GeoVision inc.
The Vision of Security

Quick Start Guide

http://www.geovision.com.tw

GV-NVR

V8.4

2010/11
English

NVRV84-B

1 Introduction

Welcome to the *GV-NVR Quick Start Guide*. In the following sections, you will learn the basic requirements and configurations of using GV-NVR. For the detailed instructions of use, see the *DVR User's Manual* on the GV-NVR Software DVD.

Note: GV-NVR automatically comes with 32 free IP channels when connected with GeoVision IP video devices. To connect with third-party IP devices, you need to purchase a NVR Dongle and install it to the computer.

Packing List

- GV-NVR Software DVD x 1
- GV-NVR Quick Start Guide x 1
- Protection Key (NVR Dongle) available upon order x 1

Types of Dongle Options

Two types of USB dongles are available to connect third-party IP devices: **External-type NVR Dongle** and **Internal-type NVR Dongle**.

- **External-type NVR Dongle:** This is used for implementation of GV-NVR with third-party IP video devices. The dongle options include 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 and 32 IP channel(s).
  For details on supported third-party IP video devices, please visit GeoVision's website: http://www.geovision.com.tw/english/4_21.asp

- **Internal-type NVR Dongle:** This dongle is not only used for connecting GV-NVR with third-party IP video devices as External-Type NVR Dongle, but also built with Hardware Watchdog function .You need to connect the USB dongle directly to the USB header on the motherboard.

The GV-NVR system can support up to 32 channels. The following table lists the minimum and recommended system requirements needed to run the GV-NVR.

		Up to 4 Channels	Up to 8 Channels	Up to 16 Channels	Up to 32 Channels
OS	32-bit	Windows XP / Windows Vista / Windows 7 / Windows Server 2008			
	64-bit	Windows 7 / Windows Server 2008			
CPU		Core 2 Duo, 2.4GHz	Core 2 Quad, 2.4 GHz		Core i7, 2.8 GHz
Memory		2 × 1 GB Dual Channels / 2 x 2 GB Dual Channels (see IMPORTANT 2)			
VGA		ATI X1300			

IMPORTANT:

1. To connect **IP cameras with H.264 codec** and **GV-IP Speed Dome** (no matter which codec you select), the minimum CPU requirement of Core 2 Quad can only support up to 8 channels. With CPU of Core i7 or higher, you can record up to 32 channels but note the following limit for live viewing:

   - For live viewing of 32 channels, you need to lower the resolution and change the codec to MPEG 4 or MJPEG.

2. For the users of 32-bit Windows, the memory limit of GV-NVR is 1.7 GB with 2 GB RAM. For the users of 64-bit Windows, the memory limit of GV-NVR is 1.7 GB with 2 GB RAM and 3 GB with 4 GB RAM. If the high memory issue persists, the GV-NVR will become unstable.

3. Some GV hardware accessories and GV-System functions are not available to GV-NVR users. Please note the following lists. Unavailable GV-System functions:

   - Adjustment of codec and resolution for third-party devices
   - Recording quality
   - Pre-Recording using RAM
   - Hard Disk Calculator
   - Noise Detection to Reduce File Size
   - Video Lowpass Filter

3 Options

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

AVP (Advanced Video Process) Functions	AVP (Advanced Video Process) functions include Panorama View, Video Stabilizer, Defogging and etc. You can add the AVP functions to the GV-NVR by using an additional AVP Dongle, or upgrading your external or internal NVR Dongle to have the AVP functions.
Internal USB Dongle	The USB dongle can provide the Hardware Watchdong function to the GV-NVR system by restarting the computer when Windows crashes. You need to connect the dongle internally on the motherboard.
GV-Data Capture V3 Box	GV-Data Capture V3 Box can integrate the GV-NVR to an electronic POS system, while GV-Data Capture V3E Box can establish such integration through LAN or Internet.
GV-Hub Box	An easy way for serial port extension. This hub can add 4 RS-232/RS-485 serial ports through the GV-NVR's USB port.
GV-COM Box	This unit can add 1 RS-232/RS-485 serial port through the GV-NVR's USB port.
GV-IO Box (4 Ports)	GV-IO Box 4 Ports 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 Ports provides 8 inputs and 8 relay outputs, and supports both DC and AC output voltages. You can connect the unit to the PC either by using its USB port or through network by using its Ethernet module.

GV-IO Box (16 Ports)	GV-IO Box 16 Ports provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages. You can connect the unit to the PC either by using its USB port or through network by using its Ethernet module.
GV-NET/IO Card (I/O Box Mode)	The GV-NET/IO Card is a RS-485 / RS-232 interface converter, providing 4 inputs and 4 relay outputs. It supports both DC and AC output voltages.
GV-Joystick	GV-Joystick facilitates the PTZ camera control. It can be either plugged into the GV-NVR for independent use or connected to GV-Keyboard to empower the operation.
GV-Keyboard V3	GV-Keyboard V3 is used to program and operate GV-NVR and PTZ cameras. Through RS-485 configuration, it can control up to 16 GV-NVR systems. In addition, through RS-485 or RS-422 connection, it can set up and control up to 32 PTZ cameras directly without making any configuration through the GV-NVR.

