GeoVision inc
The Vision of Security

GV-Mobile NVR System

User's Manual

User's Manual for
GV-Mobile NVR System

Welcome to the GV-Mobile NVR System User's Manual.

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

- **Chapter 1, Introduction**

  Identifies the GV-Mobile NVR System's accessories and options.

- **Chapter 2, Overview**

  Identifies the GV-Mobile NVR System's components.

- **Chapter 3, Getting Started**

  Provides step-by-step instructions on setting up the GV-Mobile NVR System.

- **Chapter 4, Optional Wireless Connection**

  Introduces how to connect to 3G / 4G mobile network and how to receive GPS data.

- **Chapter 5, System Restoration**

  Instructs to restore the system to all the preinstalled software and operating system.

- **Chapter 6, NVR Health Analysis**

  Introduces how to collect data to obtain the service of NVR health analysis from GeoVision.

- **Chapter 7, Troubleshooting**

  Suggests courses of action if the GV-Mobile NVR System does not seem to be working properly.

Contents

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.

● **Do not touch** the top panel when you replace the storage drive. The top panel is a dissipation of heat.

Chapter 1   Introduction

Designed to withstand rugged environment, GV-Mobile NVR System operates at a wide range of temperature and comes with anti-vibration protection, making it ideal for railways, public transits and industrial environment. For storage, it offers up to 2 hot swappable bays of HDD or SSD choice. With built-in GV-NVR, this fanless Mobile NVR system supports up to 32 channels of GV-IP megapixel cameras to provide an all-in-one solution (Live View, Playback, Recording, Backup, CMS) for rough conditions.

Recording solution for harsh environment:
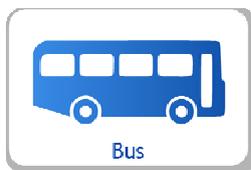
1.1   Features

- Powered by Intel Atom / Core i3 Processor
- 64-bit Windows Embedded Standard 7 SP1
- GPU Decoding
- Up to 2 Hot Swappable HDD / SSD bays for up to 2 Terabytes
- Fanless System
- Vibration and Mechanical Shock Protection (2G at 5 ~ 500 Hz for SSD)
- Power Ignition Management (ACC)
- Wide Operating Temperature (-30°C ~ 70°C / -22°F ~ 158°F for SSD)
- 2 Gigabit LAN Ports
- Dual-monitor Display (VGA and DisplayPort)
- Optional Wireless Communication (WiFi / 3G / 4G)
- GPS Support for Vehicle Tracking
- Built-in GV-NVR
- Up to 32 Channels
- 3rd Party IP Cameras with H.264 Compatible (License Required)
- Automatic Connection to GV-IP Cameras
- Video Analysis
- Dual Video Streams
- Fisheye Dewarping Function
- Smart Device Access (iOS and Android)
- E-Mark, EN50155 Certified
- 31 Languages

1.2 Application

The GV-Mobile NVR System is designed for digital surveillance of transportation. It can be set up in a public transit to record images from the GV-IP cameras installed in the vehicle and connected to dual monitors with one monitor displaying live view and the other displaying alarm-triggering events. The hot-swap storage drives also provide convenient access to recordings and allow data backup in minutes.

With the GPS receiver, the GV-Mobile NVR System is able to transmit the GPS data collected from the satellite to the GV-GIS (Geographic Information System) through mobile network connection for vehicle tracking.
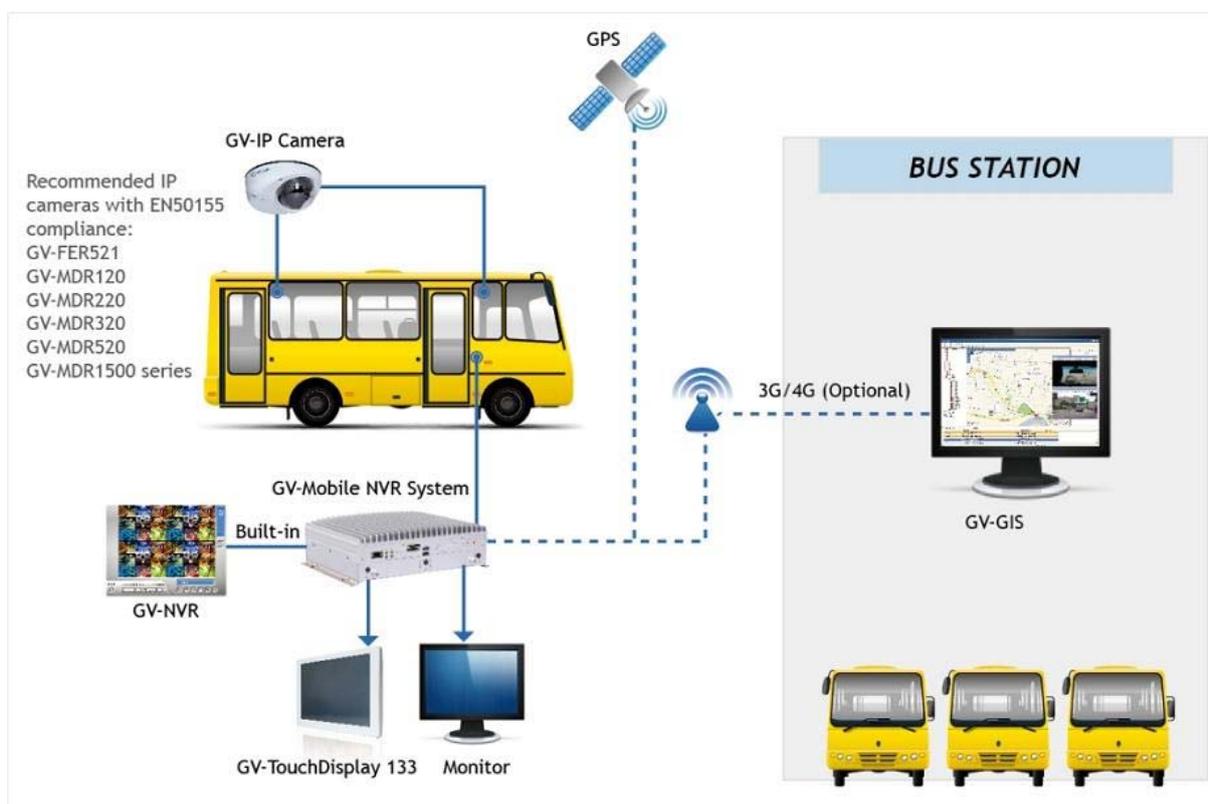
Figure 1-1

Other than being applied in a public transit, the GV-Mobile NVR can be installed in a fixed and harsh place, such as a factory. In addition, the automatic video backup for the GV-Mobile NVR is made possible by the LAN connection with GV-Backup Center.
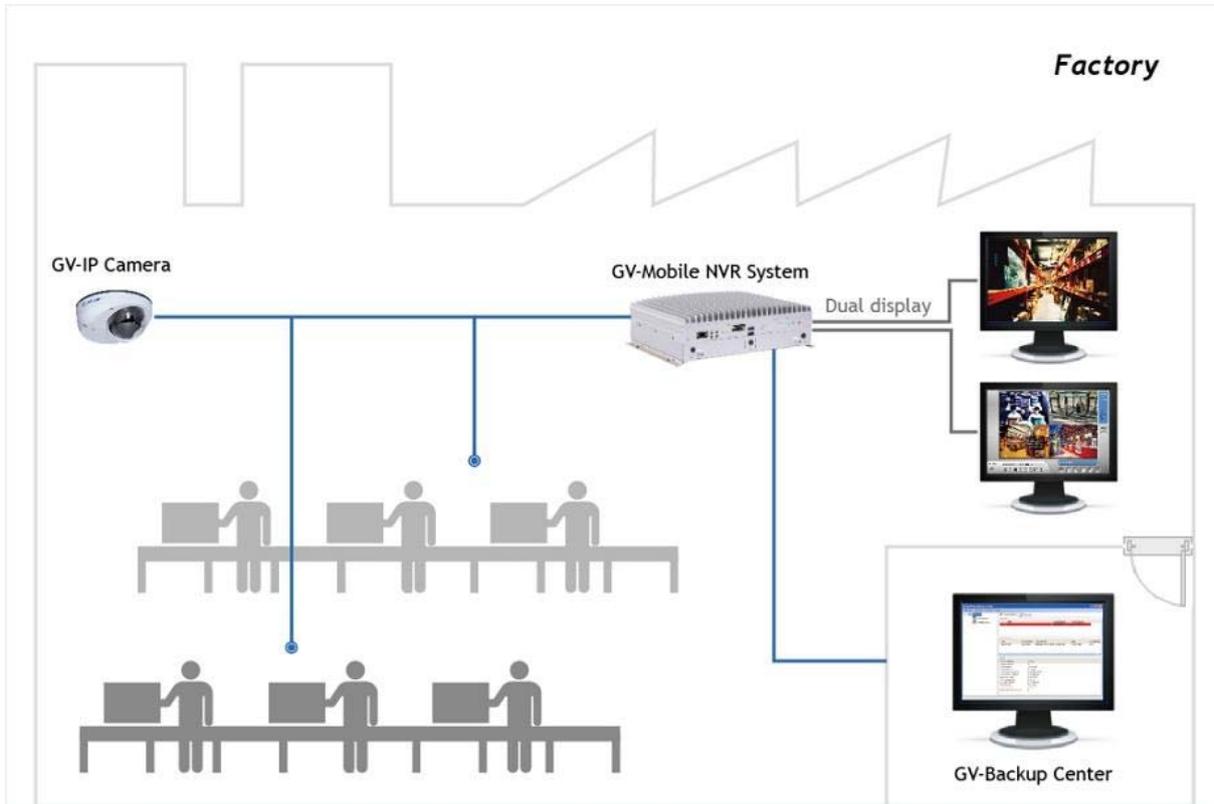
Figure 1-2

The IP cameras GV-FER521 and GV-MDR120 / 220 / 320 / 520 / 1500 Series are complied with EN50155 and suitable for the installation with GV-Mobile NVR System. With a mobile device or an Internet browser, you can access the live view and recorded events anywhere.

Figure 1-3

1.3 Packing List

The GV-Mobile 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.

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1. GV-Mobile NVR System

2. 3-pin Terminal Block (for ACC Connection and DC In)

3. HDD screw x 4 (for GV-MNVR1000 System)

4. HDD screw x 8 (for GV-MNVR2100 System)

5. GPS Antenna

6. GV-NVR Dongle for third-party IP Camera Connection (Optional)

7. DVD (User's Manual and Quick Start Guide included)

1.4   Models

GV-MNVR1000 System has 1 hot swappable bay of HDD/SSD and records up to 24 IP channels.

Models:

- GV-MNVR1000 System
- GV-MNVR1000 System with 3G module
- GV-MNVR1000 System with 4G module
- GV-MNVR1000 System with M12 Connector
- GV-MNVR1000 System with M12 Connector and 3G module
- GV-MNVR1000 System with M12 Connector and 4G module
- GV-MNVR1000 System with EN50155 Certified (Coming)
- GV-MNVR1000 System with M12 Connector and EN50155 Certified (Coming)
- GV-MNVR1000 System with WiFi module

GV-MNVR2100 System has 2 hot swappable bay of HDD/SSD and records up to 32 IP channels.

Models:

- GV-MNVR2100 System
- GV-MNVR2100 System with 3G module
- GV-MNVR2100 System with 4G module
- GV-MNVR2100 System with M12 Connector
- GV-MNVR2100 System with M12 Connector and 3G module
- GV-MNVR2100 System with M12 Connector and 4G module
- GV-MNVR2100 System with EN50155 Certified (Coming)
- GV-MNVR2100 System with M12 Connector and EN50155 Certified (Coming)
- GV-MNVR2100 System with WiFi module

1.5 Software License

Free License	24 / 32 channels from GV-IP Devices (dual streams)
Maximum License	24 / 32 channels from third-party IP devices (dual streams)
Increment for Each License	1 to 24 / 32 third-party IP cameras at an increment of 2
Optional Combinations	N/A
Dongle Type	External

1.6 Recommended Hard Disks

GV-Mobile NVR supports up to 2 SATA HDD / SSD (2.5") with up to 2 TB capacities. For the optimal system performance, it is recommended to use the SSD (MLC or SLC) or the enterprise-level HDD, such as HGST Endurastar series and Toshiba automotive HDD.

1.7 Maximum Channels and Frame Rate Supported

Below are the total channels and frame rates GV-Mobile NVR System can support with CPU usage of up to approximate 70% to ensure performance and stability.

1.7.1 Dual Streams from GeoVision and third-party IP Cameras

- GV-MNVR1000 System supports up to 24 channels.

Resolution	Dual Streams		Supported Channel	Total Frame Rate
	Stream 1 (H.264)	Stream 2 (H.264)		
1 MP	1280 x 1024	320 x 256	20 Ch	600 fps
2 MP	1920 x 1080	448 x 252	17 Ch	510 fps
3 MP	2048 x 1536	320 x 240	24 Ch	480 fps
5 MP	2560 x 1920	320 x 240	16 Ch	160 fps

- GV-MNVR2100 System supports up to 32 channels.

Resolution	Dual Streams		Supported Channel	Total Frame Rate
	Stream 1 (H.264)	Stream 2 (MPEG4)		
1 MP	1280 x 1024	320 x 256	31 Ch	930 fps
2 MP	1920 x 1080	448 x 252	25 Ch	750 fps
3 MP	2048 x 1536	320 x 240	32 Ch	640 fps
5 MP	2560 x 1920	320 x 240	32 Ch	320 fps

1.7.2   Single Stream from GeoVision and third-party IP Cameras

- GV-MNVR1000 System supports up to 9 channels.

Resolution	Single Stream (H.264)	Supported Channel	Total Frame Rate
1 MP	1280 x 1024	9 Ch	270 fps
2 MP	1920 x 1080	4 Ch	120 fps
3 MP	2048 x 1536	4 Ch	80 fps
4 MP	2048 x 1944	4 Ch	60 fps
5 MP	2560 x 1920	6 Ch	60 fps

- GV-MNVR2100 System supports up to 25 channels.

Resolution	Single Stream (H.264)	Supported Channel	Total Frame Rate
1 MP	1280 x 1024	25 Ch	750 fps
2 MP	1920 x 1080	19 Ch	570 fps
3 MP	2048 x 1536	15 Ch	300 fps
4 MP	2048 x 1944	13 Ch	195 fps
5 MP	2560 x 1920	11 Ch	110 fps

1.7.3   GV-Fisheye Cameras (De-warping)

- GV-MNVR1000 System supports up to 2-Ch GV-Fisheye cameras.

Resolution	Single Stream (H.264)	Supported Channel	Total Frame Rate
1 MP	1280 x 1200	2 Ch	30 fps
2 MP	1440 x 1376	2 Ch	30 fps
4 MP	2048 x 1944	1 Ch	15 fps
5 MP	2560 x 1920	1 Ch	10 fps

- GV-MNVR2100 System supports up to 10-Ch GV-Fisheye cameras.

