

GV-Tower DVR/NVR System

User's Manual





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User's Manual for GV-Tower DVR/NVR System

Welcome to the GV-Tower DVR/NVR System User's Manual.

The Manual provides an overview of the GV-Tower DVR/NVR System and its accessories. It also includes the instructions to guide you through the installation and use of the GV-Tower DVR/NVR System:

- **Chapter 1, Introduction**
Identifies the GV-Tower DVR/NVR System's accessories and options.
- **Chapter 2, Overview**
Identifies the GV-Tower DVR/NVR System's components.
- **Chapter 3, Getting Started**
Provides step-by-step instructions on setting up the GV-Tower DVR/NVR System.
- **Chapter 4, NVR Health Analysis**
Introduces how to collect data to obtain the service of DVR/NVR health analysis from GeoVision.
- **Chapter 5, Troubleshooting**
Suggests courses of action if the GV-Tower DVR/NVR System doesn't seem to be working properly.

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Safety Instructions



Observe these safety instructions to help ensure against injury to yourself and damage to the product.

- **Read** all safety and installation instructions before you operate the product.
- **Do not operate** the product in high humidity areas or expose it to water or moisture.
- **Do not put** the product in an unstable, a slanting or vibrated place.
- **Do not block** any ventilation opening.
- **Do not install** the product near any heat sources such as radiator, heat register or other apparatus that produce heat.
- **Operate** the product using only the type of power source indicated on the marking label.
- **Do not defeat** the safety purpose of the grounding-type plug. A grounding plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- **Do not overload** wall outlets or extension cords, as this may cause fire or electric shock.
- **Do not use** the product when abnormality occurs, such as emitting smoke from the product, smelling burning, being damaged by drop, invasion of foreign objects inside the product, etc. Be always sure to remove the AC adaptor at once and contact your dealer.
- **Do not use** accessories or attachments not recommended by the manufacturer, as they may cause hazards and void the warranty.
- **Do not attempt** to service the product yourself, as removing the casing may expose you to dangerous voltage and void the warranty.

Chapter 1 Introduction

1.1 Features

- Powered by Intel Core i3 or i5 Processor
- 64-bit Windows Embedded Standard 7
- Support for GPU Decoding
- 4-bay hot swap data HDD
- Maximum storage capacity of up to 12 terabytes
- Pre-installed recovery from the hidden partition
- Dual Gigabit LAN ports
- Dual monitor display (VGA and HDMI outputs)
- Support for 3rd party IP cameras with H.264
- Support for 32-channel GV-Hybrid DVR (16-channel hardware compression plus 16-channel digital video recorder)
- All-in-one solution (Live View, Playback, Recording, Backup, CMS)
- Video analysis (Advanced Motion Detection, Privacy Mask, Scene Change Detection and Counter)
- Fisheye camera dewarping function
- Automatic connection to GV IP cameras
- H.264 / MJPEG / MPEG4
- Dual video streams
- On-screen LED panel for HDD status
- Smart device access
- Multiple (29) languages

1.2 Model

The GV-Tower DVR/NVR System has the following models:

GV-Tower DVR System	<ul style="list-style-type: none">- 16-channel hardware compression plus 16-channel digital video recorder- 16-channel hardware compression: Records up to 480 (NTSC) / 400 (PAL) fps at D1 resolution
GV-Tower NVR System	<ul style="list-style-type: none">- 32-channel digital video recorder- 32-channel of free GeoVision IP devices, or 32-channel combination of GeoVision IP devices and third-party IP devices digital video recorder

Note: For third-party IP device connection, it is required to additionally purchase an internal GV-NVR Dongle.

1.3 Software License

Free License	32 channels from GV-IP devices
Maximum License	32 channels from third-party IP devices
Increment for Each License	1 to 32 third-party IP cameras at an increment of 2
Optional Combinations	N/A
Dongle Type	Internal or External
<p>Note:</p> <ol style="list-style-type: none"> 1. The Maximum License is a paid service. 2. It is recommended to use the internal GV-USB Dongle to have the Hardware Watchdog function which restarts the PC when Windows crashes or freezes 	

1.4 Packing List

The GV-Tower DVR/NVR System package includes the following items. If any of the items are missing or damaged, contact your dealer to arrange a replacement.

Important: Please keep the original carton and all packing materials for future shipping need.

1. GV-Tower DVR/NVR System x 1
2. LFH Audio and Video Cable x 1 (only for GV-Tower DVR System)



3. Keys for Dard Disk Safety Lock x 2
4. Hard Disk Drive Screw x 16



5. GV-IR Remote Control x 1



6. AC Power Cord x 1



7. GV-Tower DVR/NVR System Quick Start Guide x 1
8. Software DVD x 1

1.5 Options

Optional devices can expand your GV-Tower DVR/NVR System's capabilities and versatility. Contact your dealer for more information.

GV-Data Capture V3 Box	GV-Data Capture V3 Box can integrate the GV-Tower DVR/NVR System to an electronic POS system, while GV-Data Capture V3E Box can establish such integration through LAN or Internet.
GV-Hub V2	An easy way for serial port extension. This hub can add 4 RS-232/RS-485 serial ports through the GV-Tower DVR/NVR's USB port.
GV-COM V2	This unit can add 1 RS-232/RS-485 serial port through the GV-Tower DVR/NVR System's USB port.
GV-IO Box (4 Ports)	GV-IO Box 4 provides 4 inputs and 4 relay outputs, and supports both DC and AC output voltages. A USB port is also provided for PC connection.
GV-IO Box (8 Ports)	GV-IO Box 8 provides 8 inputs and 8 relay outputs, and supports both DC and AC output voltages. A USB port is also provided for PC connection.
GV-IO Box (16 Ports)	GV-IO Box 16 provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages. A USB port is also provided for PC connection.
GV-Joystick	GV-Joystick facilitates the PTZ camera control. It can be either plugged into the GV-Tower DVR/NVR System for independent use or connected to GV-Keyboard to empower the operation. However, this device can only work on GV-System version 8.2 or later.
GV-Keyboard V3	The GV-Keyboard V3 is designed to program and operate the system, and it can also be connected with PTZ cameras directly for PTZ control.

Chapter 2 Overview

2.1 Front View

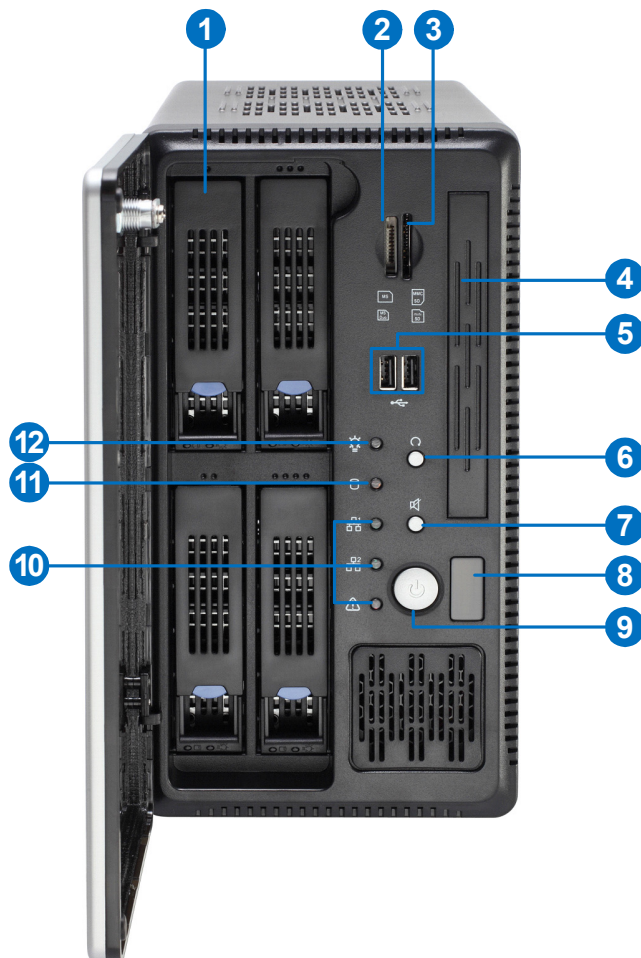


Figure 2-1

No.	Name	No.	Name
1	HDD x 4	7	Not Functional
2	Not Functional	8	IR Receiver
3	Not Functional	9	Power Button
4	Not Functional	10	Not Functional
5	Not Functional	11	HDD Activity LED (Red)
6	Reset Button	12	Power LED (Blue)

2.2 Rear View

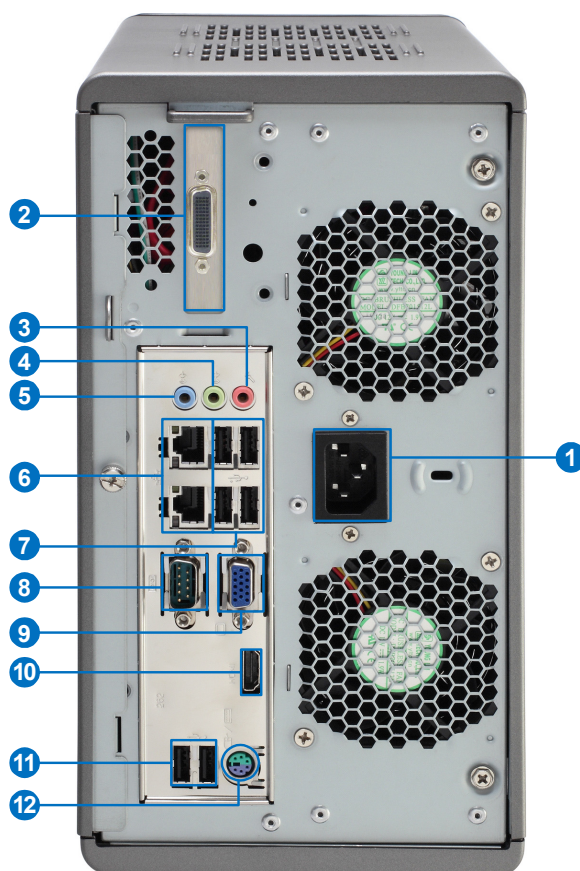


Figure 2-2

No.	Name	No.	Name
1	Power Connector	7	USB 2.0 Port x 4
2	LFH Audio and Video Connector*	8	Not Functional
3	Audio Microphone In Port	9	VGA Monitor Output
4	Audio Line Out Port	10	HDMI Port
5	Audio Line In Port	11	USB 2.0 Port x 2
6	Ethernet Port x 2	12	PS/2 Port (only for the keyboard)

Note: The feature marked with * is for GV-Tower DVR System only.

Chapter 3 Getting Started

3.1 Basic Installation

This section describes all the equipments required to program and operate the GV-Tower DVR/NVR System. Here we use GV-Tower DVR System as the example.

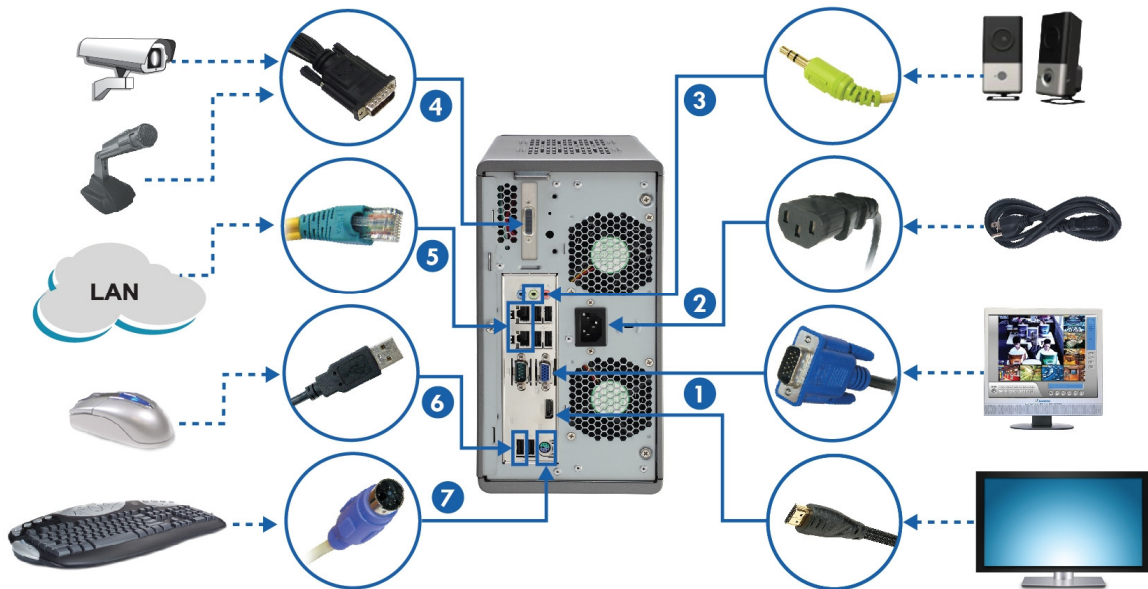


Figure 3-1

1. There are two ways to connect the monitor to the GV-Tower DVR/NVR System.
 - Using the VGA cable supplied by the monitor manufacturer, connect the VGA monitor.
 - Using the HDMI cable supplied by the HDTV manufacturer, connect the HDTV.
2. Using the supplied power cord, connect one end to the AC input and the other end to the power outlet.
3. Connect speakers to the Audio Line Out port.
4. Using the supplied LFH Audio and Video cable, connect the yellow ends to the cameras, and the red ends to the microphones.
5. Using the RJ-45 cable, connect one end to the Ethernet port and the other end to Network.
6. Connect the mouse to the USB port.
7. Connect the keyboard to the PS/2 port.

Once the above hardware is properly connected, press the **Power** button on the front panel to start the system. It takes about 1 minute for startup. The system should load automatically and display cameras in the main screen.

3.1.1 Using the IR Remote Control

The GV-IR Remote Control provides easy control of the GV-Tower DVR/NVR System. Its receiver is a built-in device.

For details, see *GV-IR Remote Control User's Manual* (GV-Desktop < **Program** button < **User Manual**).



Figure 3-2

3.1.2 Connecting to 2 Monitors

You can connect the 2 monitors to the ports labeled below on the back panel of the GV-Tower DVR/NVR System. Here we use GV-Tower DVR as the example.