4 — USB Driver Installation

It is required to install the driver of USB dongle before use. After you insert the USB dongle to the computer where GV-NVR is installed, the Found New Hardware Wizard will automatically detect the device. Ignore the Wizard and follow these steps to install the driver:

1. Insert the GV-NVR Software DVD. It will run automatically and a window pops up.

Figure 1

2. Select **Install or Remove GeoVision GV-Series Driver**, and then click **Install GeoVision USB Devices Driver**. This dialog box appears.

Figure 2

3. Click **Install** to install the driver. When the installation is complete, this message will appear: *Install done!*

4. To verify that the driver is installed correctly, go to Windows Device Manager and xpand **DVR-Devices**. You should see the entry of **GV-Series USB Protector**.

Figure 3

◆ Before You Start

For optimal performance of your system, it is important to follow these recommendations before installing the GV-NVR:

- It is strongly recommended to use two separate hard disks. One is for installing Windows OS and GV-NVR software, and the other is for storing recorded files and system logs.

- When formatting the two hard disks, select **NTFS** as the file system.

- GV-NVR is a multi-channel video recording system. With normal use of the system, the drive containing video files will become fragmented. This is because GV-NVR constantly stores video files of multi channels simultaneously, and video files will be scattered all over the drive. It is **not necessary** to regularly perform disk defragmentation. Since GV-NVR software and video files are stored on two separated hard disks, the performance of GV-NVR will not be affected.

- Since the size of transmitted data from IP cameras may be quite large and reach beyond the transfer rate of a hard disk, you should note the total of recording frame rates that you can assign to a single hard disk, as listed below:

Frame rate limit in a single hard disk

Video resolution	MJPEG		H.264		MPEG	
	Frame Rate	Bit Rate	Frame Rate	Bit Rate	Frame Rate	Bit Rate
2560x1920 (5M)	30 fps	102.26 Mbit/s	240 fps	21.24 Mbit/s		
2560x1600 (4M)	60 fps	73.49 Mbit/s	240 fps	15.28 Mbit/s		
2048x1536 (3M)	60 fps	64.73 Mbit/s	480 fps	10.52 Mbit/s		
2048x1536 (3M)	120 fps	41.16 Mbit/s	480 fps	9.16 Mbit/s		
1280x960 (1.3M)	200 fps	30.04 Mbit/s	480 fps	5.77 Mbit/s	480 fps	6.30 Mbit/s
640x480 (VGA)	480 fps	11.42 Mbit/s	640 fps	2.54 Mbit/s	640 fps	3.27 Mbit/s
320x240 (CIF)	480 fps	5.16 Mbit/s	640 fps	0.75 Mbit/s	640 fps	1.03 Mbit/s

Note: The above data was determined using the bit rate listed above and hard disks with average R/W speed above 80MB/s.

The frame rate limit is based on the resolution of video sources. The higher video resolutions, the lower frame rates you can assign to a single hard disk. In other words, the higher frame rates you wish to record, the more hard disks you need to install. For the information of recording frame rates, you may consult the user's manual of the IP camera that you wish to connect to.

Before installing the GV-NVR, make sure **DirectX 9.0c** is already installed on your computer.

Installing the GV-NVR

To install the GV-NVR, follow these steps:

1. Insert the GV-NVR System Software DVD. The Install Program window pops up automatically (see Figure 1).

2. Click **Install GeoVision xxx System** (ex. Install GeoVision V8.4.0.0 System).

3. To install the Main System, select **GeoVision Main System**, and follow the on-screen instructions.

4. Follow the above steps to install other programs one by one.

Uninstalling the GV-NVR

To uninstall the GV-NVR, follow these steps:

1. Close any open programs because your computer will restart during the uninstalling process.

2. Click the **Start** button, click **Control Panel**, and then click **Add or Remove Programs**.

3. In the **Currently installed programs** list, select **GV-NVR V8.4.0.0**, and then click **Remove**.
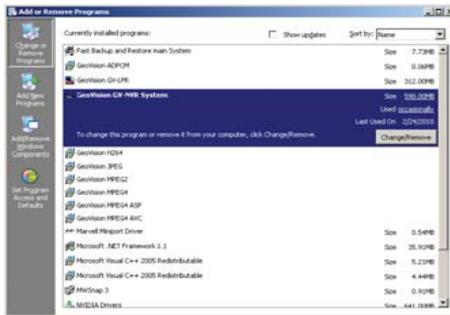
Figure 4

4. When you are prompted to confirm the program removal, click **Yes**.

Note: Uninstalling the GV-NVR will not delete video files and log files previously saved in the computer.