Resolution	Single Stream (H.264)	Supported Channel	Total Frame Rate
1 MP	1280 x 1200	10 Ch	150 fps
2 MP	1440 x 1376	8 Ch	120 fps
4 MP	2048 x 1944	4 Ch	60 fps
5 MP	2560 x 1920	5 Ch	50 fps

1.8   Options

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

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 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 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 provided for PC connection.
GV-Joystick V2	GV-Joystick V2 facilitates the PTZ camera control. It can be either plugged into the GV-Mobile NVR System for independent use or connected to GV-Keyboard V3 to empower the operation.
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.
GV-IR Remote Control	Controls GV-Mobile NVR System with the Remote Control.
GV-TouchDisplay133	The GV-TouchDisplay133 is a 13.3-inch touch panel designed for GV-Mobile NVR System. With the touch panel, you can monitor live images and operate GV-NVR by simply touching the screen.
Power Adapter	Power adapters are available in 4 regions: U.S.A., Australia, U.K and Europe.
3G / 4G Module	The 3G or 4G module allows data exchange for the GV-Mobile NVR through the network connection covering wide area. It also empowers the application of GPS for the data transmission to the GV-GIS for real-time vehicle tracking.
WiFi Module	The WiFi module allows data exchange for the GV-Mobile NVR through wireless network connection within local area.

Note: The WiFi / 3G / 4G module will be built in the GV-Mobile NVR System and tested before shipment. Opening the case and installing the accessories yourself will void the warranty.

Chapter 2   Overview

2.1   Front View

2.1.1   GV-MNVR1000 System
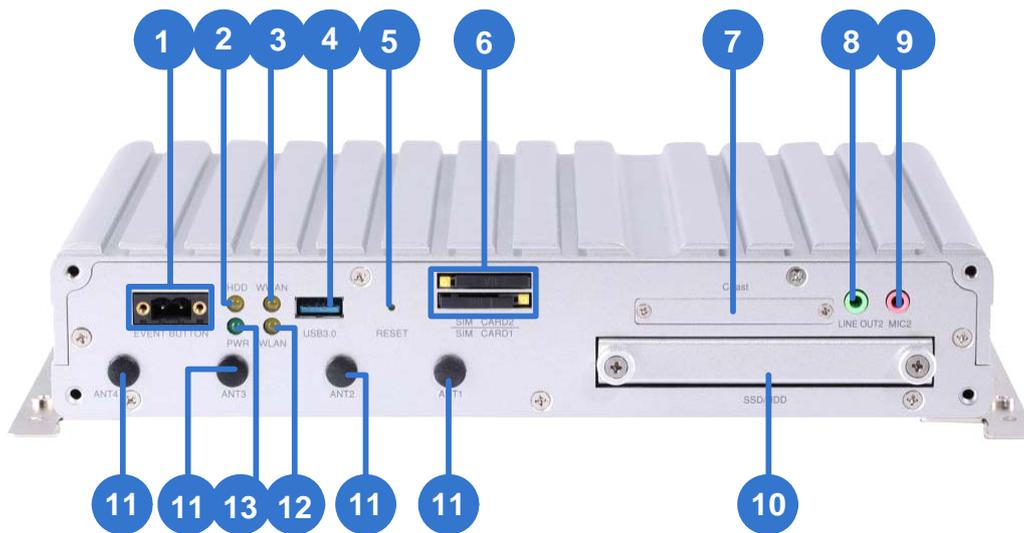
Figure 2-1

No.	Name	No.	Name
1	Event Button (Not Functional)	8	Audio Line Out Port
2	HDD Status LED	9	Audio Microphone In Port
3	WWAN LED	10	2.5" HDD/SSD Slot
4	USB 3.0 Port	11	Antenna Port x 4
5	Reset Button	12	WLAN LED
6	SIM Card Slot x 2	13	Power Status LED
7	CFast Card Slot		

Note:

1.   For the status of LED indicators, see *2.1.3 Status Indicator LED*s later in this chapter.

2.   The WLAN WiFi and WWAN 3G / 4G module are optional.

2.1.2 GV-MNVR2100 System
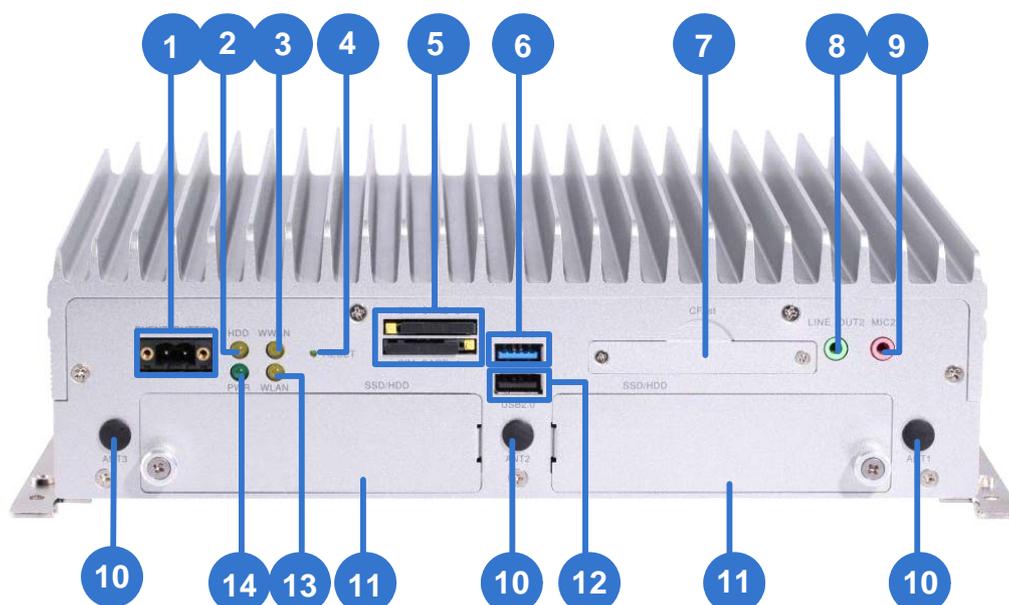
Figure 2-2

No.	Name	No.	Name
1	Event Button (Not Functional)	8	Audio Line Out Port
2	HDD Status LED	9	Audio Microphone In Port
3	WWAN LED	10	Antenna Port x 3
4	Reset Button	11	2.5" HDD/SSD Slot x 2
5	SIM Card Slot x 2	12	USB 2.0 Port
6	USB 3.0 Port	13	WLAN LED
7	CFast Card Slot	14	Power Status LED

Note:

1. For the status of LED indicators, see *2.1.3 Status Indicator LED*s later in this chapter.

2. The WLAN WiFi and WWAN 3G / 4G module are optional.

2.1.3   Status Indicator LEDs

See the below descriptions for each status LED.
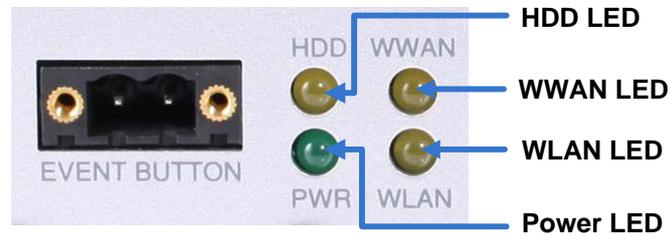
Figure 2-3

Indicator LED	Color	Description
HDD LED	Orange	Glows when HDD/SSD is active.
WWAN LED	Orange	Glows when the WWAN is active.
WLAN LED	Orange	Glows when the WLAN is active.
Power LED	Green	Glows when power is turned on.

2.2 Rear View

2.2.1 GV-MNVR1000 System
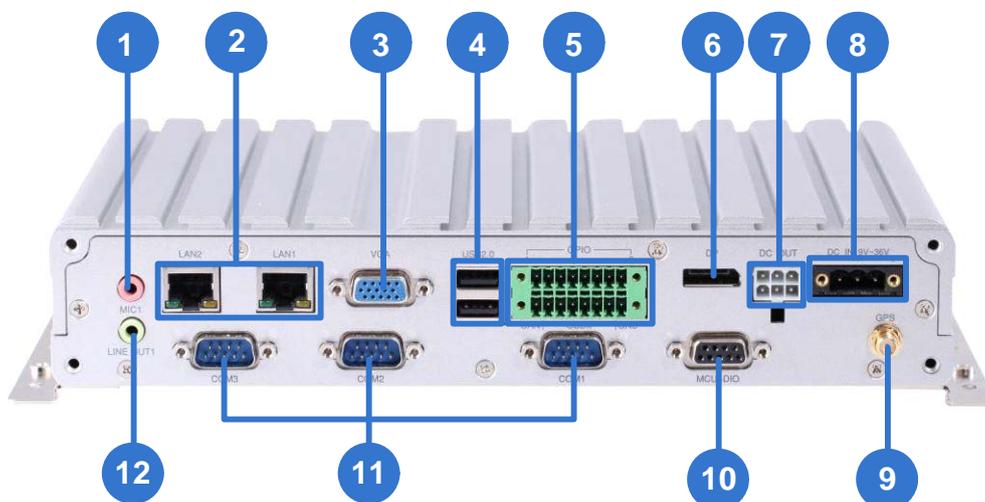
Figure 2-4

No.	Name	No.	Name
1	Audio Microphone In Port	7	DC Power Output (Not Functional)
2	Gigabit Ethernet Port x 2	8	DC 10 ~ 35V Power Input
3	VGA Output	9	GPS Antenna Port
4	USB 2.0 Port x 2	10	MCU DIO Port (Not Functional)
5	GPIO Terminal Block (Not Functional)	11	COM Port x 3
6	DisplayPort	12	Audio Line Out Port

![GeoVision logo]

2.2.2 GV-MNVR2100 System
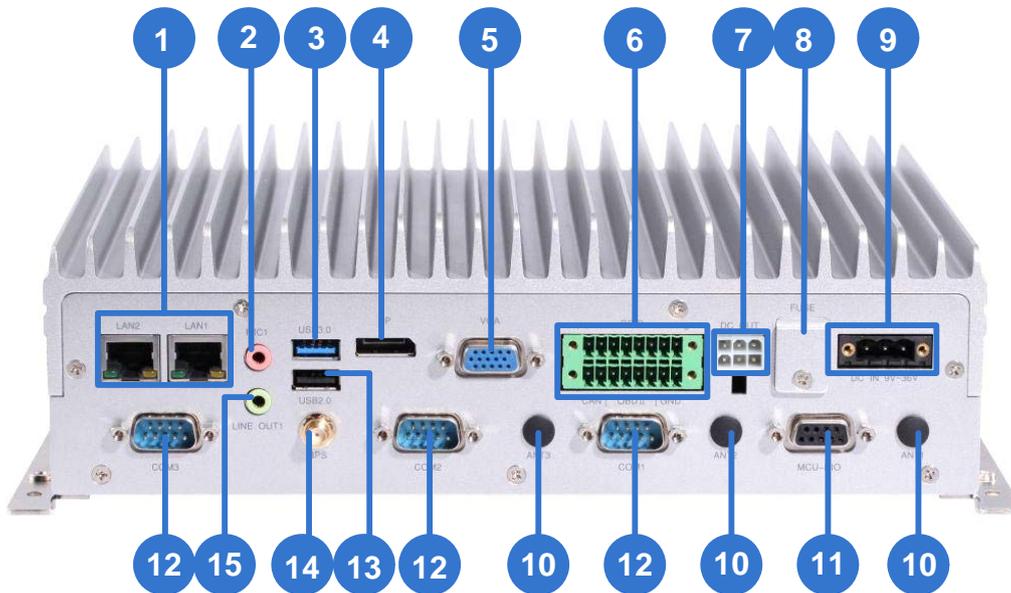
Figure 2-5

No.	Name	No.	Name
1	Gigabit Ethernet Port x 2	9	DC 10 ~ 35V Power Input
2	Audio Microphone In Port	10	Antenna Port x 3
3	USB 3.0 Port	11	MCU DIO Port (Not Functional)
4	DisplayPort	12	COM Port x 3
5	VGA Output	13	USB 2.0 Port
6	GPIO Terminal Block (Not Functional)	14	GPS Antenna Port
7	DC Power Output (Not Functional)	15	Audio Line Out Port
8	Fuse (15A)		

2.3   Wireless Antenna

2.3.1   GV-MNVR1000 System

An example of the GV-MNVR1000 System installed with WiFi, 3G / 4G and GPS antennas is shown as below.

For supported 3G / 4G frequency bands, see *Specifications*. For connection details, see *Chapter 4 Optional Wireless Connection*.

Note:
1. You can freely arrange and switch WiFi and 3G / 4G antennas in ports.
2. GPS module is already built in the GV-Mobile NVR System. WiFi / 3G / 4G modules are optional.

Figure 2-6

Figure 2-7

No.	Name
1	WiFi Antenna x 2
2	3G / 4G Antenna
3	GPS Antenna

2.3.2 GV-MNVR2100 System

An example of the GV-MNVR2100 System installed with WiFi, 3G / 4G and GPS antennas is shown as below.

For supported 3G / 4G frequency bands, see *Specifications*. For connection details, see *Chapter 4 Optional Wireless Connection*.

Note:
1. You can freely arrange and switch WiFi and 3G / 4G antennas in ports.
2. GPS module is already built in the GV-Mobile NVR System. WiFi / 3G / 4G modules are optional.

Figure 2-8

No.	Name
1	GPS Antenna
2	WiFi Antenna x 2
3	3G / 4G Antenna

Chapter 3   Getting Started

3.1   Interface Connection

This section describes the equipments required to operate the GV-Mobile NVR System. Here we use the GV-MNVR2100 System for example.