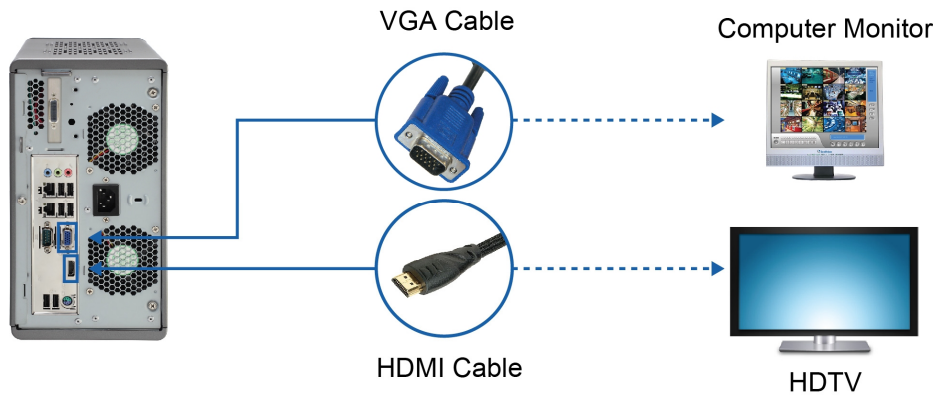


Figure 3-3

To install other required equipment, follow the steps in *3.1 Basic Installation*.

3.2 Installing the Hard Drive

The GV-Tower DVR/NVR System uses SATA hard drives for video and audio data storage. Before recording, ensure to install your hard drives. Follow the below steps to install the hard drive.

1. Press the release latch. The drawer handle pops up.

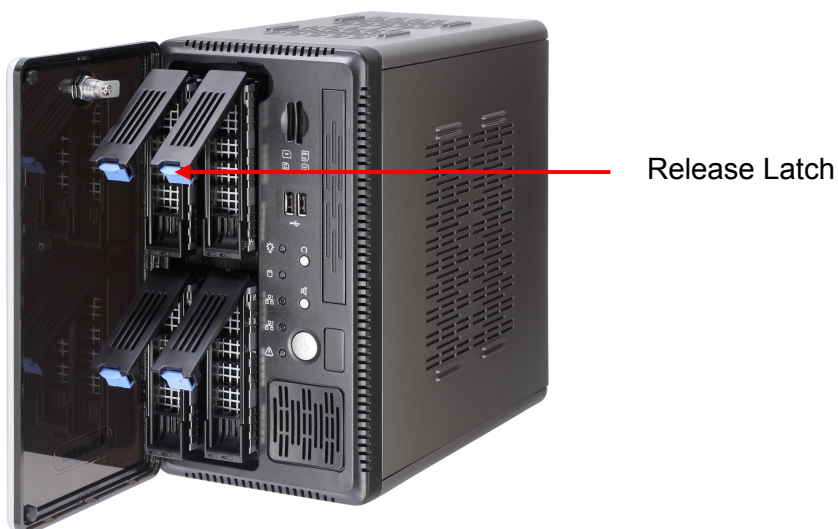


Figure 3-4

2. Pull out the drive drawer.
3. Remove the plastic carrier from the chassis.

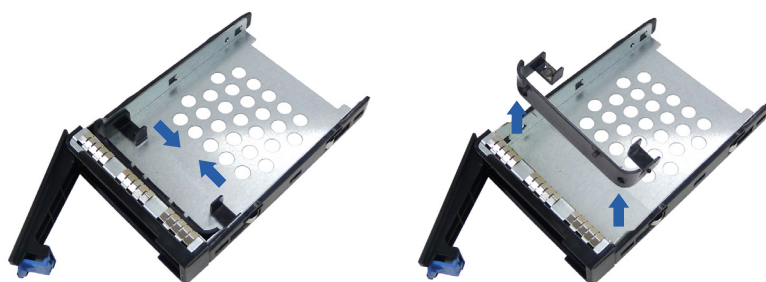


Figure 3-5

4. Insert the hard drive in the drawer.



Figure 3-6

5. Secure the hard drive with the 4 screws, and make sure all screw heads flush with the surface.



Figure 3-7

6. Put the drawer back in the drive bay of the GV-Tower DVR/NVR System, and push the latch until it locks.
7. When the Power LED on the drawer shines blue, the hard drive is now ready to use.

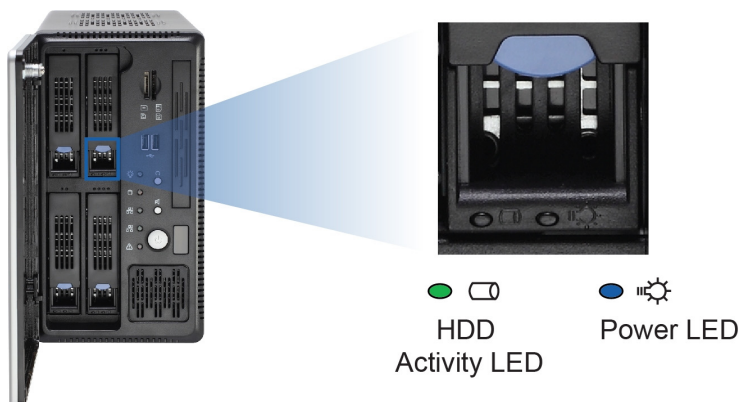


Figure 3-8

3.3 Formatting the Hard Drive

After installing hard drives to your system, you will need to format them before use.

1. On the GV-Desktop, click the **Programs** button, and select **Disk Management**.

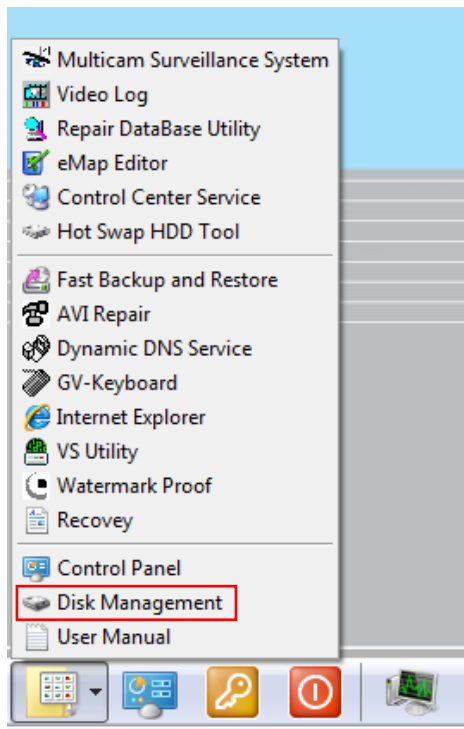


Figure 3-9

2. Type the ID and password in the dialog box. The default ID and password are “0000”.

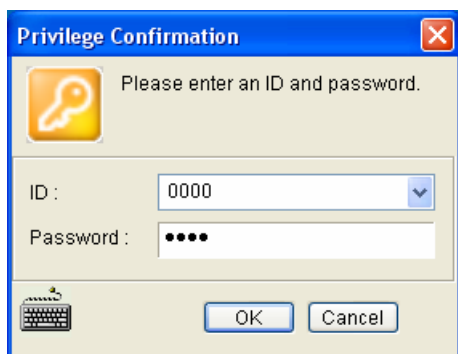


Figure 3-10

3. Right-click in the unallocated space of a new drive, and select **New Simple Volume**.

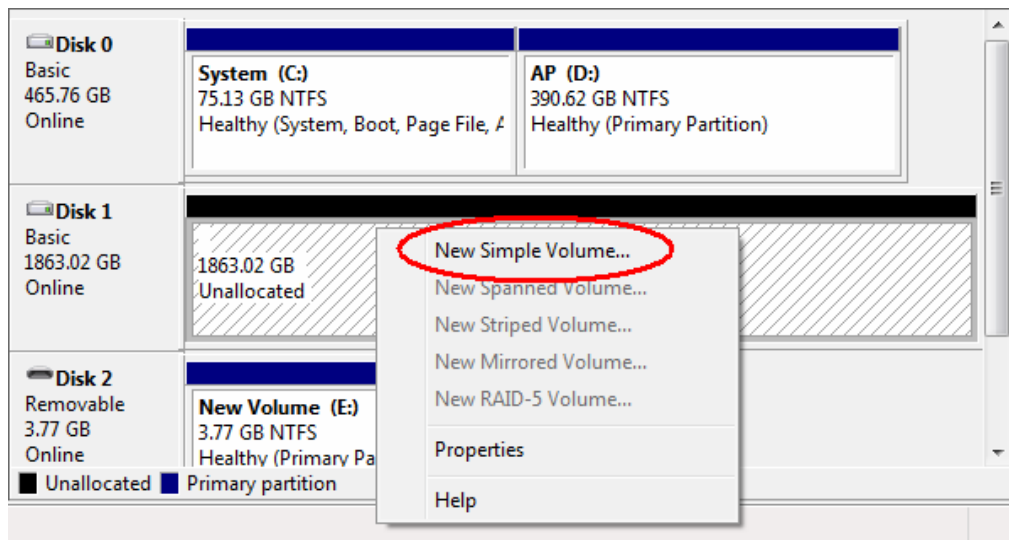


Figure 3-11

4. The New Simple Volume Wizard appears. Click **Next** to continue.

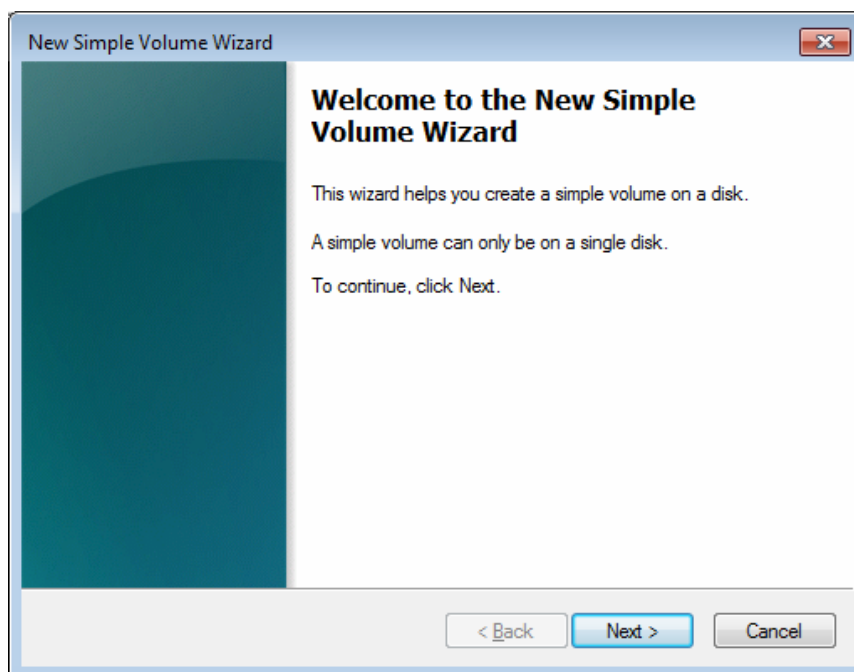


Figure 3-12

5. The default partition size is the same as the maximum disk space. Make changes if necessary. Click **Next** to continue.

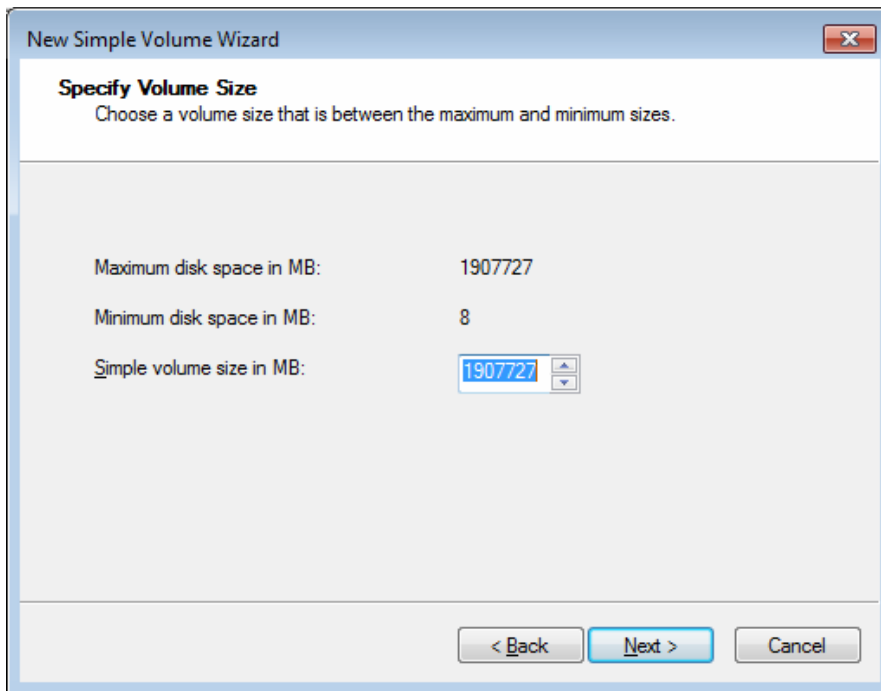


Figure 3-13

6. Assign a drive path that is not in use by other devices, and click **Next** to continue.

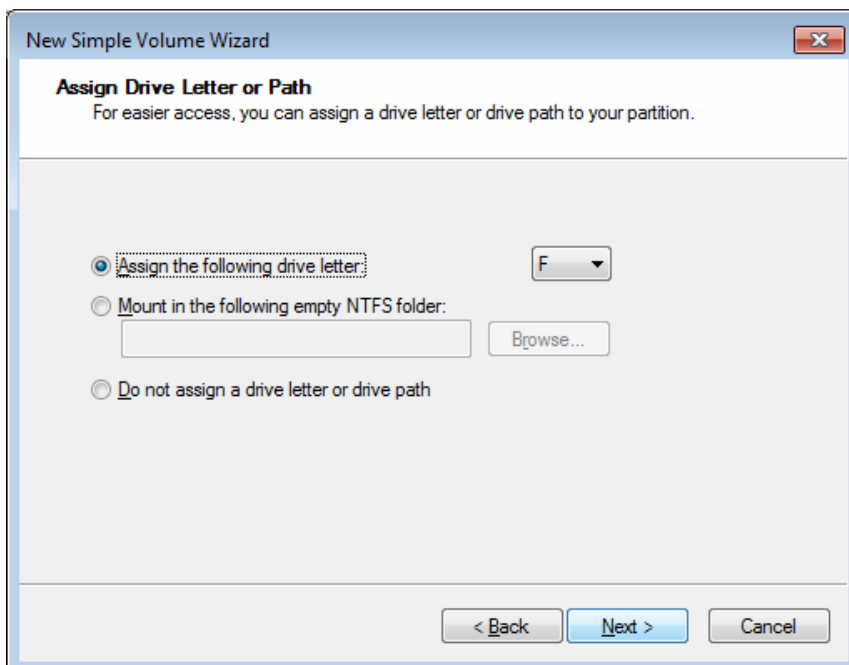


Figure 3-14

Note: The default drive path starts from D:\.

