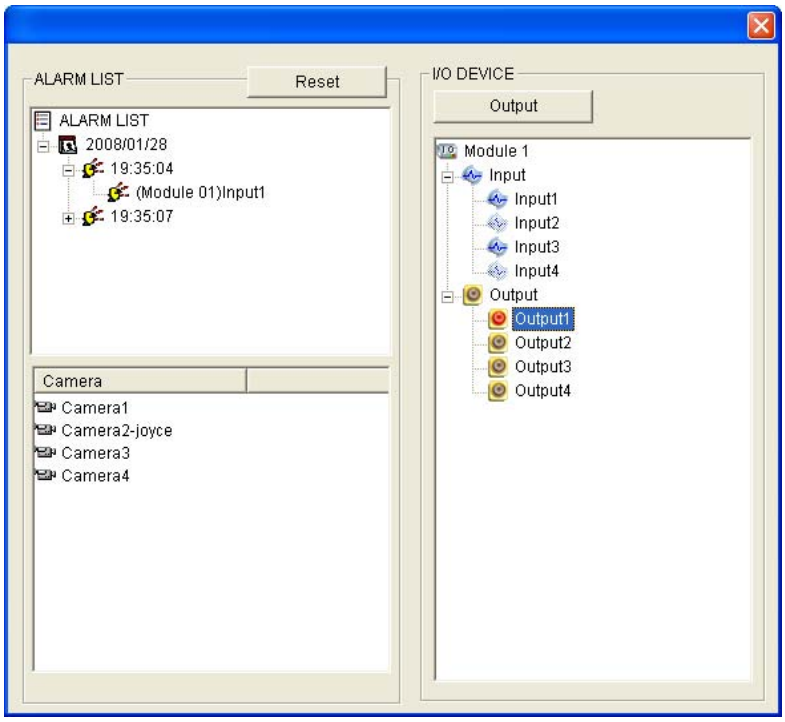


Figure 5-15

- To display the I/O control window, click the **I/O Control** button (No. 8, Figure 5-5).
- The Alarm List is displayed in three levels. The first level indicates date, the second indicates time, and the third indicates alarm ID. Clicking the **Reset** button will clear the list.
- To trigger an output device, highlight an output and then click the **Output** button.

5.3.14 Visual Automation

The Visual Automation allows you to change the current state of the electronic device by simply clicking on its image, e.g. turning the light ON. This feature is only available when the Visual Automation is set ahead by the Administrator. For details, see *6.1.3 Visual Automation.*

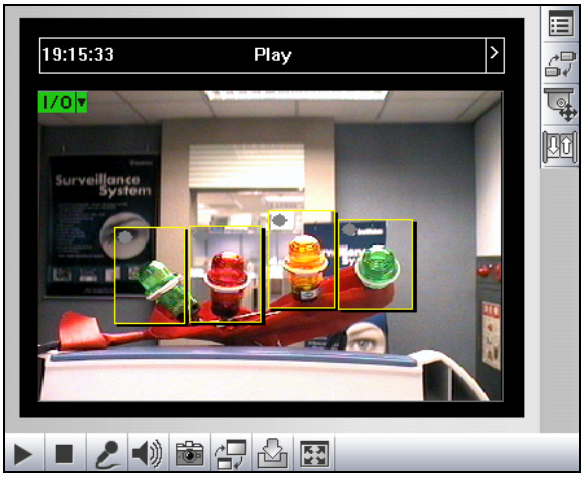


Figure 5-16

- To access this feature, click the **I/O Control** button (No. 8, Figure 5-5) and select **Visual Automation**.
- To change the style of the set areas, click the green **I/O** button on the top left corner. You will have these options:
  - **Show All:** Displays all set areas.
  - **Rec Float:** Embosses all set areas.
  - **Set Color:** Changes the frame color of all set areas

5.3.15 Network Status

To view the network status, in the left menu, click **Network** and select **Status**.

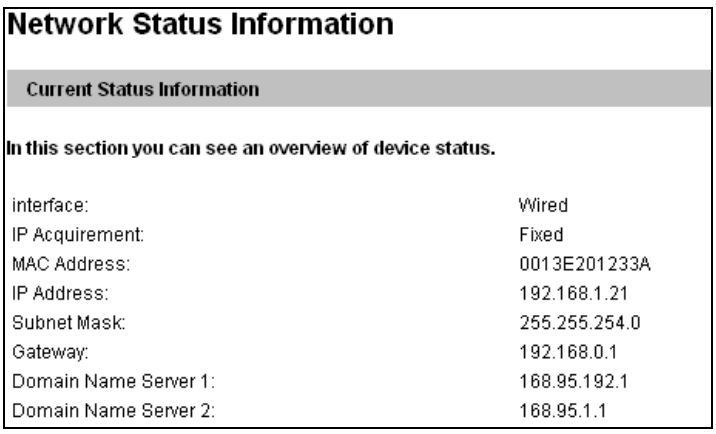


Figure 5-17

Chapter 6 Remote Configurations

The Administrator can remotely configure the GV-Compact DVR V2 via the Internet. Eight categories of configurations are involved in the system configuration: **Video and Motion**, **Digital I/O and PTZ**, **Events and Alerts**, **Monitoring**, **Recording Schedule**, **Remote ViewLog**, **Network**, and **Management**.

- **Video and Motion**
  - Live View
  - Video Settings
  - Motion Detection
  - Text Overlay
  - Visual Automation
  - VGA Output Settings
  - Video Channel Source Settings
- **Digital I/O and PTZ**
  - I/O Control
  - PTZ Settings
  - GPS
  - Buzzer
  - Spot Monitor
- **Events and Alerts**
  - Email
  - FTP
  - Center V2
  - VSM
  - GV-GIS
  - ViewLog
  - 3GPP
- **Monitoring**
- **Recording Schedule**
  - Camera
  - I/O Monitor
- **Remote ViewLog**
- **Network**
  - Status
  - LAN
  - Wireless
  - Advanced TCP/IP
  - UMTS/ZigBee
  - Multicast
  - IP Filtering
- **Management**
  - Date and Time
  - GPS Maps Settings
  - Storage Settings
  - User Account
  - Log Information
  - Tools

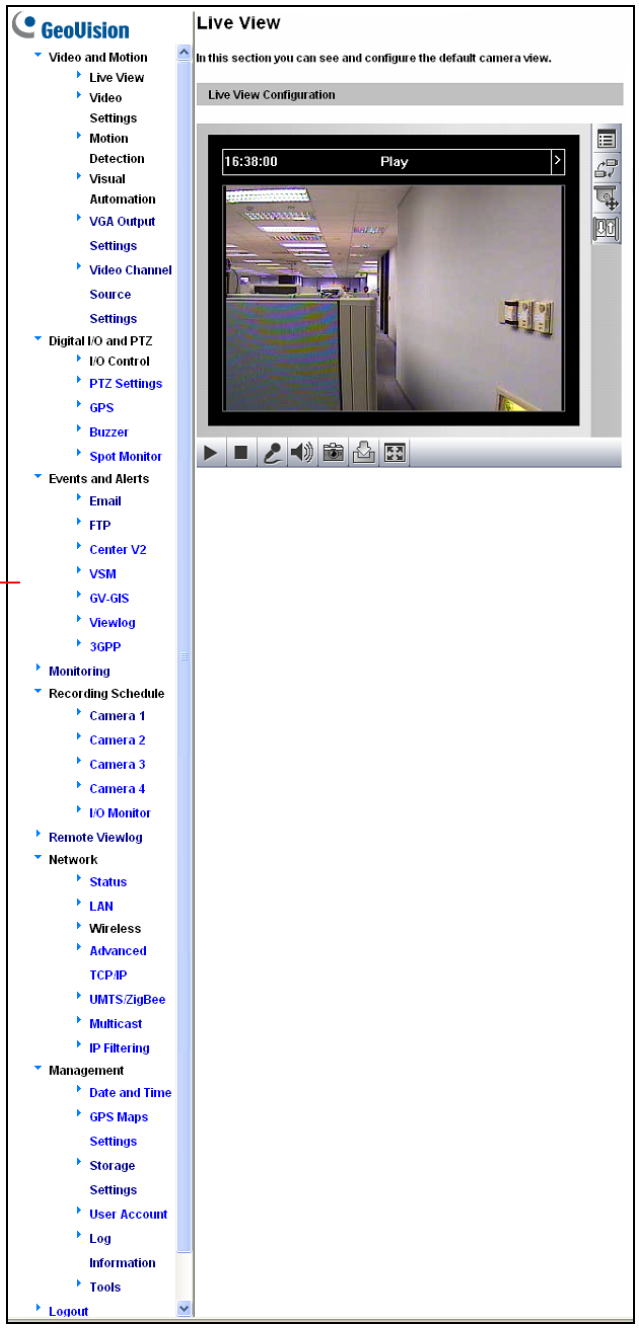


Figure 6-1

6.1 Video & Motion

This section includes the video image settings and how the images can be managed by using Multicast, Motion Detection, Visual Automation and Video Channel Source Settings.

6.1.1 Multicast

The Multicast view allows the GV-Compact DVR V2 receiving video and audio streams from a multicast group. It also enables the GV-Compact DVR V2 to receive audio broadcast from the hosts in the multicast group.

To join a multicast group and listen to audio broadcasting, it is required to activate the related settings in *4.7.7 Mulitcast*.

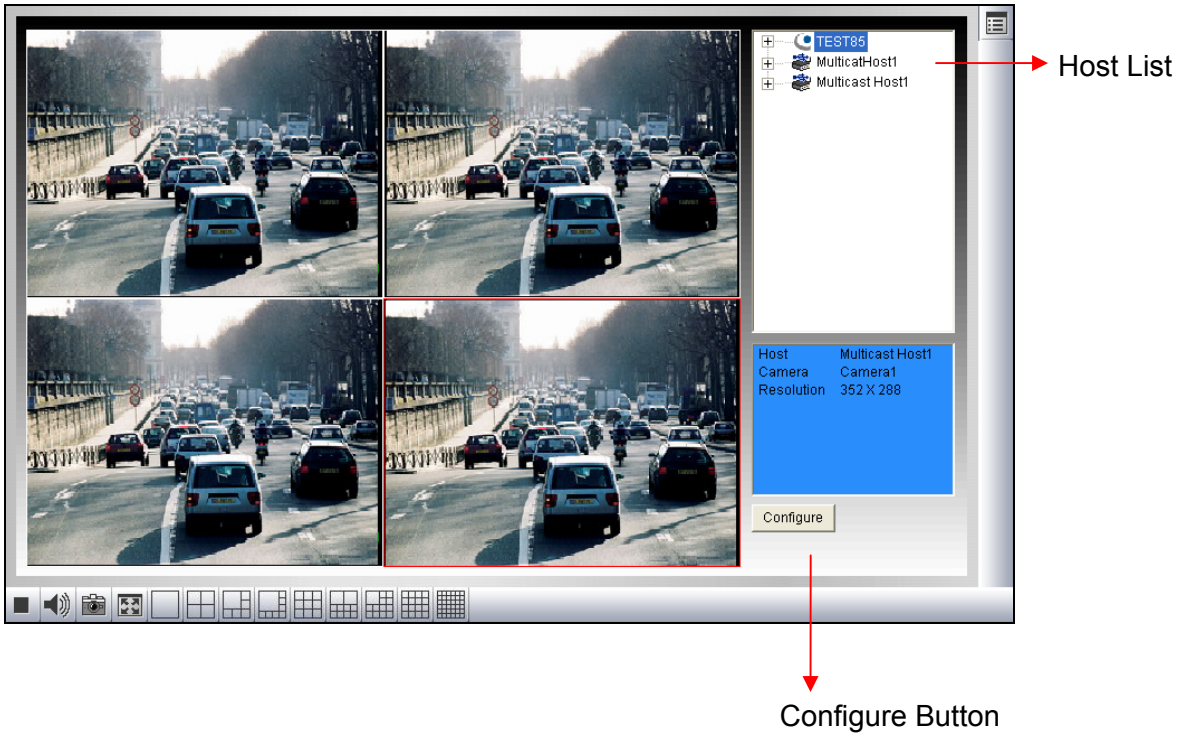


Figure 6-2

1. The host(s), in the multicast group, is displayed automatically on the host list. If you cannot see any host displayed, click the **Configure** button, select **General Setup**, select **Multicast** and ensure the relevant IP address, port number and network card are correctly configured.
2. Expand the Host folder and drag the desired cameras to the screen for display. If the host has already set a password, you will be promoted to enter it at this step.

3. To receive audio broadcasting, first ensure a speaker is properly installed on the local computer. Then click the **Configure** button, select **General Setup**, select **Receive broadcast audio**, and ensure the broadcast IP address and port number are correctly configured.
4. To save the current settings of screen division and camera display for future use, click the **Configure** button, select **Video List Setup**, and select **Export**. You can also select **Import** to apply the pre-defined settings.

6.1.2 Video Settings

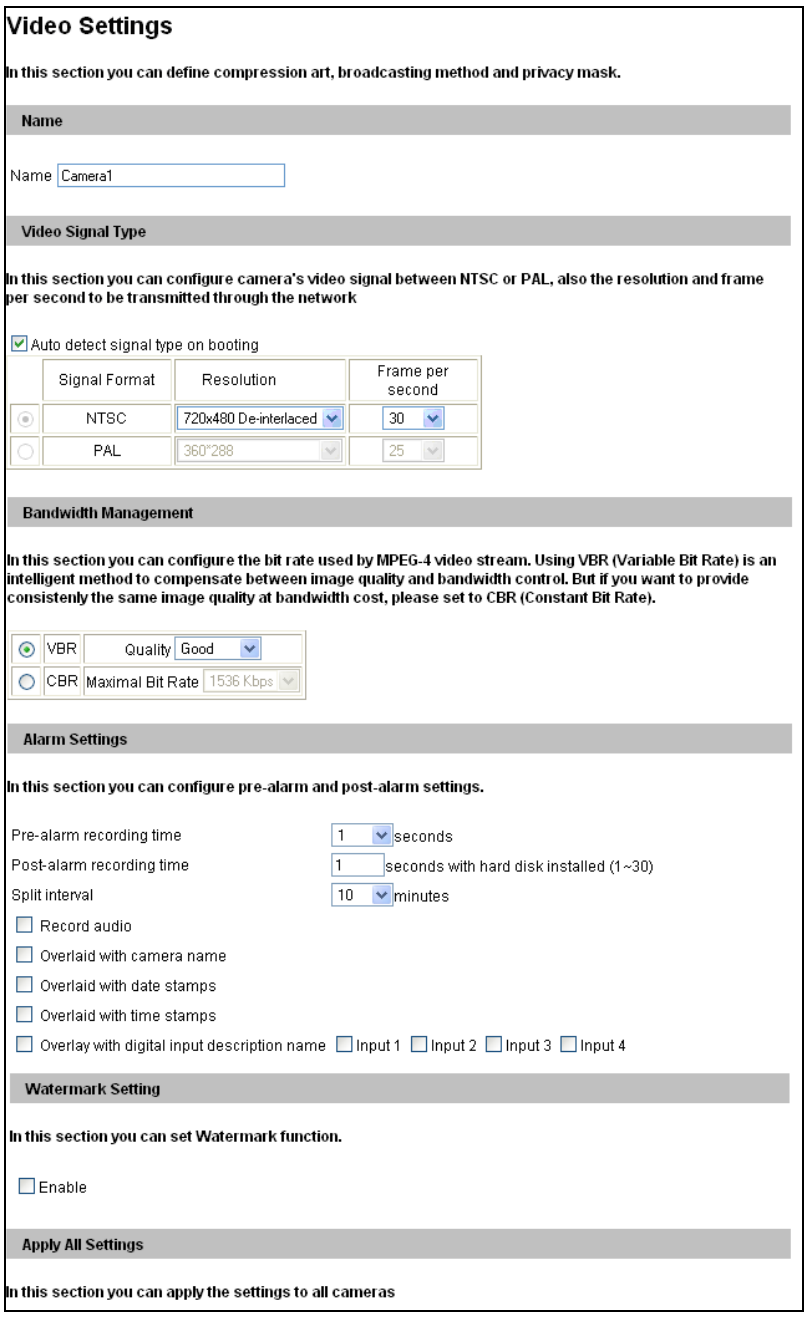


Figure 6-3

[Name]

Rename the camera. To display the camera name on the image, see *5.3.9 Camera Name Display*.

[Video Signal Type]

- **Auto detect signal type on booting:** Automatically detects the type of video input is NTSC or PAL.

There are 3 options for selecting image resolutions.

NTSC	PAL
720 x 480	720 x 576
720 x 480 De-interlaced (Default)	720 x 576 De-interlaced (Default)
360 x 240	360 x 288
360 x 240 3GPP v7	360 x 288 3GPP v7

There are several frame rates available.

	Frame Rate
NTSC	2, 3, 5, 7.5, 10, 15, 30 (Default)
PAL	2.5, 5, 8, 12.5, 25 (Default)

[Bandwidth Management]

When using MPEG-4 or H.264, it is possible to control the bitrate, which in turn allows the amount of bandwidth usage to be controlled.

- **VBR (Variable Bitrate):** The quality of the video stream is kept as constant as possible at the cost of a varying bitrate. The bandwidth is much more efficiently used than a comparable CBR.

  Set the image quality to one of the 3 standards: **Fair**, **Good**, and **Excellent**.

- **CBR (Constant Bitrate):** CBR is used to achieve a specific bitrate by varying the quality of the stream. The bitrates available for selection depend on the image resolution.

[Alarm Settings]

The alarm settings allow you to capture images before and/or after a motion and an I/O event happens.

- **Pre-alarm recording time:** Activates video recording before an event occurs. Set the recording time to 1 or 2 seconds.
- **Post-alarm recording time:** Activates video recording onto the hard disk after an event occurs. Set the recording time from 1 to 30 seconds.
- **Split Interval:** Sets the time length between each event file.
- **Record Audio:** Activates audio recording when an event occurs.
- **Overlaid with camera name:** Includes camera names on live and recorded videos.
- **Overlaid with date stamps:** Includes date stamps on live and recorded videos.
- **Overlaid with time stamps:** Includes time stamps on live and recorded videos.

- **Overlaid with IO input name:** Includes the names of the selected inputs on live and recorded videos.

[Watermark Setting]

- **Enable:** Enable this option to watermark all recordings. The watermark allows you to verify whether the video has been tampered while it was recorded and saved.

[Apply All Settings]

- **Apply the settings to all cameras:** Applies the same settings to other cameras.

6.1.3 Motion Detection

Motion detection is used to generate an alarm whenever movement occurs in the video image. You can configure up to 8 areas with different sensitivity values for motion detection.

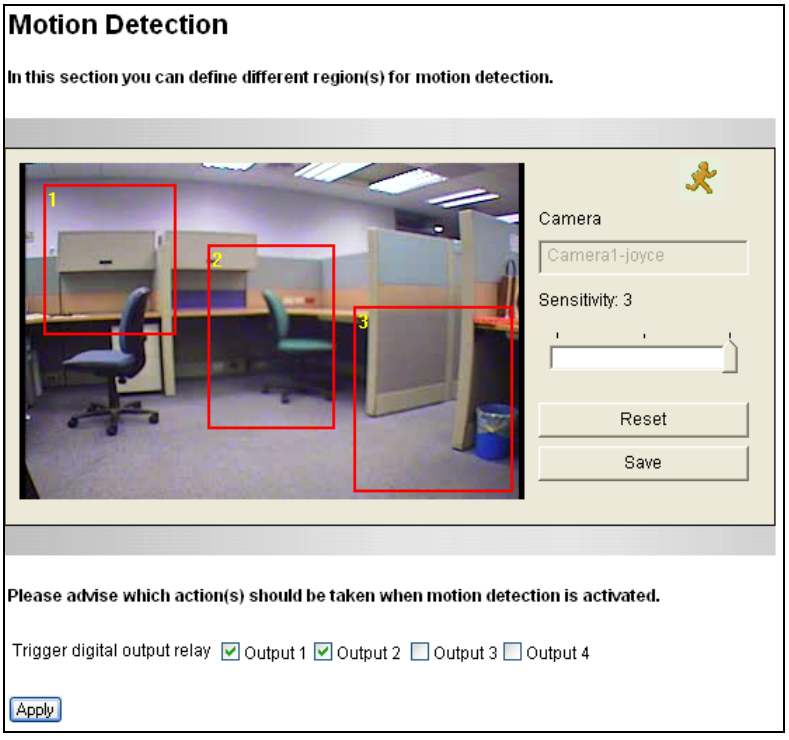


Figure 6-4

1. The default sensitivity value is 2 for the whole area. To define a different sensitivity value, click **Reset**.
2. Select the desired sensitivity by moving the slide bar. There are three values. The higher the value, the more sensitive the camera is to motion.
3. Drag an area on the image. Click **Add** when you are prompted to confirm the setting.
4. To create several areas with different sensitivity values, repeat Steps 2 and 3.

5. Click **Save** to save the above settings.
6. If you want to trigger the alarm outputs when motion is detected, select the outputs (Output 1 to Output 4) and click the **Apply** button. To activate the output settings, you must also start **Input** monitoring manually or by schedule. For related settings, see *6.4 Monitoring* and *6.5.2 I/O Monitoring Settings*.

6.1.4 Text Overlay

The Text Overlay function allows you to type any text in any place on the camera view. Up to 16 text messages can be created. The overlaid text will also be saved in the recorded images.