Rear Side

Front Side

HDD/SSD x 2
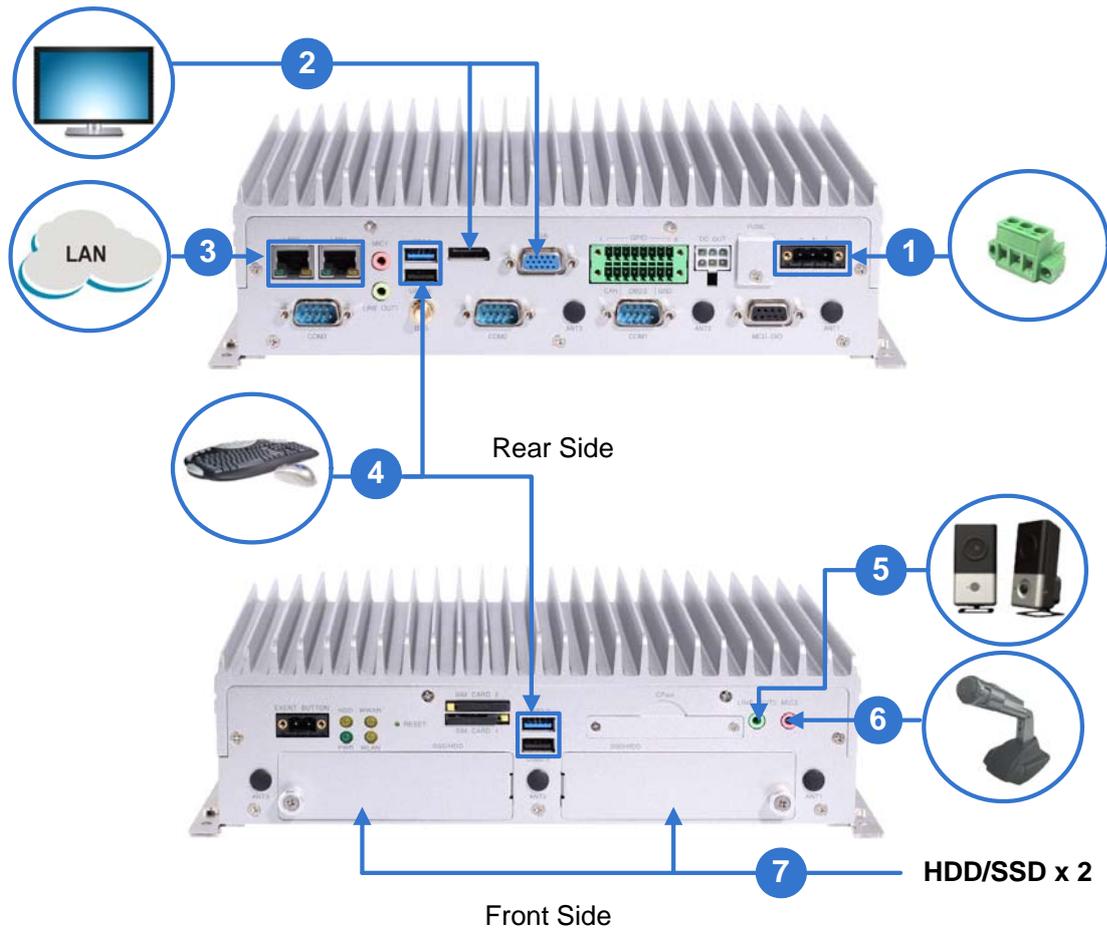
Figure 3-1

1. There are two options for connecting the power.

   A. Connect the GV-Mobile NVR System to the vehicle's power battery and ACC wire using the supplied 3-pin terminal block. The system will automatically start after you turn on the vehicle ignition. Power is supplied to the system as long as the vehicle ignition is on.
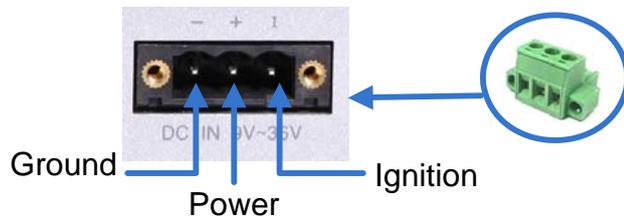

Figure 3-2

   B. Optionally purchase a power adapter from GeoVision. See *3.2 Turning on and off the Power*.

2. Use the VGA cable or the DisplayPort cable to connect the unit to the monitor.

Note: The GV-Mobile NVR System supports dual-monitor display. You can connect two monitors by using the VGA connector and DisplayPort.

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3. Connect one end to the Gigabit Ethernet port and the other end to Network by using the RJ-45 cable.

4. Connect the keyboard and the mouse to the USB ports.

5. Connect the speaker to the Audio Line Out port.

6. Optionally connect the microphone to the Audio Microphone In port for two-way audio with IP cameras.

7. Insert the 2.5" HDDs or SSDs into the storage slots. For details, see *3.3 Installing the Storage Drive*.

After the unit is powered on, the Power Indicator LED (Figure 2-3) shows constant green.

Before recording, you need to format the storage drive and add it to the recording path of the system. For formatting the storage drive, see *3.4 Formatting the Storage Drive*. For adding the storage drive to the recording path, see *3.5 Adding the Storage Drive* to the Recording Path.

3.2 Turning on and off the Power

The GV-Mobile NVR System is designed to connect to the vehicle's ACC wire. However, you can optionally purchase a power adapter (AC 100 ~ 240V) from GeoVision for power connection.

3.2.1 Connecting to the ACC Wire

To turn on the GV-Mobile NVR System, connect the vehicle's ACC and power wires to the unit's power input using the supplied 3-pin terminal block. The system will automatically start after you power on the vehicle for 5 seconds.

After you power off the vehicle for 3 seconds, the system will turn off automatically.

3.2.2 Using the Power Adapter

To turn on and off the GV-Mobile NVR System using an optional power adapter from GeoVision, follow the steps below.

1. Plug the 3-pin terminal block connected with power adapter to the panel's power pins. The GV-Mobile NVR System will be powered on about 5 seconds later.
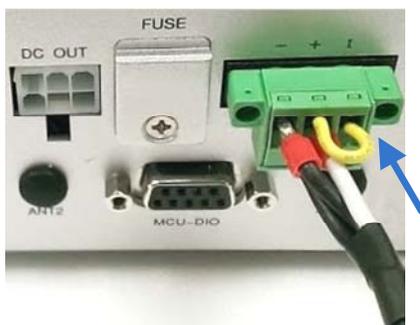

Figure 3-3

2. To turn off the GV-Mobile NVR System, shut down the system through the Windows desktop.

Using Rocker Switch to Simulate ACC Ignition

For quick control of turning on or off the GV-Mobile NVR System, you can install a rocker switch to the 3-pin terminal block with the optional power adapter. For the connection and operation, follow the steps below.
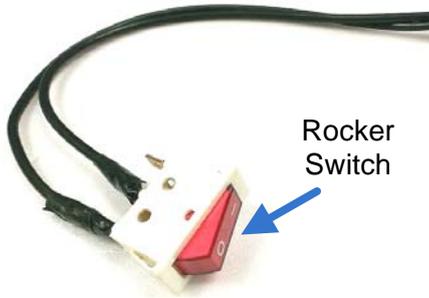

Figure 3-4

1. For the 3-pin terminal block with optional power adapter, unplug the U-shaped wire from the Power and Ignition pins.
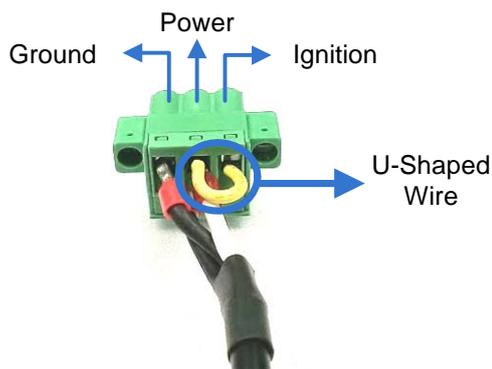

Figure 3-5

2. Connect the wires of the rocker switch to the Power and Ignition pins respectively.

Figure 3-6

3. Plug the terminal block to the panel's power pins.
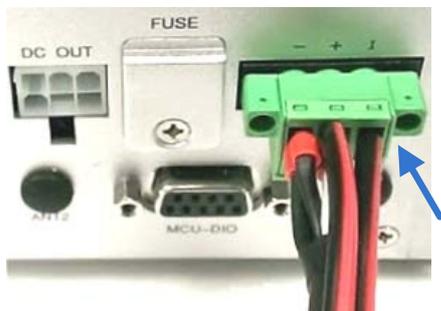
Figure 3-7

4. Press the rocker switch to turn on the GV-Mobile NVR System without operating on the Windows desktop. Once the rocker switch is on, the GV-Mobile NVR System will be powered on about 3 seconds later.

5. To turn off the GV-Mobile NVR System, press the rocker switch again.

Note: After the power is on, the GV-Mobile NVR System will run a series of self-tests, and a series of messages may be displayed as the various hardware and software subsystems are activated. After the process is finished, the GV-NVR Software (Multicam Surveillance System) should load automatically and bring you to the main screen.

3.3 Installing the Storage Drive

The GV-Mobile NVR System uses SATA hard drive / SSD for video data storage. Before recording, be sure to install the storage drive.

3.3.1 GV-MNVR1000 System

1. Loosen the thumb screws on the HDD/SSD slot and pull out the drive drawer.

Figure 3-8

2. Insert the storage drive into the drive drawer with the SATA data and power connector facing towards the end.

Power Connector

Figure 3-9

3. Secure the storage drive with the drive drawer using the supplied 4 screws.

Figure 3-10

Note: For convenience, it is suggested to secure the screws with the drive drawer being placed downward.

4. Insert the drive drawer into the HDD/SSD slot and secure the thumb screws.

3.3.2 GV-MNVR2100 System

1. Loosen the thumb screws on the HDD/SSD slots and remove the covers.
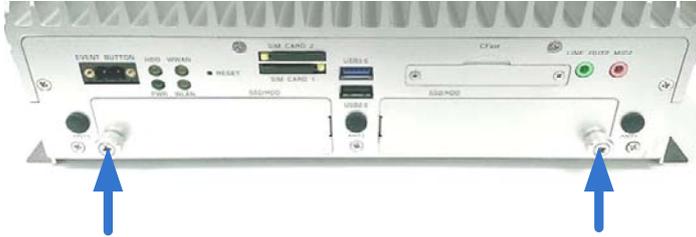
Figure 3-11

2. Press the release latch and pull out the drive drawer using the drawer handle that pops out.


Release Latch
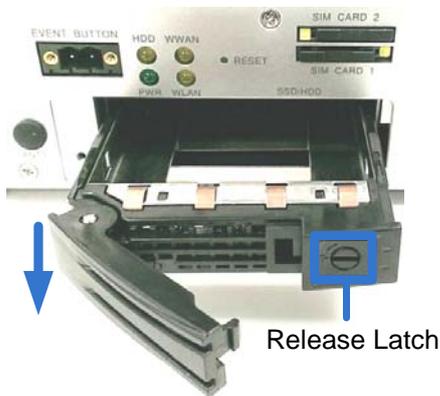
Figure 3-12

3. Insert the storage drive into the drive drawer with the SATA data and power connector facing towards the end.

Power Connector

Figure 3-13

4. Secure the storage drive with the drive drawer using the supplied 4 screws.
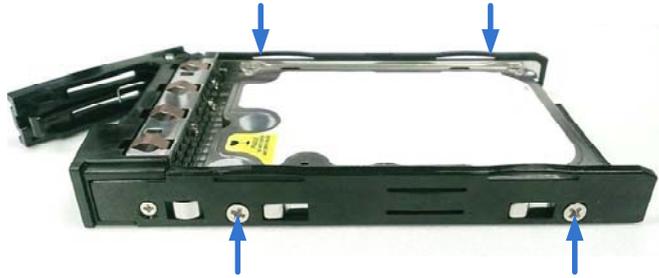

Figure 3-14

5. Insert the drive drawer into the HDD/SSD slot, press the drawer handle back and rotate the release latch until it is vertical to lock the drive drawer.

Figure 3-15

6. Put the cover back and secure the thumb screw.

7. Repeat the steps above to install the storage drive in the other HDD/SSD slot.

The HDD Status LED glows, and the storage drive is ready for use.

3.4 Formatting the Storage Drive

After installing HDD / SSD to your system, you will need to format the storage drive before recording.

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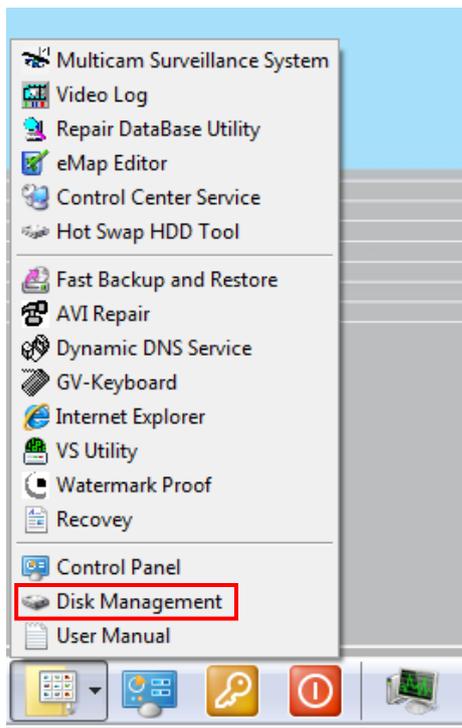

Figure 3-16

2. Type the ID and password in the dialog box. The default ID and password are "**0000**".
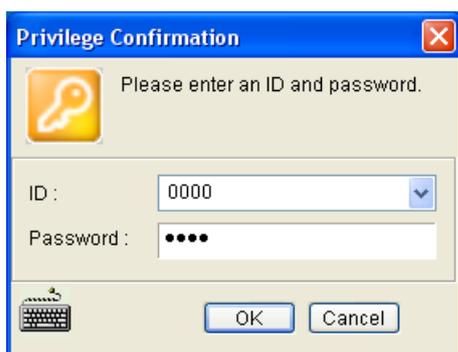

Figure 3-17

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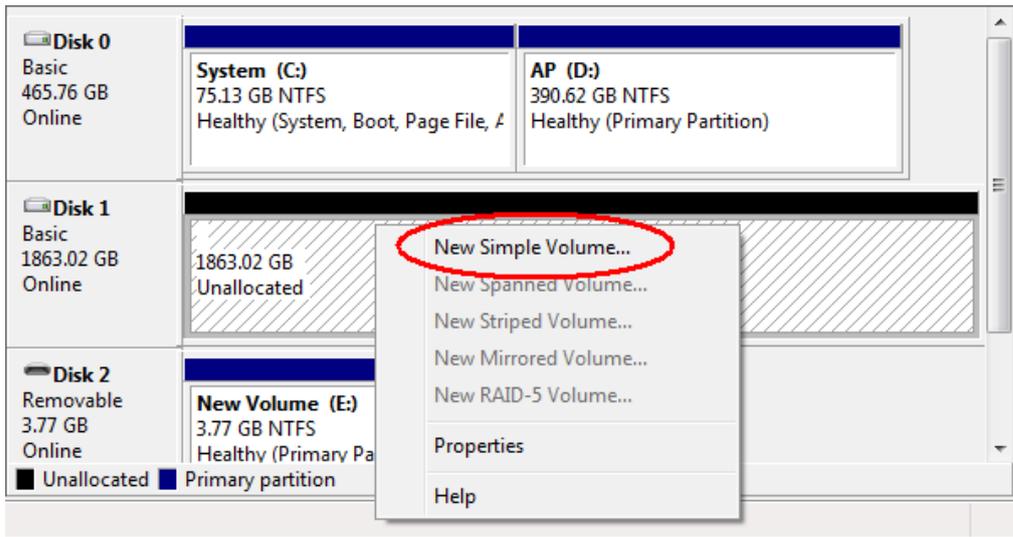