7. Type a name in the **Volume label** box, ex. HDD1, and click **Next** to continue.

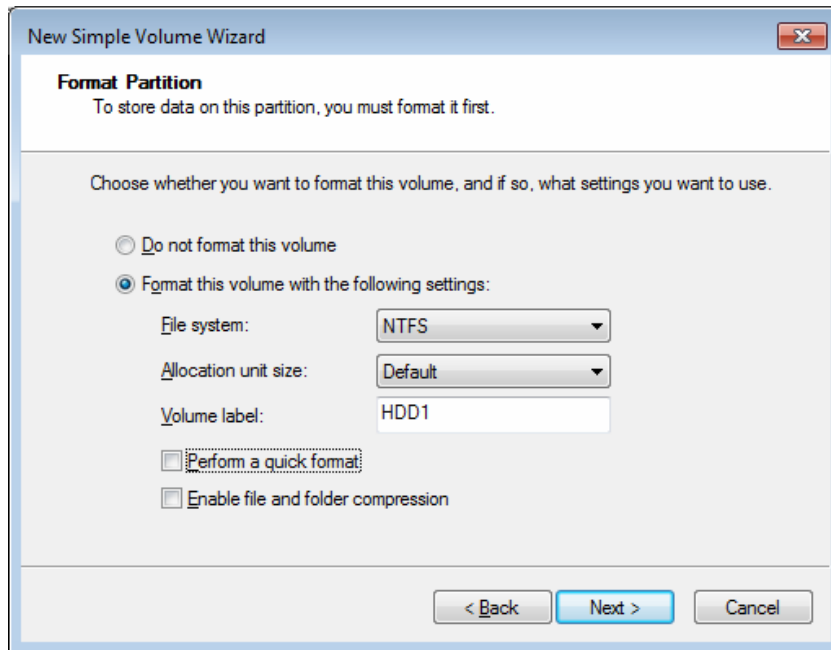


Figure 3-15

8. When the formatting is complete, click **Finish** to close the wizard.

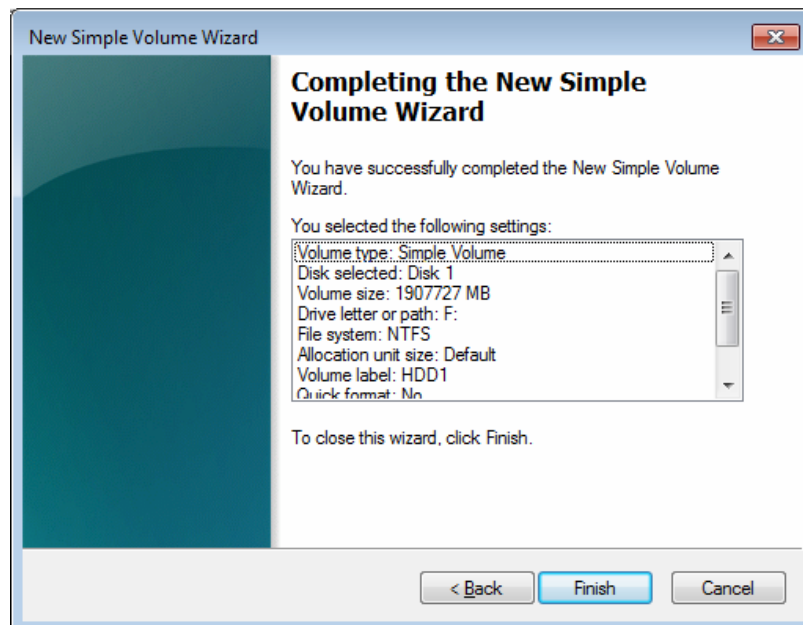


Figure 3-16

9. When the drive is successfully initialized, partitioned, and formatted, its status description should display “*Healthy.*”

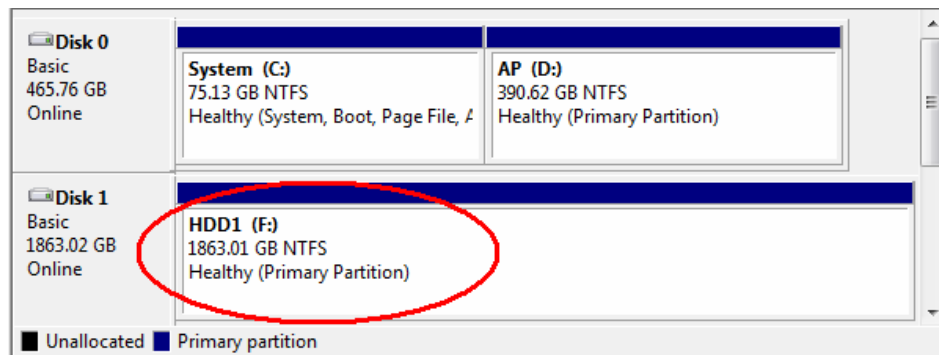


Figure 3-17

3.4 Adding the Hard Drive to the Recording Path

For GV-Tower DVR/NVR System, you need to add the formatted hard drives to the recording path before recording.

1. On the GV-Desktop, click the **Programs** button, and select **Hot Swap HDD Tool**. The MediaMan Tools window appears.

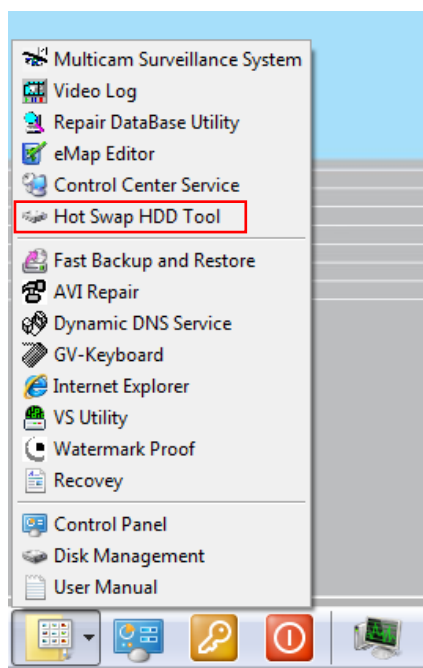


Figure 3-18

2. If a hard drive is already inserted, right-click it in the MediaMan Tools window, select **Add for recording**, and then select the storage group from the drop-down list.
3. If a hard drive is not inserted, follow these steps:
 - A. Insert a hard drive or plug a USB hard drive to the GV-Tower DVR/NVR System.

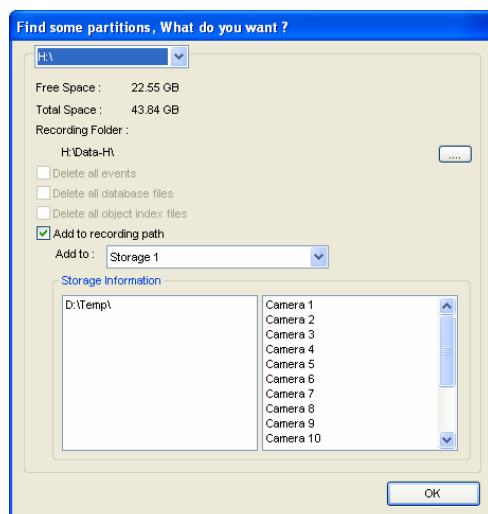


Figure 3-19

- B. Select **Add to recording path**, and select the storage group from the drop-down list.

Note: Storage 1 is the default storage group.

4. Click **OK** to automatically configure the hard drive to the recording path.
5. In the MediaMan Tools window, if the hard drive is successfully added to store data, its Status field should display “Standby”.

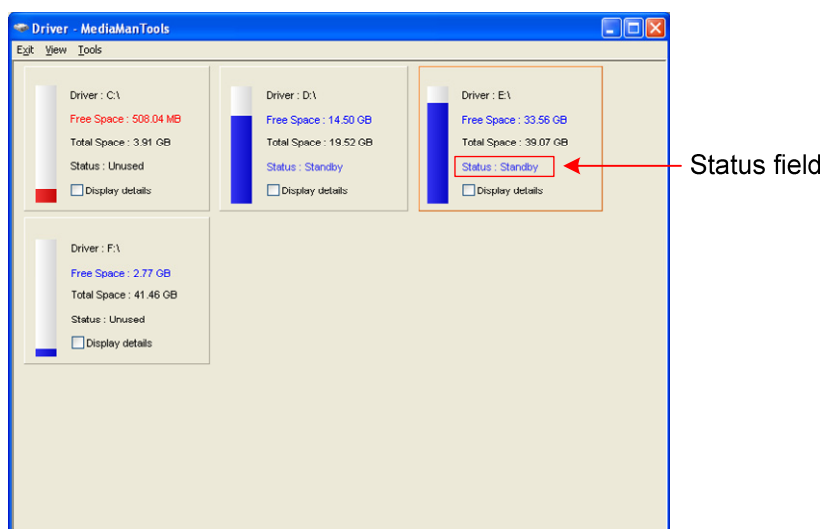


Figure 3-20

6. To add another formatted hard drive for storage, repeat the above steps.

For the details on using Hot Swap HDD Tool, see *Hot-Swap Recording*, Chapter 11, *DVR User's Manual* (GV-Desktop < **Program** button < **User Manual**).

3.5 Setting Up On-Screen LED Panel

For GV-Tower DVR/NVR System, a LED panel on the screen provides a quick indication of the activity status of hard disk drives.



Figure 3-21

LED Color	Description
Gray	- No HDD is assigned to this LED. - The system is not started.
Green	A HDD is assigned to this LED.
Red	The HDD is full.
Flashing Green	The system is recording.
Flashing Red	The HDD is recycling.

1. On the GV-Desktop, click the **Programs** button, and select **Hot Swap HDD Tool**.
2. Click **Tools** on the menu bar, and select **Setup LED Panel**. This dialog box appears.

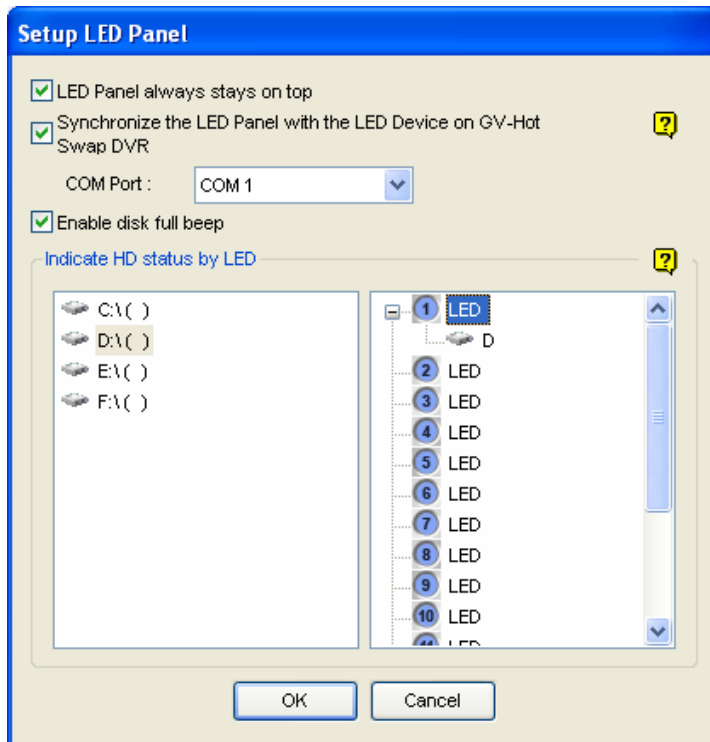


Figure 3-22

- **LED Panel always stays on top:** This option makes the LED panel stay on top of other windows when the Media Man Tools window is minimized.
 - **Synchronize the LED Panel with the LED Device on GV-Tower DVR/NVR System:** Not functional.
 - **Enable disk full beep:** When the hard disk drive is full, the system sounds on. Note this function only works when speakers are connected to the GV-Tower DVR/NVR System.
3. By default, only the hard disk drive D will be assigned to LED. If you want to re-assign the hard disk drive or assign other drives to LEDs, freely drag and drop the hard disk drive to the desired LED on the tree.
 4. Click **OK** to apply the settings, and minimize the MediaMan Tools window to display the LED panel on the screen.
 5. If you want to return to the MediaMan Tools window, right-click the LED panel and select **Switch to the setup window**.

Note:

1. Because the LEDs are designed to indicate the video and audio files are being written or read, it is not recommended to assign the HDDs that store log files to the LEDs.
 2. If the HDD that stores log files is assigned to a LED and its LED turns red, make sure the log files are not being written before you remove it. Otherwise, the log files might be lost during the removal.
-

3.6 Replacing the Hard Drive

You can replace the hard drive without shutting down the GV-Tower DVR/NVR System.

1. Do not turn off the power before you replace the hard drive.
2. Push the release latch. The drawer handle pops up.
3. Lift the handle, pull out the drawer slightly and wait until the hard drive spins down.
4. Pull out the drawer completely, remove the hard drive, and then mount a new one.
5. Put the drawer back in the drive bay.
6. Push the release latch until it locks.

3.7 Configuring the IP Address

GV-Tower DVR/NVR System supports remote monitoring, control and configuration over a network connection. The following default IP addresses will automatically be assigned.

- **Connection 1: 192.168.0.200**
- **Connection 2: 192.168.0.201**
- **Default Subnet Mask: 255.255.252.0**

To change the above default IP addresses, follow the steps below.