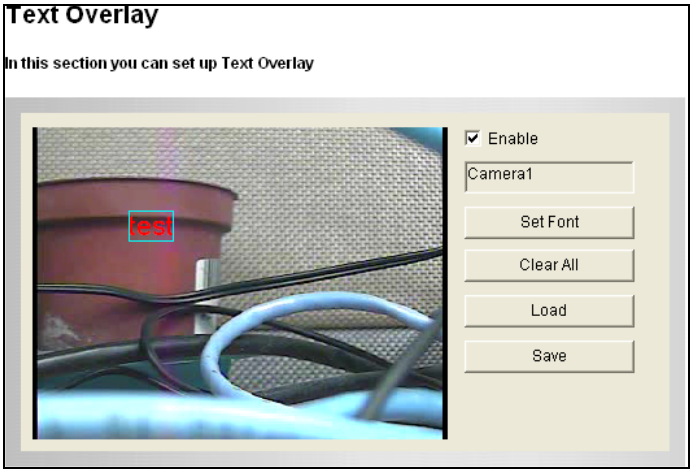


Figure 6-5

1. Select the **Enable** option.
2. Click any place on the image. This dialog box appears.

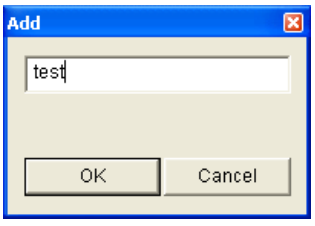


Figure 6-6

3. Type the desired text, and click **OK**. The text is overlaid on the image.
4. Click on the text and drag it to any place on the image.
5. Click **Set Font** to modify the font style of the text.
6. Click **Save** to apply the settings, or click **Load** (Undo) to revert to a previous setting.

6.1.5 Visual Automation

This intuitive feature helps you automate any electronic device by triggering the connected output device. When you click on the image of the electronic device, you can simply change its current state, e.g. light ON.

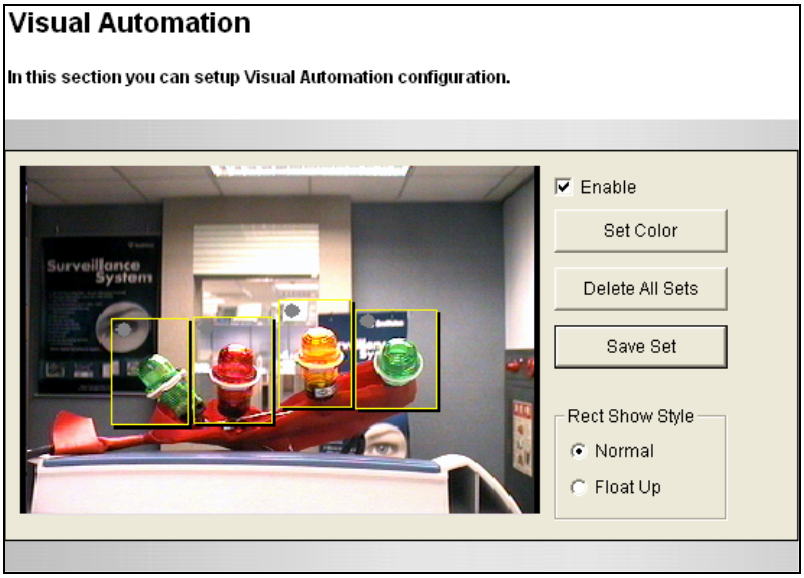


Figure 6-7

1. Select the **Enable** option.
2. Drag an area on the image of the desired electronic device. This dialog box appears.

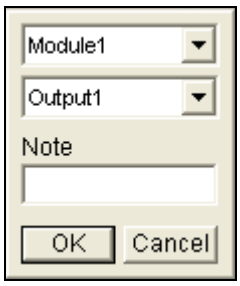


Figure 6-8

3. Assign the connected module and output device. In the Note field, type a note to help you manage the device. Click **OK** to save the settings.
4. To change the frame color of the set area, click the **Set Color** button.
5. To emboss the set area, select **Float Up**; or keep it flat by selecting **Normal**.
6. Click the **Save Set** button to apply the settings.

To perform the function, see *5.3.14 Visual Automation*.

6.1.6 VGA Output Settings

You can select the screen resolution for the VGA output.

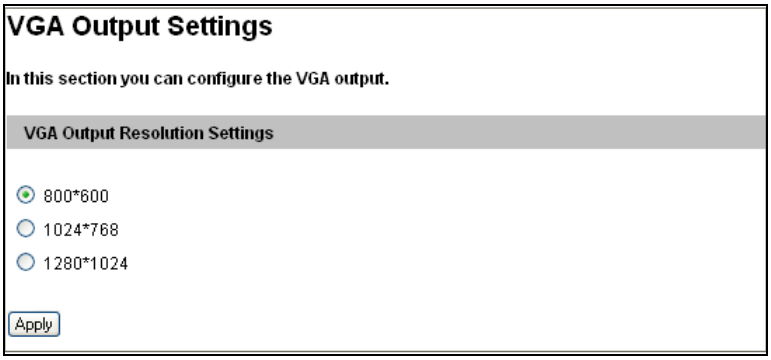


Figure 6-9

6.1.7 Video Channel Source Settings

The settings allow you to assign the video input to the desired video channel for display.

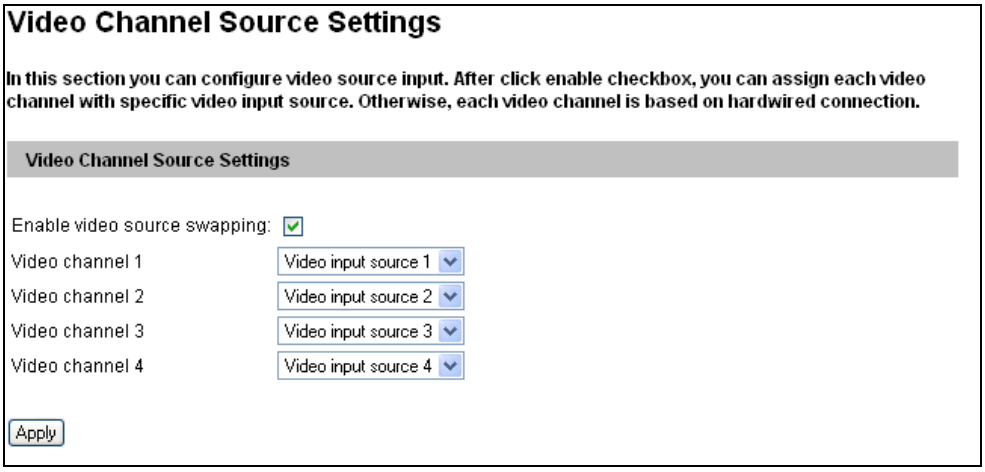


Figure 6-10

6.2 Digital I/O & PTZ

The I/O terminal block, on the rear panel of the GV-Compact DVR V2, provides the interface for the following applications:

1. Digital Input / Relay Output
2. RS-485 interface for PTZ control
3. RS-232 interface for GPS tracking

6.2.1 PTZ Settings

Through the RS-485 interface on the I/O terminal block, you can connect up to 4 PTZ cameras. Before using this function, you must install the PTZ components from the Software CD. Select **Install PTZ** in the Software CD for installation. Then open this PTZ Settings page to configure the baud rate, speed and address. For these settings, please consult your PTZ documentation.

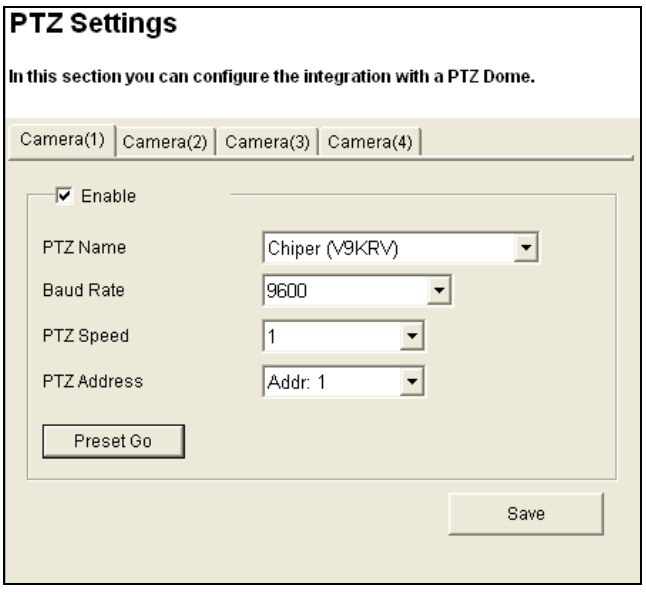


Figure 6-11

Note: Currently the GV-Compact DVR V2 does not support the PTZ camera with RS-232 interface.

6.2.2 Input/Output Settings

Input Setting

The GV-Compact DVR V2 can connect up to 4 input devices, such as sensors.

- **Normal State:** Set up the input state to trigger actions by selecting Open Circuit (N/O) or Grounded Circuit (N/C).
- **Latch Mode:** Enable the mode to have a momentary output alarm.
- **Trigger Digital Output Relay:** Select the output(s) to be triggered once the input is activated.
- **Record:** Select the camera(s) to start recording once the input is activated.
- **Send Video to Center V2:** Select the desired camera(s) to send their images to Center V2 when the input is triggered.

You can direct a PTZ camera to a preset point upon input trigger:

- **Set PTZ camera to preset point:** Enable the preset function and select the camera that maps the PTZ camera.
- **Input on:** Direct the PTZ camera to a preset point when the input is triggered.
- **Input off:** Direct the PTZ camera to another preset point when the triggered input is off.
- **Duration to set preset after input off x seconds:** Specify the amount of time the PTZ camera stays in “Input on” preset point before moving to “Input off” preset point.

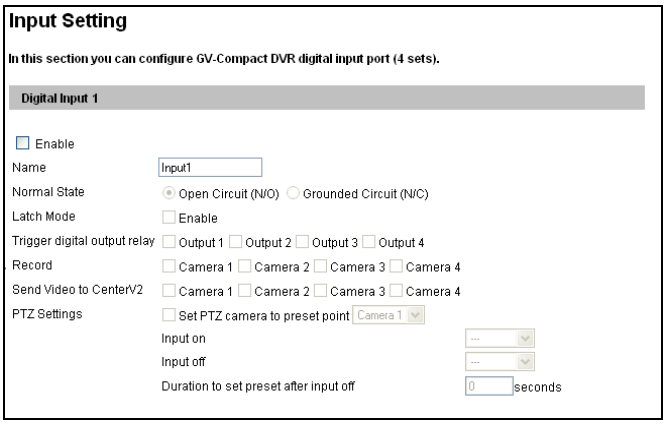


Figure 6-12

Note: The functions of triggering the output, the recording and sending video to Center V2 only work after you start **Input** monitoring manually or by schedule. To configure the input monitoring, see *6.4 Monitoring* and *6.5.2 I/O Monitoring Settings*.

For set up a PTZ camera, see *6.2.1 PTZ Settings*.

Output Setting

The GV-Compact DVR V2 can connect up to 4 output devices, such as alarms. Select **Enable** to enable the output device. Choose the output signal that mostly suits the device you are using: N/O (Open Circuit), N/C (Grounded Circuit), N/O Toggle, N/C Toggle, N/O Pulse or N/C Pulse. For **Toggle** output type, the output continues to be triggered until a new input trigger ends the output. For **Pulse** output type, the output is triggered for the amount of time you specify in the Trigger Pulse Mode for x Seconds field.

You can also choose to activate the configured output device automatically under these conditions: video lost, disk write error (Rec Error) and hard disk full (HD Full).

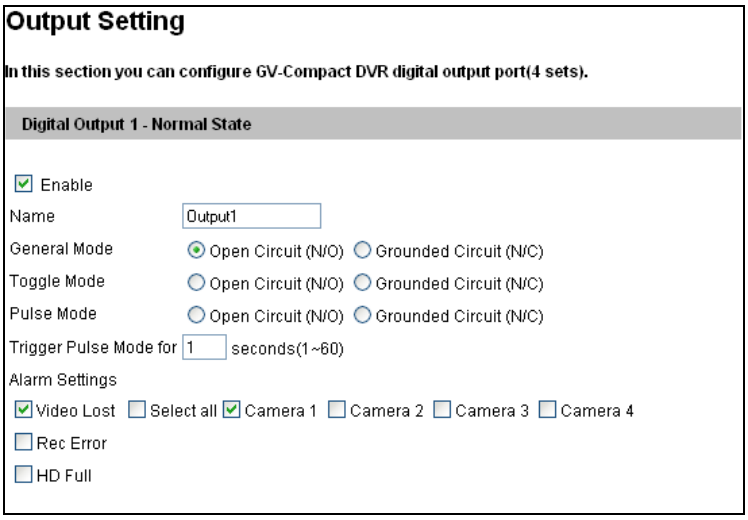


Figure 6-13

6.2.3 GPS

The GV-Compact DVR V2 supports the Global Position System (GPS) for active vehicle tracking and location verification.

To enable this function, a GV-GPS module or any GPS module supporting RS-232 serial interface is required. See *12.1 Pin Assignment* to connect the GPS module to the I/O terminal block of the unit.

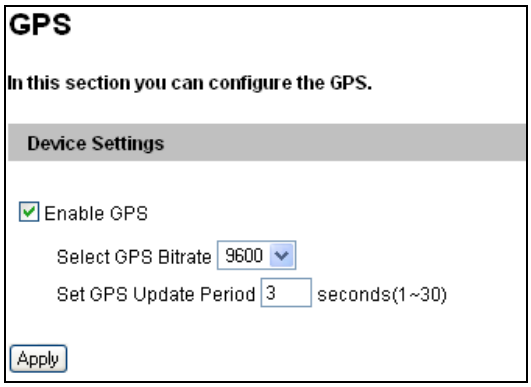


Figure 6-14

- **Select GPS Baudrate:** Two baud rate options are available: 4800 and 9600. By default the value is 9600.
- **Set GPS Update Period:** Set the update frequency in seconds for GPS data.

After the GPS function is activated, you can view the location of the GV-Compact DVR V2 on Google Maps. See *8.3 GPS Tracking*. If the monitoring is also activated, the GPS tracks will be recorded along with videos. This makes it possible to play back GPS tracks and videos together on the GV-System. See *7.2.4 Playback of GPS Tracks*.

6.2.4 Buzzer

The system buzzer can be activated automatically under these conditions: video lost, input device triggered, motion detected, disk full and disk write error. The duration of buzzing sounds is definable. When the buzzer starts beeping, pressing any button on the Remote Control can stop it.

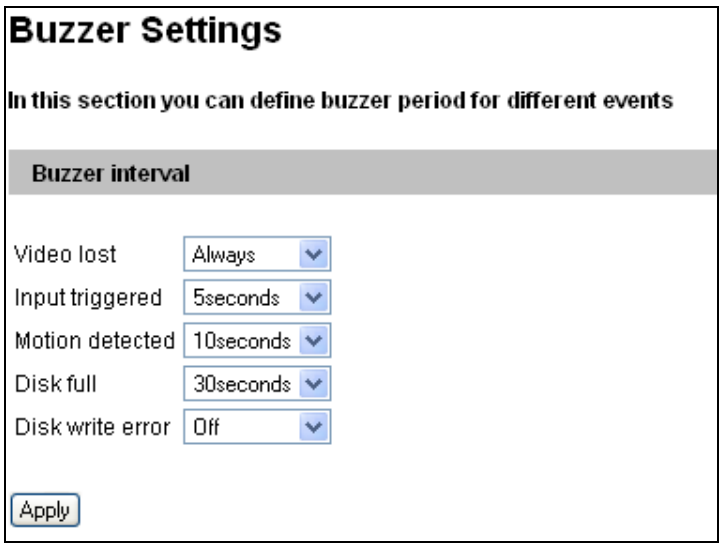


Figure 6-15

6.2.5 Spot Monitor

If the spot monitor is connected to the GV-Compact DVR V2, configure the settings of the spot monitor.

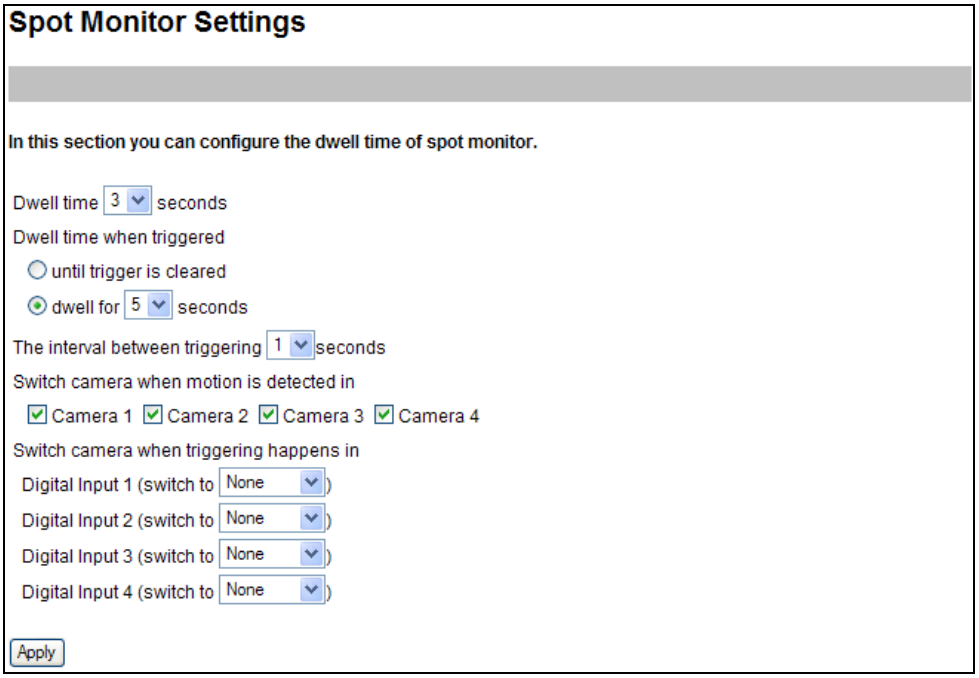


Figure 6-16

- **Dwell time x seconds:** Select the amount of time that each video remains on the spot monitor before the GV-Compact DVR V2 switches to the next video in a rotation. The dwell time can be between 1 and 5 seconds.
- **Dwell time when triggered:** Select the amount of time that the video remains on the spot monitor after the motion or I/O triggered event occurs. The triggered dwell time can be between 1 and 5 seconds. If you select **until trigger is cleared**, the video will remain on the spot monitor until the triggered input is turned off.
- **The interval between triggering x seconds:** Select the interval between triggered events from 1 to 5 seconds. During the specified length of time, all the triggered events will be ignored. The triggered event after the interval will be displayed on the spot monitor.
- **Switch camera when motion is detected in:** Select the cameras to be displayed upon motion events.
- **Switch camera when triggering happens in:** Select the associated camera to be displayed when an input is triggered.

6.3 Events & Alerts

For the events of motion detection or I/O trigger, the Administrator can set up these trigger actions:

1. Send a captured still image by e-mail or FTP.
2. Notify Center Monitoring Station, Center V2, VSM or GV-GIS, by video or text alerts.

To have above trigger actions, you must also set the following features:

- Motion Detection (See *6.1.3 Motion Detection*)---optional
- Input Setting (See *6.2.2 Input/Output Settings*)
- For e-mail and FTP alerts, it is required to start monitoring (See *6.4 Monitoring*).

Note: The Motion Detection function is an optional setting since it is activated by default.

6.3.1 E-mail

After a trigger event, the GV-Compact DVR V2 can send the e-mail to a remote user containing a captured still image.

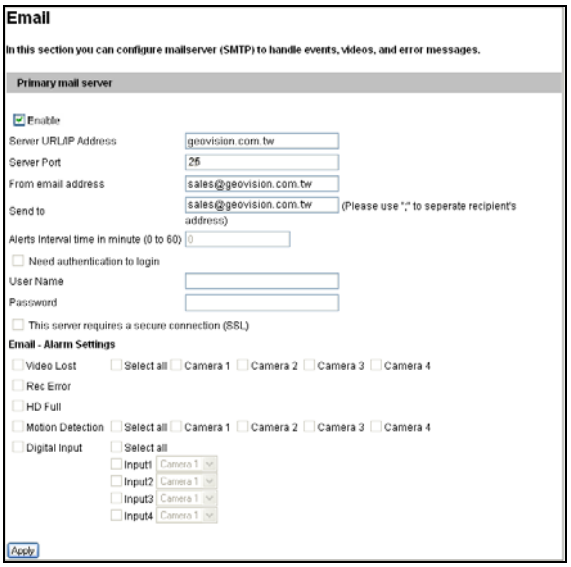


Figure 6-17

[Enable] Select to enable the e-mail function.

- **Sever URL/IP Address:** Type the URL or IP address of the SMTP server.
- **Server Port:** Type the SMTP server's port number. Or keep the default value 25.
- **From email address:** Type the sender's e-mail address.
- **Send to:** Type the e-mail address(s) you want to send alerts to.
- **Alerts interval time in minute:** Specify the interval between e-mail alerts. The interval can be between 0 and 60 minutes. The option is useful for the frequent event condition. It will ignore any event triggers during the interval period.

[Need authentication to login] If the SMTP server needs authentication, select this option and type the valid username and password.

[This server requires a secure connection] If the SMTP Servers needs a secure connection (SSL), select this option.

[Email-Alarm Settings] You can choose to send e-mail alerts under these conditions: video lost, disk write error (Rec Error), hard disk full (HD full), motion detected, or the digital input triggered.

For the related settings to send e-mail alerts, see *6.1.3 Motion Detection*, *6.2.2 Input/Output Settings* and *6.4 Monitoring*.

6.3.2 FTP

You can also send the captured still image to a remote FTP server for alerts.