Figure 3-18

4. The New Simple Volume Wizard appears. Click **Next** to continue.
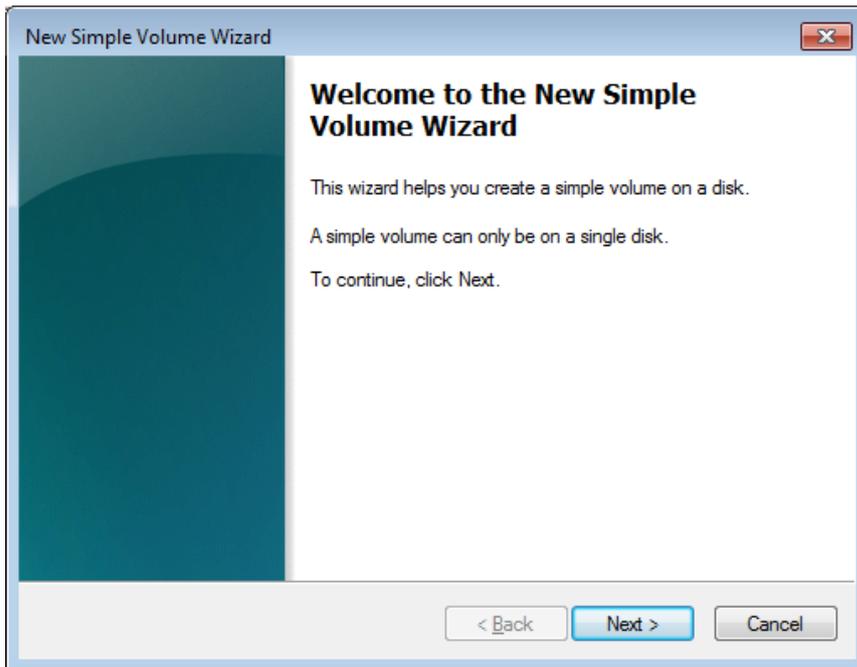
Figure 3-19

5. The default partition size is the same as the maximum disk space. Make changes if necessary and click **Next** to continue.
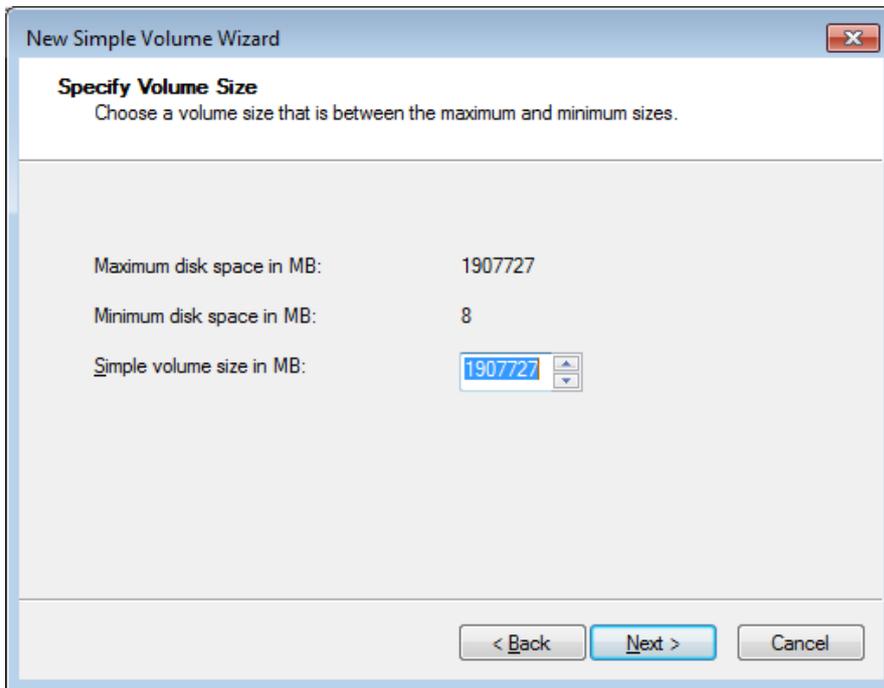
Figure 3-20

6. Assign a drive path that is not in use by other devices and click **Next** to continue.
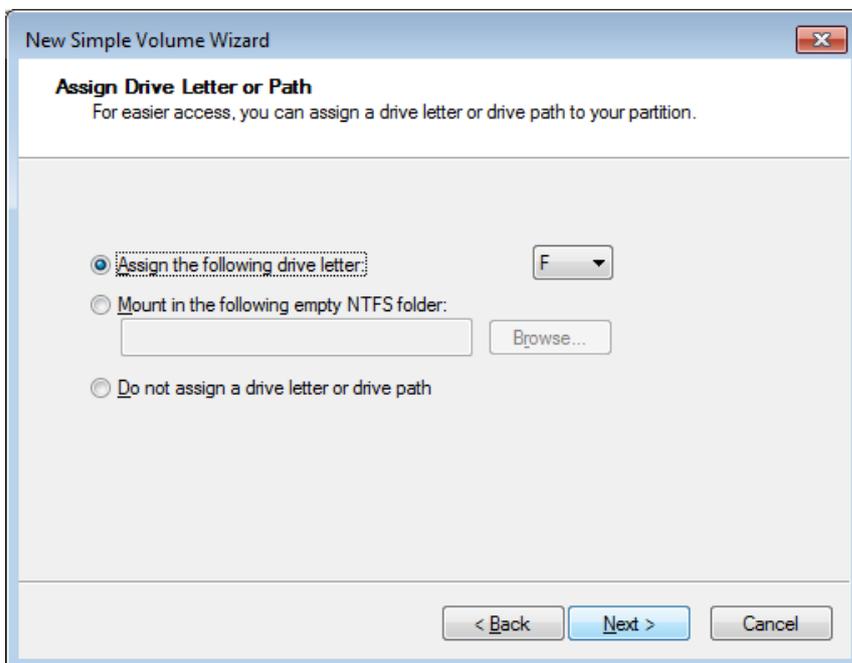
Figure 3-21

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

---

7. Type a name in the **Volume label** box, ex. HDD1, and click **Next** to continue.
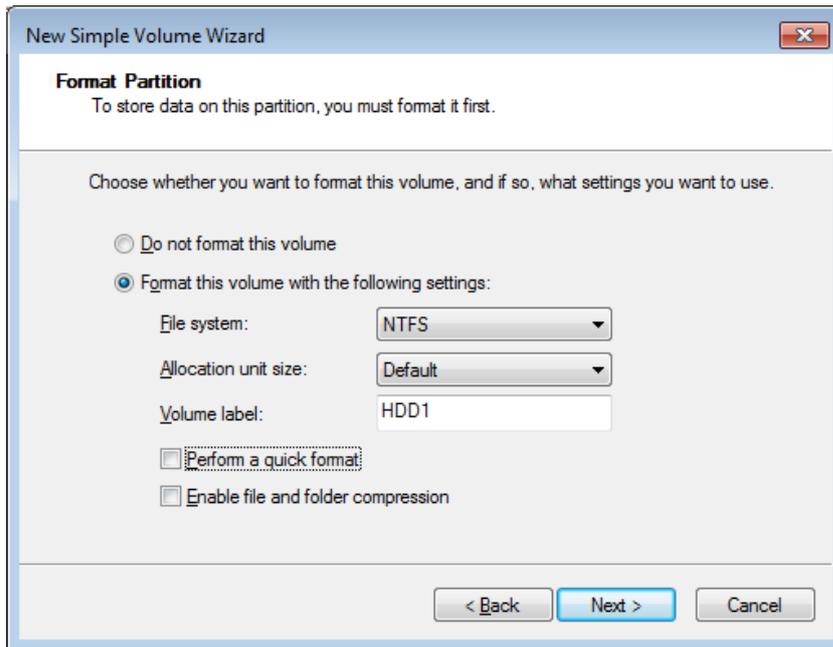
Figure 3-22

8. When the formatting is complete, click **Finish** to close the wizard.
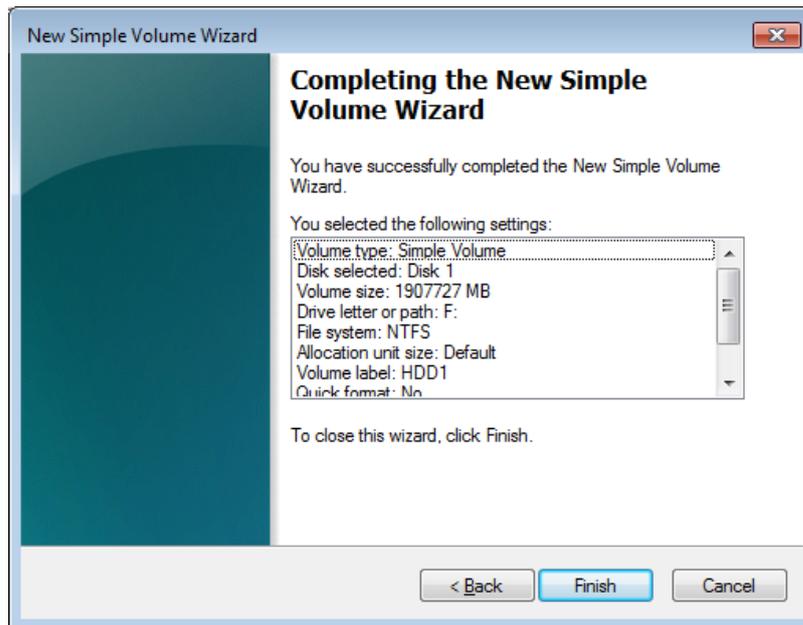
Figure 3-23

9. When the drive is successfully initialized, partitioned, and formatted, its status description should display "*Healthy.*"
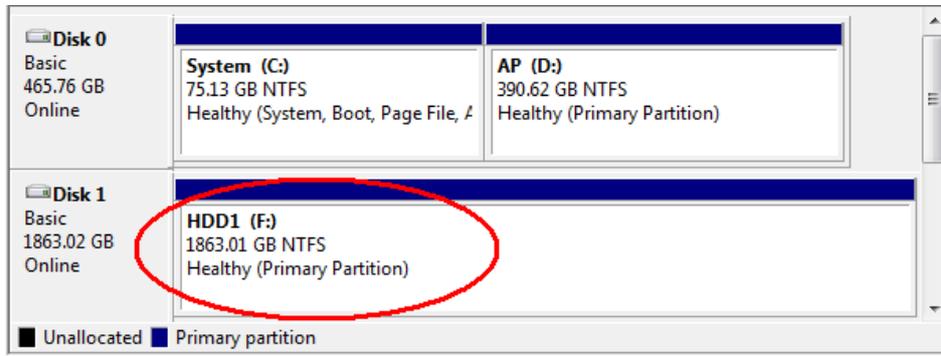
Figure 3-24

3.5 Adding the Storage Drive to the Recording Path

For GV-Mobile NVR System, you need to add the formatted storage 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.
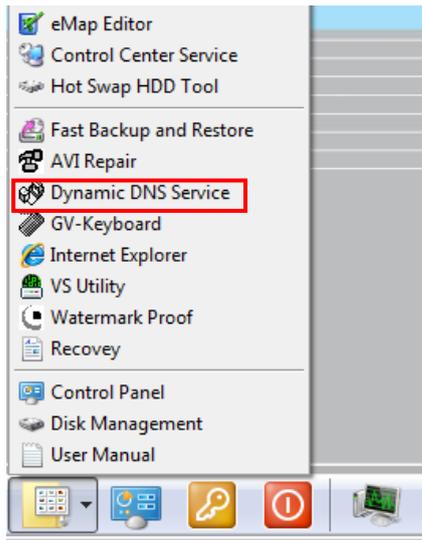
Figure 3-25

2. If a storage drive is already inserted, right-click it in the MediaMan Tools window, select **Add for recording** and select the storage group from the drop-down list.

3. If a storage drive is not inserted, follow the steps below.

   A. Insert a HDD / SSD to the GV-Mobile NVR System. This dialog box appears.
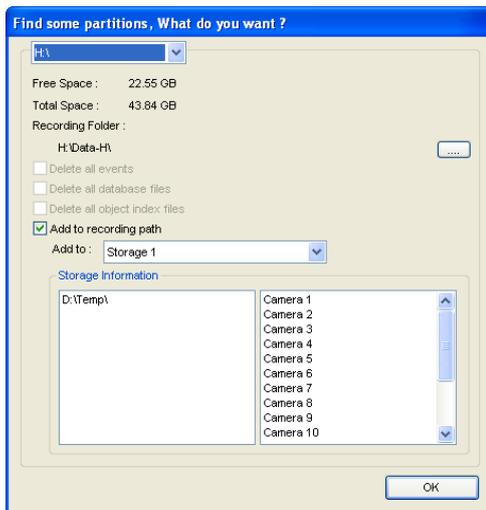
Figure 3-26

   B. Click **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 storage drive to the recording path.

5. In the MediaMan Tools window, if the storage drive is successfully added to store data, its Status field should display "*Standby*".
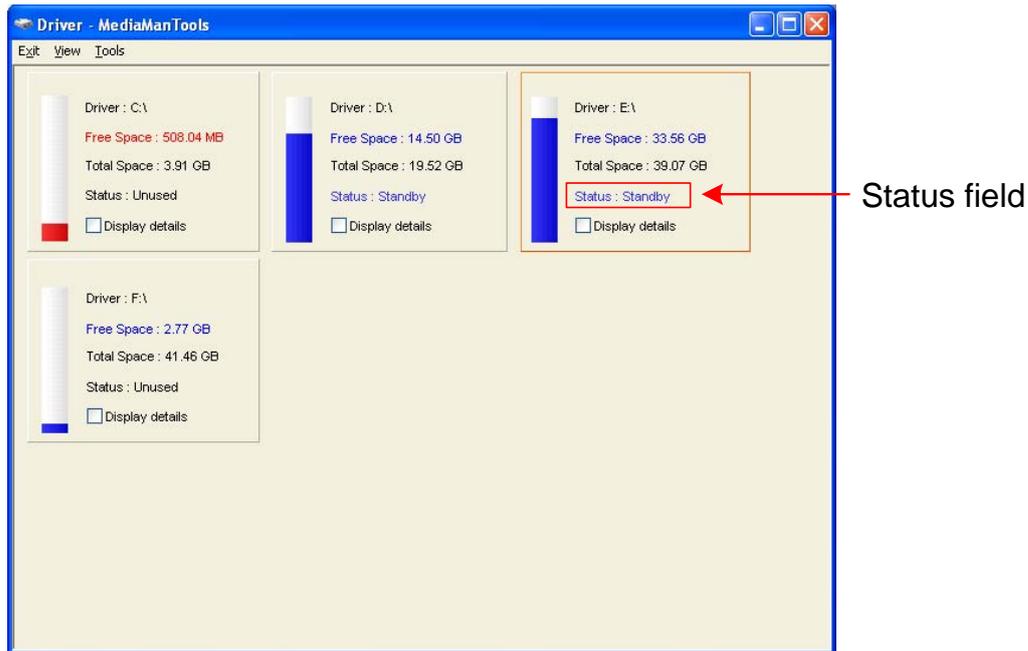
Figure 3-27

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

For the details on using Hot Swap HDD Tool, see *Hot-Swap Recording*, Chapter 11, *Multicam Digital Surveillance System User's Manual* (GV-Desktop > **Program** button > **User Manual**).

3.6 Replacing the Storage Drive

You can replace the HDD / SSD without shutting down the GV-Mobile NVR System.