1. On the GV-Desktop, click the **Programs** button, and select **Control Panel**.

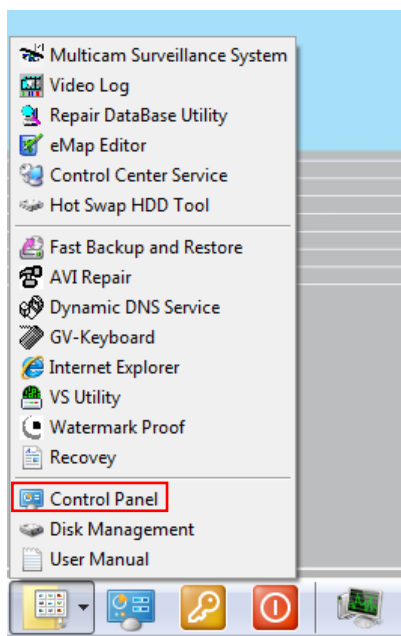


Figure 3-23

2. Type the ID and password. The default ID and password are “0000”. The Control Panel window appears.

- Under Network and Internet, click **View network status and tasks**.

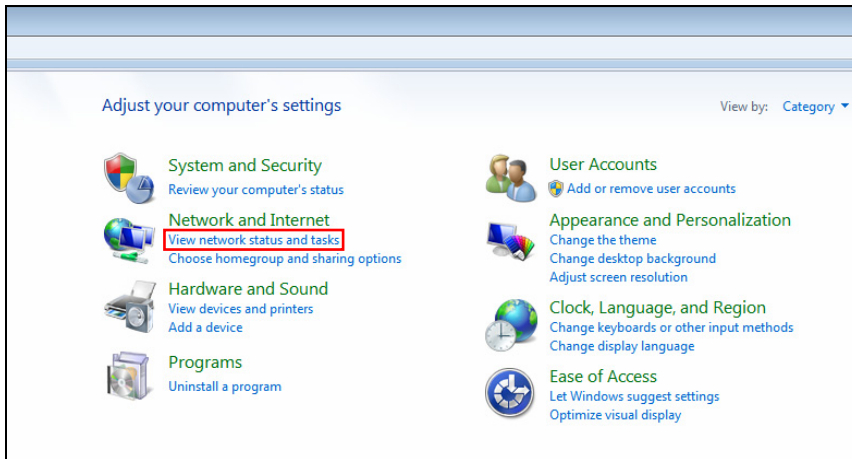


Figure 3-24

- Under Connections, select the **Local Area Connection** you want to configure.

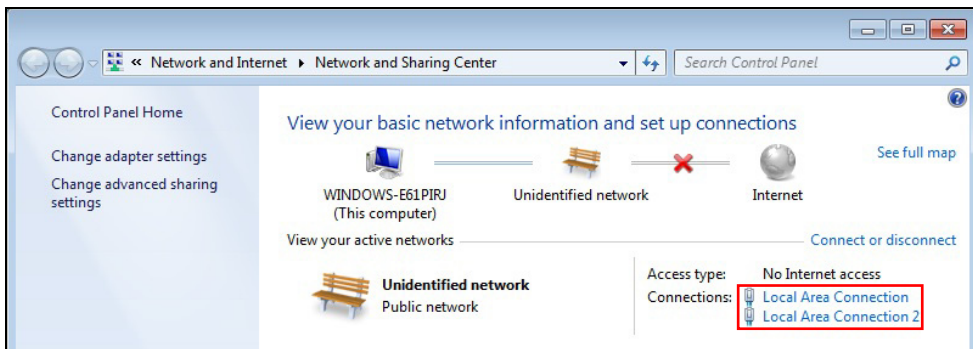


Figure 3-25

The local area connections listed correspond to the Ethernet ports as shown below:

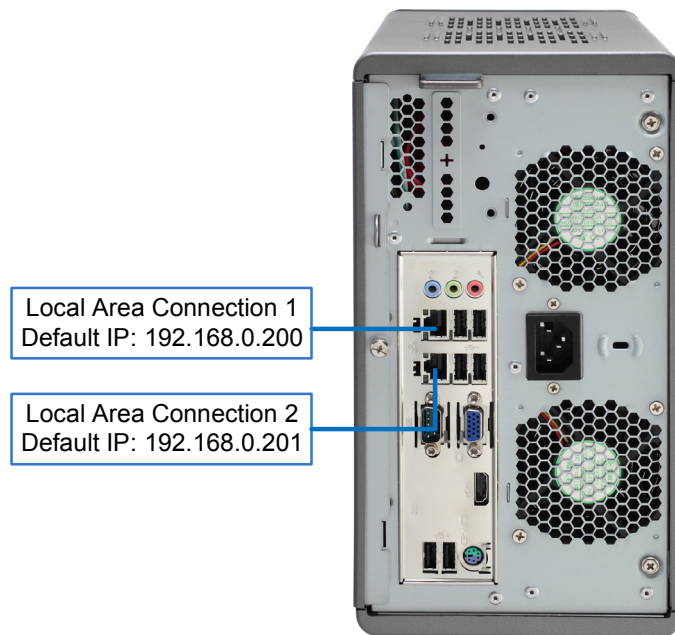


Figure 3-26

5. Select **Internet Protocol Version 4 (TCP/IPv4)**, and select **Properties**.

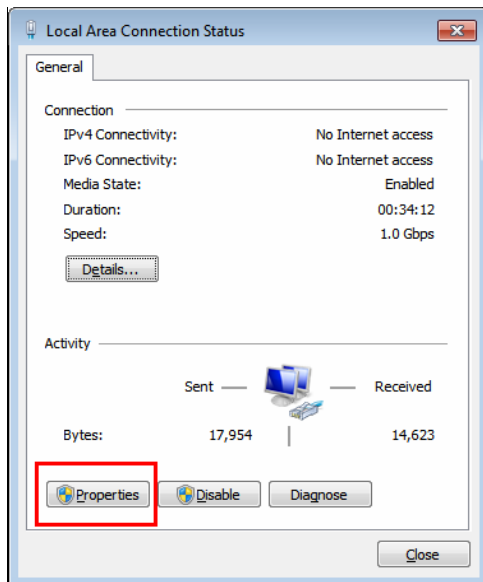


Figure 3-27

6. Select **Use the following IP address** and type the new IP information in the fields. Or select **Obtain an IP address automatically** to enable dynamic IP address.

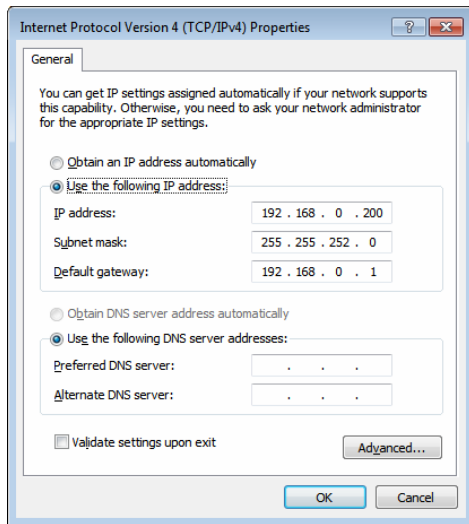


Figure 3-28

7. Click **OK** to finish the setting.

3.8 Exiting to Windows

GV-Tower DVR/NVR System is protected by GV-Desktop that is limited to run the selected programs. If you need to exit to Windows desktop, follow these steps.

1. Exit the main screen to display the GV-Desktop screen.



Figure 3-29

2. Click the **Settings** button, and type the valid ID and password. The default ID and Password are "0000". The Settings dialog box appears.
3. Under Desktop Type, select **Windows** from the drop-down list, and click **OK**.
4. Click the **Log Off** button, and type the ID and Password to display the Windows desktop.



Figure 3-30 The GV-Desktop

3.9 Returning to GV-Desktop

To return to GV-Desktop, click the Windows **Start** button, point to **All Programs**, click **GV-DVR/NVR**, and click **Key Lock Utility**.

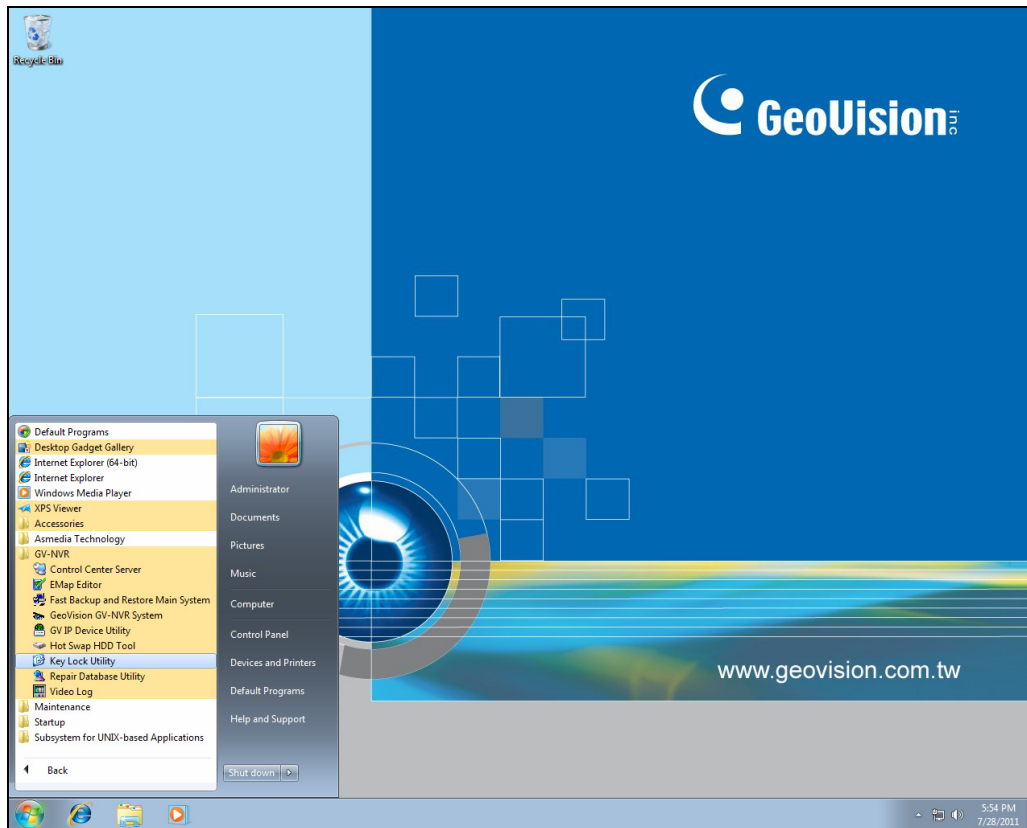


Figure 3-31

3.10 Twin View Display

You can display live view and play back video in two separated monitors.

1. Follow Steps 1 and 2 in 3.7 *Configuring the IP Address* to access the Control Panel window. See Figure 3-23.
2. In the Control Panel window, click **Adjust Screen Resolution** under the Appearance and Personalization section. This dialog box appears.

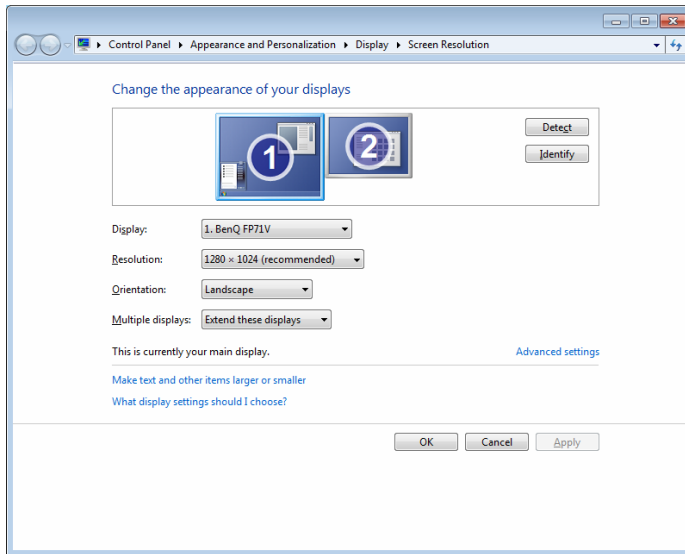


Figure 3-32

3. Click the **Display** list. If you do not see multiple monitors listed, check if your additional monitors are connected with the system properly.
4. Select the primary monitor from the list, and select **Make this my main display**.
5. Select additional monitors from the list, and select **Extend these displays** in the Multiple displays drop-down list.
6. Click **Identify**. Drag and drop the monitor icons to match the physical arrangement of your monitors.
7. Click **OK**.

8. Click the **Up** button on the toolbar, go to the system folder and locate **DMPOS.exe**.

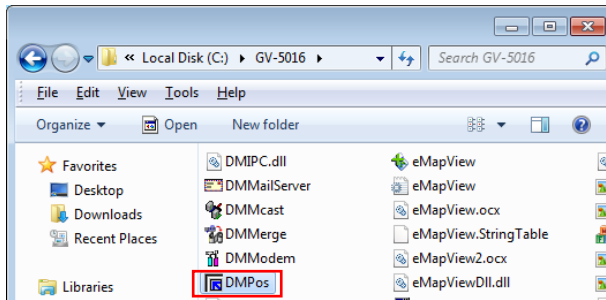


Figure 3-33

9. Double-click **DMPOS.exe**. The Set Application Function Position dialog box appears.

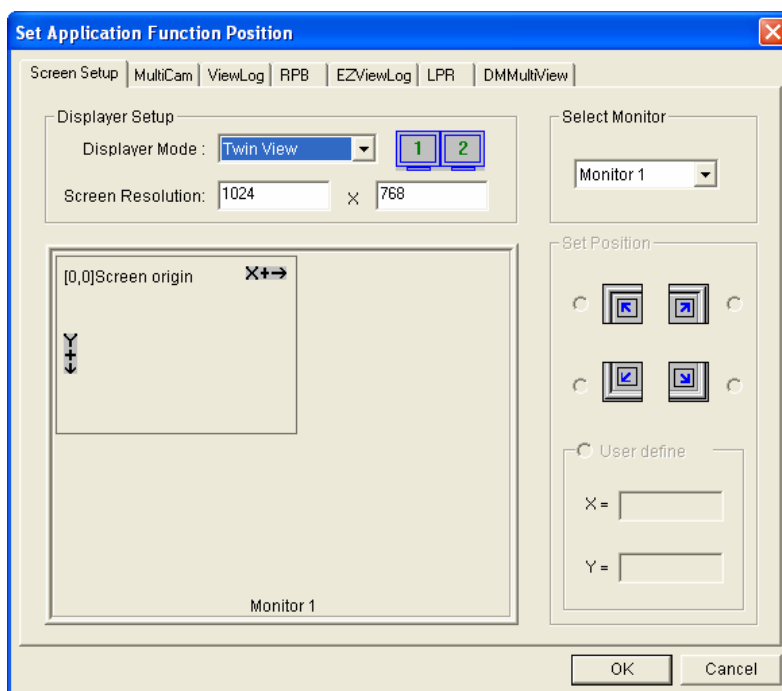


Figure 3-34

10. In the Screen Setup tab, select **TwinView** from the Displayer Mode drop-down list.
11. To define the live view monitor, in the MultiCam tab, select **Monitor 1** from the Select Monitor drop-down list.
12. To define the playback monitor, in the ViewLog tab, select **Monitor 2** from the Select Monitor drop-down list.
13. Click the OK button.
14. Exit and re-start the system. The live view should appear on monitor 1.
15. Click the **ViewLog** button on the main screen and select **Video/Audio Log** from the menu. The ViewLog player should appear on monitor 2.