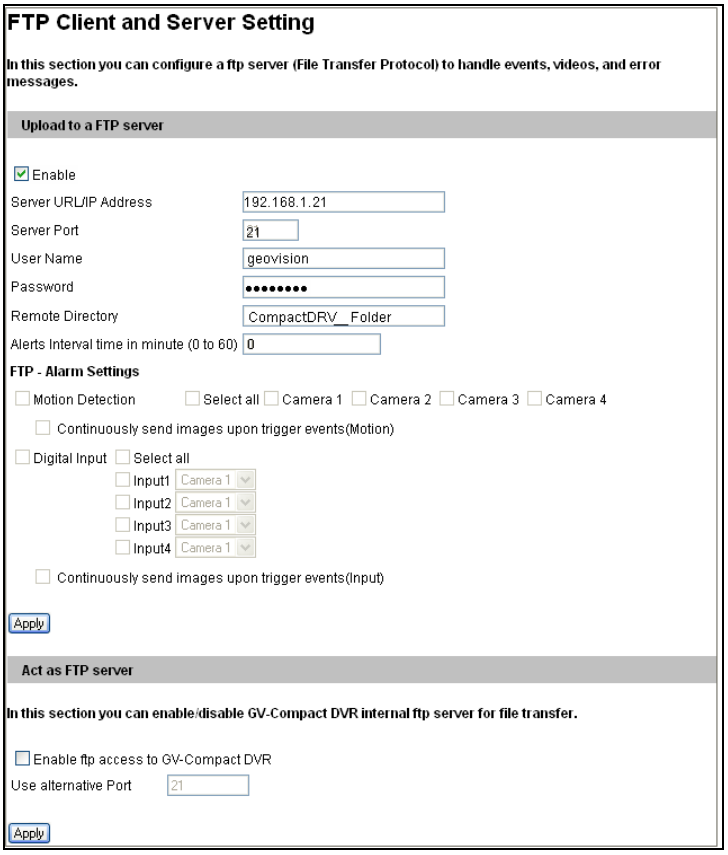


Figure 6-18

[Upload to a FTP Server]

- **Enable:** Select to enable the FTP function.
- **Server URL/IP Address:** Type the URL address or IP address of the FTP Server.
- **Port Number:** Type the port number of the FTP Server. Or keep the default value 21.
- **User Name:** Type a valid user name to log into the FTP Server.
- **Password:** Type a valid password to log into the FTP Server.
- **Remote Directory:** Type the name of the storage folder on the FTP Server.
- **Alerts Interval time in minute:** Specify the interval between FTP alerts. The interval can be between 0 and 60 minutes. The option is useful for the frequent event occurrence by which any event triggers during the interval period will be ignored.

[FTP-Alarm Settings]

- **Motion Detection:** Once the motion is detected on the selected camera, a still image will be sent to the FTP Server.
  - ⊙ **Continuously send images upon trigger events (motion):** A sequence of snapshot images are uploaded to the FTP Server when motion is detected on the selected camera.
- **Digital Input:** Once the selected input is triggered, a still image from the selected camera will be sent to the FTP Server.
  - ⊙ **Continuously send images upon trigger events (input):** A sequence of snapshot images from the selected are uploaded to the FTP Server when the selected input is triggered.

[Act as FTP Server]

You can enable the GV-Compact DVR V2 to act as a FTP Server, allowing users to download the AVI files. The default download port is 21.

To access the internal FTP server through a Web browser, enter the IP address or the domain name of the GV-Compact DVR V2 in your browser like this:
fpt://192.168.0.10
When you are prompted for Username and Password, enter the default value **ftpuser** in both fields. Then you should find the AVI files recorded after event triggers.

For the related settings to send FTP alerts, see *6.1.3 Motion Detection*, *6.2.2 Input/Output Settings* and *6.4 Monitoring*. To change the login information of the internal FTP Server, see *6.8.4 User Account*.

6.3.3 Center V2

After a motion or an I/O triggered event, the central monitoring station Center V2 can get notified by live videos and text alerts. For the live monitoring through Center V2, you must already have a subscriber account on Center V2.

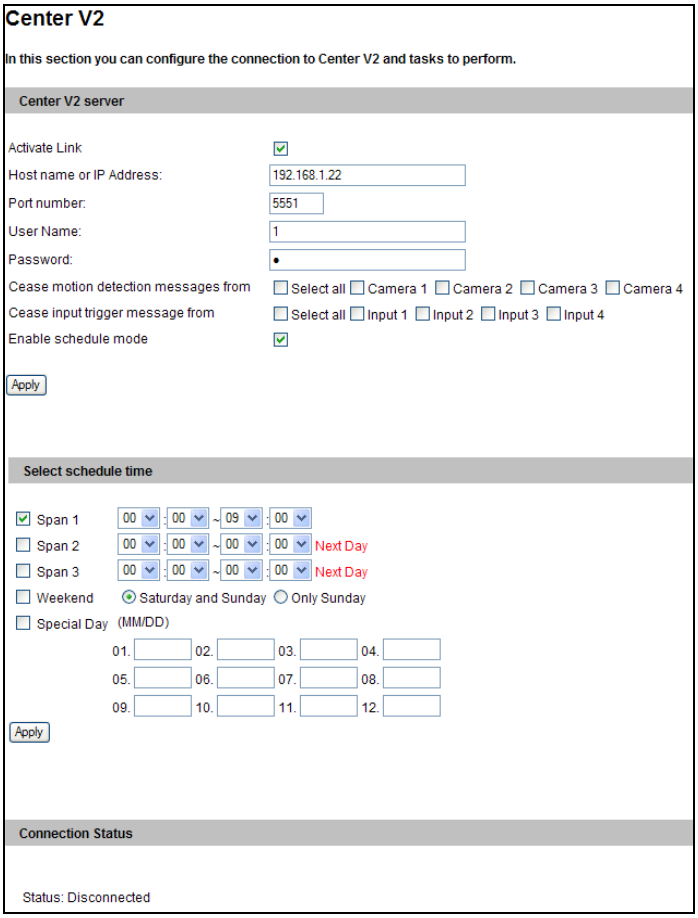


Figure 6-19

To enable the Center V2 connection:

1. **Activate Link:** Enable the monitoring through Center V2.
2. **Host Name or IP Address:** Type the host name or IP address of Center V2.
3. **Port Number:** Type the port matching the **Port 2** on Center V2. Or keep the default value 5551. Refer to *11.1 Center V2*.
4. **User Name:** Type a valid user name to log into Center V2.
5. **Password:** Type a valid password to log into Center V2.
6. Click **Apply**. The Connection Status should display “Connected” and connected time.

These options you can also find on this Center V2 setting page:

- **Cease motion detection messages from:** Stops notifying Center V2 of motion detection from selected camera(s).
- **Cease input trigger messages from:** Stops notifying Center V2 of input trigger from selected input(s).
- **Enable schedule mode:** Starts the monitoring through Center V2 based on the schedule you set in the **Select Schedule Time** section. Refer to *6.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through Center V2, see *6.1.3 Motion Detection*, *6.2.2 Input/Output Setting,* and *11.1 Center V2.*

6.3.4 VSM

After a motion or an I/O triggered event, the central monitoring station VSM can get notified by text alerts. For the live monitoring through VSM, you must already have a subscriber account on VSM.

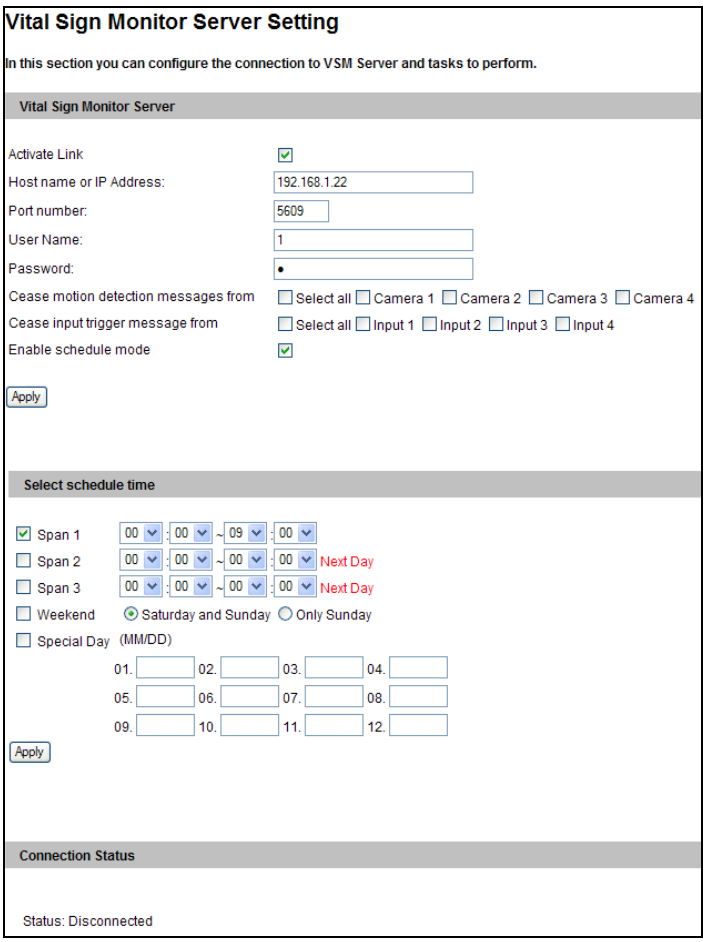


Figure 6-20

To enable the VSM connection:

1. **Activate Link:** Enable the monitoring through VSM.
2. **Host Name or IP Address:** Type the host name or IP address of VSM.
3. **Port Number:** Type the port matching the **Port 2** on VSM. Or keep the default value 5609. Refer to *11.2 VSM*.
4. **User Name:** Type a valid user name to log into VSM.
5. **Password:** Type a valid password to log into VSM.
6. Click **Apply.** The Connection Status should display “Connected” and connected time.

These options you can also find on this VSM setting page:

- **Cease motion detection messages from:** Stops notifying VSM of motion detection from selected camera(s).
- **Cease input trigger messages from:** Stops notifying VSM of input trigger from selected input(s).
- **Enable schedule mode:** Starts the monitoring through VSM based on the schedule you set in the **Select Schedule Time** section. Refer to *6.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through VSM, see *6.1.3 Motion Detection*, *6.2.2 Input/Output Settings,* and *11.2 VSM*.

6.3.5 GV-GIS

Through the Internet connection, the GV-Compact DVR V2 equipped with the GPS device can send GPS data and live video to the GV-GIS (Geographic Information System) for the services of vehicle tracking, location verification and live monitoring.

Before you configure the GV-GIS connection on this setting page, the following conditions must be met:

- A subscriber account created on the GV-GIS
- UMTS connection activated on the GV-Compact DVR V2 (See *6.7.4 UMTS*)
- GPS function activated on the GV-Compact DVR V2 (See *6.2.3 GPS*)

For details on the GV-GIS, see *GV-CMS Series User's Manual*.

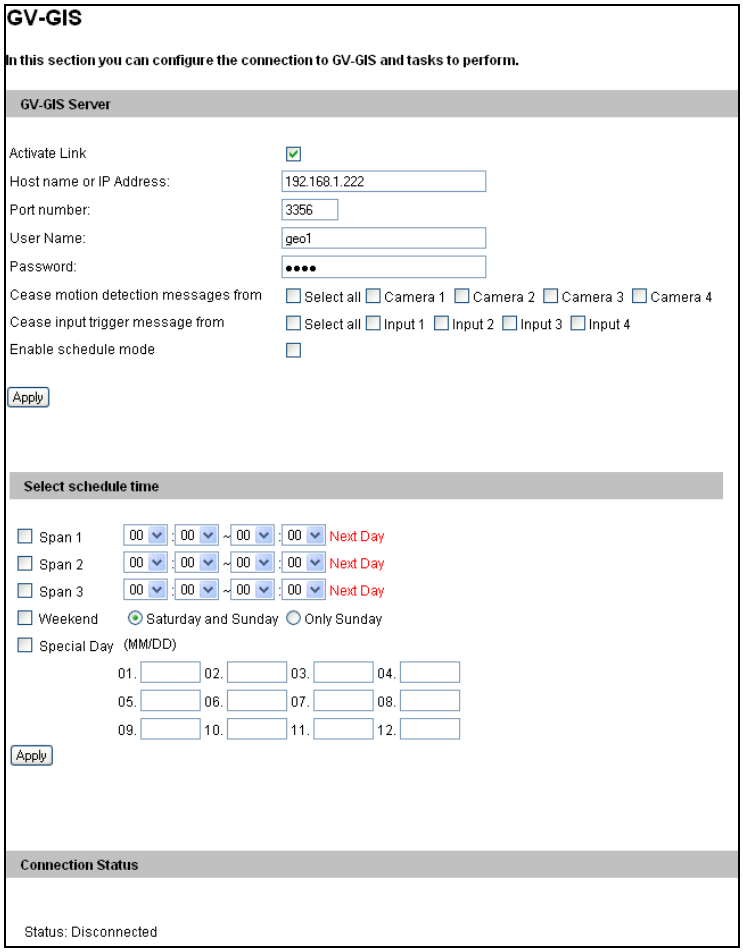


Figure 4-21

To enable the GV-GIS connection:

1. **Activate Link:** Enable the monitoring through GV-GIS.
2. **Host Name or IP Address:** Type the host name or IP address of GV-GIS.

3. **Port Number:** Match the communication port on GV-GIS. Or keep the default value 3356.
4. **User Name:** Type a valid user name to log into GV-GIS.
5. **Password:** Type a valid password to log into GV-GIS.
6. Click **Apply.** The Connection Status should display “Connected” and connected time.

These options you can also find on the GV-GIS setting page:

- **Cease motion detection messages from:** Stops notifying GV-GIS of motion detection from the selected camera(s).
- **Cease input trigger messages from:** Stops notifying GV-GIS of input trigger from the selected input(s).
- **Enable schedule mode:** Starts the monitoring through GV-GIS based on the schedule you set in the **Select Schedule Time** section. Refer to *6.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through GV-GIS, see *6.1.3 Motion Detection*, and *6.2.2 Input/Output Settings*.

6.3.6 GV-Video Gateway

To send the video images to the GV-Video Gateway, follow the steps below.

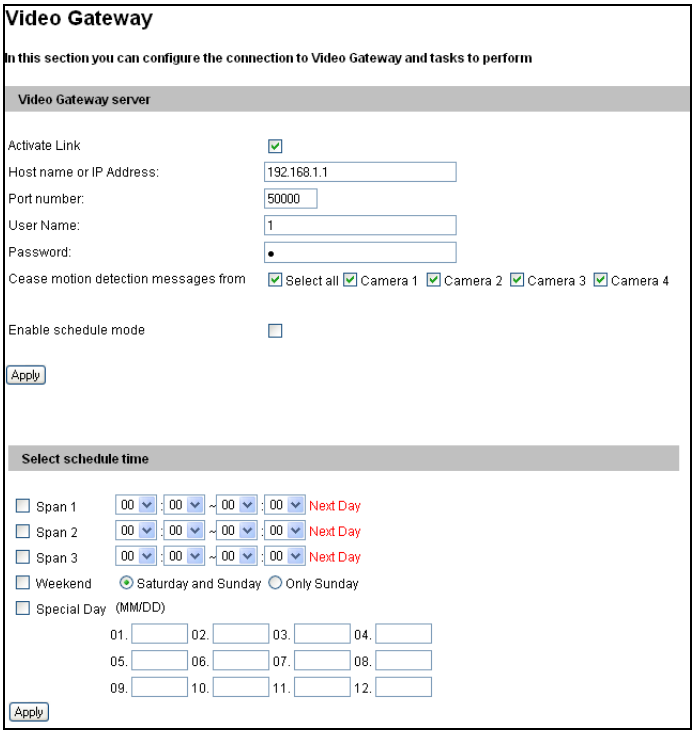


Figure 4-22

1. **Activate Link:** Enable the connection to the GV-Video Gateway.
2. **Host Name or IP Address:** Type the host name or IP address of the GV-Video Gateway.
3. **Port Number:** Match the communication port on the GV-Video Gateway. Or keep the default value 50000.
4. **User Name:** Type a valid user name to log into the GV-Video Gateway.
5. **Password:** Type a valid password to log into the GV-Video Gateway.
6. Click **Apply.** The Connection Status should display “Connected” and connected time.

These options you can also find on this GV-Video Gateway setting page:

- **Cease motion detection messages from:** Stop sending the videos of motion detection from the selected camera(s).
- **Enable schedule mode:** Enable the GV-Video Gateway connection on the schedule you set in the **Select Schedule Time** section. Refer to *4.5 Recording Schedule* for the same settings.

6.3.7 ViewLog Server

The ViewLog Server is designed for remote playback function. This server allows you to remotely access the recorded files saved at the GV-Compact DVR V2 and play back video with the player ViewLog.

Select **Enable** to activate the server built in the unit. Keep the default port **5552** or modify it if necessary. For details on the remote playback, see *7.2.2 Playback over Network*.

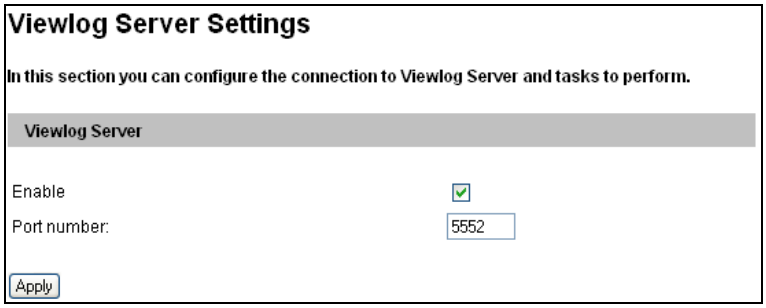


Figure 6-23

6.3.8 3GPP

The 3GPP Server enables video and audio streaming to your 3G-enabled mobile phone. After enabling the server, you can receive live streaming from the GV-Compact DVR V2 by entering the IP address (domain name) and password of the GV-Compact DVR V2 on the 3G-enable mobile phone. See *Chapter 9 Mobile Phone Surveillance*.

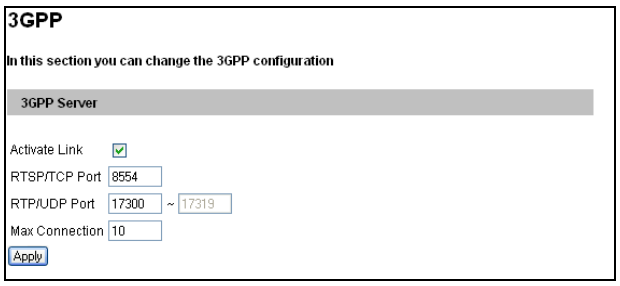


Figure 6-24

- **Activate Link:** Enable the 3GPP service.
- **RTSP/TCP Port:** Keep the default value 8554, or modify it if necessary.
- **RTP/UDP Port:** Keep the default range from 17300 to 17319, or modify it if necessary. The number of ports for use is limited to 20.
- **Max Connection:** Set the maximum number of connections to the GV-Compact DVR V2. The maximum value is 20.

6.4 Monitoring

You can start recording manually, by schedule or by input trigger.

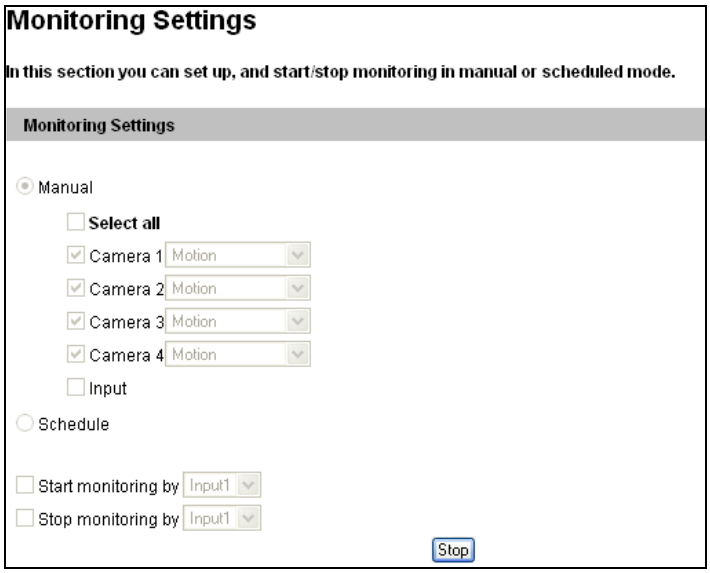


Figure 6-25

[Manual] Manually activates recording and I/O monitoring. Select one of the following options and then click the **Start** button.

- **Select all:** Manually starts recording and I/O monitoring as well.
- **Camera 1 - Camera 4:** Manually starts recording. Select the desired camera(s) and the recording mode for recording.
- **Input:** Manually starts I/O monitoring. When the input is triggered, its associated camera and output will also be activated for recording and alerting. For input settings, see *6.2.2 Input/Output Settings.*

[Schedule] The system starts recording and I/O monitoring based on the schedule you set. For schedule settings, see *6.5 Recording Schedule*.

[Start monitoring by Input X] Starts monitoring by the assigned input. When the assigned input is triggered, the system will respond based on your recording or I/O monitoring settings in above **Manual** or **Schedule** options.

[Stop monitoring by Input X] Stops monitoring by the assigned input. When the assigned input is triggered, the system will stop monitoring.

[Camera Status Icon]

 : Manual recording

 : Schedule recording

 : On standby

 : Enabled for motion detection and input trigger

6.5 Recording Schedule

The schedule is provided to activate recording and I/O monitoring on a specific time each day.

6.5.1 Recording Schedule Settings

You can set up different monitoring schedules for each camera.

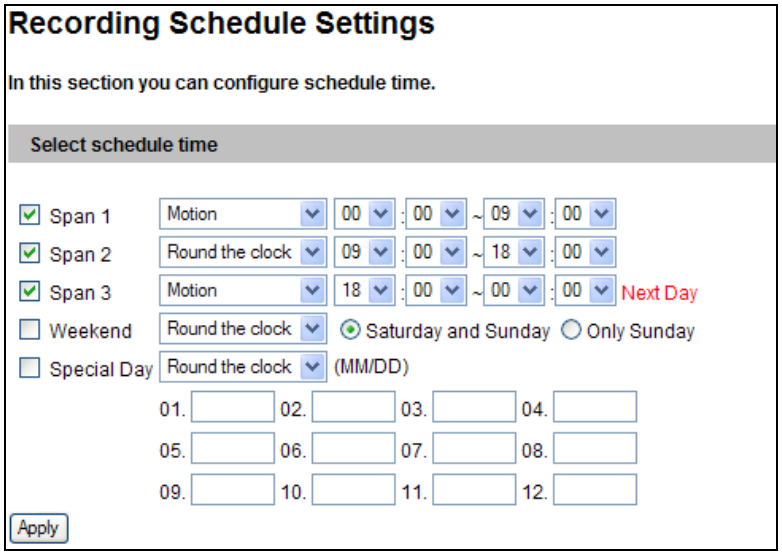


Figure 6-26

- **Span 1- Span 3:** Set a different recording mode for each time frame during the day. Each day can be divided into 3 time frames, represented by Span 1 to Span 3.
- **Weekend:** If you want to have the camera monitoring all day during the weekend, enable this option and select the recording mode to be used on the weekend. Define whether your weekend includes **Saturday and Sunday** or **Only Sunday**.
- **Special Day:** Set the recording mode on a specified day.