1. Stop the recording and make sure the HDD Status LED (No. 2, Figure 2-1 / 2-2) is off.

2. To replace a new storage drive:

   - For GV-MNVR1000 System, see *3.1.1 GV-MNVR1000 System* to replace a new storage drive.

   - For GV-MNVR2100 System, see *3.1.2 GV-MNVR2100* System to replace a new storage drive.

Warning: Do not touch the top panel when you replace the storage drive. The top panel is a dissipation of heat and it may be extremely hot.

3.7 Setting Up On-Screen LED Panel

For GV-Mobile NVR System, a LED panel on the screen provides a quick indication of the activity status of the storage drives.

Figure 3-28

LED Color	Description
Gray	- No storage drive is assigned to this LED. - The system is not started.
Green	A storage drive is assigned to this LED.
Red	The storage drive is full.
Flashing Green	The system drive is recording.
Flashing Red	The storage drive 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.
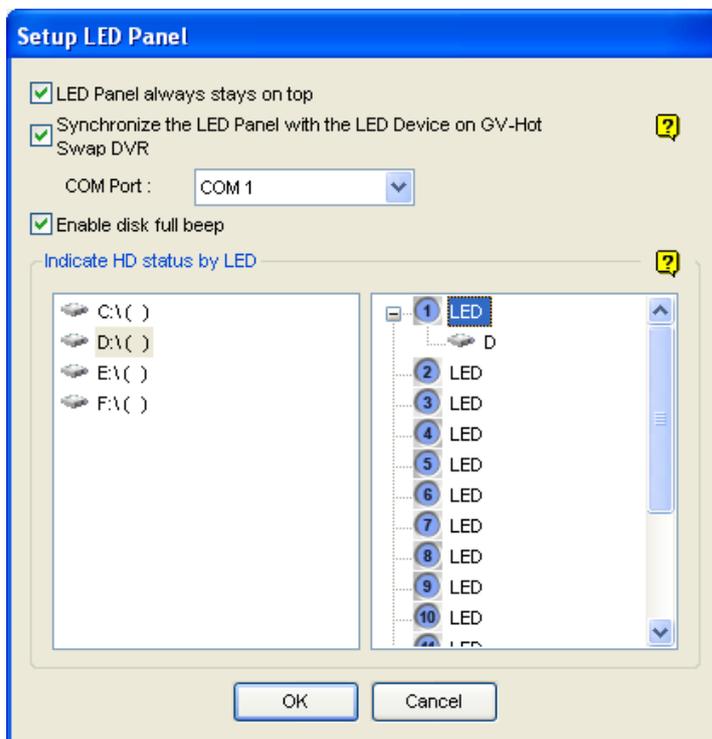
Figure 3-29

- **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-Mobile DVR:** Not functional.

- **Enable disk full beep:** When the storage drive is full, the system sounds on. Note this function only works when speakers are connected to the GV-Mobile NVR System.

3. By default, only the hard disk drive D will be assigned to LED. If you want to re-assign the storage 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 storages that store log files to the LEDs.

2. If the storage 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.

3.8 Configuring the IP Address

GV-Mobile 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**

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

Local Area Connection 1
Default IP: 192.168.0.200

Local Area Connection 2
Default IP: 192.168.0.201

Figure 3-30

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

1. On the GV-Desktop, click the **Programs** button, and select **Control Panel**.
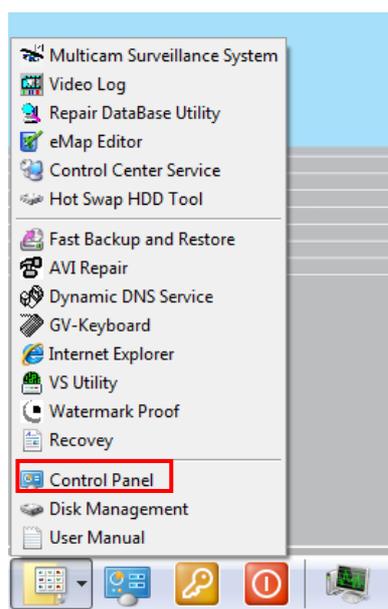
Figure 3-31

2. Type the ID and password. The default ID and password are "**0000**". The Control Panel window appears.

3. Under Network and Internet, click **View network status and tasks**.
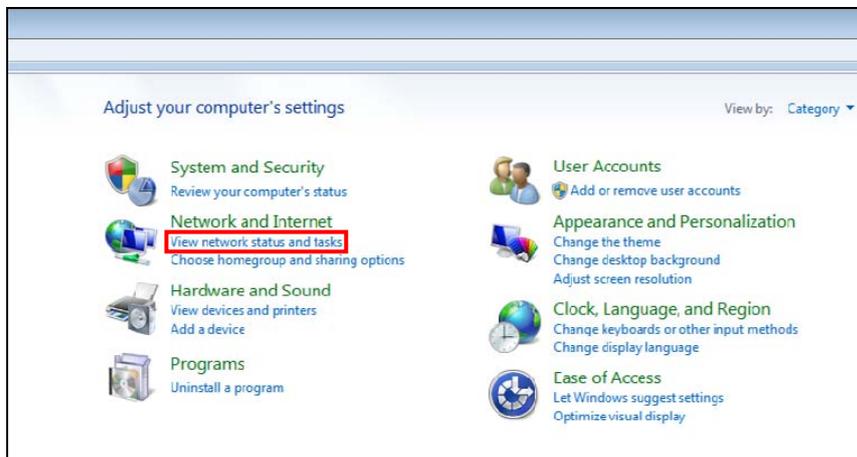
Figure 3-32

4. Under Connections, select the **Local Area Connection** you want to configure.
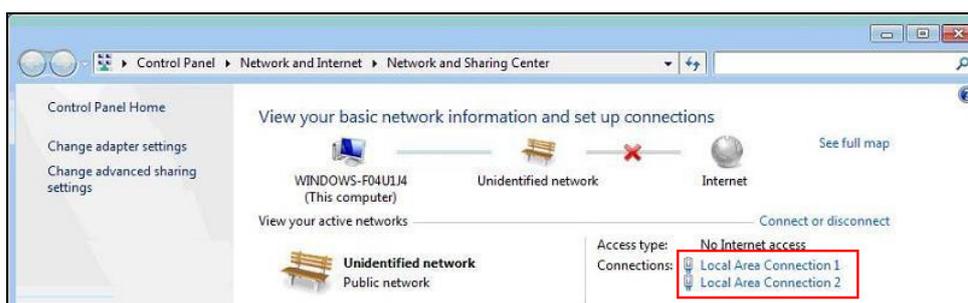
Figure 3-33

5. Select **Internet Protocol Version 4 (TCP/IPv4)**, and select **Properties**.
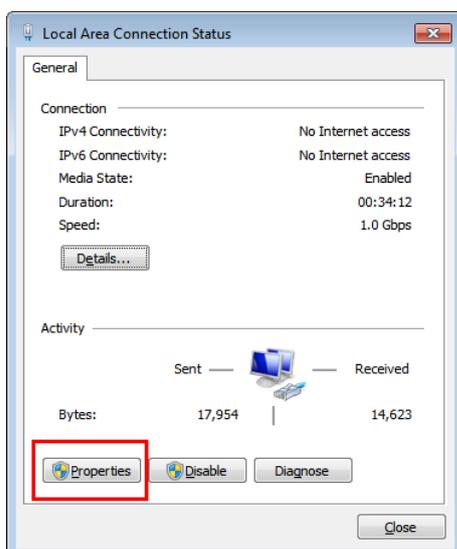
Figure 3-34

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.
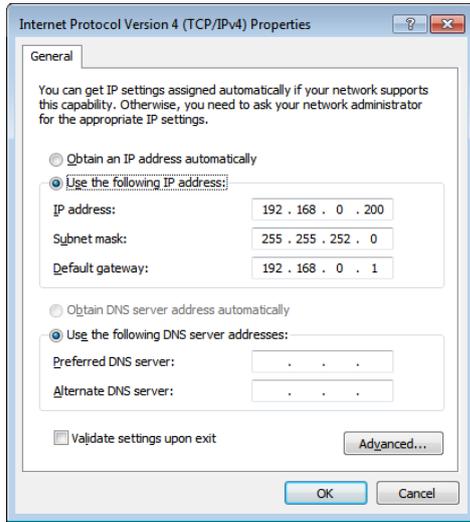
Figure 3-35

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

3.9 Exiting to Windows

GV-Mobile 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 3-36

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.
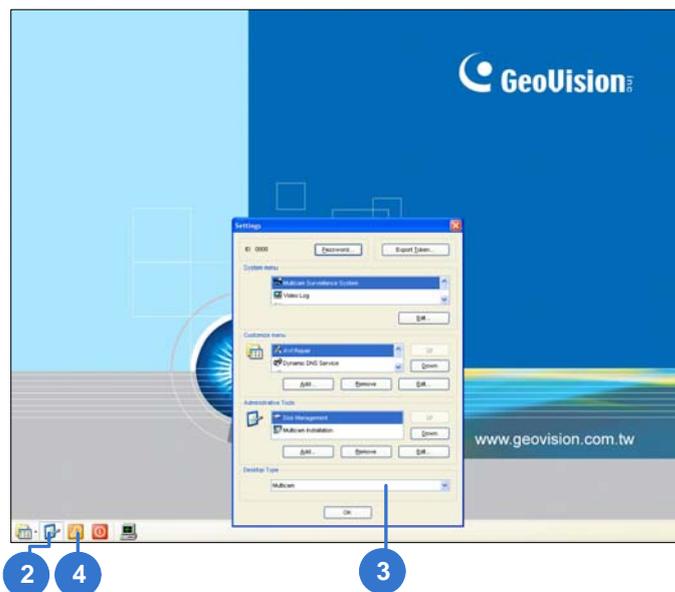
Figure 3-37 The GV-Desktop

3.10 Returning to GV-Desktop

To return to GV-Desktop, click the Windows **Start** button, point to **All Programs**, click **GV-NVR**, and click **Key Lock Utility**.
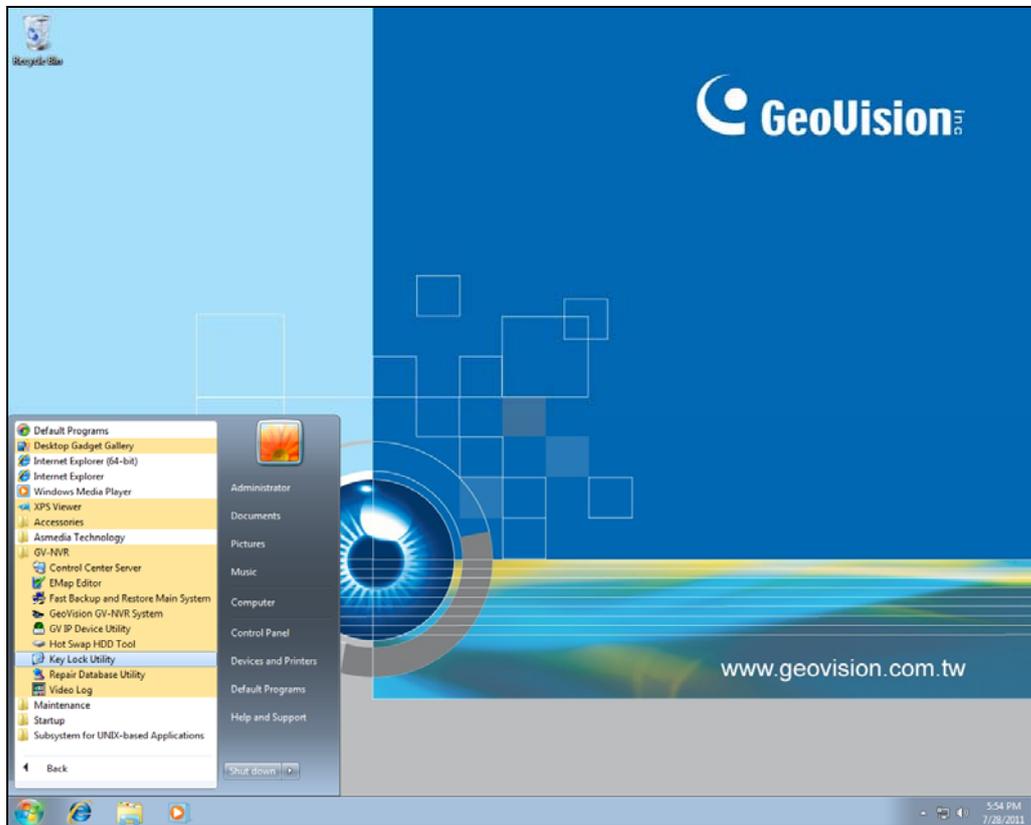
Figure 3-38

3.11 Setting Up Twin View Display

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

1. Follow Steps 1 and 2 in *3.8 Configuring the IP Address* to access the Control Panel window.

2. In the Control Panel window, click **Adjust Screen Resolution** under the Appearance and Personalization section. This dialog box appears.
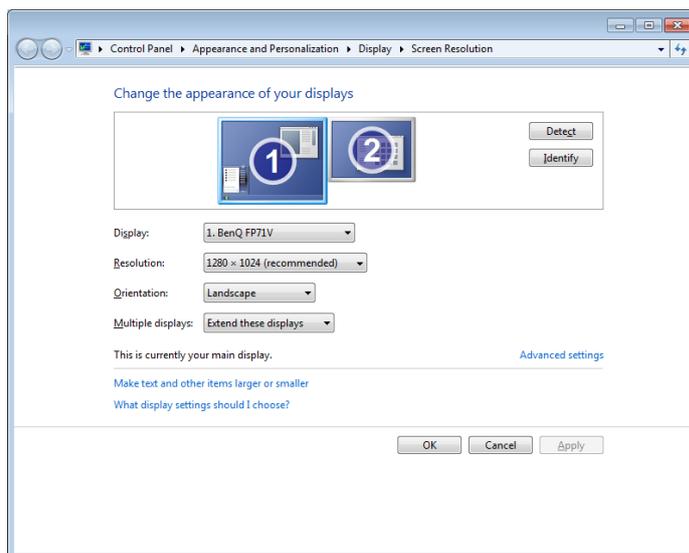
Figure 3-39

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**.
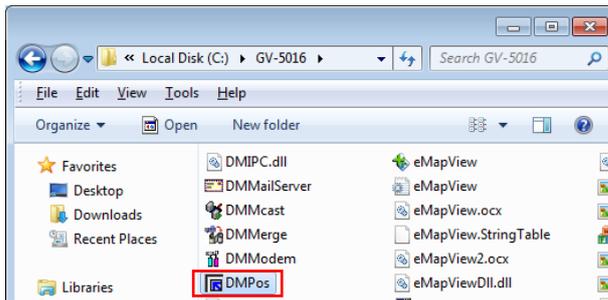
Figure 3-40

9. Double-click **DMPOS.exe**. The Set Application Function Position dialog box appears.
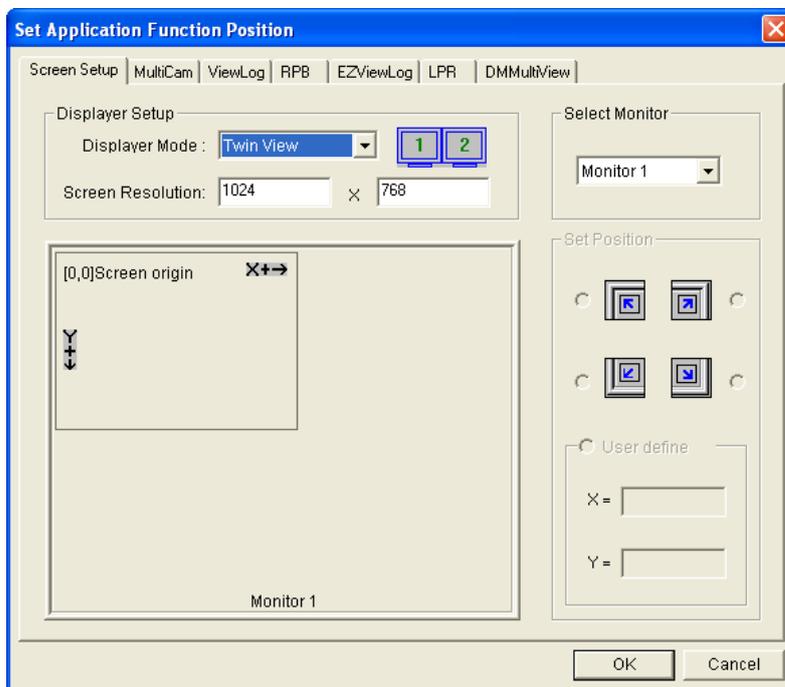
Figure 3-41

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.