3.11 Digital Matrix

To display multiple channels through two monitors, Digital Matrix is thus introduced to provide a method.

The Digital Matrix includes these features:

- **Live view:** You can set different live views and screen divisions for each monitor.
- **Automatic channel scan:** You can set up to 16 scanned pages with different screen divisions and channels for each monitor.
- **Pop-up Alert:** You can be alerted by pop-up live videos when motion is detected or I/O devices are triggered.

3.11.1 Activating Two Monitors

Use Windows Display Property to activate multiple monitors.

1. Follow Steps 1 to 6 in *3.10 Twin View Display* to configure the second monitor.
2. Start the GV-System, click the **Configure** button, click **Accessories**, select **Digital Matrix Setting**, select monitors from the **Display** list and select **Activate** for each monitor. All monitors must be activated one by one.
3. Click **Apply**. Your additional monitor should now display the channels seen on the primary monitor.

3.11.2 Setting Live View

You can set different live views and screen divisions for each monitor.

1. On the main screen, click the **Configure** button, click **Accessories**, and select **Digital Matrix Setting**. This dialog box appears.

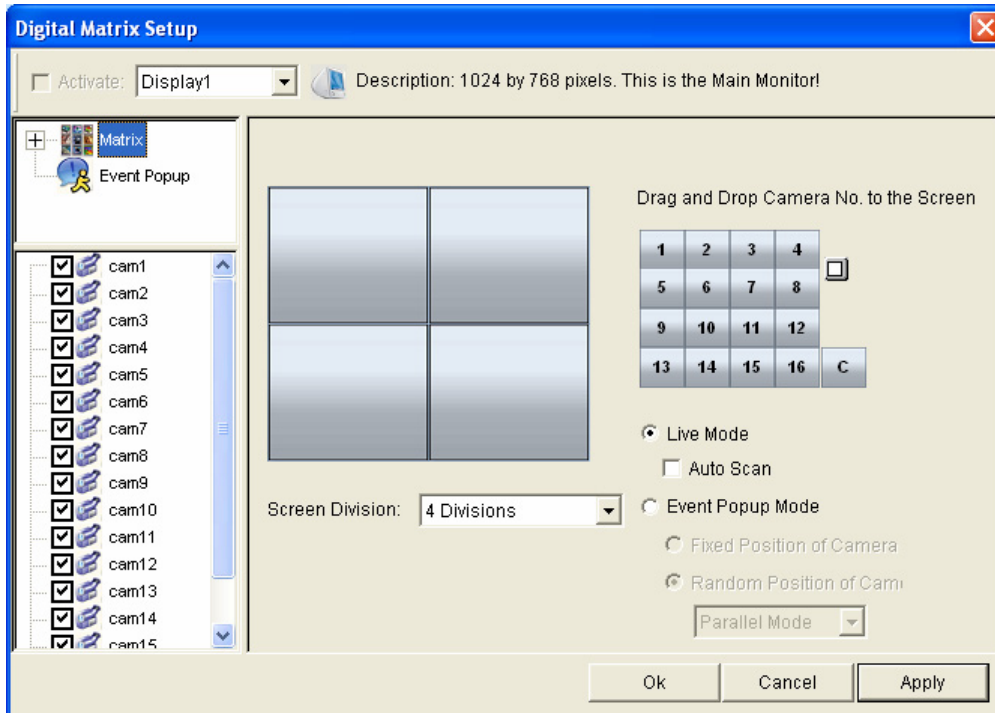


Figure 3-35

2. Use the **Display** list to select the monitor to be configured.
3. Select **Screen Division**.
4. Drag and drop the camera numbers to the desired positions on the divisions. To clear the assignment, drag and drop the “C” icon to that position.
5. Select **Live Mode**.
6. Repeat above steps to configure other monitors.
7. Click **OK** to apply the settings.

3.11.3 Setting Scanned Pages

You can set up to 16 scanned pages with different screen divisions and channels for each monitor.

1. Use the **Display** list to select the monitor to be configured.
2. In the upper-left column, expand the **Matrix** folder tree, and click **Page 1**. This page appears.

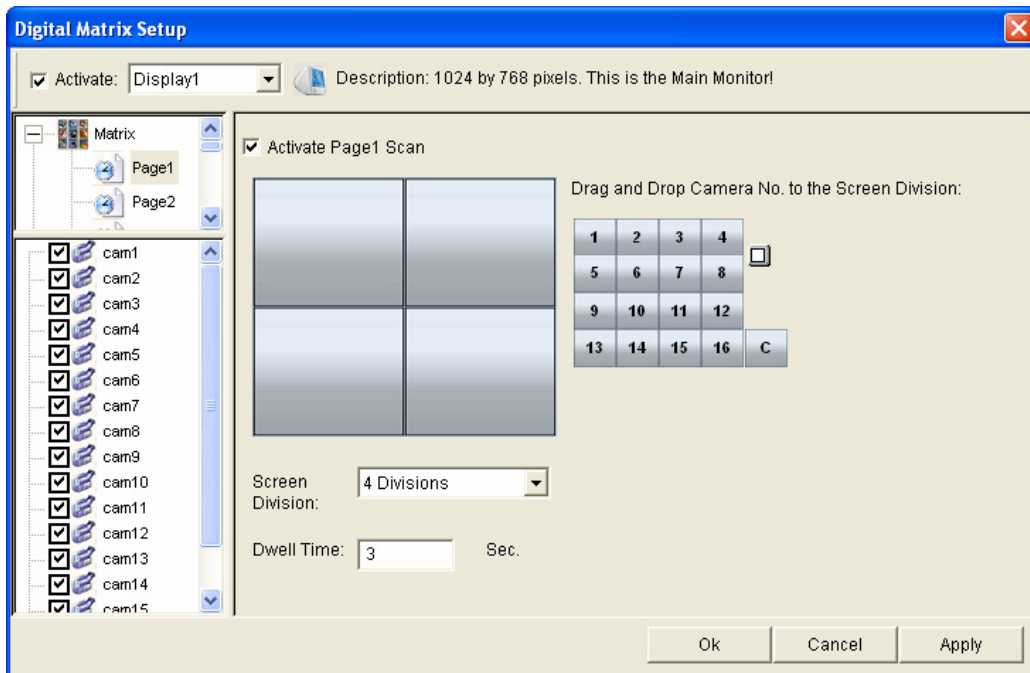


Figure 3-36

3. Select **Activate Page 1 Scan**.
4. Select **Screen Division**.
5. Drag and drop the camera numbers to the desired positions on the divisions. To clear the assignment, drag and drop the “C” icon to that position.
6. Specify **Dwell Time** for how long this scanned page remains on the monitor.
7. Repeat Steps 2 to 5 to configure more scanned pages for the specific monitor.
8. Repeat Steps 1 to 7 to configure scanned pages for the second monitor.
9. In the upper-left column, click the **Matrix** icon and return to Figure 3-35.
10. Select **Auto Scan**.
11. Click **OK** to start scanning among pages.

3.11.4 Setting Pop-up Alert

You can be alerted by pop-up live videos when motion is detected or I/O devices are triggered.

1. Use the **Display** list to select the monitor to be configured.
2. In the upper-left column, click **Event Popup**. This page appears.

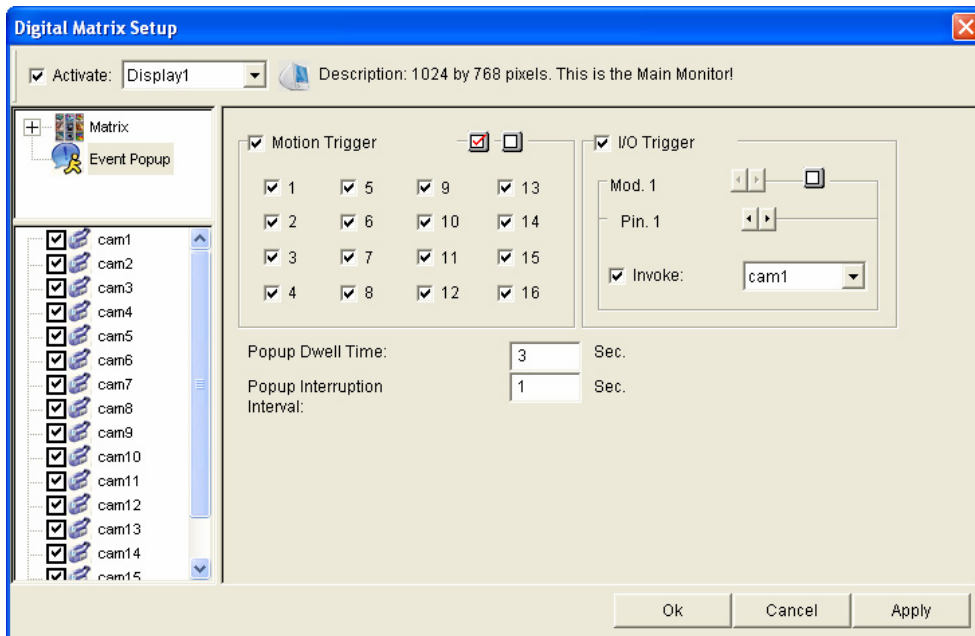


Figure 3-37

- **Motion Trigger:** The live video of selected cameras pops up when motion is detected.
 - **I/O Trigger:** The live video of assigned camera pops up when the selected input device is triggered.
 - **Popup Dwell Time:** Specify the amount of time that a pop-up live video remains in the foreground.
 - **Popup Interruption Interval:** Specify the interval between camera pop-ups. This option is useful when several cameras are activated for pop-up alert at the same time.
3. Use the **Display** list to select other monitors for setup.
 4. After above settings, click the **Matrix** icon and return to Figure 3-36.
 5. Select **Event Popup Mode**. Then select **Fixed Position of Camera** or **Random Position of Camera**. For these two options, see 3.11.4.1 *Setting Pop-up Positions*.
 6. Click **OK**.
 7. Start monitoring. When motion is detected or the input device is triggered, the live video will pop up for alert.

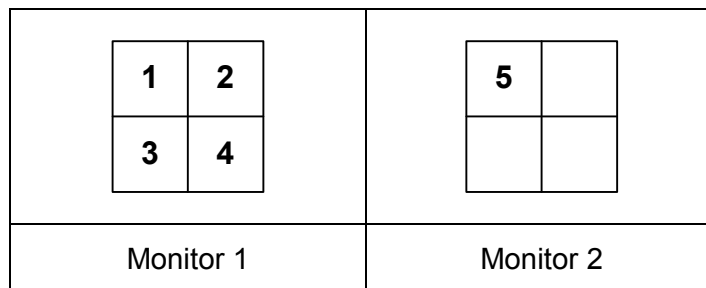
3.11.4.1 Setting Pop-up Positions

When you select **Random Position of Camera**, you can decide the positions for pop-up cameras.

- **Fixed Position of Camera:** The cameras pop up in their assigned positions. To assign positions, select **Screen Division**. Then drag and drop the cameras number to the desired positions on the divisions.
- **Random Position of Camera:** The positions of pop-up cameras are based on the sequence order of triggers. There are two modes for this position:
 1. **Cascade Mode:** This mode can avoid the same cameras popping up on different monitors. This is suggested to be used when multiple monitors are placed close to each other.

Example:

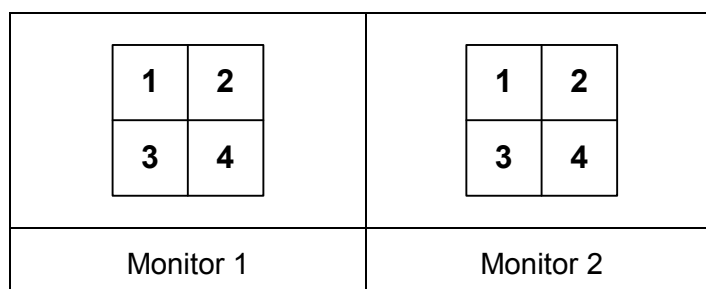
Camera 1, Camera 2, Camera 3, Camera 4 and Camera 5 are assigned for pop-up alert on both Monitor 1 and Monitor 2. Monitor 1 is set at 4 screen divisions. When the five cameras are triggered at same time, the first 4 cameras show up on Monitor 1 and the 5th on Monitor 2.



2. **Parallel Mode:** This mode allows the same cameras simultaneously pop up on different monitors. This is suggested to be used when multiple monitors are placed in separate rooms.

Example:

Camera 1, Camera 2, Camera 3 and Camera 4 are assigned for pop-up alert on both Monitor 1 and Monitor 2. When the four cameras are triggered at the same time, they will show up simultaneously on both Monitor 1 and Monitor 2.



3.11.5 Setting Live View with Pop-up Alert

You can set a different live view mode with pop-up alert together for each monitor. When alert events occur, the live video of the associated camera will pop up on the assigned monitor to replace its live view mode.