Note: In Recording Schedule and I/O Monitoring Schedule, if the settings for Special Day conflict with those for Span 1-3 or Weekend, the Special Day settings will get priority.

To start the scheduled recording, you must select **Schedule** to be the monitoring mode. See *6.4 Monitoring*.

6.5.2 I/O Monitoring Settings

You can set up the schedule for I/O monitoring to start.

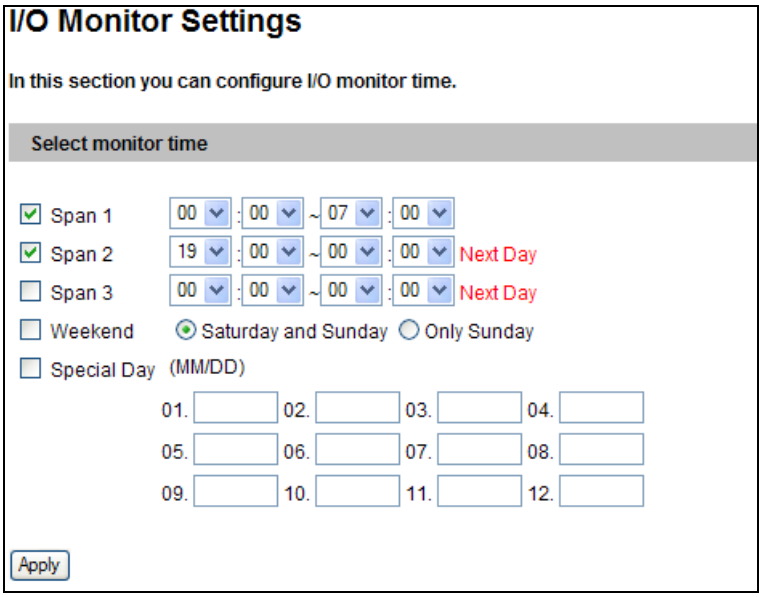


Figure 6-27

- **Span 1 to Span 3:** Set different time frames during the day to enable I/O monitoring. Each day can be divided into 3 time frames, represented by Span 1 to Span 3.
- **Weekend:** If you want to have the I/O monitoring all day during the weekend, enable this option and define whether your weekend includes **Saturday and Sunday** or **Only Sunday**.
- **Special Day:** Enable I/O monitoring on a specified day.

To start the scheduled recording, you must select **Schedule** to be the monitoring mode. See *6.4 Monitoring*.

6.6 Remote ViewLog

With the Remote ViewLog function, you can remotely play back the files recorded at the GV-Compact DVR V2 over TCP/IP network.

For the first-time user, you need to install the Remote ViewLog program from the Software CD. For remote access to the GV-Compact DVR V2, the **ViewLog Server** built in the unit must be enabled. See *6.3.7 ViewLog Server*.

For details on connecting to the GV-Compact DVR V2 for playback, see *7.2.2 Playback over network*.

6.7 Network

The Network section includes some basic but important network configurations that enable the GV-Compact DVR V2 to be connected to a TCP/IP network.

6.7.1 LAN

According to your network environment, select among Static IP, DHCP and PPPoE.

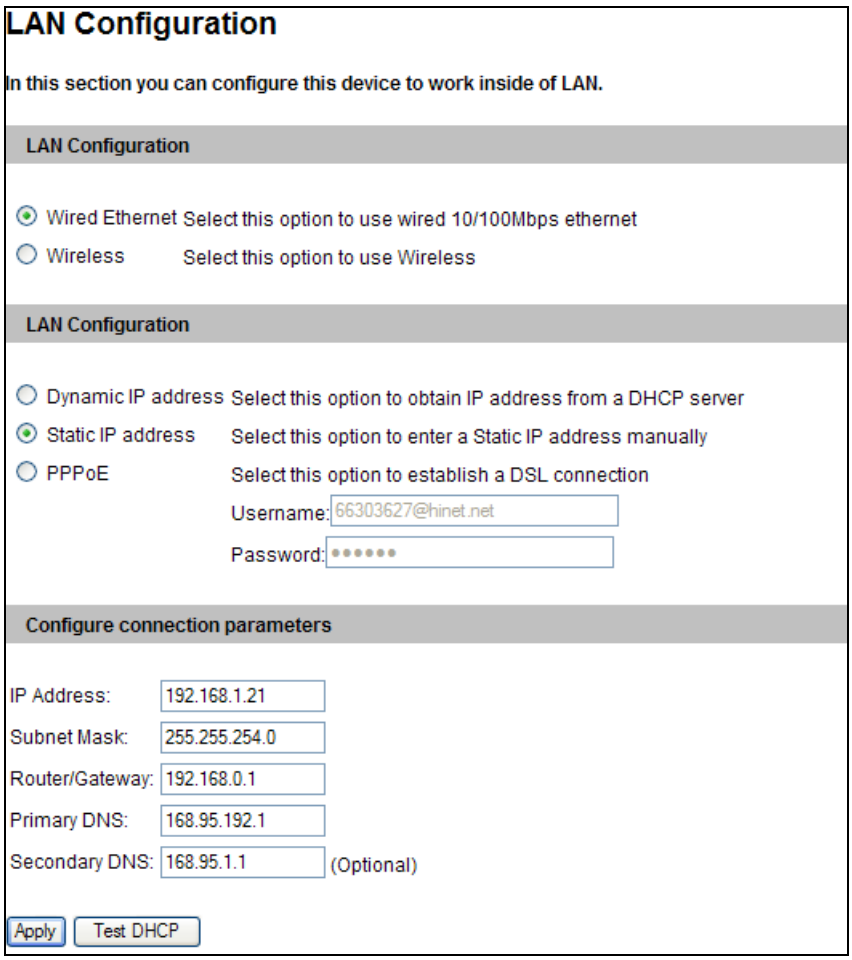


Figure 6-28

[LAN Configuration]

According to the network environment, select **Wired** or **Wireless**.

Before enabling **Wireless**, set up **WLAN Configuration** first. For details, see *6.7.2 Wireless-Client Mode*.

[LAN Configuration]

- **Dynamic IP address:** Assign a dynamic IP by the DHCP server. Every time when you want to log in the GV-Compact DVR V2, you must check the current IP assigned by the DHCP server at the **Network Status** screen. Otherwise, you may enable the DDNS function that links a domain name to the unit's changing IP address.
- **Static IP address:** Assign a static IP or fixed IP to the GV-Compact DVR V2. Type the GV-Compact DVR V2's TCP/IP and DNS parameters in the **Configure connection parameters** section.
- **PPPoE:** The network environment is xDSL connection. Type the username and password provided by ISP to establish the connection. If you use the xDSL connection with dynamic IP addresses, it is highly suggested to enable the DDNS function that links a domain name to the unit's changing IP address.

[Configure connection parameters]

Type the GV-Compact DVR V2's IP address, Subnet Mask, Router/Gateway, Primary DNS server and Secondary DNS server.

Parameters	Default
IP address	192.168.0.10
Subnet Mask	255.255.255.0
Router/Gateway	192.168.0.1
Primary DNS server	192.168.0.1
Secondary DNS server	192.168.0.2

For details on the DDNS function, see *6.7.3 Advanced TCP/IP.*

6.7.2 Wireless-Client Mode

To use the wireless function, a wireless LAN USB Adaptor is required. For supported wireless LAN adaptors, see *Appendix A*.

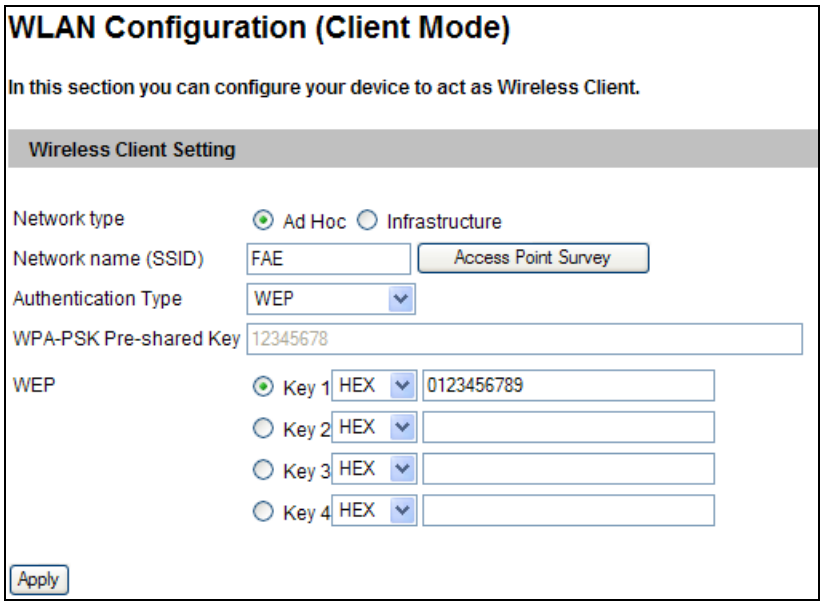


Figure 6-29

- **Network type:** Select the network mode **Ad Hoc** or **Infrastructure**.
  - **Infrastructure:** Via the Access Point to connect to the Internet. This mode further gives wireless access to the Internet or data sharing under a previously wired environment.
  - **Ad-Hoc:** A Peer-to-Peer mode. This mode connects to other computer with the WLAN card, and does not need the Access Point to connect to each other.
- **Network name (SSID):** The SSID (Service Set Identify) is a unique name that identifies a particular wireless network. Type SSID of the Wireless LAN group or Access Point you are going to connect to.
  - **Access Point Survey:** Click this button to search all the available Access Points (Infrastructure mode) and wireless stations (AD-Hoc mode) within the range of your WLAN card.
- **Authentication Type:** Select one of these network authentication and data encryption: **Disable**, **WEP**, **WPAPSK-TKIP**, **WPAPSK-AES**, **WPA2PSK-TKIP** or **WPA2PSK-AES**.
  - **Disabled:** No authentication is needed within the wireless network.
  - **WEP (Wired Equivalent Privacy):** A type of data encryption. Type up to four WEP Keys in HEX or ASCII format. Note that if you use HEX format, only digits 0-9 and letters A-F, a-f are valid.

- **WPAPSK-TKIP** and **WPA2PSK-TKIP:** Type WPA-PSK (Pre-Shared Key) for data encryption.
- **WPAPSK-AES** and **WPA2PSK-AES:** Type WPA-PSK (Pre-Shared Key) for data encryption.

Note: Your encryption settings must match those used by the Access Points or wireless stations with which you want to associate.

6.7.3 Advanced TCP/IP

This section introduces the advanced TCP/IP settings, including DDNS server, HTTP port, streaming port and UPnP.

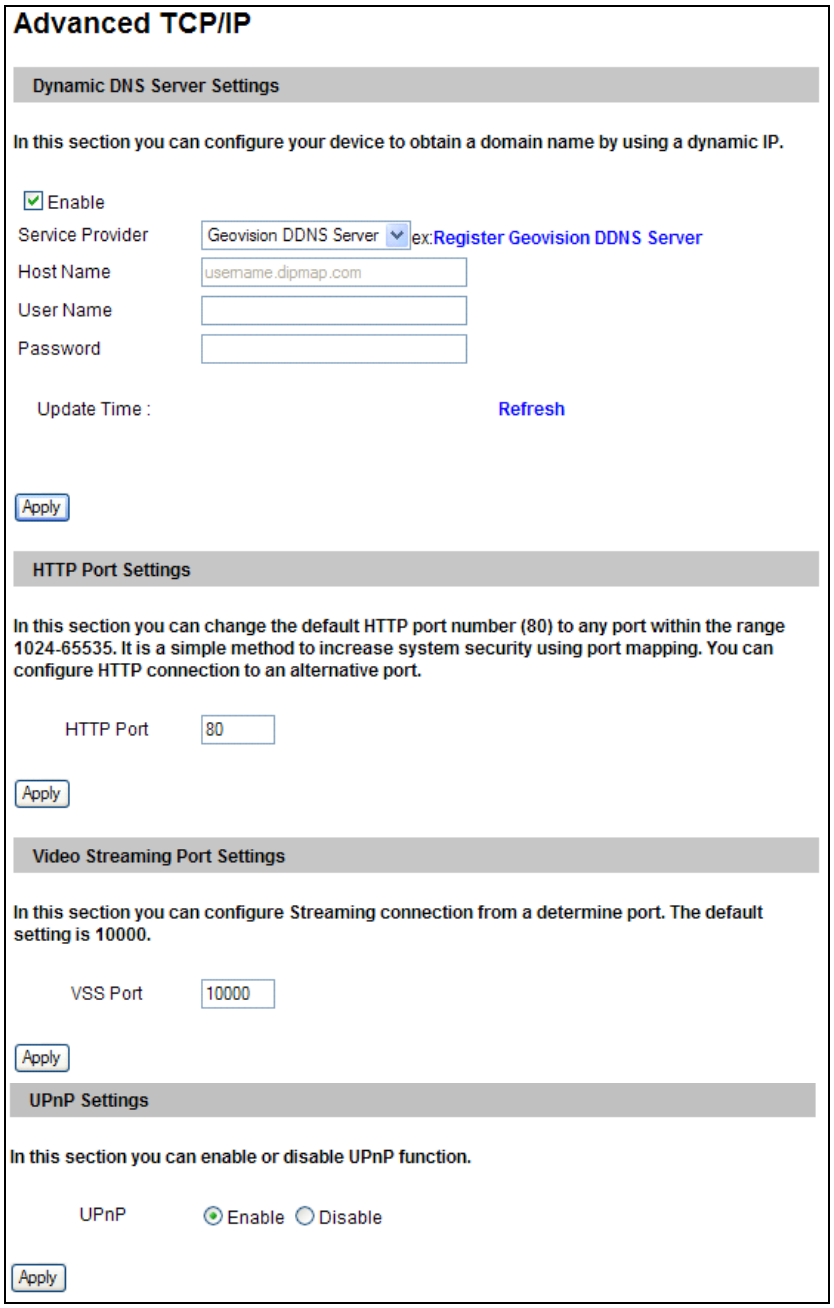


Figure 6-30

[Dynamic DNS Server Settings]

DDNS (Dynamic Domain Name System) provides a convenient way of accessing the GV-Compact DVR V2 when using a dynamic IP. DDNS assigns a domain name to the unit, so that the Administrator does not need to go through the trouble of checking if the IP address assigned by DHCP server or ISP (in xDSL connection) has changed.

Before enabling the DDNS function, the Administrator should apply for a Host Name from the DDNS service provider's website. There are 2 providers listed in the GV-Compact DVR V2: GeoVision DDNS Server and DynDNS.org.

To enable the DDNS function:

1. **Enable:** Enable the DDNS function.
2. **Service Provider:** Select the DDNS service provider you have registered with.
3. **Host Name:** Type the host name used to link to the GV-Compact DVR V2. For the users of GeoVision DDNS Server, it is unnecessary to fill the field because the system will detect the host name automatically.
4. **User Name:** Type the user name used to enable the service from the DDNS.
5. **Password:** Type the password used to enable the service from the DDNS.
6. Click **Apply**.

[HTTP Port Settings]

The HTTP port enables connecting the GV-Compact DVR V2 to the web. For security integration, the Administrator can hide the server from the general HTTP port by changing the default HTTP port of 80 to a different port number within the range of 1024 thru 65535.

[Video Streaming Port Settings]

The VSS port enables connecting the GV-Compact DVR V2 to the GV-System. The default setting is 10000.

[UPnP Settings]

UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among networking equipment, software and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. It means that they are listed in the network devices table for the operating system (such as Windows XP) supported by this function. Enabling this function, you can connect to the GV-Compact DVR V2 directly by clicking on the GV-Compact DVR V2 listed in the network devices table.

6.7.4 UMTS/ZigBee

UMTS stands for Universal Mobile Telephone System. UMTS is a third-generation (3G) broadband, packet-based transmission of text, digitized voice, video, and multimedia at data rates up to 2 megabits per second. UMTS offers a consistent set of services to mobile computer and phone users, no matter where they are located in the world.

After a mobile broadband device (supporting UMTS, HSDPA, etc.) is attached to the USB port on the front panel and the UMTS function is enabled, the GV-Compact DVR V2 can have Internet connectivity. For supported mobile broadband devices, see *Appendix B*.

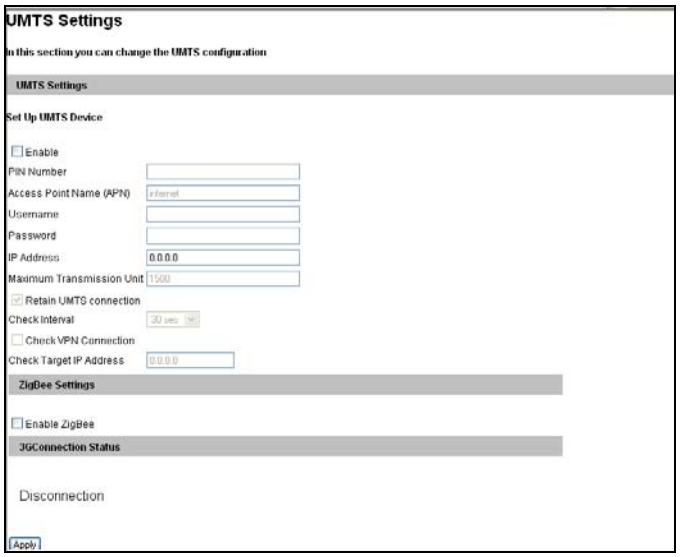


Figure 6-31

[UMTS Settings]

- **PIN number:** Type the PIN number that is provided by your network operator.
- **Access Point Name (APN):** Type Access Point Name that is provided by your network operator.
- **Username:** Type a valid username to enable the UMTS service from your network operator.
- **Password:** Type a valid password to enable the UMTS service from your network operator.
- **IP Address:** The IP address of the GV-Compact DVR V2 will be displayed after the UMTS service is enabled. The next time when you want to log in the GV-Compact DVR V2, you need to enter the IP address into your browser. If you use the UMTS connection with dynamic IP addresses, it is highly suggested to enable the DDNS function that links a domain name to the unit's changing IP address. For details on DDNS, see *6.7.3 Advanced TCP/IP.*

- **Maximum Transmission Unit:** Type the Maximum Transfer Unit (MTU). The default value is 1500.
- **Retain UMTS Connection:** Select this option to check the UMTS connection status and use the drop-down list to specify the time length for check frequency. The GV-Compact DVR V2 will start connection retry if disconnection is detected.
- **Check VPN Connection:** Select this option to check the Virtual Private Network (VPN) connection status and enter the IP address of a VPN client. The GV-Compact DVR V2 will start connection retry if disconnection is detected.

[ZigBee Settings] Enable the ZigBee application.

6.7.5 Multicast

The multicast provides a mechanism for sending a single video and audio stream to a group of hosts. Only the hosts that have joined a multicast group can send and receive the multicast streams. The multicast streams are only sent to the hosts on a local network.

This configuration page provides two settings. One is to allow the GV-Compact DVR V2 to join a multicast group. The other is to allow the GV-Compact DVR V2 to receive audio broadcasting from other hosts in a multicast group.

IMPORTANT: The Multicast function only works when the video resolution is set to CIF (360 x 240 / 360 x 288) or QCIF (176 x 112 / 176 x 144).

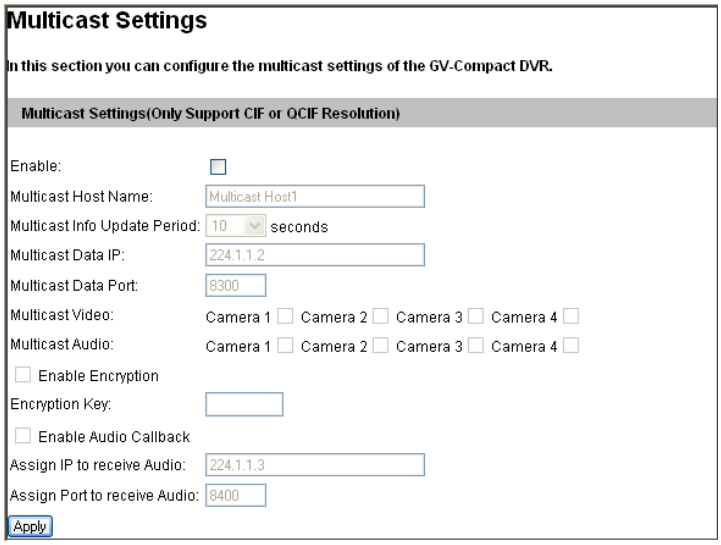


Figure 6-32

- **Multicast Host Name:** Name the GV-Compact DVR V2 in a multicast group.
- **Multicast Info Update Period:** Set the time length between each update of multicast streams.
- **Multicast Data IP:** Type the IP address used for multicasting. The default IP address is 224.1.1.2.
- **Multicast Data Port:** Type the port used for multicasting. The default value is 8300.
- **Multicast Video:** Select the camera to send its video through multicasting.
- **Multicast Audio:** Select the audio to send its audio through multicasting.

- **Enable Encryption:** Enable this option and type the Encryption Key to secure multicast streams. The hosts in the multicast group will need to enter the Key to access the video and audio streams.
- **Enable Audio callback:** Enable this option to receive audio broadcasting from the hosts in the multicast group. Specify the IP address and port number to receive the audio broadcast. The default IP address is 224.1.1.3 and port number is 8400.