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6 Adding IP Video Sources

The procedures for adding an IP camera, Video Server and Compact DVR may vary. The following is the setup procedure for an IP camera in the system.

1. On the main screen, click the **Configure** button, select **General Setting**, select **Camera / Audio Install** and click **IP Camera Install**. This dialog box appears.
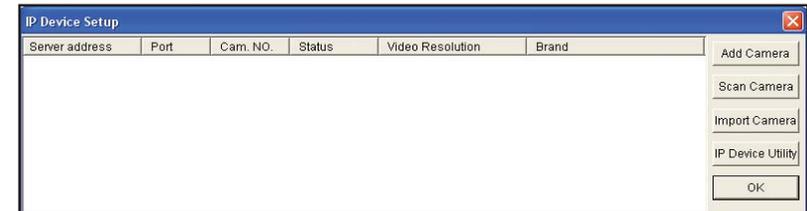
Figure 5

- To add an IP camera from a list of the IP cameras on the LAN, click **Scan Camera**.
- To manually set up an IP camera, follow steps 2 to 7.

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

Figure 6

3. Type the IP address, username and password of the IP camera. Select a camera brand and device from the drop-down list. This dialog box appears.
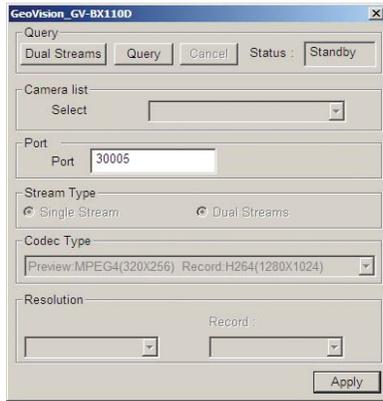

Figure 7

4. If the connection is not established, modify the default HTTP port and click **Query**.

5. The options in the setup dialog box may vary depending on the camera brand.

   - **Port:** Video streaming port number.

   - **Stream Type:** You may have the option of single streaming only or both single and dual streaming.

   - **Codec type:** You may have the option of MPEG4, JPEG, or H.264. If the selected camera supports dual streaming, the preview codec and recording codec can be set differently.

   - **Resolution:** Select resolutions for preview and recording.

6. Click **Apply**. The IP camera is added to the list.

7. Click the listed camera, and select **Display position** to map the IP camera to a channel on the GV-System.

Figure 8

8. The Status column now should display "**Connected**". Click **OK**.

For more details, see *Hybrid and NVR Solution*, *Chapter 2*, *DVR User's Manual* on the GV-NVR Software DVD.

The Black Dongle can be upgraded to include more functions or enhance the system. You need to collect the data from your dongle and send it back to GeoVision for an upgrade. The upgrade is charged services. To upgrade your dongle, follow these steps:

1. Each dongle has its own serial number. Find it on the side of the dongle. Later this serial number will be used in naming the files for upgrading.

Figure 9

2. Insert the dongle to the computer.

3. In the GV folder, double-click **GVUsbKeyUpClient.exe**. This dialog box appears.
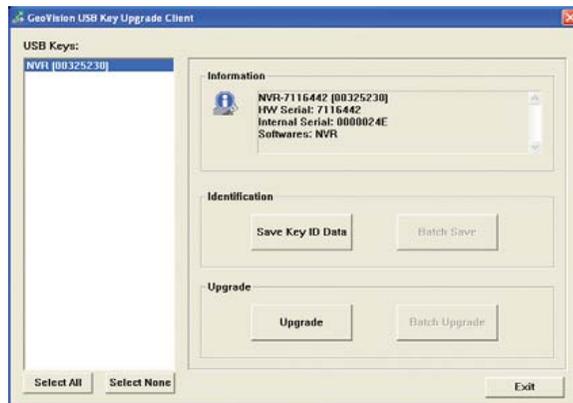

Figure 10

4. To retrieve the data from the dongle, click **Select All**. The information of the dongle will be displayed in the information field. Note the displayed number of "HW Serial" should be the same as that on the dongle.

5. To save the data to your local computer, click **Save Key ID Data**. If you have more than one dongle to upgrade, click **Batch Save**. Different dongle data will be saved as separate files. The file will be named after the serial number on the dongle and saved as *.out. For example, if a dongle serial number is 7116442, the file is named "NVR-7116442.out".

6. Send this data file to GeoVision at sales@geovision.com.tw. The GeoVision will examine the data file and send an ***.in** file back to you. The file name also includes the serial number of that dongle. In this example, the data file to be sent back is named "NVR-7116442.in".

7. After you receive the updated file, insert the correct dongle matching the .in file you receive, and then run **GVUsbKeyUpClient.exe**.

8. Click **Select All** to read the dongle, click **Upgrade** and then open the updated file to upgrade the dongle. You can also select more than one dongle in the list and click **Batch Upgrade** to upgrade them at the same time. Make sure these dongles match the updated files you receive.

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