1. To configure live view mode, follow the instructions in *3.11.2 Setting Live View*.
2. To configure pop-up alert, in the upper left column, click **Event Popup**. Figure 3-37 appears.
3. Configure **Motion Trigger**, **I/O Trigger**, **Popup Dwell Time** and **Popup Interruption Interval** for each monitor. For details see *3.11.4 Setting Pop-up Alert*.
4. Click the **Matrix** icon and return to Figure 3-35. Ensure the **Live Mode** option is selected.
5. Click **OK**. The live view mode you configured for each monitor is displayed.
6. Start monitoring. When alert events occur, the associated camera will pop up on the desired monitor.

3.12 System Restoration

3.12.1 Restoring System

You can restore preinstalled files once they are damaged by running the recovery from the hidden partition. To restore the operating system and all preinstalled software, follow the steps below.

Note: After recovery, you need to re-install all settings and passwords. But the recovery will not delete your recording files saved in the other partitions since it only reformats the partition C.

1. On the GV-Desktop, click the **Program** button and select **Recovery**. The system will run this command by itself.

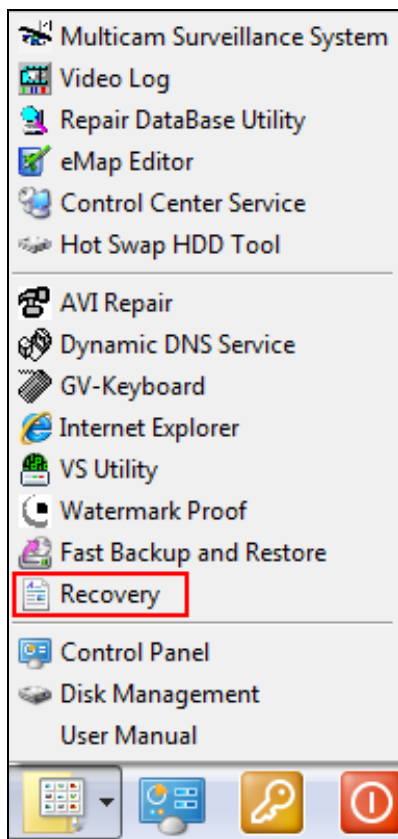


Figure 3-38

2. Restart the GV-Tower DVR/NVR System.
3. Press **F11** button several times to avoid accessing the system.

4. When the below screen appears, press the **Recovery** button.



Figure 3-39

5. When the restoring process is completed, the screen will automatically show the GV-Desktop. And the system will restore the default values.

3.12.2 Changing Video Standard after Recovery

The default video standard after recovery is set to NTSC. If the video standard in your country is PAL, remember to configure the GV-Tower DVR/NVR System for PAL after recovery .

1. Click the **Configure** button, point to **AV Setting**, and then select **Video Source**.

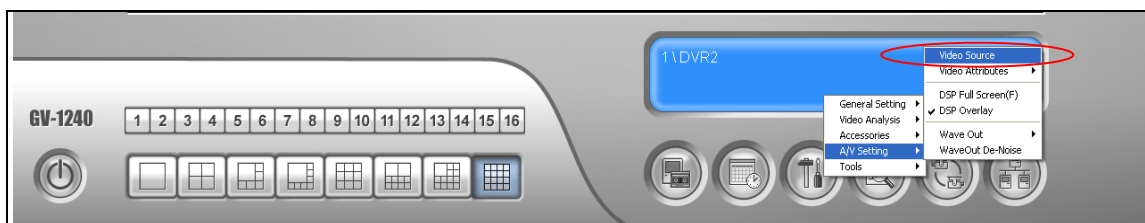


Figure 3-40

2. In the Video Standard field, select **PAL** from the drop-down list, and click **OK**.

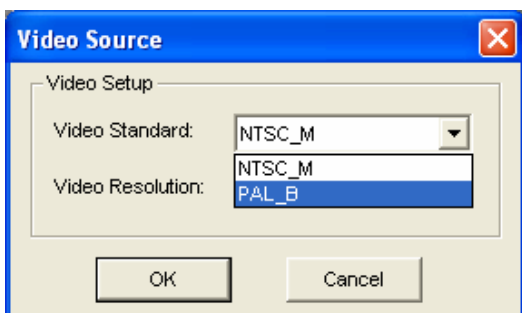


Figure 3-41

3.13 Updating GV-Tower DVR/NVR System

If you like to update your GV-Tower DVR/NVR System, contact your dealer for more information.

Before contacting your dealer, you may check software update news at our website:

<http://www.geovision.com.tw>

Chapter 4 Health Analysis

GeoVision offers health analysis to GV-Tower DVR/NVR System. The service is intended to give diagnosis for early and immediate detection of problems.

It is recommended to have the health analysis during the first week after you install the GV-Tower DVR/NVR System, and then have the checkup every three months. It will take 5 working days for response.

Please prepare the following data for analysis, and send to dvrssystem@geovision.com.tw

- **System Settings**
- **System Log**
- **Information of your computer system (Processor; Drives; Voltage, Temperature and Fans)**

4.1 System Settings

Please back up your system configurations using the **Fast Backup and Restore** application.

1. Run **Fast Backup & Restore Main System** from the Start menu.

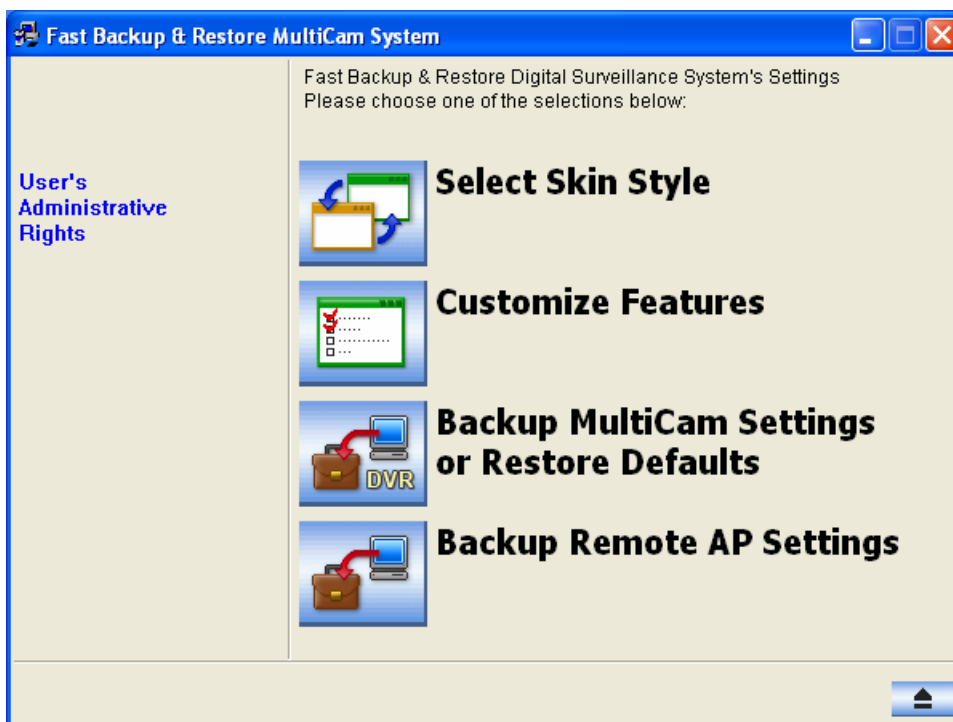


Figure 4-1

2. Select **Backup MultiCam Settings or Restore Defaults**, and select **Backup Current System**. This dialog box appears.

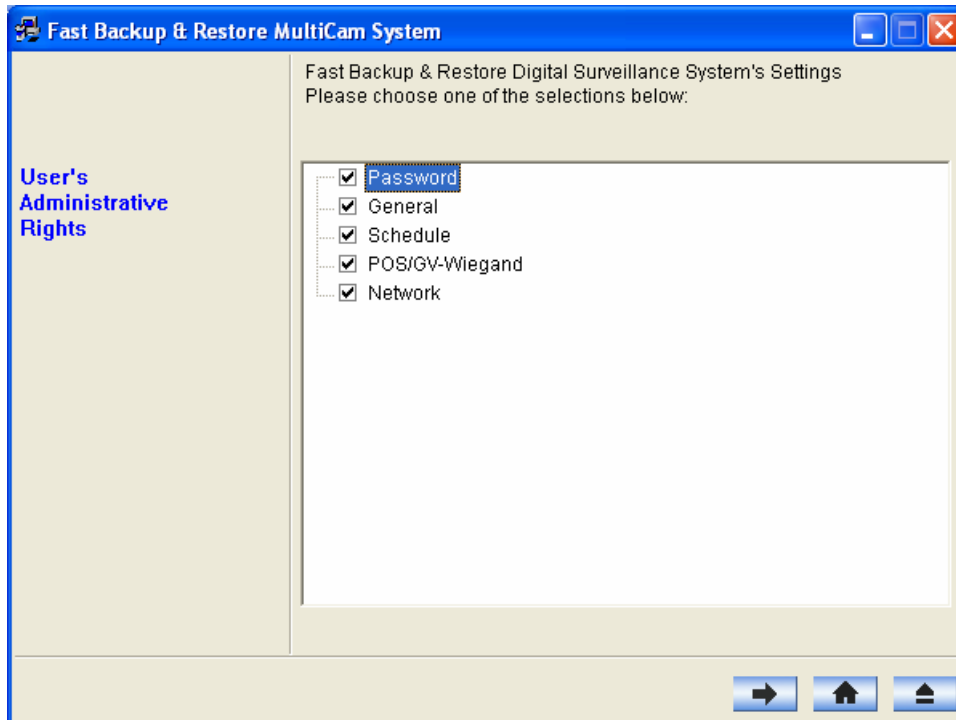



Figure 4-2

3. Press the **Next Step** button  to back up all your system settings. The Save As dialog box appears.
4. Select the destination drive to store the backup file. When the backup is complete, this message "*Successfully Backup MultiCam System Settings*" will appear.

4.2 System Log

Please provide the **sys*.mdb** files of system log. The files by default are saved at **C:\GV folder\database**. If you have modified the default location, you can check the path by the following steps:

1. Click the **Configure** button on the Main System, select **System Configure**, and then select **System Log Setting**. This dialog box appears.

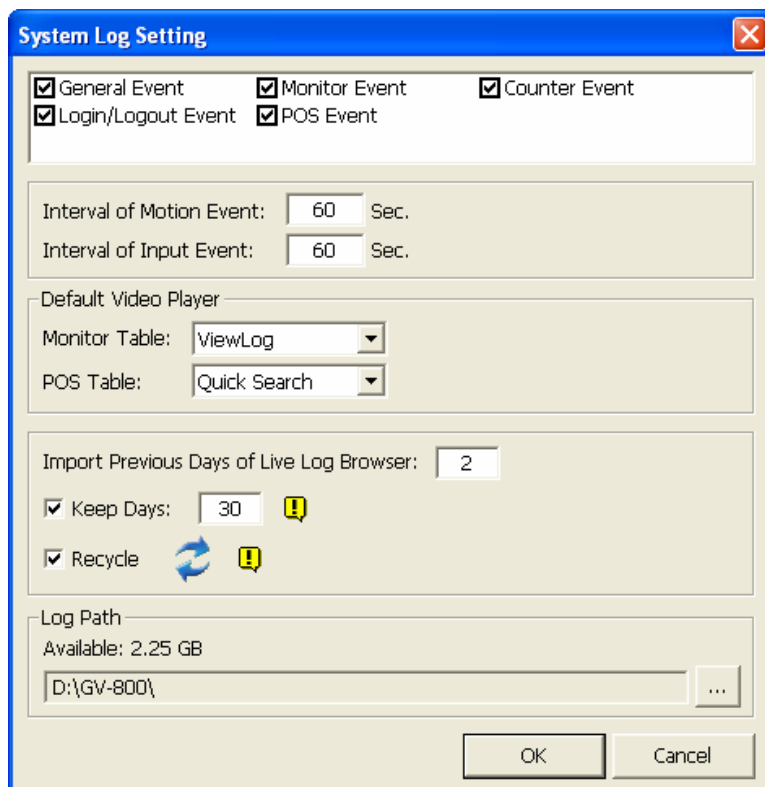



Figure 4-3

2. The location of your system log is listed after **Log Path**.

4.3 Information of Your Computer System

To get the information of your computer system, please follow the steps below to install the free software PC WIZARD. By using the software, the following computer information can be easily collected and saved for analysis:

- **Processor:** includes Type, Frequency, Data Cache L1, Trace Cache L1, Cache L2, Voltage, Processor Temperature, FPU Coprocessor.
- **Drives:** includes Number of Hard Disk, Number of Drive, Total Size and Free Space of Drive.
- **Voltage, Temperature and Fans:** includes Monitoring Chip, Voltage CPU, Chassis Fan, Processor Temperature, Mainboard Temperature, Hard Disk Temperature.

1. Download and install **PC WIZARD** from <http://www.cpuid.com/pcwizard.php> .
2. After installation, run the program.
3. Right-click the **Processor** icon  and click **Save as**.