6.7.6 IP Filter

The Administrator can set IP filtering to restrict access to the GV-Compact DVR V2.

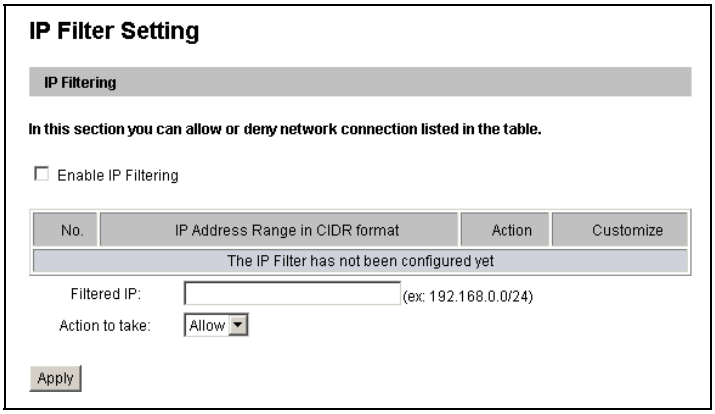


Figure 6-33

To enable the IP Filter function:

1. **Enable IP Filtering:** Enable the IP Filtering function.
2. **Filtered IP:** Type the IP address you want to restrict the access.
3. **Action to take:** Select the action of **Allow** or **Deny** to be taken for the IP address(es) you have specified.
4. Click **Apply**.

6.8 Management

The Management section includes the settings of data and time, storage device and user account. In addition, you can view the firmware version and execute certain system operations.

6.8.1 Date & Time Setting

The date and time settings are used for date and time stamps on the image.

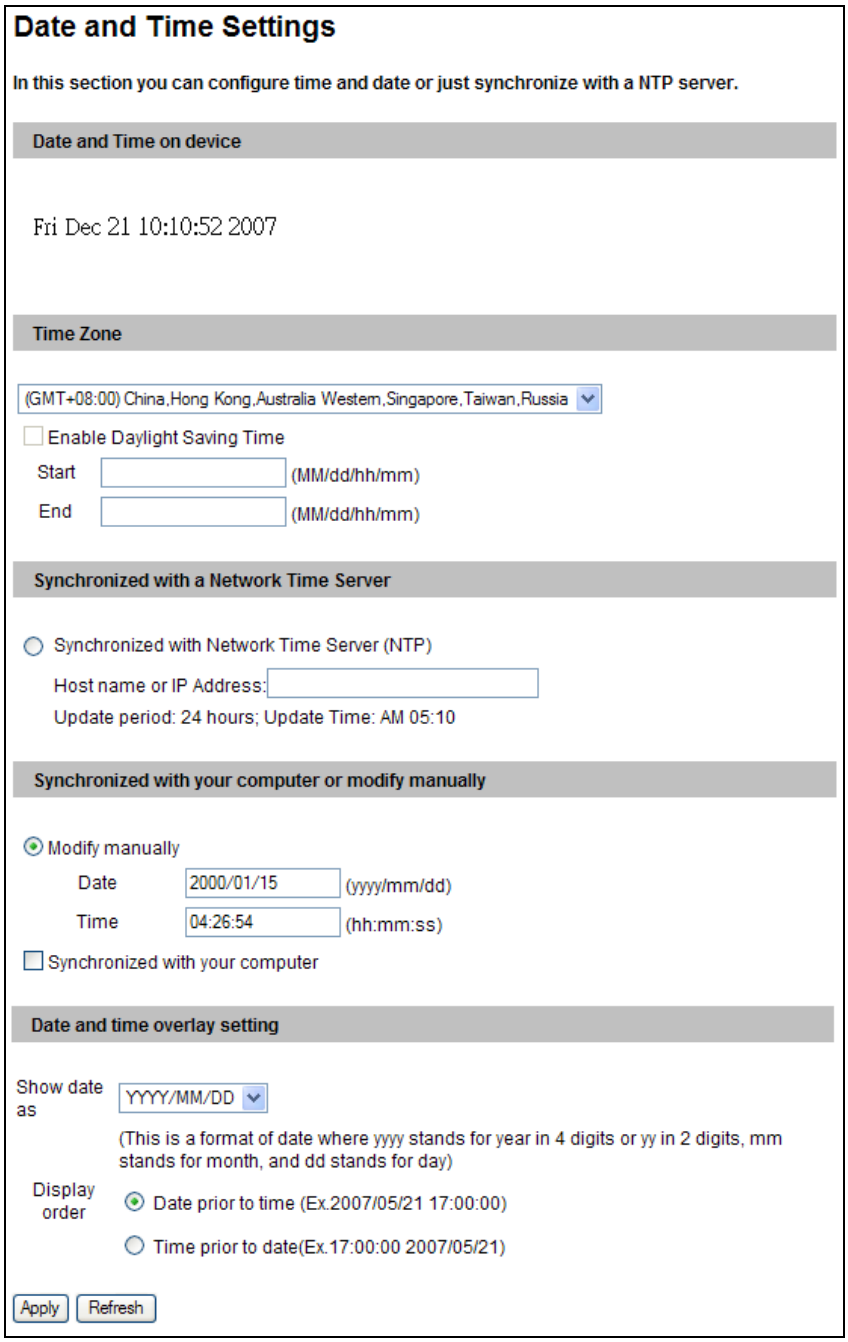


Figure 6-34

[Date & Time on Device] Displays the current date and time on the GV-Compact DVR V2.

[Time Zone] Sets the time zone for local settings. Select **Enable Daylight Saving Time** to automatically adjust the GV-Compact DVR V2 for daylight saving time. Type the Start Time and End Time to enable the function.

Also see 7*.2.5 Playback of Daylight Saving Time Events*.

[Synchronized with a Network Time Server] By default, the GV-Compact DVR V2 uses the timeserver of time.windows.com to automatically update its internal clock every 24 hours. You can also change the host name or IP setting to the timeserver of interest.

[Synchronized with your computer or modify manually] Manually changes the GV-Compact DVR V2's date and time. Or, synchronize the GV-Compact DVR V2's date and time with those of the local computer.

[Date and time overlay setting] Select the display format of date and time stamps on the image. For this function to work, you must also enable the **Overlaid with date stamps** and **Overlaid with time stamps** options in Figure 6-2.

6.8.2 GPS Maps Settings

The GV-Compact DVR V2 supports the Global Position System (GPS) for active vehicle tracking and location verification. The vehicle location will be tracked on Google Maps. Before using the Google Maps, you must sign up for a Google Maps API key and enter the registered API key in the **Google Map API Key** field.

If your GV-Compact DVR V2 is equipped with a GPS device, it is not necessary to enter **Default Longitude** and **Default Latitude**, since its vehicle location will be traced by GPS. However, if your GV-Compact DVR V2 is not equipped with a GPS device, you will need to enter **Default Longitude** and **Default Latitude** so that its location can be displayed correctly on the maps.

For details on the GPS application, see *8.3 GPS Tracking*.

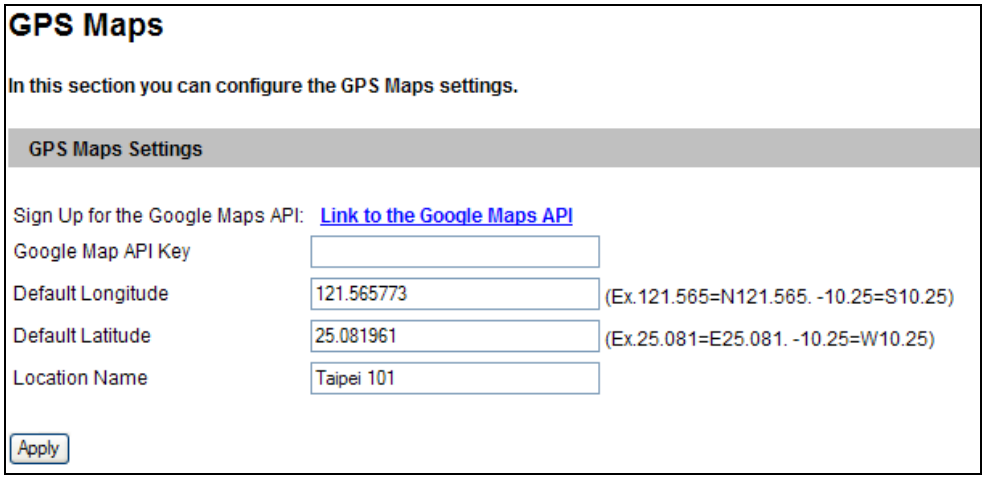


Figure 6-35

6.8.3 Storage Settings

Based on Linux file system, the GV-Compact DVR V2 supports one hard drive and two external USB hard drives for video and audio recording. Normally the hard drive is ready for Windows OS. Therefore, you need to format the hard drive by using the following Storage Settings. After being formatted, the hard drive will be ready to use by Linux OS of the GV-Compact DVR V2.

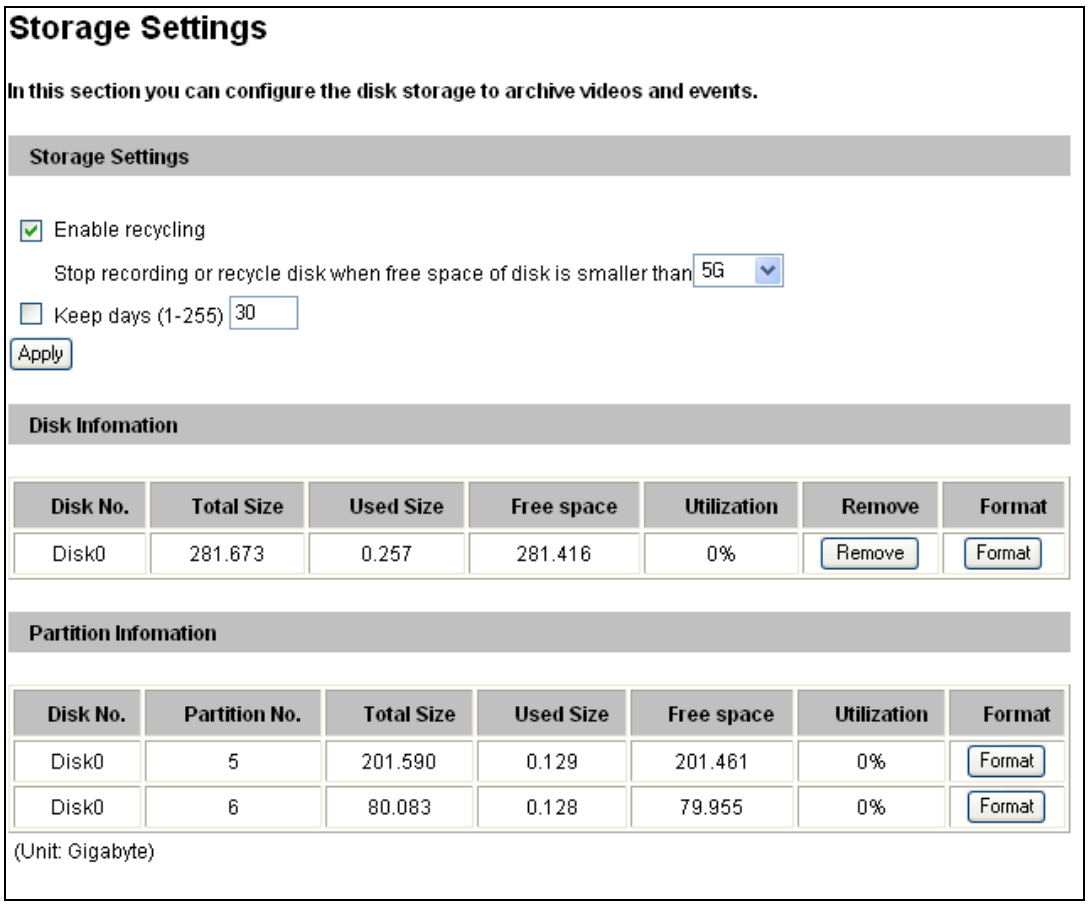


Figure 6-36

[Storage Settings]

If the **Enable recycling** option is selected, when the space of the hard drive is lower than the specified space, the system will either write the data to another device or overwrite the oldest recorded files.

If the **Enable recycling** option is cancelled, the system will stop recording when the specified space is reached.

- **Keep days (1-255):** Specify the number of days to store the files from 1 day to 255 days. When both **Keep days** and **Enable recycling** are selected, the system applies whichever condition comes first. For example, if the specified smallest amount of storage space comes earlier than the designated keep days, then recycle is applied first.

[Disk Information] This section shows the details of the hard drive.

[Partition Information] This section shows the partition details of the hard drive.

To add a hard disk:

1. Install the hard drive to the GV-Compact DVR V2.
2. Click the **Format** button.

After the format is complete, the partition information will be displayed. The maximum space for one partition is 200G.

To remove a hard disk:

1. Click the **Remove** button.
2. When you are prompted to ensure the action, click **Yes**. The page will be refreshed and the partition information will be cleaned.
3. Remove the hard drive from the GV-Compact DVR V2.

Note:

1. If **Enable Recycle** is selected, the available space of the hard drive must be higher than the space you specified at the **Stop recording or recycle disk when free space of disk is smaller than x** option. Otherwise no video will be recoded.
2. The recording data may be lost if you remove the hard drive during recording.
3. If you do not remove the hard drive properly, the data cannot be read in another computer. In this case, re-plug the hard drive back to the GV-Compact DVR V2. The system will repair the data automatically. When the system is repairing the data, the Remove field will display “Repairing”.

6.8.4 User Account

You can change the login name and password of Administrator, Guest and FTP Server User.

- The default Administrator login name and password are **admin**.
- The default Guest login name and password are **guest**. To allow a Guest user log in without entering name and password, select **Disable Check Login Guest Identity**.
- The default FTP Server login name and password are **ftpuser**.

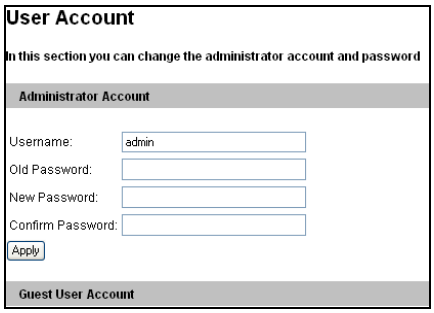


Figure 6-37

6.8.5 Log Information

The **Startup time log** section contains every start time of the GV-Compact DVR V2. The startup time log is saved on the hard disk, so the log is only available when a hard disk is inserted to the GV-Compact DVR V2.

The **System Log** section contains the dump data used by service personnel for analyzing problems. The log also records the task of log backup. You can back up the simplified system log by using the OSD menu. See *4.8.8 System Log*.

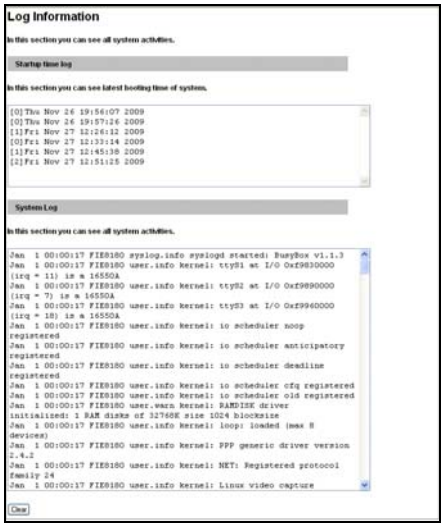


Figure 6-38

6.8.6 Tools

This section allows you to execute certain system operations and view the firmware version.

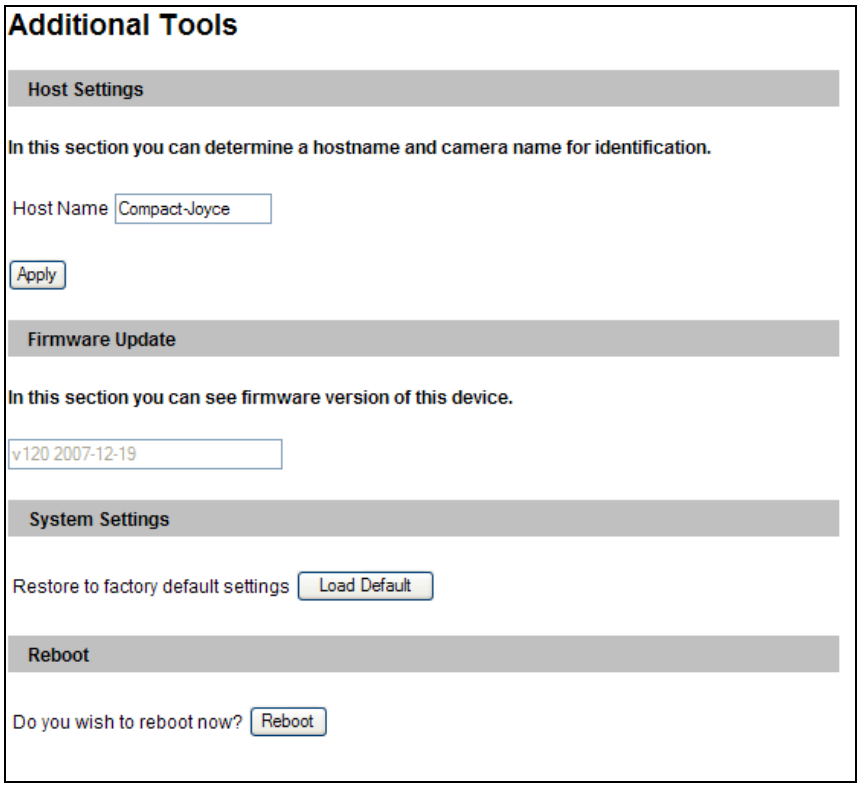


Figure 6-39

[Host Settings] Enter a descriptive name for the GV-Compact DVR V2.

[Firmware Update] This field displays the firmware version of the GV-Compact DVR V2.

[System Settings] Clicking the **Load Default** button will make the GV-Compact DVR V2 restore factory default settings. The Ready LED on the front panel will turn off. Wait until the Ready LED turns on and re-log in the unit.

Note: After applying the default function, you will need to configure the GV-Compact DVR V2's network setting again.

[Reboot]

Clicking the **Reboot** button will make the GV-Compact DVR V2 perform software reset. The Ready LED on the front panel will turn off. Wait until the Ready LED turns on and re-log in the unit.

Chapter 7 Remote Recording and Playback

The Administrator can remotely start recording to the GV-Compact DVR V2 and play back the recorded files over the TCP/IP network.

7.1 Remote Recording

To remotely enable the recording function to the GV-Compact DVR V2:

1. Make sure the hard drive is installed in the unit. See *6.8.3 Storage Settings.*
2. If you like to set up the pre-recording, post-recording or audio recording, see *6.1.1 Video Settings*.
3. If you like to set up the schedule for video recording or I/O monitoring, see *6.5 Recording Schedule*.
4. If you like to configure the areas and sensitivity values for motion detection, see *6.1.3 Motion Detection*.
5. If you want the recording to be triggered by an input device, configure the operation of I/O devices. See *6.2.2 Input / Output Settings*.
6. To start recording and I/O monitoring, see *6.4 Monitoring*.

The GV-Compact DVR V2 will start recording in case of motion detection, I/O trigger, or during the scheduled time.

7.2 Remote Playback

These methods are available to play back the video files recorded at the GV-Compact DVR V2:

- Playback using the hard drive by installing it to the GV-System
- Playback using the Remote ViewLog function over the TCP/IP network
- Playback using the recorded files downloaded from built-in FTP Server

7.2.1 Playback Using Hard Drive

You can play back the files recorded at the GV-Compact DVR V2 by installing the hard drive to the GV-System. However, the GV-System is run on Windows system while the files recorded at GV-Compact DVR V2 is of Linux file system. To enable Windows to recognize the files, you need to install the program **Ext2 Installable File System** included on the Software DVD.

1. Insert the Software DVD, select **IFS Drives** and follow the onscreen instructions for installation.
2. Run **IFS Drives** from Control Panel, and assign the drive name(s) to each available partition in the USB mass storage device.

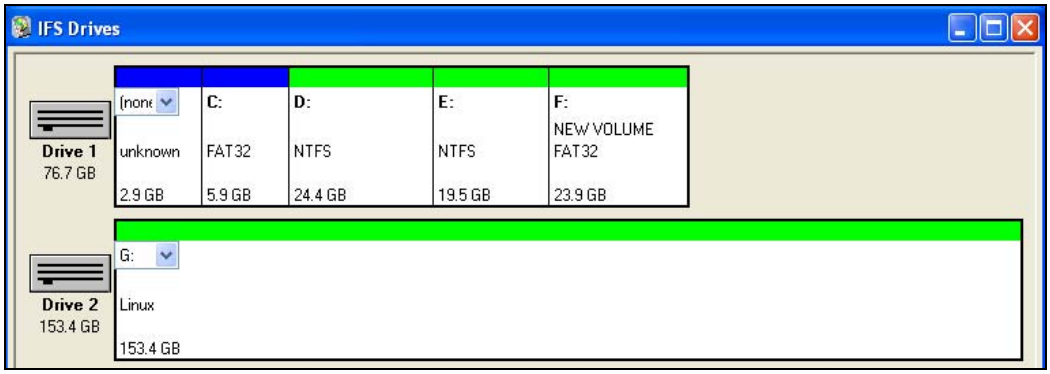


Figure 7-1

3. Run **ViewLog**.
4. Click the **Advanced** button  , select **Reload Database** and click **Video Server/Compact DVR**. This dialog box appears.