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3.12   Setting Up 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.

3.12.1   Activating Two Monitors

Use Windows Display Property to activate multiple monitors.

1. Follow Steps 1 to 6 *in 3.11 Twin View Display* to configure the second monitor.

2. Start the GV-NVR, 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.

3.12.2 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.
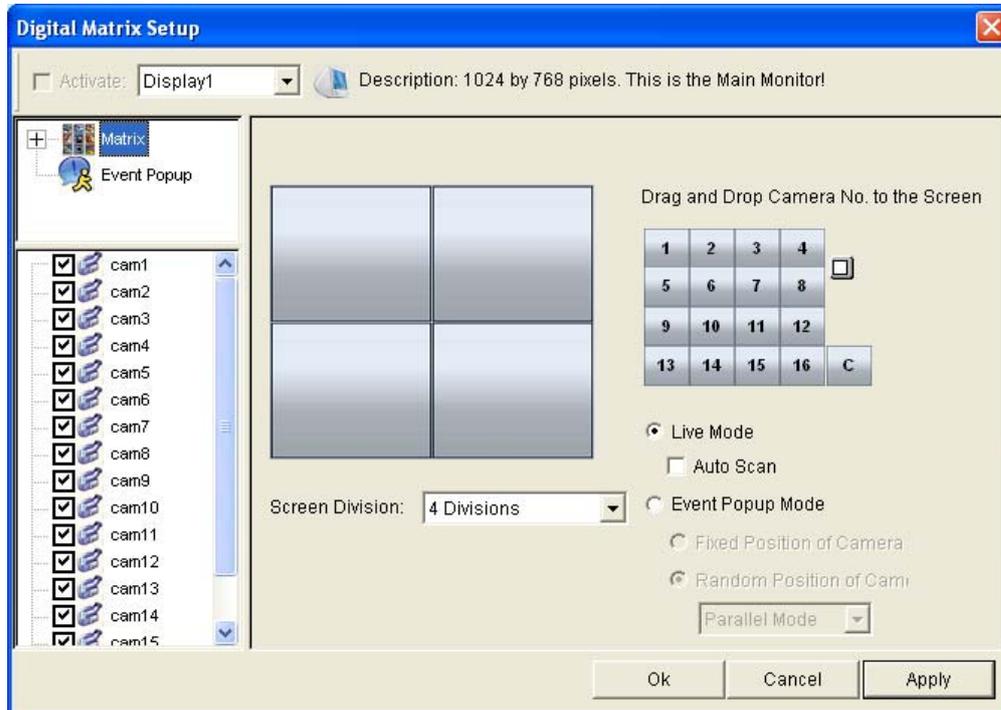
Figure 3-42

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.

3.12.3 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.
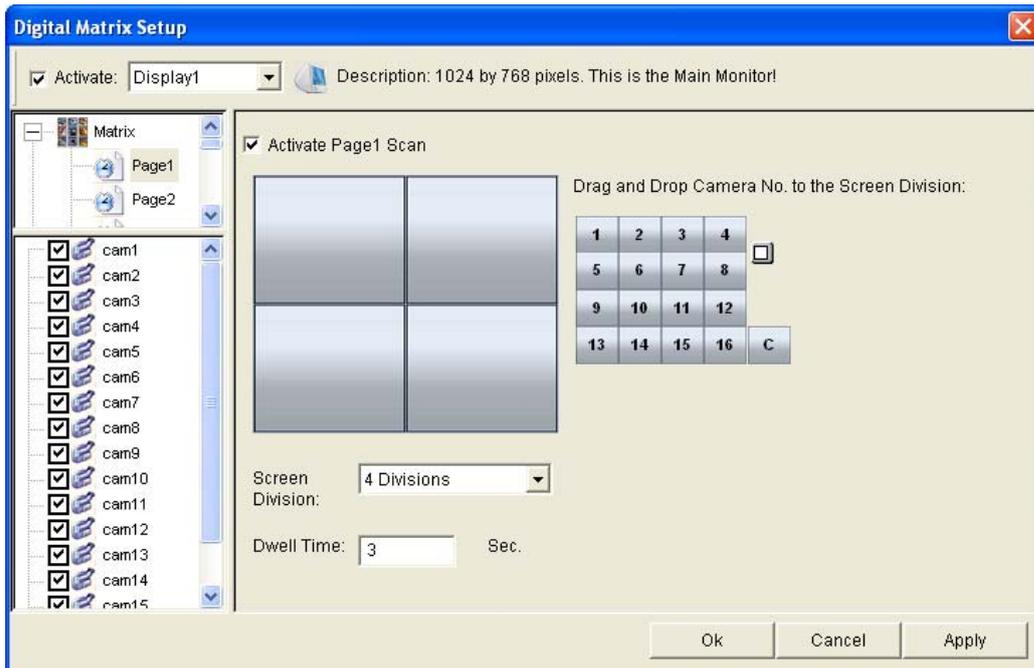
Figure 3-43

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 3-42.
10. Select **Auto Scan**.
11. Click **OK** to start scanning among pages.

3.12.4   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.
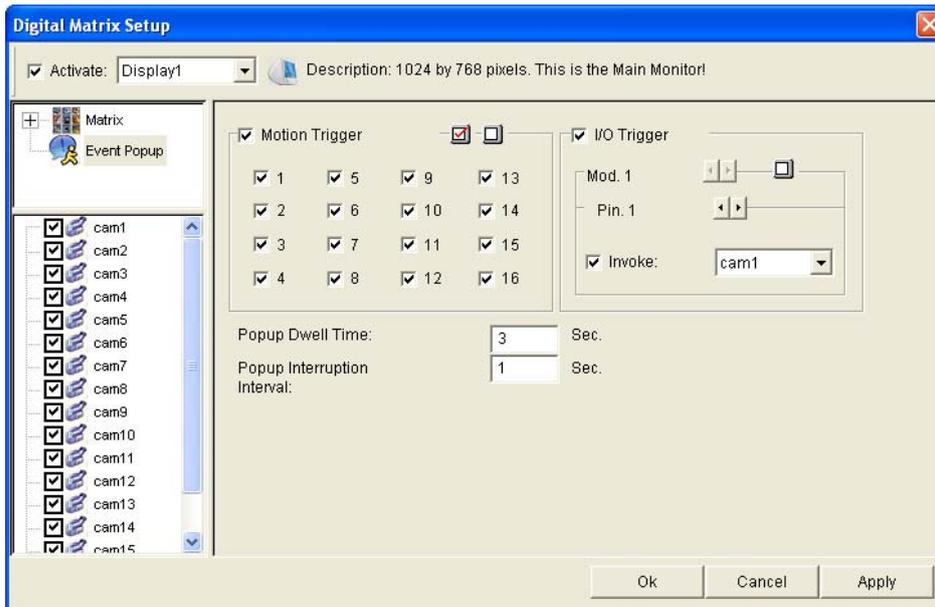
Figure 3-44

- ■ **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 3-42.

5. Select **Event Popup Mode**. Then select **Fixed Position of Camera** or **Random Position of Camera**. For these two options, see *3.12.4.1 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.

3.12.4.1 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 potions 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.

1	2		5	
3	4			
Monitor 1			Monitor 2	
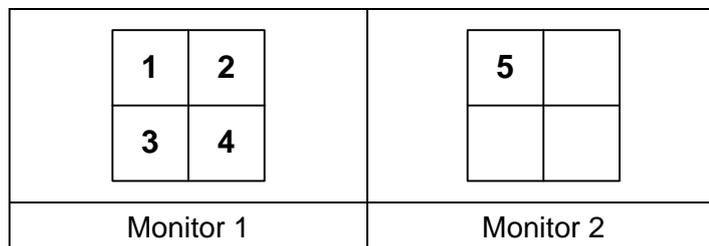
2. **Parallel Mode:** This mode allows the same cameras simultaneously pop up on different monitors. This is suggested to be used when multiple monitors are placed in separate rooms.

   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.

1	2		1	2
3	4		3	4
Monitor 1			Monitor 2	
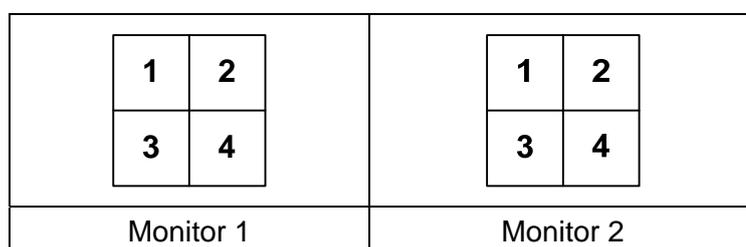
3.12.5 Setting Live View with Pop-up Alert

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 *3.12.2 Setting Live View*.

2. To configure pop-up alert, in the upper left column, click **Event Popup**. Figure 3-44 appears.

3. Configure **Motion Trigger**, **I/O Trigger**, **Popup Dwell Time** and **Popup Interruption Interval** for each monitor. For details, see *3.12.4 Setting Pop-up Alert.*

4. Click the **Matrix** icon and return to Figure 3-42. 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.

3.13 Updating GV-Mobile NVR System

If you like to update your GV-Mobile 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   Optional Wireless Connection

You can optionally connect GV-Mobile NVR System to 3G / 4G mobile network. With the built-in GPS module, you can even get the GPS location of the system.

Note: GPS module is already built in the GV-Mobile NVR System. 3G / 4G modules are optional.

Mobile Network Connection Supported (Optional)	
3G Module	WCDMA: 800 / 850 / 1900 / 2100 MHz GSM/GPRS/EDGE: 850 / 900 / 1800 / 1900 MHz
4G Module	**For EU area** LTE: 2100 (B1) / 1800 (B3) / 2600(B7) / 900 (B8) / 800 (B20) MHz WCDMA: 2100 (B1) / 1900 (B2) / 850 (B5) / 900(B8) MHz GSM/GPRS/EDGE: 850 / 900 / 1800 / 1900 MHz **For US area** LTE: 1900(B2) / AWS(B4) / 850(B5) / 700 (B13) / 700(B17) / 1900 (B25) MHz WCDMA: 2100 (B1) / 1900 (B2) / AWS (B4) / 850 (B5) / 900 (B8) MHz GSM/GPRS/EDGE: 850 / 900 / 1800 / 1900 MHz
WiFi Module	IEEE 802.11b/g/n, 2T2R

4.1 3G / 4G Mobile Network Connection

With the 3G / 4G module optionally built in the GV-Mobile NVR System, you can access to the network.

1. Turn off the GV-Mobile NVR System

2. Insert a SIM card to the SIM Card Slot 1.

3. Install the 3G / 4G antenna to the antenna port 1 (ANT1).
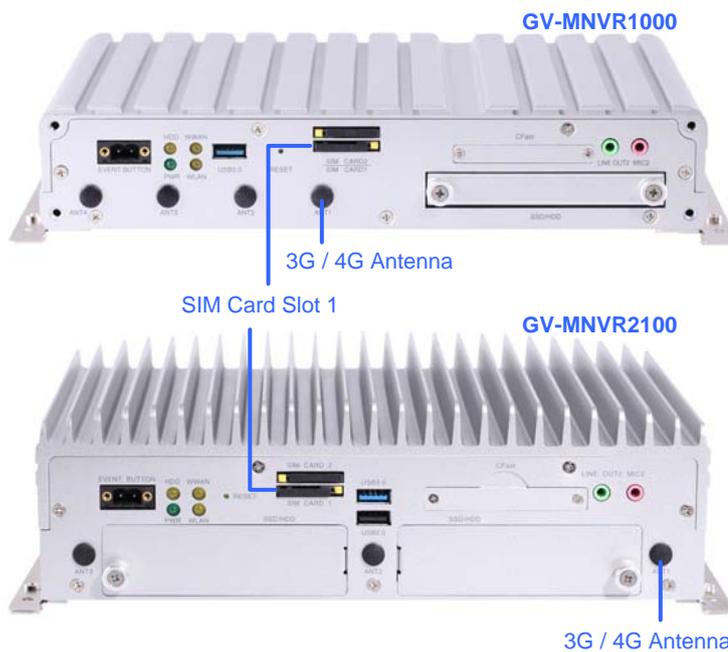
Figure 4-1

4. Start the system. The utility for mobile network connection runs automatically.

   A. If the utility shows the airplane mode is on, click **Turn Radio On**.

Figure 4-2

B. Type your PIN code.

C. Click **Connect** to start the network connection.

Figure 4-3

5. Minimize the utility to the system tray.

4.2　GPS Connection

4.2.1　Local GPS Position

With the supplied GPS antenna, the GV-Mobile NVR System can receive GPS data and display GPS coordinates with the recordings.

1. Install the GPS antenna to the GPS antenna port of the GV-Mobile NVR System.
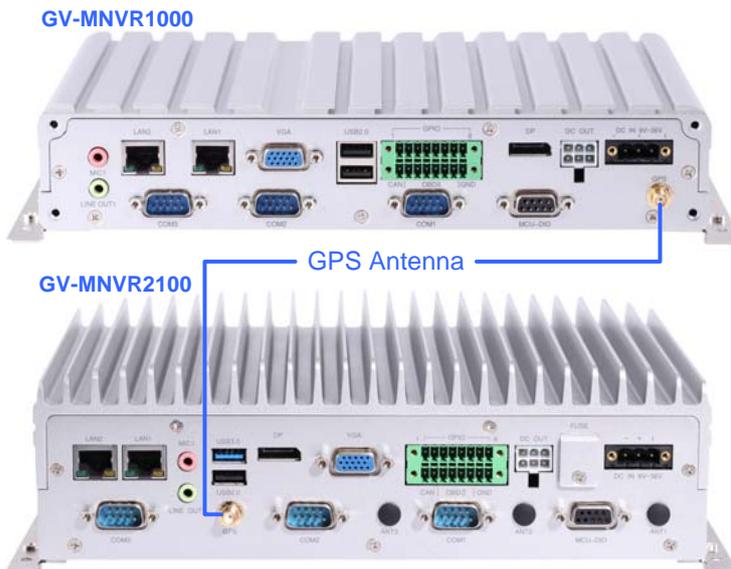
Figure 4-4

Note: The GPS antenna must point toward outdoors.