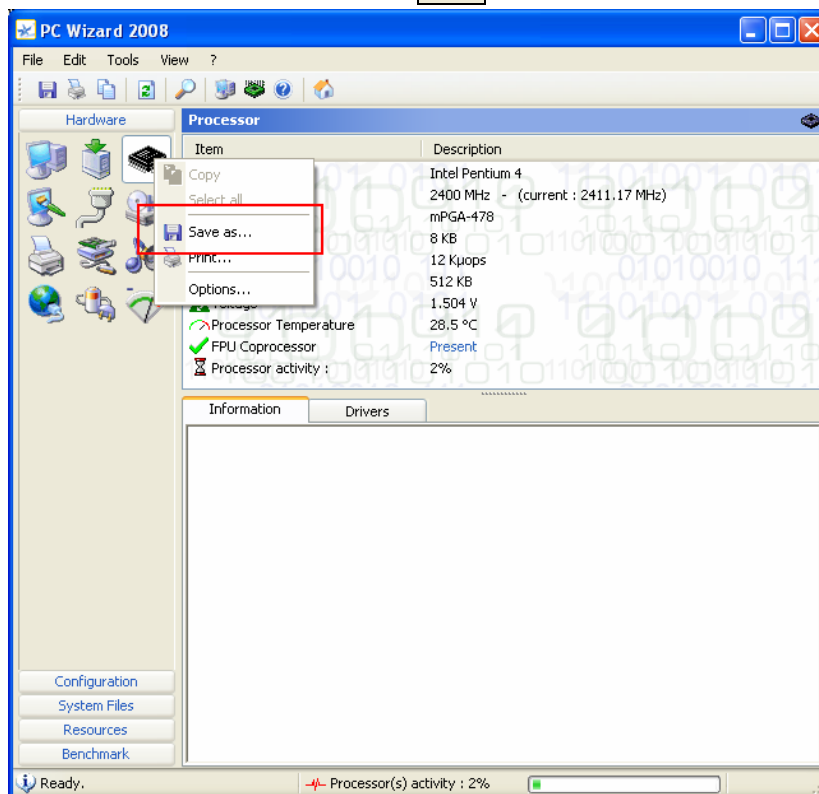


Figure 4-4

4. In the Save As dialog box, select **Format HTML** and click **OK**.

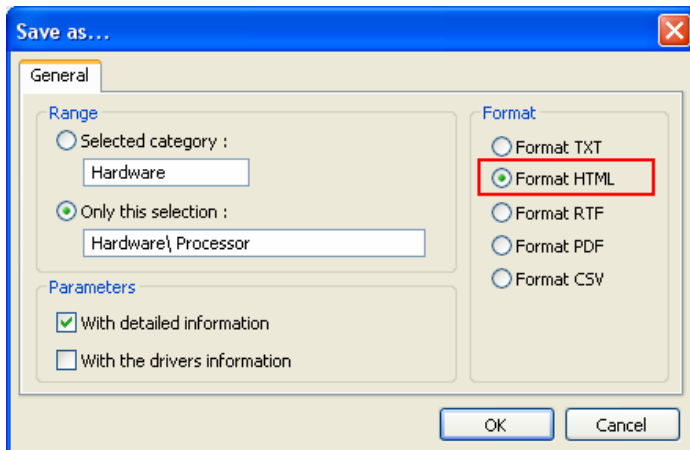




Figure 4-5

5. Select the Save location, type the file name, and then click **Save** to save the Processor information as HTML file.
6. Repeat Steps 3-5 to save the **Drives** information  as HTML file.
7. To save the **Voltage, Temperature and Fans** information , please follow these steps:
 - A. Click the **Voltage, Temperature and Fans** icon. The related data is displayed at the right window.
 - B. Click the first item **Monitoring Chip**.
 - C. Click **Edit** on the menu bar and click **Select All** to highlight all the contents.
 - D. Click **Edit** on the menu bar and select **Copy**.
 - E. Open a Notepad. Paste and save the information to TXT file.

4.4 Health Analysis Form

Please send the related data for analysis along with this Health Analysis Form to dvrssystem@geovision.com.tw.

Health Analysis of GV-Tower DVR/NVR System	
Contact Person:	Title:
Company Name:	
Telephone: (O)	(H)
Fax:	
E-Mail:	
Model:	
Bar Code:	

4.5 Check List

Read this check list before submitting the health analysis request:

- System Settings- **EXE file**
- System Log- **sys*.mdb**
- Computer System- Processor information of **HTML file**
- Computer System- Drives information of **HTML file**
- Computer System- Voltage, Temperature and Fans information of **TXT file**
- Health Analysis Form

Chapter 5 Troubleshooting

GV-Tower DVR/NVR System stops responding (aka “crashed” or “froze”).

If your GV-Tower DVR/NVR System is not responding to your clicking, typing, or mouse movements, try these steps to get your GV-Tower DVR/NVR System back on track. Please note that you will lose any unsaved changes in all open applications.

1. Restart your GV-Tower DVR/NVR System by pressing the **Reset** button on the front panel.
2. If your GV-Tower DVR/NVR System is still unresponsive, press the **Power** button to shut it down. Wait 30 seconds and then restart your GV-Tower DVR/NVR System.

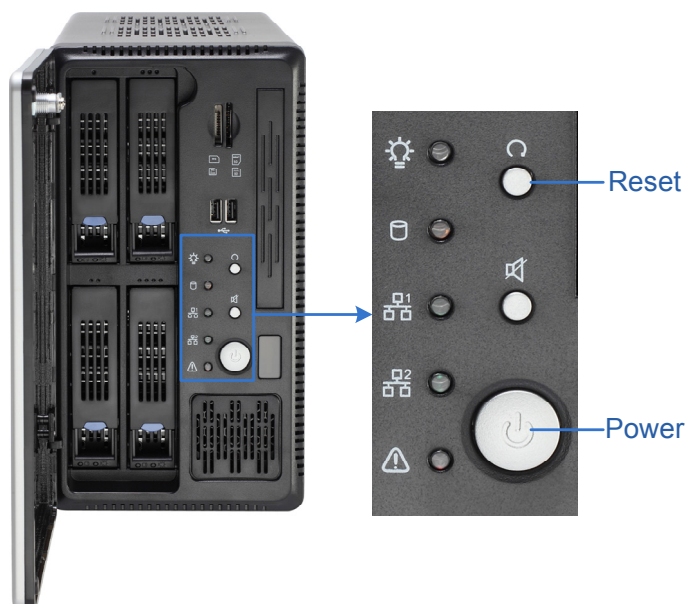


Figure 5-1

GV-Tower DVR/NVR System hard disk corrupts.

If you are experiencing file system corruption problems, such as lost clusters, cross-linked files or invalid files or directories, try these steps:

1. Use the **HD Tune** utility to scan the hard disk for errors. Follow these steps:
 - A. Download and install **HD Tune** from <http://www.hdtune.com/>
 - B. Click the **Error Scan** tab and click **Start** to scan. Any found defects will be shown as red blocks (see Figure 5-2).

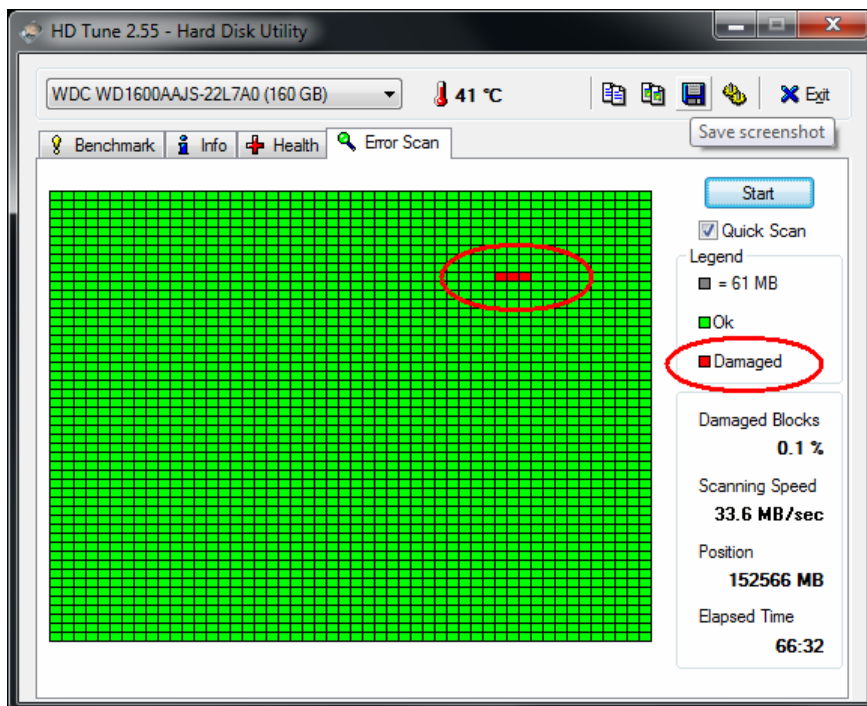


Figure 5-2

- C. If your hard disk drive is damaged, replace a new one.

2. If the HD Tune utility does not find any defects, use the Windows built-in utility to attempt to fix the errors. Follow these steps:
 - A. On the GV-Desktop, click the **Programs** button, and select **Disk Management**. See Figure 3-9.
 - B. Right-click the desired hard disk and select **Properties** from the file menu to display the Properties window.

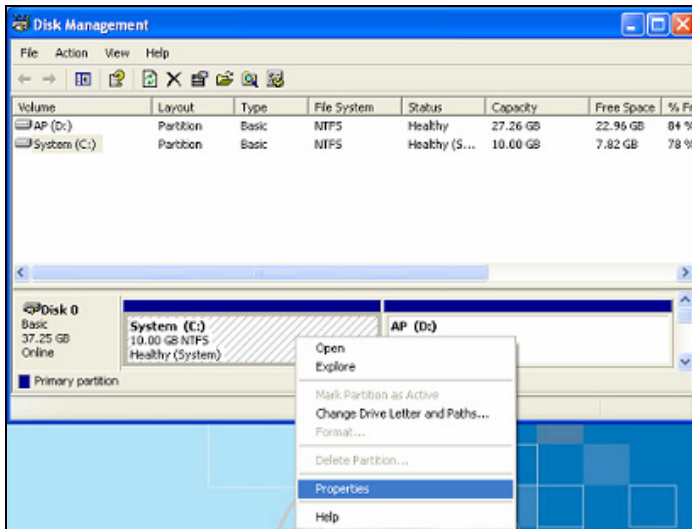


Figure 5-3

- C. Click the **Tools** tab in the upper portion of the window.
- D. Under Error-checking, click the **Check Now** button.



Figure 5-4

- E. Select **Automatically fix file system errors** and **Scan for and attempt recovery of bad sectors**.

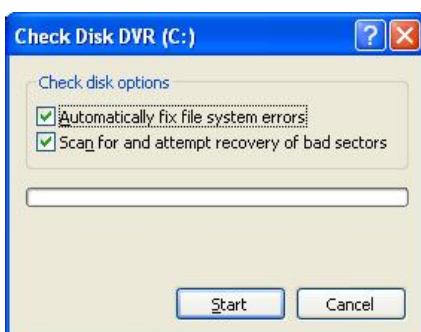


Figure 5-5

- F. Click **Start**.

3. If the problem persists, replace a hard disk drive.

GV-Tower DVR/NVR System suffers virus attack.

GV-Tower DVR/NVR System is designed and optimized for Windows 7 platform. It may be vulnerable to newly created worms and exploits that attack any of the underlying operating system's previously undocumented flaws. If your GV-Tower DVR/NVR System suffers virus attack, try restoring the operating system and GV-System Software by using the Recovery. Refer to *3.12.1 Restoring System*.

GV-Tower DVR System has video and/or audio lost.

If your GV-Tower DVR System fails to show video, audio or both, try these steps:

1. Check the video/audio connection. Make sure one end of the LFH audio & video cable is securely connected to the video/audio device, and the other end to the video/audio port of the GV-Tower DVR System.
2. Make sure the video/audio device is turned on.
3. Switch the cable from the functional channel to the non-functional channel, and vice versa. If the previously non-functional channel is now able to deliver video/audio, you should check the video/audio device itself and its related cables.

The screen image appears distorted or jitters.

If the screen image seems to be distorted, jitter, or not to look right, try these steps:

1. Make sure the video standard in your country matches the setting in the GV-Tower DVR/NVR System. Refer to *3.12.2 Changing Video Standard after Recovery*.
2. Make sure the camera and its cable are not damaged or frayed. Try to replace a camera or camera cable to see if this fixes the problem.

How can I find more help?

1. Visit our website at http://www.geovision.com.tw/english/4_1.asp
2. Write us at dvrssystem@geovision.com.tw

Specifications

GV-Tower DVR/NVR System

Hardware

System		
CPU	Intel Core i3 Processor	
	Intel Core i5 Processor (optional)	
RAM	4 GB Dual Channels	
No. of HDD	4 (3.5" HDD)	
Internal Storage	16 GB (DOM)	
	32 GB (DOM) bundled with i5 Processor	
OS	64-bit Windows Embedded Standard 7	
DirectX	11	
Power	120 W, 100-230 V, 47-63 Hz	
Connector	Ethernet	RJ-45, 10 / 100 / 1000 Mbps x 2
	Video Output	VGA and HDMI
	USB 2.0	Rear: 6 ports
Fan	7 cm (3 1/8")	2 units
Environment		
Operating Temp.	0 ~ 45 °C / 32 ~ 113 °F	
Humidity	0 ~ 80% RH (non-condensing)	
Physical		
Color	Black	
Dimensions (W x H x D)	260 x 140 x 260 mm / 10.24 x 5.51 x 10.24 in	
Net Weight	6.3 kg / 13.8 lb (± 1 kg / 2.2 lb)	
Sensor and Alarm (Optional)		
GV-IO Box 4 Ports	4 inputs, 4 outputs	
GV-IO Box 8 Ports	8 inputs, 8 outputs	
GV-IO Box 16 Ports	16 inputs, 16 outputs	

Software

Video and Audio	
Model	GV-Tower DVR System
Video Standard	NTSC, PAL
Video Input	16 channels
Video Input Level	1.0 Vp-p (± 10%) composite, 75 Ω
Audio Input	16 channels
Audio Input Level	0.5 ~ 1 Vp-p composite
Video Compression Format	HW: H.264 SW: Geo MPEG4, Geo H.264, MJPEG

Video and Audio		
Model	GV-Tower DVR System	
Display Rate (Max)	NTSC	480 FPS
	PAL	400 FPS
Recording Rate (Max)	NTSC	HW: 480 (D1)
	PAL	HW: 400 (D1)
Video Resolution	NTSC	HW: 704 x 480 SW: 352 x 240
	PAL	HW: 704 x 576 SW: 352 x 288

Video and Audio		
Model	GV-Tower NVR (GV)	GV-Tower NVR (3 rd Party)
Video Input	32 channels	1, 2, 4, 6, 8, 10, 12, 16, 18, 20, 22, 24, 26, 28, 30, 32 channels
Audio Input	32 channels	1, 2, 4, 6, 8, 10, 12, 16, 18, 20, 22, 24, 26, 28, 30, 32 channels

Live View and Playback	
Image Control	Contrast / Brightness / Saturation / Hue
Recording Mode	Round the Clock / Motion Detection / Sensor Detection / Pre & Post Recording / Schedule Recording
Pre Recording	1~ 45 min.
Instant Playback	10 sec. / 30 sec. / 1 min. / 5 min.
Watermark	Supported
Search and Backup	
Search Method	Date / Time / Camera / Event Type
Backup Type	DVD+R (DL) / DVD-R (DL) / DVD+R / DVD+RW / DVD-R / DVD-RW / CD-R / CD-RW
Note: For backup function, you need to connect an external USB DVD/CD burner.	
Remote Monitoring	
Monitoring Environment	Web browser (IE, Chrome, Firefox and Safari) Mobile device (Android Smartphone and tablet; iPad, iPhone and iPod Touch)
Live View	Max. 32-channel multi views (Up to 200 channels connection to GV-Tower System)
Network Type	LAN, WAN, Internet

System Monitoring and Recovery	
Power Restoration	Automatic restart after power outage
Monitoring	Two independent Watchdogs (Hardware Watchdog + Software Watchdog)
Recovery	Automatic system rebuild from internal hard disk.
Language	
Type	Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Italian / Japanese / Lithuanian / Norwegian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish
Software License	
Free License	32 channels from GV-IP devices
Maximum License	32 channels from third-party IP devices
Increment for Each License	1 to 32 third-party IP cameras at an increment of 2
Optional Combinations	N/A
Dongle Type	Internal or external
Note: The Maximum License is a paid service.	