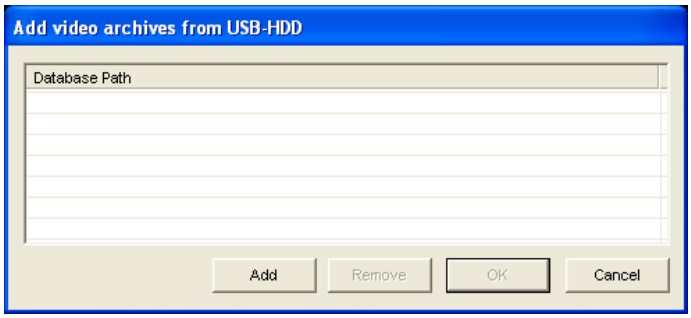


Figure 7-2

5. Click **Add** to assign the hard drive.
6. Click **OK** to load the data to the ViewLog for playback.

7.2.2 Playback over Network

With the Remote ViewLog function, you can play back the files recorded at the GV-Compact DVR V2 over TCP/IP network.

1. The GV-Compact DVR V2 needs to allow the remote access with **ViewLog Server** activated. See *6.3.5 ViewLog Server*.
2. For the first-time user, run the **Remote ViewLog** program from the Software DVD. Next time whenever you like to use this function, access this option from the GV-Compact DVR V2's Web interface.
3. When this dialog box appears, type the GV-Compact DVR V2's IP address, login ID and password. Keep the default port **5552** or modify it if necessary.

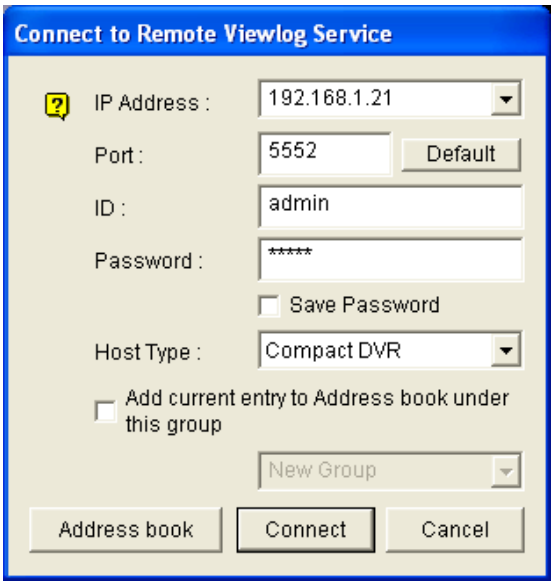


Figure 7-3

4. In the Host Type field, select **Compact DVR.**
5. Click **Connect** to access the files of the GV-Compact DVR V2 for playback.

Note: For details on the installation of Remote ViewLog, see the supplementary user's manual on the Software DVD.

7.2.3 Access to the Recorded Files through FTP Server

The built-in FTP Server allows you to download the recorded files saved on the GV-Compact DVR V2. You can play back the downloaded files of AVI format with any multimedia player. For details to download files, see [Act as FTP Server], *6.3.2 FTP*.

7.2.4 Playback of GPS Tracks

On GV-System, you can retrieve the GPS tracks from GV-Compact DVR V2 for playback. You can also attach the USB mass storage device with the data to GV-System for playback.

The following instructions describe how to retrieve the GPS tracks from GV-Compact DVR V2 over Internet. If you like to use the USB mass storage device for playback, first follow the instructions in *7.2.1 Playback Using USB Mass Storage Device* to load the data to ViewLog, and then follow Steps 4-7 below to play back GPS tracks.

1. The GV-Compact DVR V2 must allow the remote access with **ViewLog Server** activated. See *6.3.6 ViewLog Server*.
2. To remotely connect to GV-Compact DVR V2 from GV-System, click the **Tools** button and select **Remote ViewLog Service**. The Connect to Remote ViewLog Service dialog box appears.
3. Enter the connection information of the GV-Compact DVR V2, and click **Connect**. Once the connection is established, the video events will appear on the Video Event list.
4. To select a map API (Application Program Interface), click the **Tools** button and click **Select Map API**. This dialog box appears.

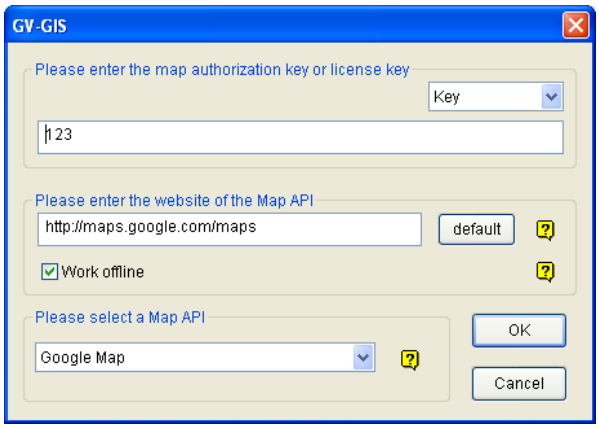


Figure 7-4

5. In **Please Select a Map API**, select a Map API. For Google Maps, you need to sign up for an API key from Google website (http://code.google.com/apis/maps/signup.html), and enter the API key in the **Please enter the map authorization key or license key** field.
6. To play back GPS tracks, click the **Tools** button and select **Display GIS Window**. The first-time user will be prompted for a License Agreement. Read through the license terms before you click **I understand and agree** to continue.
7. Select the events of tracking routes from the Video Event list, select the desired video mode, and click the **Play** button to start.

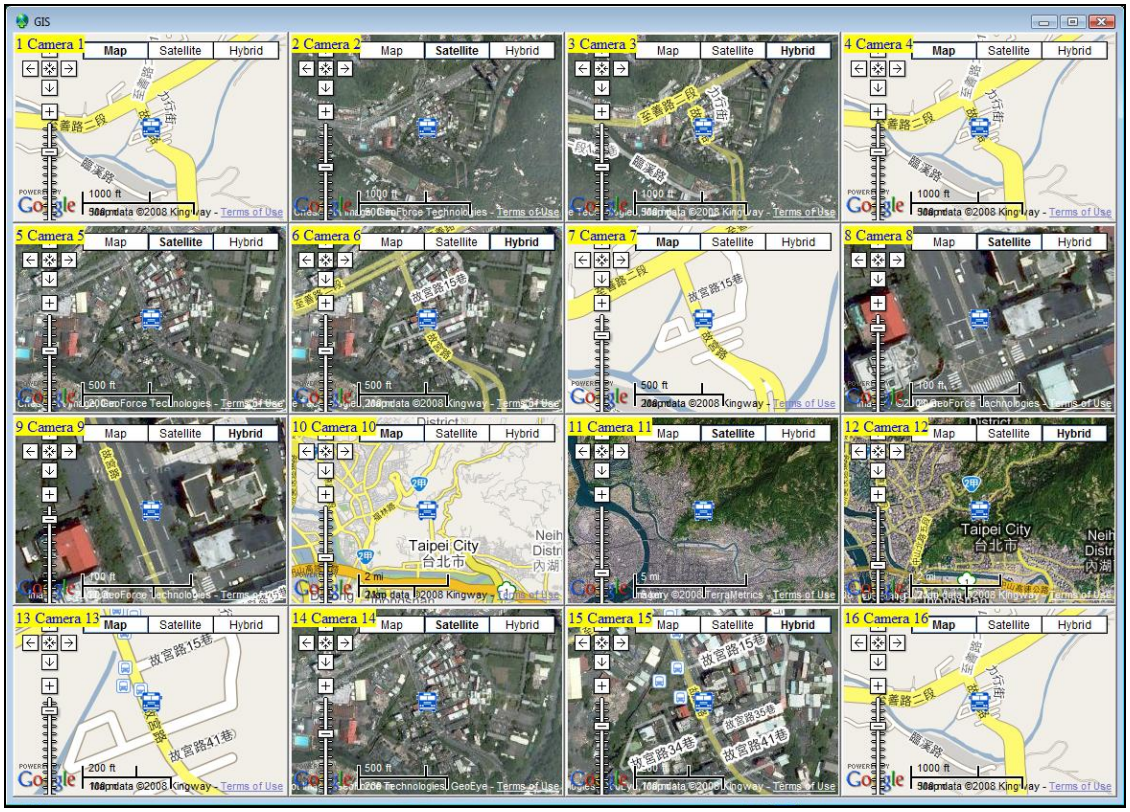


Figure 7-5

Note:

1. The playback function is only compatible with GV-System version 8.3 or later.
2. If you like to use the maps created yourself, overwrite the files at

   :\GV folder\GIShtm-User, and select **User Defined** from the “Please Select a Map API” drop-down list (Figure 7-4).
3. If you are the paid-client of Google Maps, select **Client** from the “Please enter the map authorization key or license key” drop-down list; otherwise select **Key**.

7.2.5 Playback of Daylight Saving Time Events

On GV-System, you can retrieve the events recorded during the Daylight Saving Time (DST) period from GV-Compact DVR V2 for playback. You can also attach the USB mass storage device with the recorded files to GV-System for playback.

The following instructions describe how to retrieve the recorded files from GV-Compact DVR V2 over Internet. If you like to use the USB mass storage device for playback, first follow the instructions in *7.2.1 Playback Using USB Mass Storage Device* to load the data to ViewLog, and then follow Steps 4-7 below to play back DST events.

1. The GV-Compact DVR V2 must allow the remote access with **ViewLog Server** activated. See *6.3.5 ViewLog Server*.
2. To remotely connect to GV-Compact DVR V2 from GV-System, click the **Tools** button and select **Remote ViewLog Service**. The Connect to Remote ViewLog Service dialog box appears.
3. Enter the connection information of the GV-Compact DVR V2, and click **Connect**. Once the connection is established, the video events will be displayed on the Video Event list.
4. On the Date Tree, select the date of Daylight Saving Time. A separate DST subfolder will be displayed as illustrated below.

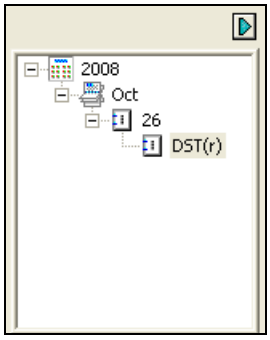


Figure7-6

5. On the Video Event list, select desired events, and click the **Play** button to start.

Note:

1. The playback function is only compatible with GV-System version 8.3 or later.
2. The AVI file recorded during the DST period is named with the prefix “GvDST”, e.g. GvDST20081022xxxxxxxxx.avi, to differentiate from the regular AVI file named with the prefix “Event”, e.g. Event20081022xxxxxxxxx.avi.

Chapter 8 Advanced Applications

This chapter introduces more advanced applications.

8.1 Upgrading System Firmware

GeoVision will periodically release the updated firmware on the website. The new firmware can be simply loaded into the GV-Compact DVR V2 over the Internet or by using the IP Device Utility included in the Software DVD.

Important Notes before You Start

Before you start updating the firmware, please read these important notes:

1. While the firmware is being updated, the power supply must not be interrupted.
2. Do not turn the power off in 10 minutes after the firmware is updated.

WARNING: The interruption of power supply during updating causes not only update failures but also damages to the device. In this case, please contact your sales representative and send your device back to GeoVision for repair.

8.1.1 Using the Web Interface

1. In the Live View window, click the **Show System Menu** button (No. 11, Figure 5-5), select **Remote Config**, and click the **Firmware Upgrade** tab. This dialog box appears.

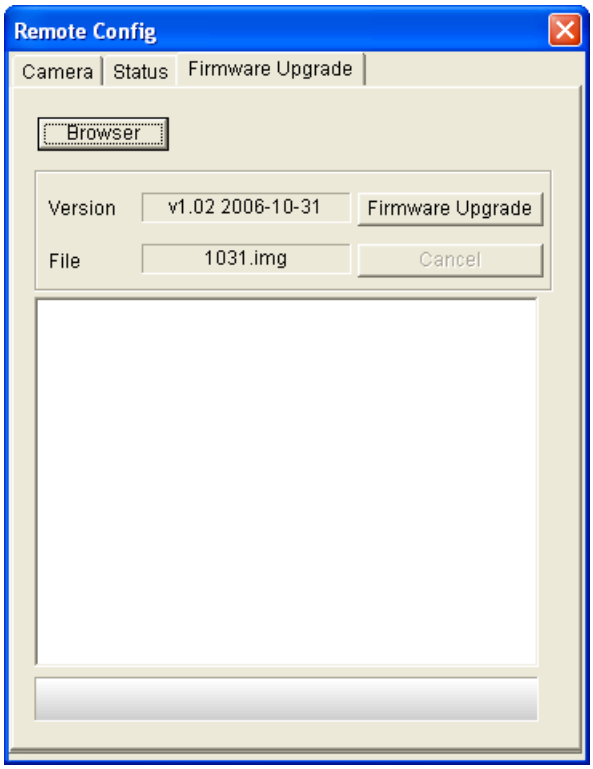


Figure 8-1

2. Click the **Browser** button to locate the firmware file (.img) saved at your local computer.
3. Click the **Firmware Upgrade** button to process the upgrade.

8.1.2 Using the IP Device Utility

The IP Device Utility provides a direct way to upgrade the firmware to multiple units of the GV-Compact DVR V2.

1. Insert the Software DVD, select **IP Device Utility**, and follow the onscreen instructions to install the program.
2. Double-click the **IP Device Utility** icon created on your desktop. This dialog box appears.

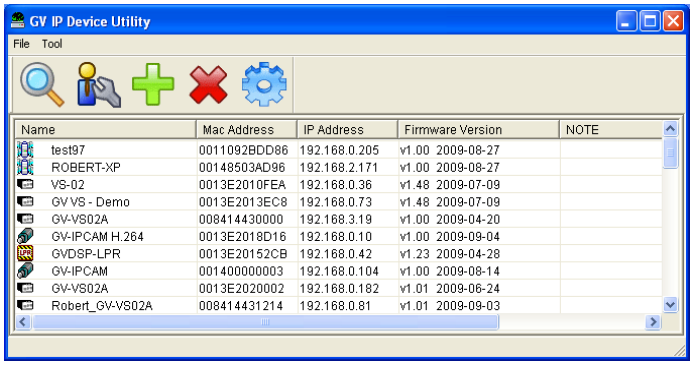


Figure 8-2

3. Click the **Search** button  to locate the available GV-Compact DVR V2 on the same LAN. Or click the **New** button and assign the IP address to locate a GV-Compact DVR V2 over the Internet. Or highlight one GV-Compact DVR V2 in the list and click the **Delete** button to remove it.
4. Double-click one GV-Compact DVR V2 in the list. This dialog box appears.

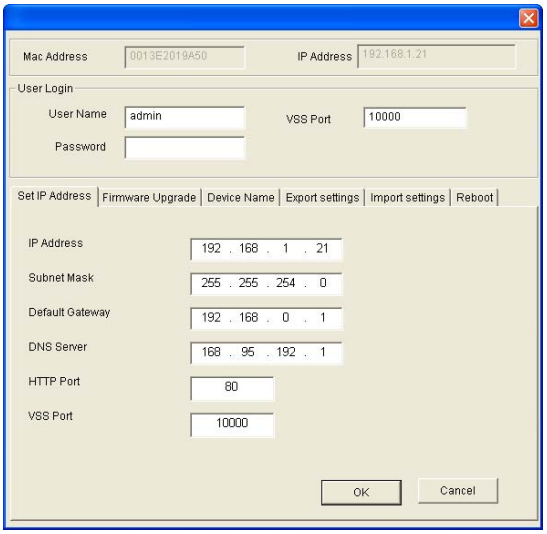


Figure 8-3

5. Click the **Firmware Upgrade** tab. This dialog box appears.

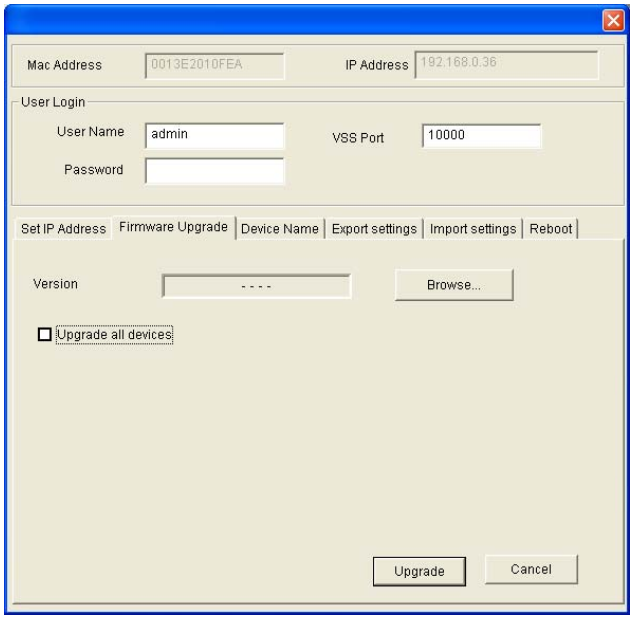


Figure 8-4

6. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
7. If you like to upgrade all the GV-Compact DVR V2s in the list, select **Upgrade all devices**.
8. Type **Password**, and click **Upgrade** to process the upgrade.

8.2 Backing Up and Restoring Settings

With the IP Device Utility included in the Software DVD, you can back up the configurations in the GV-Compact DVR V2, and restore the backup data to the current unit or import it to another unit.

8.2.1 Backing Up the Settings

1. Run **IP Device Utility** and locate the desired GV-Compact DVR V2. See Steps 1-3 in *8.1.2 Using the IP Device Utility*.
2. Double-click the GV-Compact DVR V2 in the list. Figure 8-3 appears.
3. Click the **Export Settings** button. This dialog box appears.

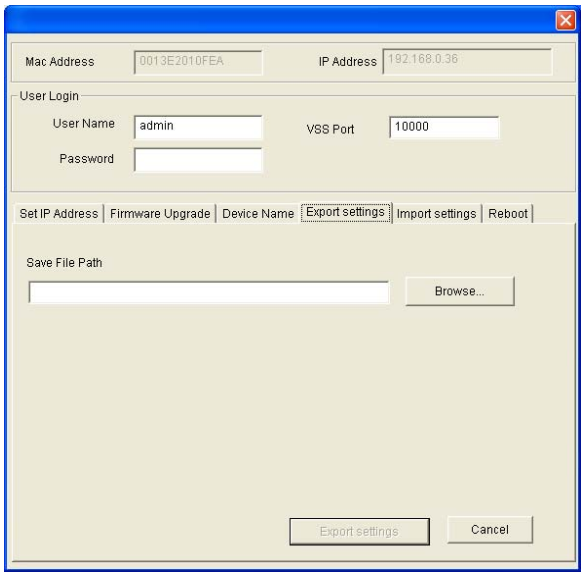


Figure 8-5

4. Click the **Browse** button to assign a file path.
5. Type **Password**, and click **Export Settings** to save the backup file.

8.2.2 Restoring the Settings

1. In Figure 8-3, click the **Import Settings** tab. This dialog box appears.

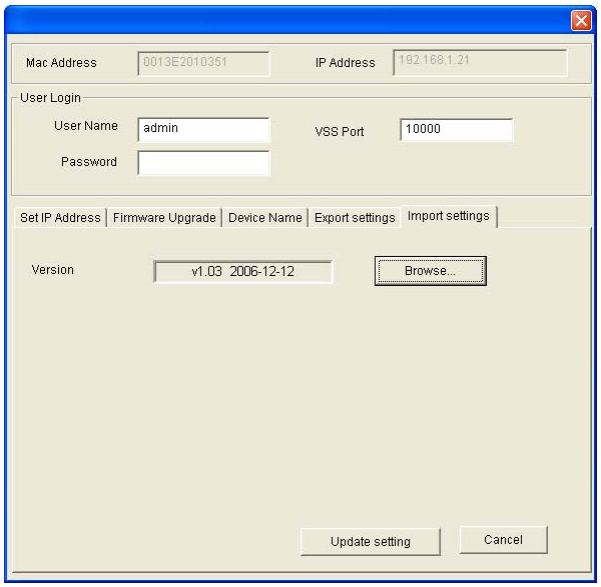


Figure 8-6

2. Click the **Browse** button to locate the backup file (.dat).
3. Click **Update Settings** to start restoring.

8.3 GPS Tracking

The GV-Compact DVR V2 supports the Global Position System (GPS) for active vehicle tracking and location verification. The vehicle location will be tracked by Google Maps.

To track the location of your GV-Compact DVR V2:

1. Connect the GV-GPS module or any GPS module supporting RS-232 serial interface to the I/O terminal block on the rear panel of the unit. See the *12.1 Pin Assignment*.
2. Enable the GPS function. See *4.2.3 GPS Settings* for OSD menu configurations, or *6.2.3 GPS* for web-based configurations.
3. Sign up for a Google Maps API Key and enable the GPS Maps settings. See *6.8.2 GPS Maps Settings*.
4. Open the control panel of the Live View window.

Figure 8-7

- Click **Start** to activate GPS tracking. The longitude, latitude and host time of the GV-Compact DVR V2 will be displayed.
- To save the location information to your local computer, select **Save message** and click **[…]** to assign the storage path.