2. Start the system. The GV-GIS Client runs automatically. Minimize the dialog box to the system tray.
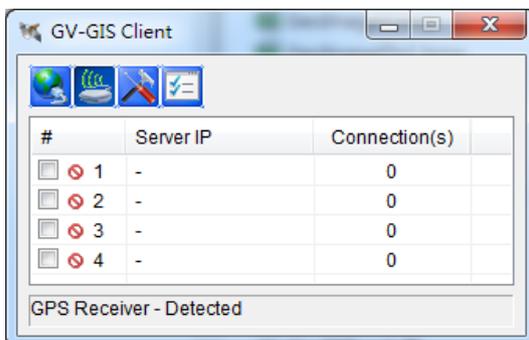
Figure 4-5

3. Start recording. The GPS data is recorded with the video.

4. To see the GPS coordinates with recordings, click **ViewLog** in the GV-NVR Software and enable **Display GPS positions** (**Setting** > **Display tab** > **Display GPS positions**).
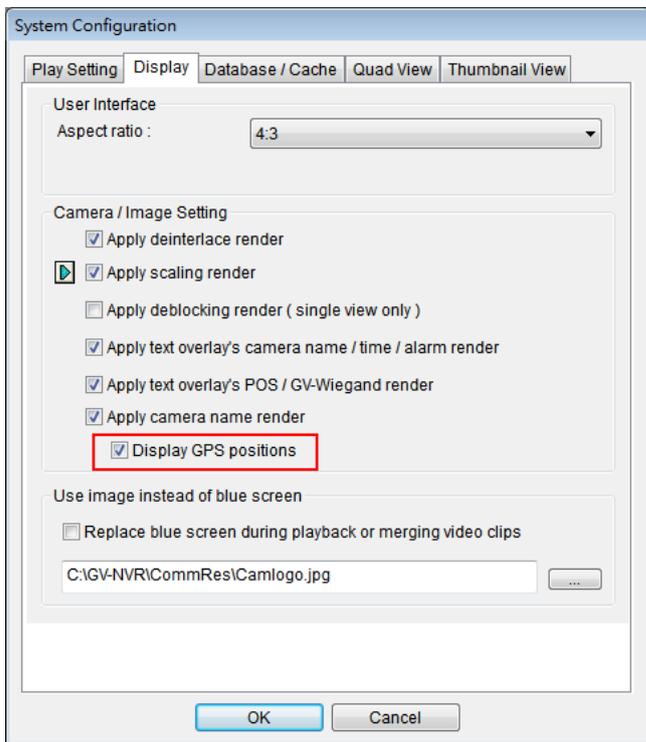
Figure 4-6

5. The GPS coordinates are displayed in the top-left corner of the recording.
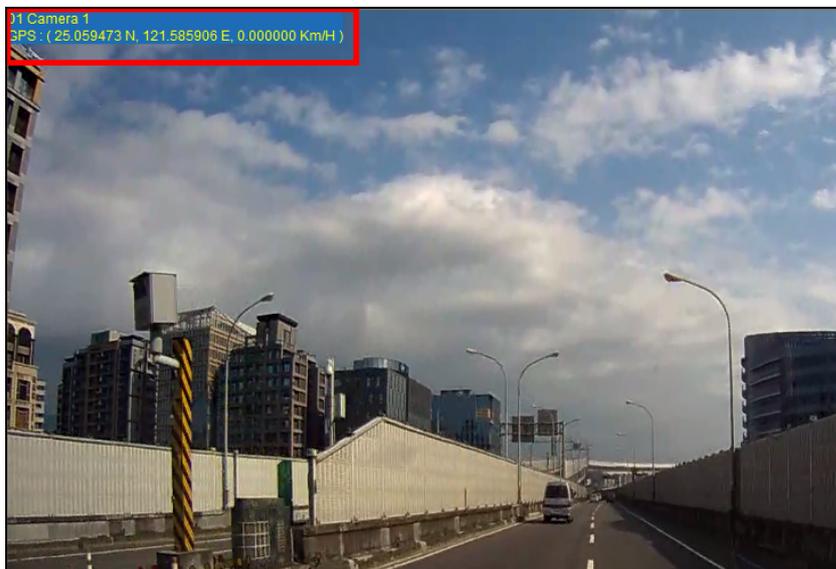
Figure 4-7

You can also view the GPS location of the GV-Mobile NVR System on Google map or other map API. For details, see *Viewing GPS Locations during Playback*, Chapter 11, *Multicam Digital Surveillance System User's Manual* (GV-Desktop > **Program** button > **User Manual**).

![GeoVision logo]

1. The GPS coordinates aren't displayed on the live view.

2. If the GV-Mobile NVR System doesn't receive any GPS data, check the following settings.

    A. Make sure you enable the GPS Receiver on the GV-GIS Client (see *Figure 4-5*). The **Service** button ![icon] is selected.

    B. Make sure the default GPS Receiver settings are as below:

    GV-MNVR1000: COM Port 3, Baud Rate 9600

    GV-MNVR2100: COM Port 4, Baud Rate 9600
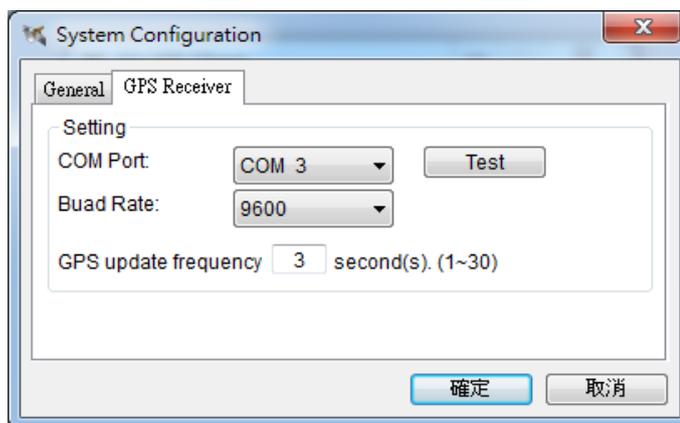
Figure 4-8

    C. Make sure the GIS function of the GV-NVR Software is enabled (**Configure** > **Accessories** > **Enable Local GIS**).

4.2.2   GPS for Vehicle Tracking

With the GPS receiver, the GV-Mobile NVR System is able to transmit the GPS data collected from the satellite to the GV-GIS (Geographic Information System) through mobile network connection for vehicle tracking.

For details on connecting the GV-Mobile NVR System to the GV-GIS, see *11.15.5 Sending GPS Data to the GV-GIS* in *Multicam Digital Surveillance System User's Manual* and *Appendix D.4* in *GV-GIS User's Manual*.

Chapter 5   System Restoration

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 on the GV-Mobile NVR System since it only reformats the partition C and all of your files are still stored on other partitions.

---

1. On the GV-Desktop, click the **Program** button and select **Recovery**. The system will run this command by itself.
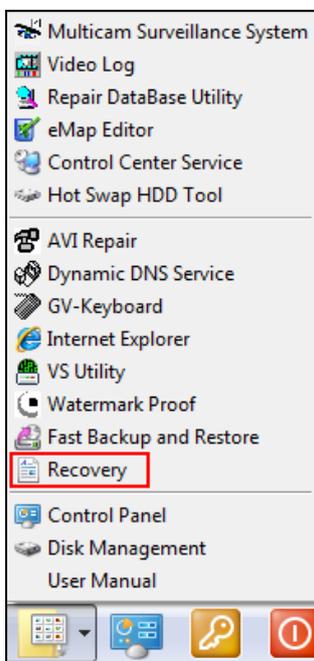
Figure 5-1

2. Restart the GV-Mobile NVR System.

3. Press **F11** button several times to avoid accessing the system.

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

Figure 5-2

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

Chapter 6   Health Analysis

GeoVision offers health analysis to GV-Mobile 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-Mobile NVR, 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 dvrsystem@geovision.com.tw
- **System Settings**
- **System Log**
- **Information of your computer system (Processor; Drives; Voltage, Temperature and Fans)**

6.1   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.
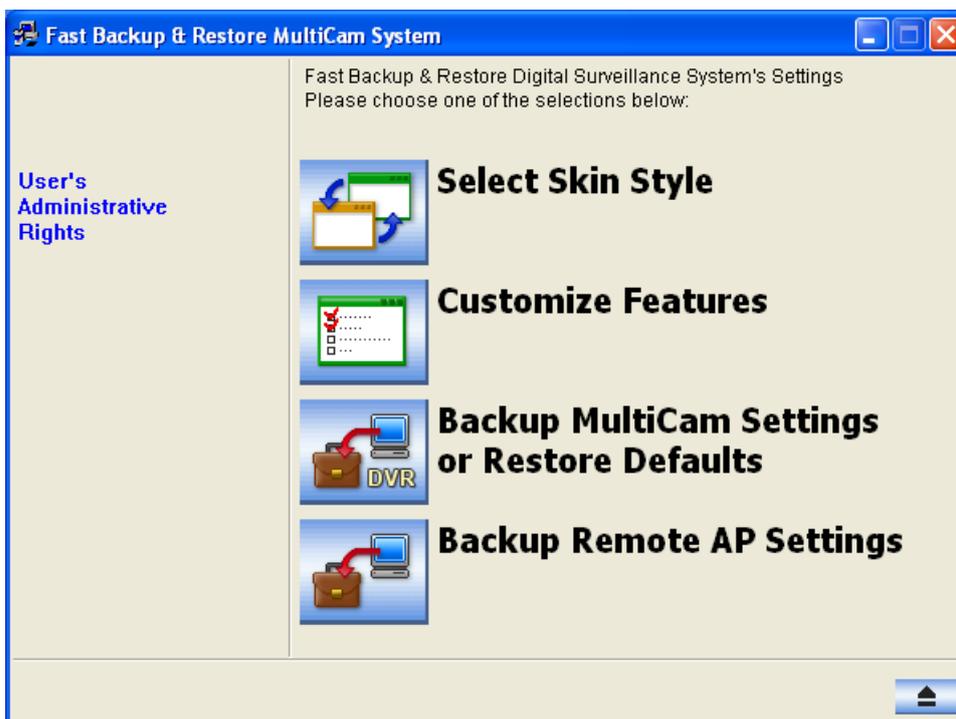
Figure 6-1

2. Select **Backup MultiCam Settings or Restore Defaults**, and select **Backup Current System**. This dialog box appears.
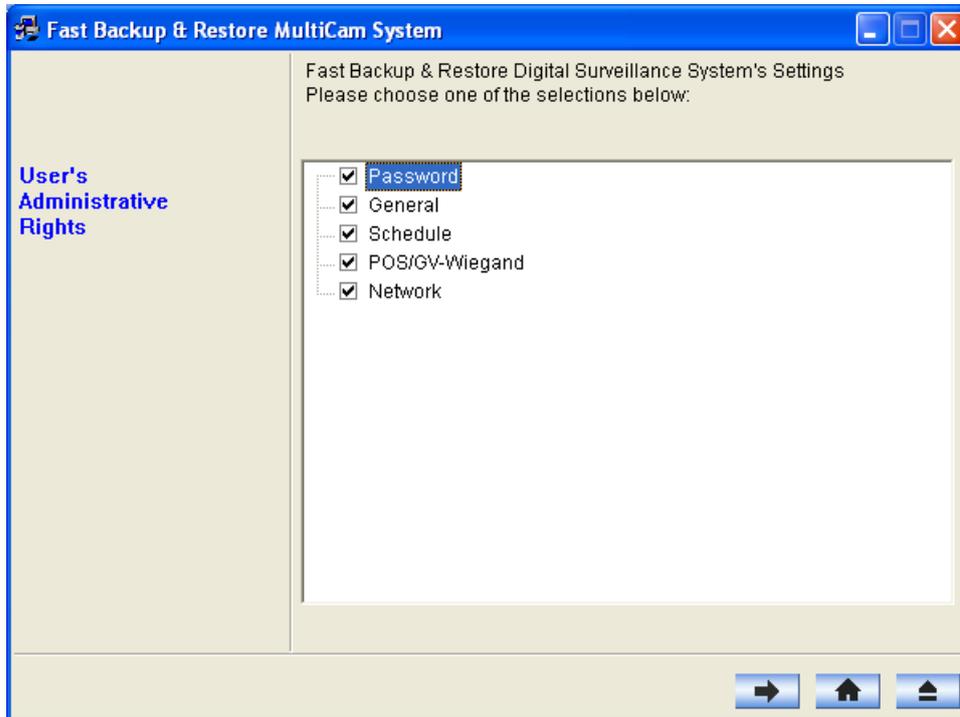
Figure 6-2

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.