*All specifications are subject to change without notice.

Appendix

A. Hard Disk Requirements

The total of recording frame rates that you can assign to a single hard disk is listed as below:

Frame rate limit in a single hard disk when connecting to analog cameras

Analog Cameras / SW Compression		
Video Resolution	MPEG4	
	NTSC	PAL
CIF	960 FPS	800 FPS
VGA/D1	480 FPS	400 FPS

Analog Cameras / HW Compression		
Video Resolution	H.264	
	NTSC	PAL
D1	480 FPS	400 FPS

Frame rate limit in a single hard disk when connecting to IP cameras

IP Cameras				
Video resolution	H.264		MJPEG	
	Frame Rate	Bitrate	Frame Rate	Bitrate
5 MP (2560 x 1920)	220 FPS	8.5 Mbit/s	80 FPS	30.4 Mbit/s
4 MP (2048 x 1944)	330 FPS	10.4 Mbit/s	105 FPS	40.53 Mbit/s
3 MP (2048 x 1536)	440 FPS	9.83 Mbit/s	140 FPS	38.67 Mbit/s
2 MP (1920 x 1080)	660 FPS	12.59 Mbit/s	210 FPS	44.93 Mbit/s
1.3 MP (1280 x 1024)	660 FPS	6.16 Mbit/s	300 FPS	32.26 Mbit/s

Frame rate limit in a single hard disk when connecting to SDI cameras

Hardware Compression		
Video Resolution	H.264	
	NTSC	PAL
1080p	360 FPS	300 FPS
1080i	360 FPS	300 FPS
720p	720 FPS	600 FPS

Note: The above data was determined using the bitrate listed above and hard disks with average R/W speed above 110 MB/s.

B. Total Frame Rate Supported

Below are the total frame rates GV-Tower DVR/NVR System can support with CPU usage of approximately 70% to ensure performance and stability. You could connect up to 32 cameras to the system. See the below charts to calculate frame rate for connected IP cameras.

For instance, if you connect 10 units of GV Fisheye 1.3 MP cameras to the system supporting CPU Intel Core i3 Processor, you will receive 12 fps for each channel (120 fps / 10 units = 12 fps).

For GV IP Cameras

Video Resolution	Dual Streams		Total Fps
	Stream 1 (H.264)	Stream 2 (MPEG4)	
D1	704 x 480	352 x 240	960 fps
1.3 MP	1280 x 1024	320 x 256	960 fps
2 MP	1920 x 1080	448 x 252	960 fps
3 MP	2048 x 1536	320 x 240	640 fps
5 MP	2560 x 1920	320 x 240	320 fps

For GV Fisheye Cameras (De-warping)

Video Resolution	Single Stream (H.264)	Total FPS	
		Intel Core i3	Intel Core i5
1.3 MP	1280 x 1024	120 fps	180 fps
2 MP	1440 x 1376	105 fps	120 fps
4 MP	2048 x 1944	45 fps	60 fps
5 MP	2560 x 1920	30 fps	40 fps

For Third-Party IP Cameras (GPU Decode)

Video Resolution	Single Stream (H.264)	Total FPS	
		Intel Core i3	Intel Core i5
VGA	640 x 480	960 fps	960 fps
1 MP	1280 x 720	570 fps	960 fps
1.3 MP	1280 x 1024	570 fps	960 fps
2 MP	1920 x 1080	390 fps	660 fps
3 MP	2048 x 1536	Not supported	500 fps
4 MP	2048 x 1944		360 fps
5 MP	2560 x 1920		300 fps

C. Supported IP Devices

This list provides the supported IP device brands. For detailed information on the supported IP devices, refer to Supported IP Camera List on GeoVision's Website:

http://www.geovision.com.tw/english/4_21.asp

GeoVision
ACTi
Arecont Vision
AXIS
Bosch
Canon
CNB
D-Link
Etrovision
Hikvision
HUNT
IQinVision
JVC
MOBOTIX
Panasonic
Pelco
Samsung
Sanyo
SONY
UDP
Verint
VIVOTEK

Warranty Policy

GeoVision, Inc. (“GeoVision”) provides types of Limited Warranty for products. Please see **Limited Warranty Table** on main page of official website (www.geovision.com.tw) for detail information.

All aforementioned products, **EXCLUDE ALL SOFTWARE AND SOME PACKAGED ACCESSORIES LISTED IN LIMITED WARRANTY TABLE**, (hereinafter called “Products”) will be free from defects in materials/workmanship during the terms of these Limited Warranties (“Limited Warranties”) from the date of purchase. These Limited Warranties parts and labor warranty are applicable to Products purchased via authorized distribution and sales channels.

If a defect arises and a valid claim is received by GeoVision within Limited Warranties Period, at its option, GeoVision will (1) repair Products at no charge, using new or refurbished replacement parts, or (2) exchange Products with a Product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original Products.

GeoVision warrants replacement parts or repairs for thirty (30) days from the date of GeoVision shipment or for the remainder of Limited Warranties Period, whichever provides longer coverage for you. When a Product or part is exchanged, any replacement item becomes your property and the replaced item becomes GeoVision’s property.

It is customer’s sole responsibility and requirement to prove these Products are under warranty (by submit your sales invoice and bar code), otherwise GeoVision will determine these Products’ warranties period at its option. GeoVision reserves the right, at its sole discretion and any time, to modify and adjust the scope and content of Products and its warranty without prior notice, however, any modification and adjustment thereafter will not affect or interrupt any rights belonging to Products you purchased already.

Limitations of Warranties

Limited Warranties apply only to Products manufactured by or for GeoVision that can be identified by the "GeoVision" trademark, trade name, or logo affixed to them. Limited Warranties do not apply to any non-GeoVision products including counterfeited products. GeoVision is not liable for any damage to or loss of any profit, programs, data, or other information stored on any media, or any non-GeoVision products or part not covered by these warranties. Recovery and reinstallation of system and application software and user data are not covered under Limited Warranties. Limited Warranties do not apply if:

- a) Products have been subjected to abnormal use, improper storage, unauthorized modifications, unauthorized repair, misuse, neglect, abuse, accident, alternation, removal

of any stickers or labels on the hardware, improper hardware/software installations, or other acts that are not the faults of GeoVision, including damage caused by shipping;

- b) Products have been damaged from exposure under circumstances which is over weatherproof specification of the product, an Act of God, or improper use of any electrical source, or the connection to other products not recommended for interconnection by GeoVision;
- c) Products have defects or damage caused due to computer virus attack, internet or technical issues;
- d) Products serial number have been removed, defaced or altered; or
- e) Products have been sold by an unauthorized distributor or retailer.
- f) The GV system case has been opened.
- g) Products have been interoperated with any non-GeoVision products which GeoVision does not approve the compatibility.

Disclaimer of Warranties

EXCEPT AS SPECIFIED IN THESE WARRANTIES, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, SATISFACTORY QUALITY, NON-INTERFERENCE, ACCURACY OF INFORMATIONAL CONTENT, OR ARISING FROM A COURSE OF DEALING, LAW, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW AND ARE EXPRESSLY DISCLAIMED BY GEOVISION. TO THE EXTENT IMPLIED WARRANTIES CANNOT BE EXCLUDED, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE EXPRESS WARRANTIES PERIOD. BECAUSE SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG IMPLIED WARRANTIES LASTS, THE ABOVE LIMITATION MAY NOT APPLY. THESE WARRANTIES GIVE CUSTOMERS SPECIFIC LEGAL RIGHTS, AND CUSTOMER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. THIS DISCLAIMER AND EXCLUSION SHALL APPLY EVEN IF THE EXPRESS WARRANTIES SET FORTH ABOVE FAILS OF ITS ESSENTIAL PURPOSE.

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Limitation of Liability

Regardless whether any remedy set forth herein fails of its essential purpose or otherwise, in no event will GeoVision or its suppliers be liable for any lost revenue, profit or lost or damaged data, business interruption, loss of capital, or for special, indirect, consequential, incidental, or punitive damages however caused and regardless of the theory of liability or whether arising out of the use or inability to use the GeoVision Products or otherwise and even if GeoVision has been advised of the possibility of such damages. In no event shall GeoVision's liability to customer, whether in contract, tort (including negligence), breach of warranty, or otherwise, exceed the price paid by customer for the Software that gave rise to the claim or if the Software is part of another Products, the price paid for such other Products. Because some states or jurisdictions do not allow limitation or exclusion of consequential or incidental damages, the above limitation may not apply to you. In no event shall GeoVision's total liability to you for all damages (other than as may be required by applicable law in cases involving personal injury) exceed the amount of two hundred dollars (U.S. \$200.00). The foregoing limitations will apply even if the above stated remedy fails of its essential purpose.

Customer agrees that the limitations of liability and disclaimers set forth herein will apply regardless of whether customer has accepted any other Products or service delivered by GeoVision. Customer acknowledges and agrees that GeoVision has set its prices in reliance upon the disclaimers of warranties and the limitations of liability set forth herein, that the same reflect an allocation of risk between the parties, and that the same form an essential basis of the bargain between the parties.

These Warranties shall be governed by and construed in accordance with the laws of Taiwan, Republic of China and United State, without reference to or application of choice of law rules or principles. The United Nations Convention on the International Sale of Goods shall not apply. If any portion hereof is found to be void or unenforceable, the remaining provisions shall remain in full force and effect.

FOR AUSTRALIA ONLY:

Our products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the products repaired or replaced if the products fail to be of acceptable quality and the failure does not amount to a major failure. Please visit www.accc.gov.au for more information. GeoVision Inc. 9F, No.246, Sec.1, Neihu Rd., Neihu District Taipei 114, Taiwan R.O.C. Tel: 886-2-8797-8376 Email: support@geovision.com.tw

GeoVision Inc. Warranty Policy last updated on August 14, 2013.

Warranty Requirements

To validate your purchase, you shall complete the online Product Registration **within 30 days from the date of purchase** at http://www.geovision.com.tw/english/4_6.asp. Or click **GeoVision Online Registration** in My Favorite for a direct link.

If you fail to complete the Product Registration, the warranty period will start **from the date of shipment**.

Before you return the product

Some problems you experience may be related to software or the operating system. It is important to investigate other sources of assistance first. Before returning the product, try the following:

1. Review troubleshooting sections in the documentation for software and peripheral devices.
2. Try rebuilding the operating system and GV-System by using the Recovery DVD.
3. Consult your dealer. They are your best sources for current information and support. Or you can call or email GeoVision offshore offices for assistance.

When you call or e-mail, please inform us the following:

- Model name
 - Bar Code
 - Details of the defect or problem
 - Attempted solutions
 - Your contact information
 - Reseller's contact information
4. If you find it is the software problem, please check our website or your dealer for software updates.

Obtaining Warranty Service

If you are still unable to solve the problem and suspect that it is hardware related, follow these:

1. Send an e-mail to GeoVision to start Return Merchandise Authorization (RMA) process.
E-Mail: sales@geovision.com.tw or dvrssystem@geovision.com.tw
2. Securely pack the product in its original carton using the original packing material, or in equivalent packaging.
3. The product shall be returned to **GeoVision, Taiwan** at your expense for shipping and insurance costs.

BEFORE YOU DELIVER YOUR GV-TOWER DVR/NVR SYSTEM FOR WARRANTY SERVICE, IT IS YOUR RESPONSIBILITY TO BACK UP YOUR DATA. YOU WILL BE RESPONSIBLE FOR REINSTALLING ALL DATA, SETTINGS AND PASSWORDS. DATA RECOVERY IS NOT INCLUDED IN THE WARRANTY SERVICE AND GEOVISION IS NOT RESPONSIBLE FOR DATA THAT MAY BE LOST OR DAMAGED DURING TRANSIT OR A REPAIR.

Warranty Form

Thank you for purchasing the GV-Tower DVR/NVR System. To help us validate your purchase and better serve you in the future, please go to http://www.geovision.com.tw/english/4_6.asp or click **GeoVision Online Registration** in My Favorite for a direct link to register online **within 30 days from the date of purchase**. Please keep this copy for your records.

Name: First (given)		Surname (family name)	
Company Name (only if the product is owned by company):			
Mailing Address:			
City/Town:		Province/State:	
Country:		Postal Code:	
Telephone: (O)		(H)	
Fax:			
E-Mail:			
Date of Purchase: (e.g. 16-APR-2012)			
Product: <u>Please check the model and its items you purchased.</u>			
Model			
<input type="checkbox"/> GV-Tower DVR System		<input type="checkbox"/> GV-Tower NVR System	
The system with third-party IP devices			
<input type="checkbox"/> 1 Channel	<input type="checkbox"/> 2 Channels	<input type="checkbox"/> 4 Channels	<input type="checkbox"/> 6 Channels
<input type="checkbox"/> 8 Channels	<input type="checkbox"/> 10 Channels	<input type="checkbox"/> 12 Channels	<input type="checkbox"/> 14 Channels
<input type="checkbox"/> 16 Channels	<input type="checkbox"/> 18 Channels	<input type="checkbox"/> 20 Channels	<input type="checkbox"/> 22 Channels
<input type="checkbox"/> 24 Channels	<input type="checkbox"/> 26 Channels	<input type="checkbox"/> 28 Channels	<input type="checkbox"/> 30 Channels
<input type="checkbox"/> 32 Channels			

Bar Code:

Shipment Date:

GeoVision, Inc.

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