5. To track the GV-Compact DVR V2 on Google Maps, click **Open**. A warning message appears.

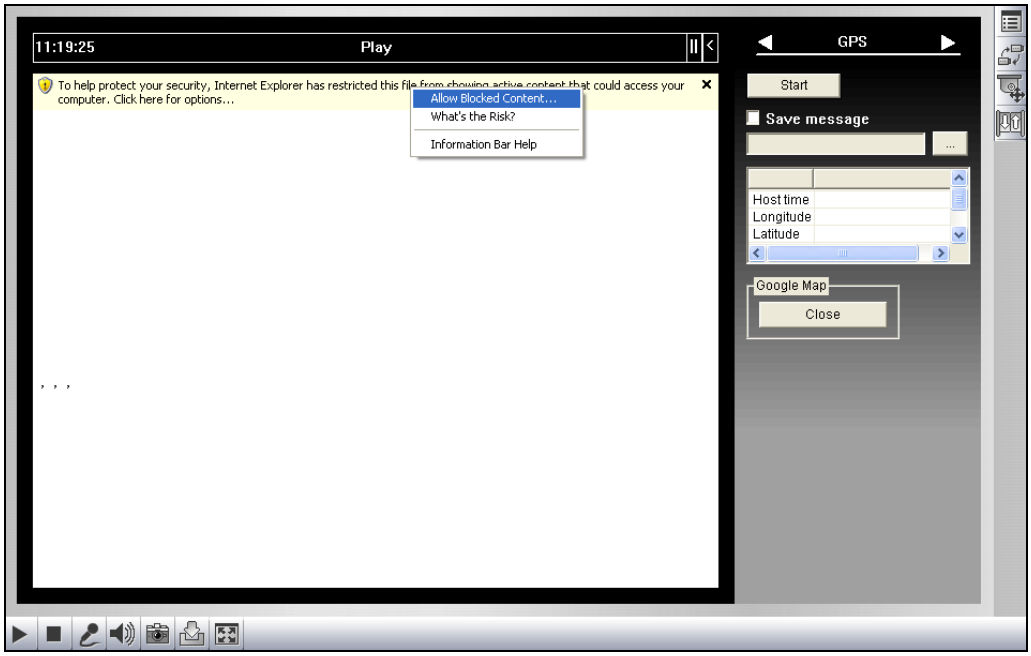


Figure 8-8

6. Right-click the warning message and select **Allow Blocked Content**. The map will be displayed. The icon indicates the location of your GV-Compact DVR V2. At the upper right corner you have options to view different map formats, such as Satellite and Hybrid.

Figure 8-9

8.4 Restoring to Factory Default Settings

To restore the GV-Compact DVR V2 to default settings, use the **Reset** and **Default** buttons on the front panel. For the location of the two buttons see *2.1 Front Panel*.

1. Press and then release the **Reset** button immediately.
2. Press and hold the **Default** button until the 3 LEDs (Power, Ready and Disk Full/Fault) are on. This may take up to 30 seconds.
3. Release the **Default** button. The process of loading default values is complete, and the GV-Compact DVR V2 starts rebooting itself with the 3 LEDs turning off.
4. Wait until the Power and Ready LEDs turn on again. After this all the settings are returned to default values.

Note: Before the **Ready LED** is on again, do not unplug the power cable; otherwise the loading of default values will fail.

8.5 Verifying Watermark

The watermark is an encrypted and digital signature embedded in the video stream during the compression stage, protecting the video from the moment of creation. Watermarking ensures that an image is not edited or damaged after it is recorded. To enable the watermark function, see [Watermark], *6.1.2 Video Settings*.

The **Watermark Proof** is a watermark-checking program. It can verify the authenticity of the recording before you present it in court.

8.5.1 Accessing AVI Files

To verify watermark, first you can access the recorded AVI files by one of these methods:

1. Use the **File Save** function on the Live View window (Figure 5-5) to start recording on the local computer.
2. Use the **Act as FTP Server** function to download AVI files from the GV-Compact DVR V2. See 6.3.2 FTP.
3. Use the files recorded on the hard drive. Since the files saved on the hard drive are of Linux file system, remember to run **IFS Drives** from the Software DVD to convert the Linux-based files to Windows-based files. For the instructions, see Steps 1 to 2 in *7.2.1 Playback Using Hard Drive*.

8.5.2 Running Watermark Proof

1. Install **Watermark Proof** from the Software DVD. After installment, a **WMProof** icon is created on your desktop.
2. Double-click the created icon. The Water Mark Proof window appears.
3. Click **File** from the menu bar, select **Open** and locate the recorded file (.avi). The selected file is then listed on the window. Alternatively, you can drag the file directly from the storage folder to the window.
4. If the recording is unmodified, a check will appear on the **Pass** column; otherwise a check will appear on the **Failed** column. To play back the recording, double-click the listed file on the window.

8.5.3 The Watermark Proof Window

Figure 8-10

The controls in the window:

No.	Name	Description
1	Open File	Opens the recorded file.
2	First Frame	Goes to the first frame of the file.
3	Play	Plays the file.
4	Previous Frame	Goes to the previous frame of the file.
5	Next Frame	Goes to the next frame of the file.
6	Previous Watermarked Frame	Goes to the previous frame that contains watermark.
7	Next Watermarked Frame	Goes to the next frame that contains watermark.
8	Original vs. Extracted	The Extracted icon should be identical with the Original icon. If not, it indicates the recording has been tampered.
9	File List	Displays the proof results.

Chapter 9 Mobile Phone Surveillance

The GV-Compact DVR V2 is built in a 3GPP server which allows you to receive live video and audio through 3G compatible mobile phones.

Note: To receive live images, your 3G mobile phone must be capable of having a screen resolution of 360 x 240 (NTSC) or 360 x 288 (PAL).

9.1 Enabling Live Streaming

To enable video and audio streaming to 3G-enabled mobile phones, follow these steps:

1. Set the video resolution to **360 x 240 3GPP v7** or **360 x 288 3GPP v7**. See *4.1.2 Video/Audio Settings* for OSD menu configurations, or *6.1.1 Video Settings* for web-based configurations.
2. Activate **3GPP Server**. See *4.3.6 3GPP* for OSD menu configurations, or *6.3.7 3GPP* for web-based configurations.

9.2 Accessing Live Images

To access live images through 3G-enabled mobile phone, follow these steps:

1. In the 3G-enabled mobile phone, enter the IP address/domain name, account and password of the GV-Compact DVR V2 to enable the connection.

Figure 9-1

2. After the connection is established, an image similar to the following figure appears.

Figure 9-2

3. Double-click one channel. You should see the live images.

Figure 9-3

Chapter 10 DVR Configurations

The GV-System provides hybrid solution, integrating the digital videos from GV-Compact DVR V2 with other analog videos. For the digital videos, the GV-System provides the complete video management, such as video viewing, recording, playback, alert settings and almost every feature of the system. Following is the integration specifications:

- GV-System version **8.2** or later is required.
- The maximum number of connections to the GV-Compact DVR V2 is 20. When one GV-System connects to one GV-Compact DVR V2, it takes up to 4 connections. When users connect to one GV-Compact DVR V2 via browser, it takes up to 2 connections. When users operate the Camera/Audio Control on Center V2, it takes 1 connection.
- The codec and recording resolution of digital videos are set up on the GV-Compact DVR V2 instead of on the GV-System
- The hardware compression and the “Pre-Recording Using RAM” feature cannot work on the videos from GV-Compact DVR V2.

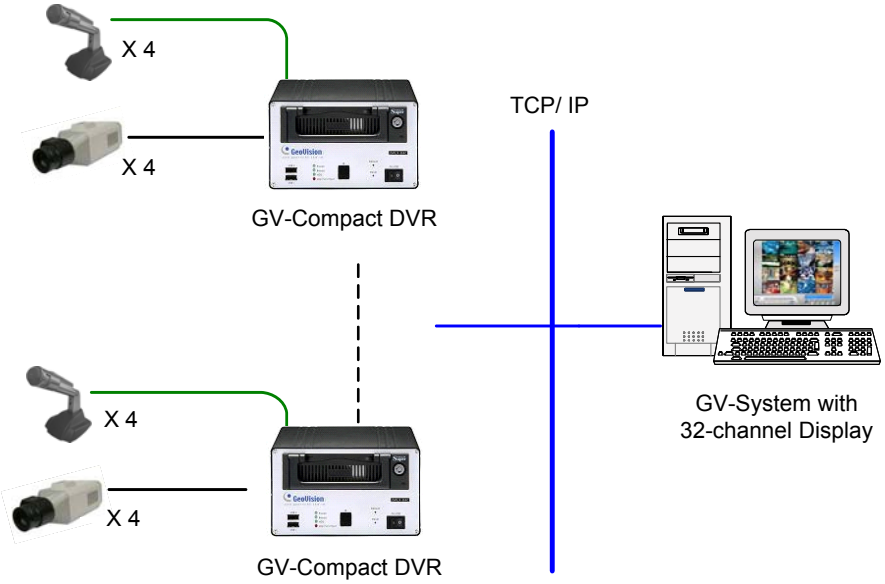


Figure 10-1

Note: The GV-250 Card does not support the GV-Compact DVR V2.

10.1 Setting up IP Cameras

To set up IP cameras on the GV-System, follow these steps:

1. On the main screen, click the **Configure** button, select **General Setting**, select **Camera / Audio Install** and click **IP Camera Install**. This dialog box appears.

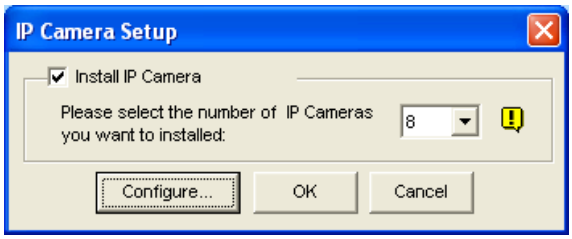


Figure 10-2

2. Select **Install IP Camera**, and select the number of IP Cameras you want to link to, and click **Configure**. This dialog box appears.

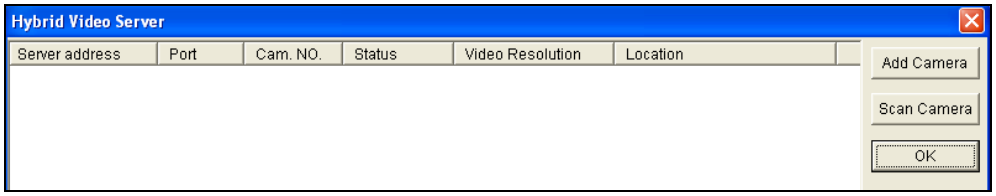


Figure 10-3

- To automatically set up the camera, click **Scan Camera** to detect any GV IP devices on the LAN.
- To manually set up the camera, click **Add Camera**.

The following steps are the example of manual setup.

3. Click **Add Camera**. This dialog box appears.

Figure 10-4

4. Type the IP address, username and password of the GV-Compact DVR V2. Modify the default HTTP port if necessary. Select **GeoVision** from the **Band** drop-down list and select **GeoVision Compact DVR** from the **Brand** drop-down list. This dialog box appears.

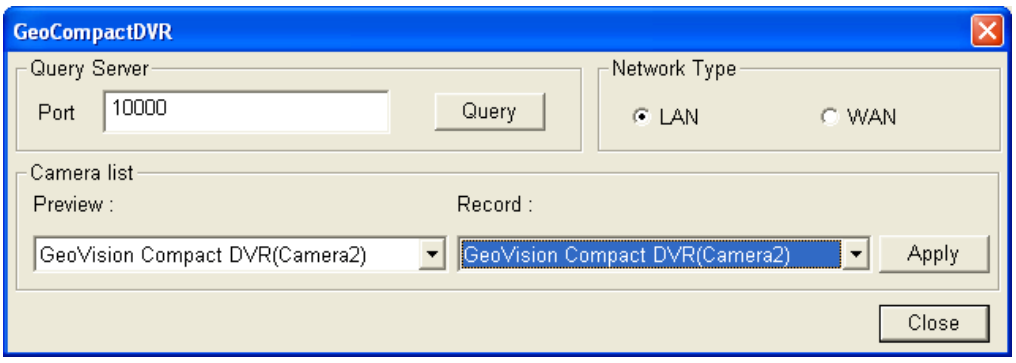


Figure 10-5

5. In the Network Type section, select your network environment **WAN** or **LAN**.
6. Click **Query** to detect the GV-Compact DVR V2. When it is detected, its available camera options will be displayed in the Camera List section.
7. Select the camera for live view from the **Preview** drop-down list, and the camera for recording from the **Record** drop-down list.
8. Click **Apply**, and then **Close** to exit the dialog box. The device information is displayed.

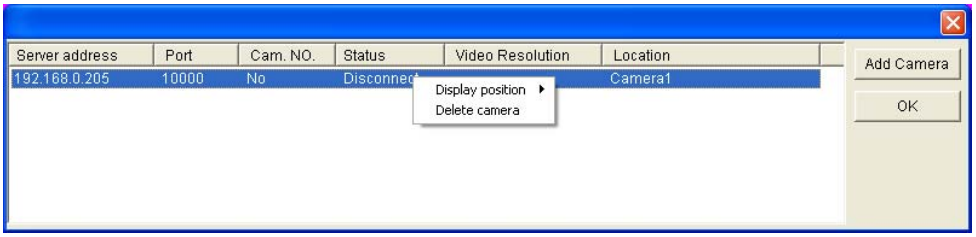


Figure 10-6

9. Click the device information, and select **Display Position** to map the IP camera to a channel on the GV-System.
10. The Statue column now should display “Connected”. Click **OK.**

Previewing Video and Setting Audio

To preview video and activate audio recoding, highlight the desired device (see Figure 10-6) and select **Preview & Audio Setting**. This dialog box appears.

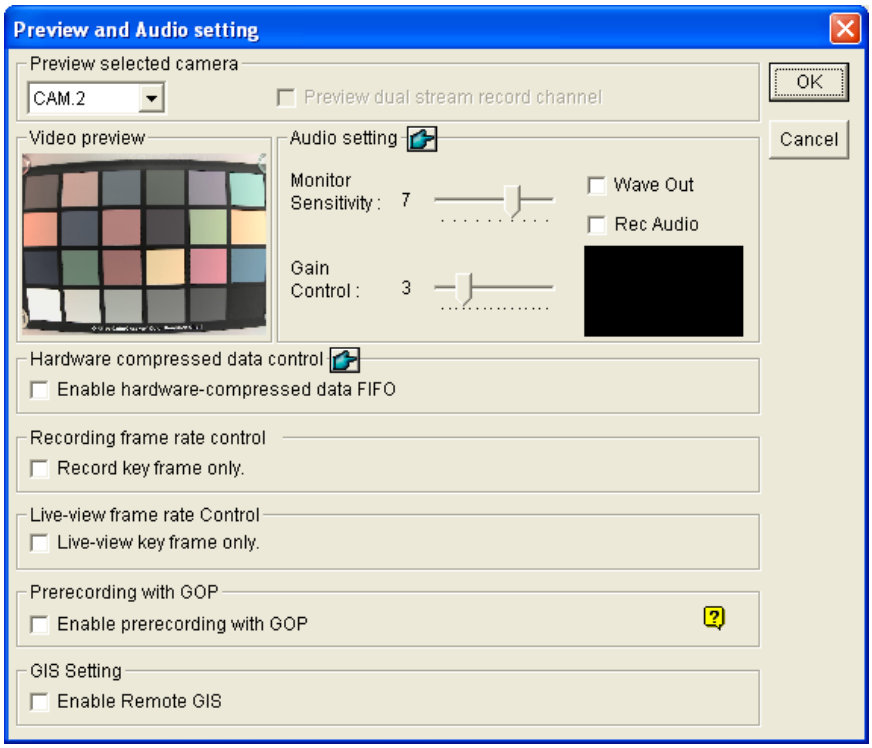


Figure 10-7

[Preview selected camera]

- **Drop-down List:** Select the desired camera for live preview.
- **Preview dual stream record channel:** The option is only available when the dual stream is set, i.e. the cameras for live view and recording are configured differently (see Figure 10-5). Check this option for recording preview.

[Audio Setting]

- **Monitor Sensitivity:** Adjust the sensitivity of the audio that will be detected. The higher the value, the more sensitive the system is to the surrounding sound.
- **Gain Control:** Increase or decrease the gain of the microphone.
- **Wave Out:** Select this option to listen to live audio from the GV-Compact DVR V2.
- **Rec Audio:** Select this option to activate the audio recording.

[Hardware compressed data control]

Hardware-compressed data from the video IP device, such as IP Camera, Video Server and Compact DVR, can be transmitted directly to remote servers instead of being compressed

again on GV-System. The remote servers include Center V2, Control Center and WebCam. This function is useful when many remote servers access GV-System at one time. When the option is selected, it can reduce the system load on GV-System, and provide more frame rates and better image quality for each remote server.

Note: It is highly recommended to enable this function on a LAN environment because it requires a lot of bandwidth.

[Recording Frame Rate Control] Set the recording frame rate to meet your storage requirements.

- **Maximum recording frame rate:** This option is available when the recording codec of the IP camera is set to JPEG. Select the frame rate from 1 to 30 fps.
- **Recording key frame only:** This option is available when the recording codec of the IP camera is set to MPEG4 or H.264. You can choose to record key frames instead of all frames to save the storage space. This option is related to the GOP setting of the IP camera. For example, if the GOP value is set to 30, there is only one key frame among 30 frames. For the GOP setting, see *6.1.2 Video Settings*.

[Live-view Frame Rate Control] Set the frame rate of live view to reduce the CPU usage.

- **Maximum live-view frame rate:** This option is available when the recording codec of the IP camera is set to JPEG. Select the frame rate of live view from 1 to 30 fps.
- **Live-view key frame only:** This option is available when the recording codec of the IP camera is set to MPEG4 or H.264. Select this option to see the video of key frames only on the live view to reduce the CPU usage. This option is related to the GOP setting of the IP camera. For example, if the GOP value is set to 30, there is only one key frame among 30 frames. For the GOP setting, see *6.1.2 Video Settings*.

[Prerecording with GOP]

- **Enable prerecording with GOP:** Enable video recording for up to 120 frames before a motion-detected event occurs. To enable this function, the IP camera needs to meet these requirements: D1 or CIF resolution, the GOP size of 60 or less than 60 frames, MPEG4 or H.264 codec.

[GV-GIS Setting]

Receive the GPS data from the IP camera. To receive the GPS data, remember to also enable the GIS function of the GV-System (Configure button < Accessories < Enable Local GIS).

10.2 Remote Monitoring with Multi View

You can use the Multi View to monitor and manage the cameras and I/O devices connected to the GV-Compact DVR V2.

Connecting to GV-Compact DVR V2

The Multi View program is available in the GV-System applications, and also included in the Software DVD as an independent program. The following is an example of running the Multi View through WebCam Server on the GV-System.

1. To enable the remote access to the GV-System, click the **Network** button, select **WebCam Server** to display the Server Setup dialog box, and click **OK** to start the WebCam server.
2. At the local computer, open the Web browser and type the address of the GV-System. The Single View page appears.
3. Select **Multi View** and the desired viewing resolution. The valid user name and password are required for login. For the first-time user, you will be directed to the Download page. Install the Multi View program before you can run it.
4. On the Multi View window, click the **Edit Host** button. The Edit Host window appears.
5. To create a host, click the **New** button. You need to create a group before creating a host.

Select **Compact DVR** from the Device drop-down list. Type the host name, IP address, user name and password of the GV-Compact DVR V2. Modify the default VSS port **10000** if necessary.

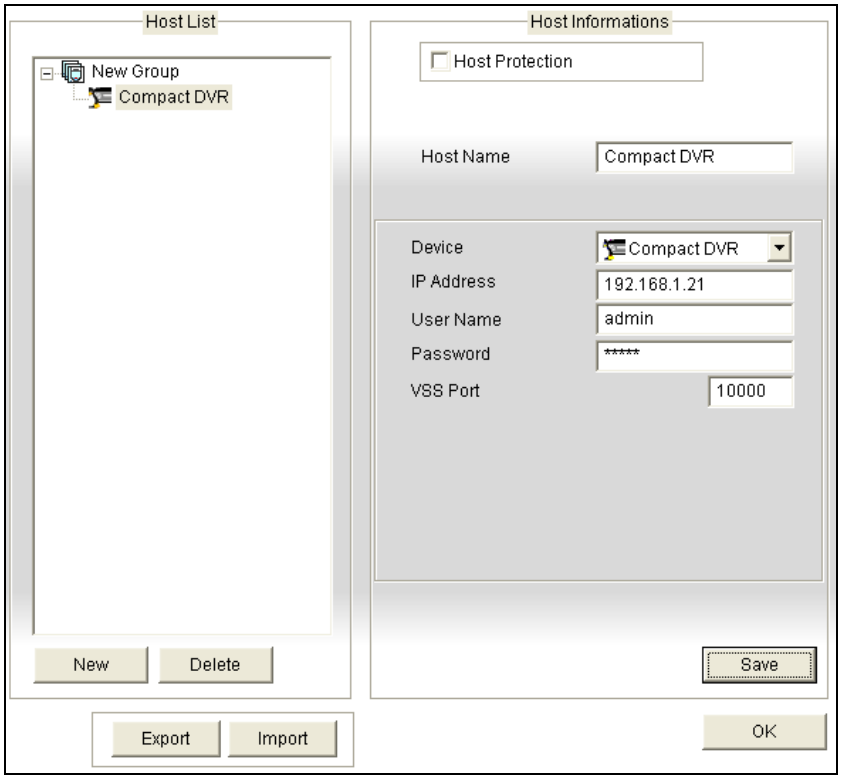


Figure 10-8

6. Click **Save** to establish connection.

For details on the Multi View functions, see “Multi View MPEG 4 Encoder Viewer”, *Chapter 8 Viewing Live Video Using WebCam*, *User’s Manual* on the Surveillance System Software DVD.

10.3 Remote Monitoring with E-Map

You can use the Remote E-Map to monitor and manage the cameras and I/O devices connected to the GV-Compact DVR V2.

Creating an E-Map for GV-Compact DVR V2

With the E-Map Editor, you can create an E-Map for the cameras and I/O devices connected to the GV-Compact DVR V2. The E-Map Editor is available in certain applications, e.g. Main System and E-Map Server. The following is an example of running the E-Map Editor included in the Main System.

1. Go to Windows **Start** menu, point to **Programs**, select **GV folder** and click **E-Map Editor**.
2. To create an E-Map, click the **Add Map** button on the toolbar. A New Map file appears.
3. Double-click the New Map file, and click the **Load Map** button on the toolbar to import a graphic file.
4. To create a host, click the **Add Host** button on the toolbar and select **Add Compact DVR**.
5. Right-click the created New Host in the Host View, and select **Host Settings**. This dialog box appears.