6.2 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.
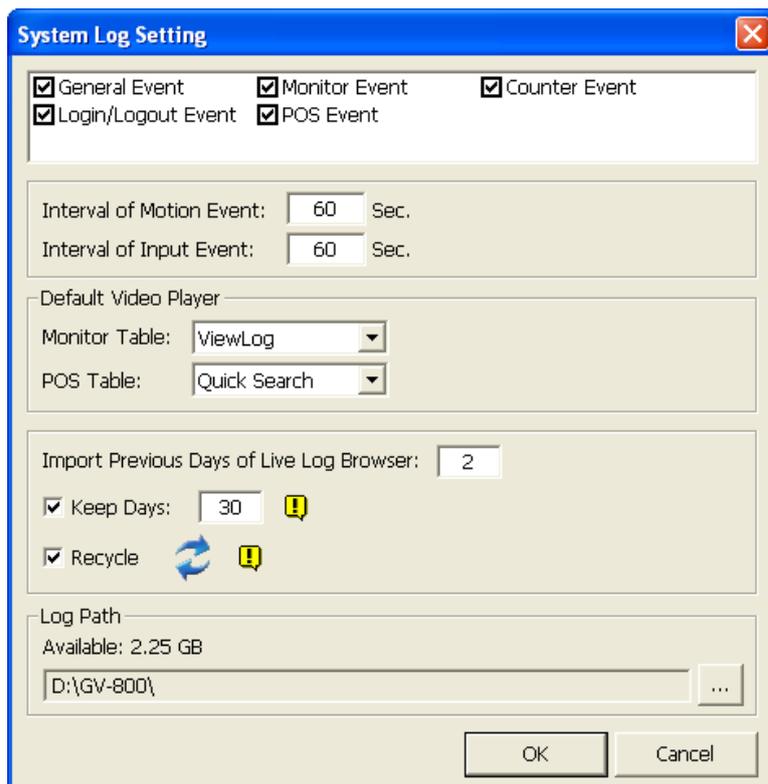
Figure 6-3

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

6.3 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 [icon] and click **Save as**.
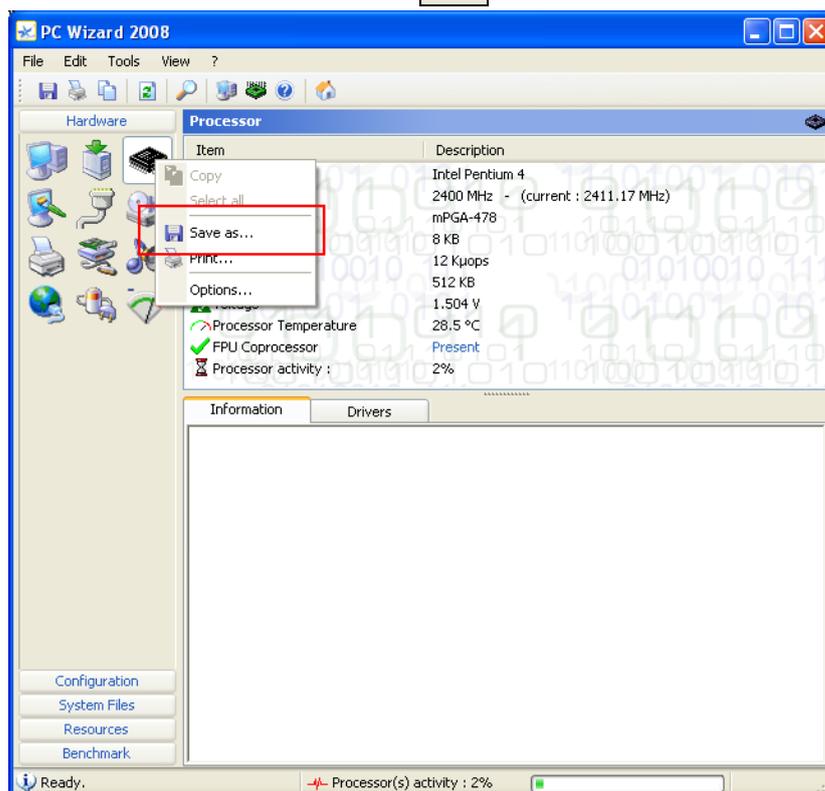
Figure 6-4

4. In the Save As dialog box, select **Format HTML** and click **OK**.
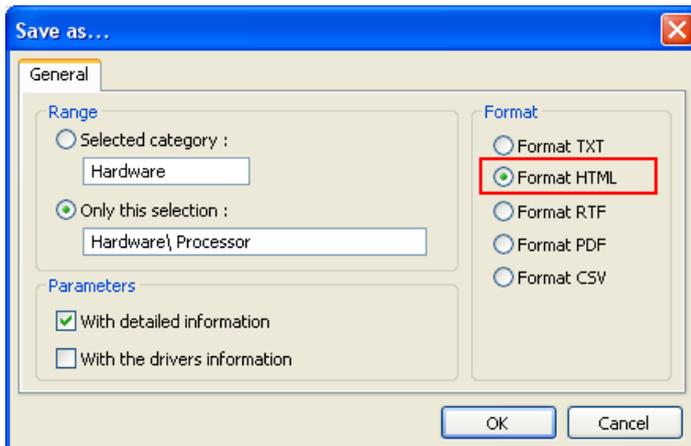
Figure 6-5

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 [icon] as HTML file.

7. To save the **Voltage, Temperature and Fans** information [icon], 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.

6.4   Health Analysis Form

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

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

6.5   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 7   Troubleshooting

GV-Mobile NVR storage drive becomes corrupted.

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 storage drive 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 5-1).
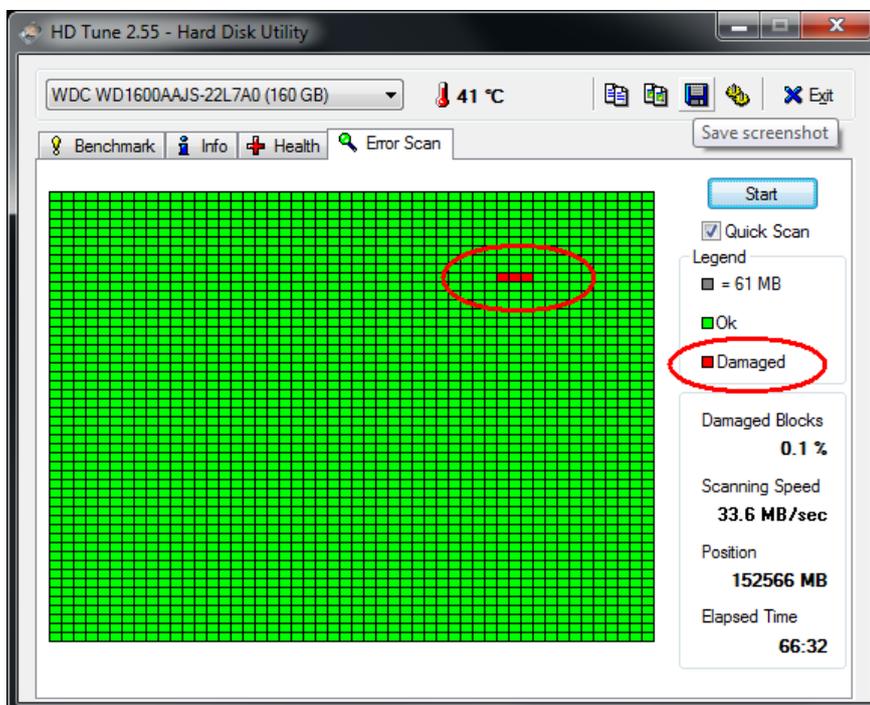
Figure 7-1

    C. If your storage 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 3-16.

B. Right-click the desired storage drive and select **Properties** from the file menu to display the Properties window.
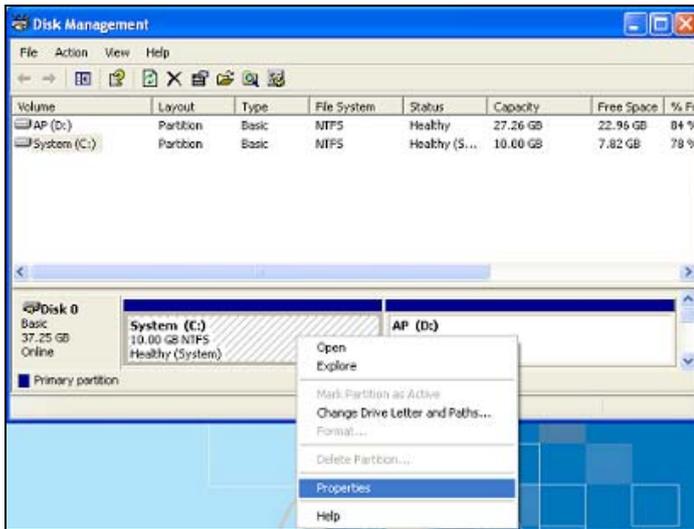
Figure 7-2

C. Click the **Tools** tab in the upper portion of the window.

D. Under Error-checking, click the **Check Now** button.

Figure 7-3

E. Select **Automatically fix file system errors** and **Scan for and attempt recovery of bad sectors**.
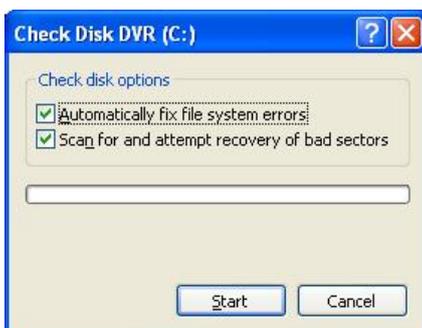
Figure 7-4

F. Click **Start**.

3. If the Windows hard disk utility still cannot fix the problem in Partition C, try rebuilding the operating system and GV-NVR Software by running the recovery from the hidden partition. Refer to *Chapter 4 System Restoration*.

Live video is not displayed smoothly.

If some of live videos are not displayed smoothly, check the following status:

1. Check the bandwidth status of the network that is connected to the GV-Mobile NVR System.

2. Check if several users are accessing the Web interface of the GV-IP camera. Try to close some of open Web interfaces.

Unable to locate all the GV-IP cameras by using the IP Device Utility.

If you can not locate all the GV-IP cameras by using the IP Device Utility, try the following instructions:

1. Ensure all the GV-IP cameras are connected to the same LAN with the GV-Mobile NVR System and check the network connectivity.

2. Ensure you have powered on all the GV-IP cameras.

3. Click the Search button of the IP Device Utility again to detect the GV-IP cameras.

Black images are displayed.

1. Check the IP cameras and make sure they are functioning well.
2. Check the GV-Mobile NVR System's connection over network.

How can I find more help?

Visit our website at http://www.geovision.com.tw/english/4_1.asp

Write us at dvrsystem@geovision.com.tw

Specifications

Hardware

Model			GV-MNVR1000	GV-MNVR2100
System				
CPU			Intel Atom Processor	Intel Core i3 Processor
RAM			2 GB Single Channel	4 GB Dual Channels
OS			64-bit Windows Embedded Standard 7 SP1	
Internal Storage			32 GB (CFast Card)	
No. of Drive Bay			1 (2.5" HDD / SSD)	2 (2.5" HDD / SSD)
Connector	**Ethernet**		RJ-45, 10 / 100 / 1000 Mbps x 2	
	Video Output		VGA and DisplayPort	
	USB 2.0		Rear: 2 ports	Front: 1 port; Rear: 1 port
	USB 3.0		Front: 1 port	Front: 1 port; Rear: 1 port
	Power		DC 10 ~ 35V (ACC, Vehicle Ignition)	
	Antenna	**3G / 4G / WiFi**	Front: 4 ports	Front: 3 ports; Rear: 3 ports
		GPS	Rear: 1 port	Rear: 1 port
Power Adapter (Optional)			Input: AC 100 ~ 240V (50 ~ 60 Hz) Output: DC 24V, 5A	
Fan			N/A	
Environment				
Operating Temp.	**HDD**		0°C ~ 60°C (32°F ~ 140°F)	
	SSD		-30°C ~ 70°C (-22°F ~ 158°F)	-30°C ~ 60°C (-22°F ~ 140°F)
Humidity			10 ~ 90% RH (non-condensing)	
Physical				
Color			Silver	
LED Indicator			4 (HDD, WWAN, Power and WLAN)	

Physical		
Dimensions (W x H x D)	260 x 50 x 176 mm (10.24 x 1.97 x 6.93")	260 x 79.5 x 206 mm (10.24 x 3.13 x 8.11")
Net Weight	2.1 kg / 4.63 lb (± 1 kg / 2.2 lb)	2.5 kg / 5.51 lb (± 1 kg / 2.2 lb)
Operating Shock	20 G	
Operating Vibration	1.5 G @ 5 ~ 500 Hz (HDD) 2 G @ 5 ~ 500 Hz (SSD)	
Sensor and Alarm		
Inputs	4 / 8 / 16 ports (optional GV-I/O Box required)	
Outputs	4 / 8 / 16 ports (optional GV-I/O Box required)	

Software

Video and Audio			
Video Standard		NTSC, PAL	
Video Codec		MJPEG / MPEG4 / H.264	
Audio Codec		32 kHz / 16 bit	
Video Stream		**Dual Streams from GeoVision IP Cameras**	**Dual Streams from 3rd-party IP Cameras**
Video Input	**GV-MNVR1000**	1 MP	20 channels	20 channels
		2 MP	17 channels	17 channels
		3 MP	24 channels	24 channels
		5 MP	16 channels	16 channels
	GV-MNVR2100	1 MP	31 channels	31 channels
		2 MP	25 channels	25 channels
		3 MP	32 channels	32 channels
		5 MP	32 channels	32 channels
Audio Input	**GV-MNVR1000**		Up to 24 channels	Up to 24 channels
	GV-MNVR2100		Up to 32 channels	Up to 32 channels

Note: It is required to enable the dual-stream function on GeoVision and third-party IP cameras to have the maximum number of channels supported. For single streaming third-party IP cameras, please see "Maximum Channels and Frame Rate Supported" later in this manual.

Video and Audio		
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
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 (iOS and Android)
Live View	**GV-MNVR1000**	Max. 24-channel multi views
	GV-MNVR2100	Max. 32-channel multi views
Network Type		LAN, WAN, Internet
System Monitoring and Recovery		
Power Restoration		Automatic restart after power outage
Monitoring		Software watchdog
Recovery		Automatic system rebuild from internal hard disk
Certification		
Type		CE, FCC, E-Mark (E13), EN50155 (coming)

Language	
Type	Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish
Software License	
Free License	24 / 32 channels from GV-IP devices (dual streams)
Maximum License	24 / 32 channels from third-party IP devices (dual streams)
Increment for Each License	1 to 24 / 32 third-party IP cameras at an increment of 2
Dongle Type	External

Mobile Network Connection Supported (Optional)	
3G Module	WCDMA: 800 / 850 / 1900 / 2100 MHz
	GSM/GPRS/EDGE: 850 / 900 / 1800 / 1900 MHz
4G Module	**For EU area** LTE: 2100 (B1) / 1800 (B3) / 2600(B7) / 900 (B8) / 800 (B20) MHz WCDMA: 2100 (B1) / 1900 (B2) / 850 (B5) / 900(B8) MHz GSM/GPRS/EDGE: 850 / 900 / 1800 / 1900 MHz
	For US area LTE: 1900(B2) / AWS(B4) / 850(B5) / 700 (B13) / 700(B17) / 1900 (B25) MHz WCDMA: 2100 (B1) / 1900 (B2) / AWS (B4) / 850 (B5) / 900 (B8) MHz GSM/GPRS/EDGE: 850 / 900 / 1800 / 1900 MHz
WiFi Module	IEEE 802.11b/g/n, 2T2R

Note: All specifications are subject to change without notice.

Appendix

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
LG
MOBOTIX
Panasonic
Pelco
Samsung
Sanyo
SONY
UDP
Verint
VIVOTEK

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-NVR 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 dvrsystem@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-MOBILE 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-Mobile 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: Please check the model and its items you purchased.

Model

☐ **GV–MNVR1000 System**   ☐ **GV–MNVR2100 System**

The system with third-party IP devices

☐ **1 Channel**   ☐ **2 Channels**   ☐ **4 Channels**   ☐ **6 Channels**

☐ **8 Channels**   ☐ **10 Channels**   ☐ **12 Channels**   ☐ **14 Channels**

☐ **16 Channels**   ☐ **18 Channels**   ☐ **20 Channels**   ☐ **22 Channels**

☐ **24 Channels**   ☐ **26 Channels**   ☐ **28 Channels**   ☐ **30 Channels**

☐ **32 Channels**

Bar Code:

Shipment Date:

GeoVision, Inc.
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