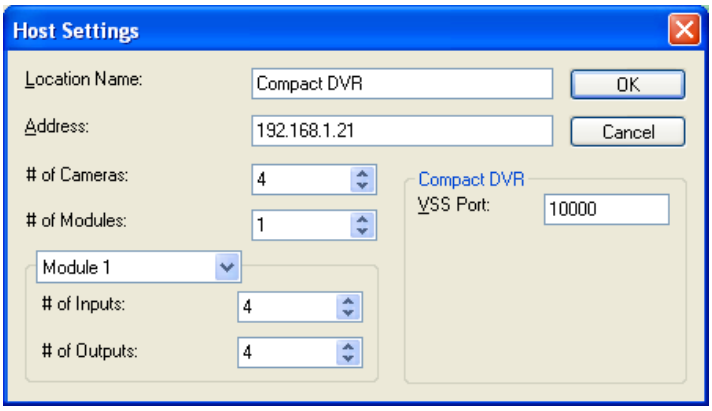


Figure 10-9

6. Give the GV-Compact DVR V2 a location name, and type its IP address (or domain name). Keep the default VSS port as **10000**, or modify it to match that of GV-Compact DVR V2.
7. Click **OK** to save the settings.
8. Expand the created host folder. Drag and drop the icons of cameras and I/O devices onto the imported E-Map.
9. Close the E-Map Editor. Click **Yes** when you are promoted to save the file.

For details on creating an E-Map file on the E-Map Server, see “E-Map Server”, *Chapter 9 E-Map Application*, *User’s Manual* on the Surveillance System Software DVD.

Connecting to GV-Compact DVR V2

Depending on where you save the created E-Map file (GV-System, E-Map Server or Control Center), the steps to open the Remote E-Map window for monitoring may vary slightly. The following is the connection example when you store the E-Map file in the GV-System.

1. To enable the remote access to the GV-System, click the **Network** button, select **WebCam Server** to display the Server Setup dialog box, and click **OK** to start the WebCam server.
2. At the local computer, open the web browser and type the address of the GV-System. The Single View page appears.
3. Select **Emap**. The valid user name and password are required for login. For the first-time user, you will be directed to the Download page. Install the E-Map program before you can run it.
4. On the Remote E-Map window, click the **Login** button and select the GV-Compact DVR V2 host to access its videos and I/O devices. The valid user name and password are required to log in the GV-Compact DVR V2.

For details on the Remote E-Map functions, see “The Remote E-Map Window”, *Chapter 9 E-Map Application*, *User’s Manual* on the Surveillance System Software DVD.

Chapter 11 CMS Configurations

This section introduces the related settings to enable connecting to the GV-Compact DVR V2 in the central monitoring stations Center V2, VSM and Dispatch Server.

11.1 Center V2

The Center V2 can monitor and manage the cameras and I/O devices connected to the GV-Compact DVR V2.

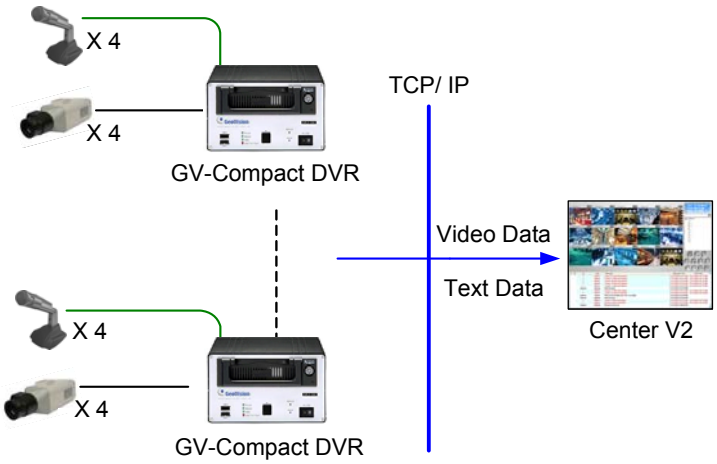


Figure 11-1

- To set the appropriate port connecting to the GV-Compact DVR V2, click the **Preference Settings** button, select **System Configure**, click the **Network** tab, and select **Accept connections from GV-Compact DVR, Video Server & IP Cam**. Keep default port **5551**, or modify it to match the Center V2 port on the GV-Compact DVR V2.

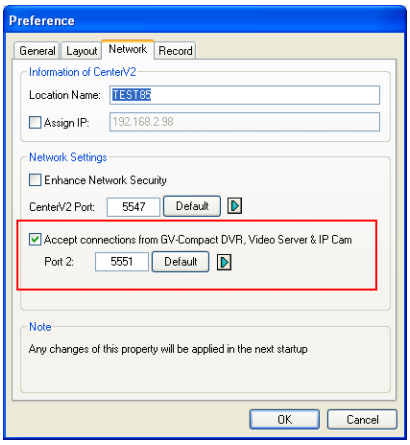


Figure 11-2

➢ To define how to display the received video on motion detection and input trigger from the GV-Compact DVR V2, click the **Preference Setting** button and select **System Configure**. This dialog box appears.

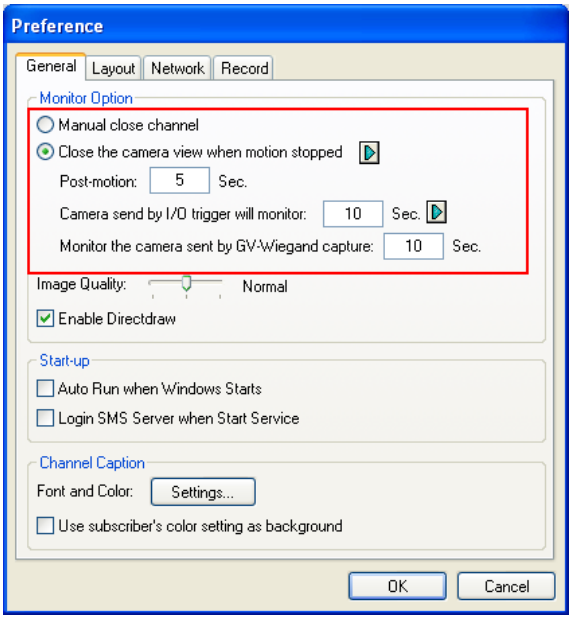


Figure 11-3

- **Manual close channel:** Closes the triggered camera view manually.
- **Close the camera view when motion stopped:** Closes the triggered camera view automatically when motion stops.
- **Post Motion:** Specify the duration of the camera view remaining on the monitoring window after motion stops.
- **Camera send by I/O trigger will monitor:** Specify the duration of the camera view remaining on the monitoring window when an I/O device is triggered.

  To keep the camera view remaining on the monitoring window even after the alarm is finished, click the right-arrow button, and uncheck **Latch Trigger**. Then the camera view will keep remaining on the monitoring window for the specified time. For example, the alarm is triggered for 5 minutes and you set 10 minutes, which means the total display time will be 15 minutes.

For details on how to mange the received video from the GV-Compact DVR V2, see *GV-CMS Series User's manual.*

11.2 VSM

The VSM can monitor and manage the cameras and I/O devices connected to the GV-Compact DVR V2.

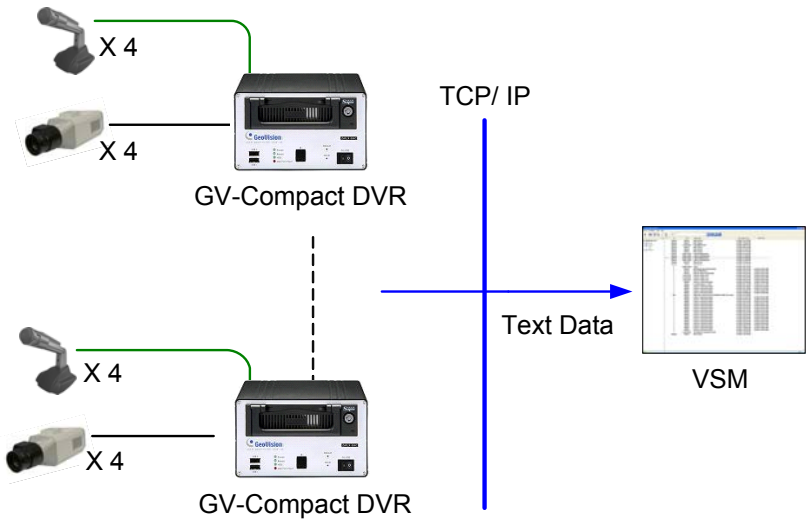


Figure 11-4

➢ To set the appropriate port connecting to the GV-Compact DVR V2, click **Configure** on the window menu, and select **System Configure** to display this dialog box. Under the Connective Port, keep the default **Port 2** value of **5609**, or modify it to match the VSM port on the GV-Compact DVR V2.

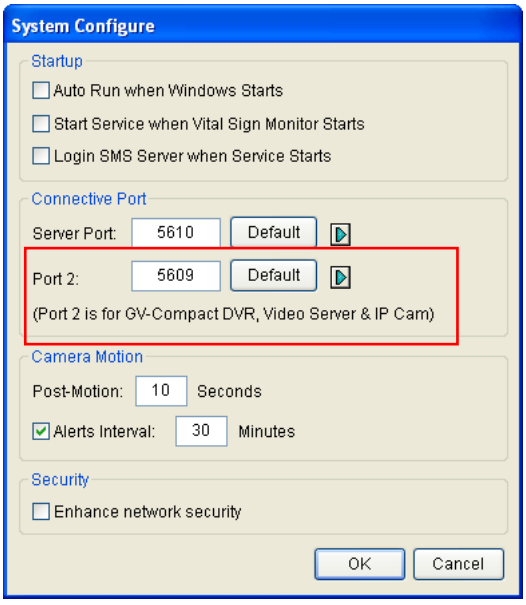


Figure 11-5

For details on how to mange the received video from the GV-Compact DVR V2, see *GV-CMS Series User's manual.*

11.3 Dispatch Server

The Dispatch Server can manage the cameras and I/O devices connected to GV-Compact DVR V2, and distribute them to the Center V2.

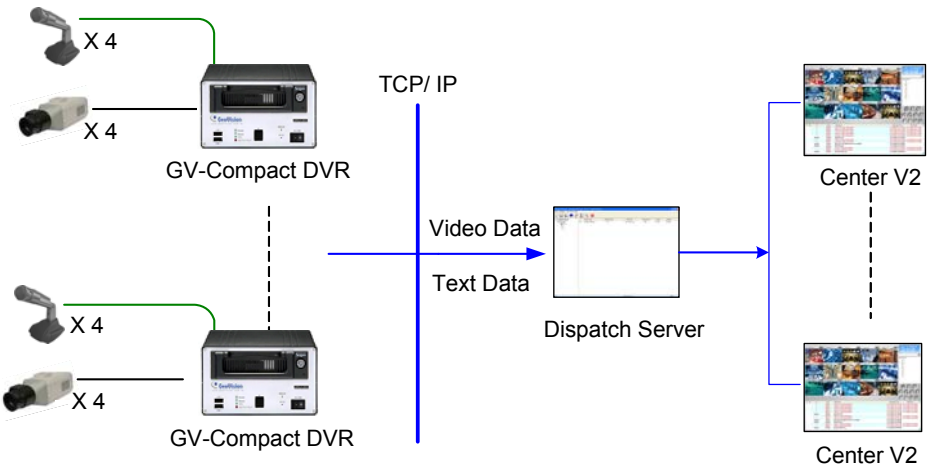


Figure 11-6

➢ To enable connecting to the GV-Compact DVR V2, click the **Server Setting** button on the toolbar, and enable **Allow Video Server Login as Subscriber from Port**. Keep the default port as **5551,** or modify it to match the Center V2 port on the GV-Compact DVR V2.

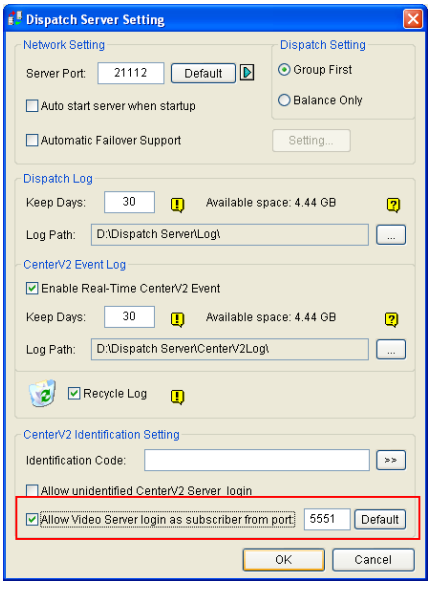


Figure 11-7

For details on how to mange the received video from the GV-Compact DVR V2, see *GV-CMS Series User's manual.*

Chapter 12 The I/O Terminal Block

The 16-pin terminal block, located on the rear panel, provides the interface to: four digital inputs, four relay outputs, one RS-485 interface, one RS-232 interface and auxiliary power. The I/O terminal block can be used to develop applications for motion detection, PTZ control, GPS tracking and a variety of other functions.

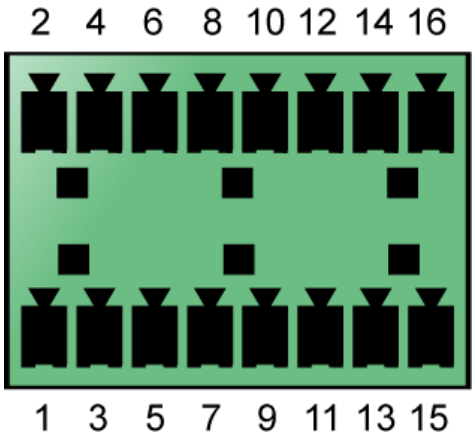


Figure 12-1

12.1 Pin Assignment

The pin assignments for the terminal block are described in the table below.

Pin	Function	Pin	Function
1	Relay Output 1	9	Relay COM
2	Digital Input 1	10	Ground
3	Relay Output 2	11	DC 12V Out for camera power supply
4	Digital Input 2	12	RS-232 TX for GPS tracking
5	Relay Output 3	13	RS-485 + for PTZ control
6	Digital Input 3	14	RS-232 RX for GPS tracking
7	Relay Output 4	15	RS-485 – for PTZ control
8	Digital Input 4	16	DC 5V Out for GPS module

12.2 Relay Output

The relay outputs on the terminal block can only drive a maximum load of 5 volts. Working in conjunction with the GV-Relay V2 module, it can drive heavier loads. Refer to the figure and table below to connect the GV-Relay V2 module to the GV-Compact DVR V2.

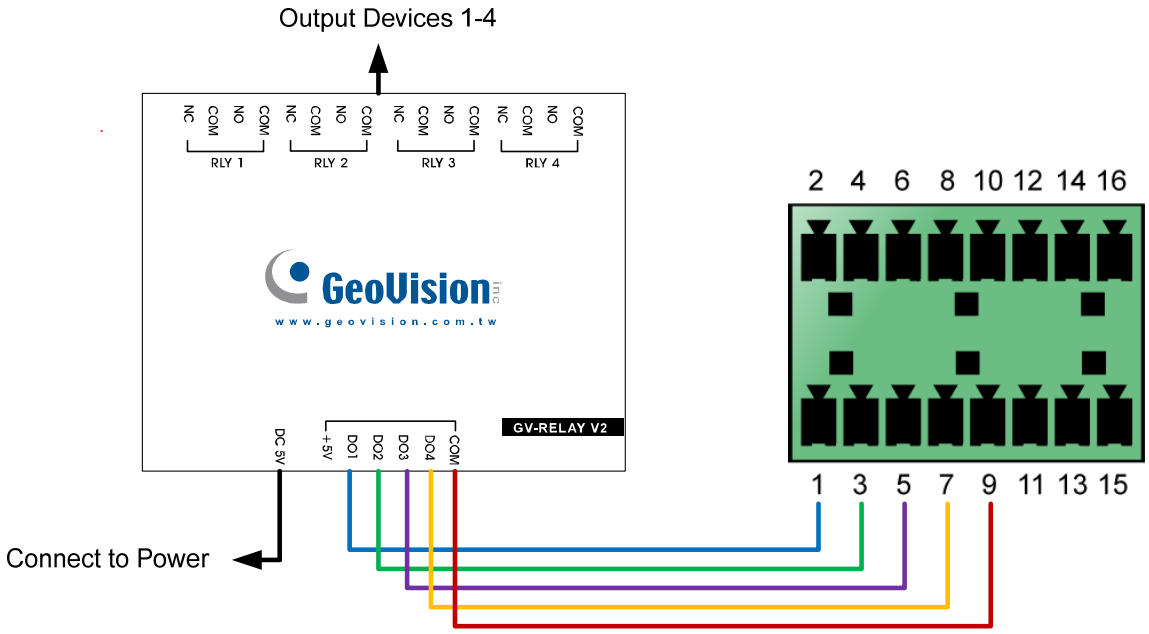


Figure 12-2

GV-Relay V2	I/O Terminal Block
DO 1	Pin 1
DO 2	Pin 3
DO 3	Pin 5
DO 4	Pin 7
COM	Pin 9

Note: The GV-Relay V2 module is an optional product.

12.3 Camera Power Supply

The cameras can be powered through GV-Compact DVR V2. Using the supplied Camera Power Cable, connect the black wire to Pin 10 and the green wire to Pin 11.

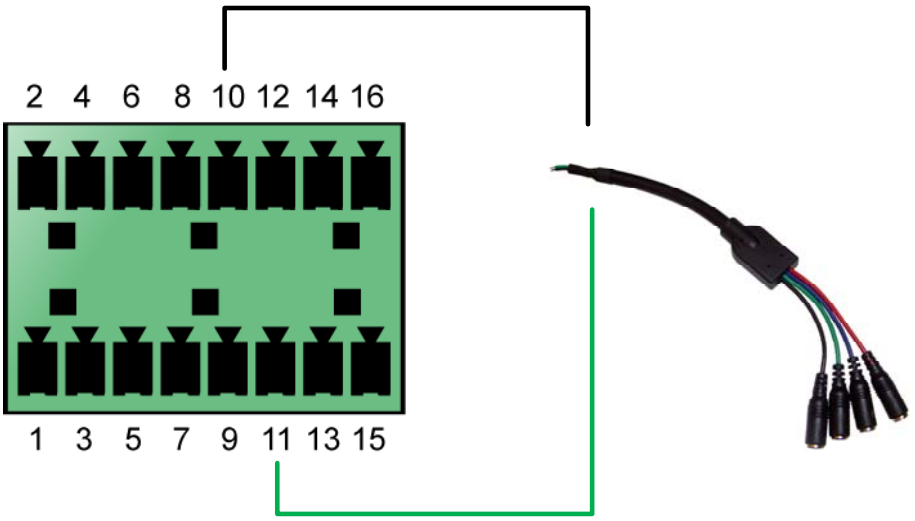


Figure 12-3

I/O Terminal Block	Camera Power Cable
Pin 10	Black Wire
Pin 11	Green Wire

Specifications

Video

Video Standard		NTSC, PAL
Video Input/Output		4 Videos In, 4 Loops Out
Compression		Geo MPEG4 (ASP)
Frame Rate	**NTSC**	30 fps/ch at D1 resolution
	PAL	25 fps/ch at D1 resolution
Resolution		Full D1, Half D1, CIF, CIF (3GPPV7)
Video Streaming		Configurable frame rate and bandwidth
Video Adjustment		Brightness, Contrast, Hue, Saturation

Audio

Audio Input/Output	4 Audios In, 1 Audio Out
Compression	G.723

Output Signal Formats

	Resolution	**V. Frequency**
VGA Out	800 x 600, 1024 x 768, 1280 x 1024	60Hz
TV Out	640 x 480	60Hz

Management

Event Management	**Trigger**	Time, Sensor Input Triggered, Motion Detected
	Action	• Store video to HDD (AVI format) • Send e-mails with captured images • Upload captured images to FTP Server • Monitor through Center V2, VSM and GV-GIS • Activate relay outputs to control external devices
Firmware Upgrade		• Remote upgrade by Web browser • Use a USB flash drive • Use the upgrade utility included on the Software CD
Storage (Optional)		• 1 SATA HDD of 2.5'' or 3.5'' (HDD converter required for 2.5'' HDD from GeoVision) • 2 external USB mass storage devices • DVD RW backup
Client PC Requirements		Microsoft IE 6.x or above running on Windows XP / Vista / 7 / Server 2008

Network

Interface	• 10/100 Base-T Ethernet • 802.11b/g, 802.11n Wireless LAN (optional) • Mobile broadband: UMTS, EDGE, etc. (optional)
Protocol	HTTP, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, Mulitcast
Security	IP address filtering

Connector

Input		4 Videos In, 4 Audios In
Output		1 TV Out, 1 Spot Out, 1 VGA Out, 1 Audio Out, 4 Video Loops Out
Terminal Block		4 digital inputs, 4 relay outputs, RS-485 for PTZ, RS-232 for GPS
Ethernet		RJ-45, 10/100 Mbps
USB 2.0		2 ports
IR Receiver		1 port for optional External IR Receiver
Power	**Standard**	12V, 5A (60W Max.)
	Anti-Vibration	5-36V (60W Max.)

Alarm

Sensor Input	4 inputs
Alarm Output	4 outputs

Environment

Operation Temp.	-20 ~ 50 °C / 4 ~ 122 °F
Humidity	5 ~ 85% RH (non-condensing)

Physical

Dimensions (L x W x H)	176 x 253 x 105 mm / 7 x 10 x 4 in
Weight	2.05 kg / 5 lb (Net)

Default Port Value

HTTP Port	80
Video Streaming Port	10000
E-mail Server	25
FTP Server	21
Center V2	5551
VSM	5609
GV-GIS	3356
ViewLog Server	5552
RTSP/TCP Port	8554
RTP/UDP Port	17300-17319

Appendix

A. Supported Wireless LAN USB Adaptor

Vendor	Model
D-Link	DWA-140 (H/W version B1), DWL-G122 C1 version
EDIMAX	EW-7318Ug, EW-7718Un
Linksys	WUSB54GC, WUSB600
Note: Linksys WUSB54GC ver. 3 is not supported.	

B. Supported Mobile Broadband Device

Vendor	Model
HUAWEI	E169, E220, E1750, E1692 USB Modem (HSDPA/UMTS/EDGE/GPRS/GSM)
Verizon	Wireless USB727, USB760 Modem (EVDO)
Novatel	MC950D