GeoVision inc
The Vision of Security

Surveillance System

Installation Guide V8.3.3

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

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

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Contents

Important Notice Before Using GV-Video Capture Card

1. **Exclusions:**

- Currently GV-Video Capture Cards are not compatible with **VIA-series**, **ATI-series** chipset motherboards.

  If your GV-Video Capture Card or GV-System works in conjunction with the following GV accessories, note the limitation that **these accessories do not support 64-bit Windows versions currently.**

GV-Multi Quad Card	GV-NET/IO Card
GV-COM Box	GV-Keyboard
GV-Hub Box	GV-Joystick
GV-I/O Box 4 / 8 / 16 Ports	

2. **Hard Disk Requirements:**

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

Video resolution	Limit of total frame rates (FPS)
CIF (320 x 240)	480
D1 (720 x 480)	240
1 Megapixel (1280 x 960)	270
2 Megapixels (1600 x 1200)	120
3 Megapixels (2048 x 1536)	110
4 Megapixels (2560 x 1600)	70
5 Megapixels (2592 x 1944)	54

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 GV-System or the IP camera that you wish to connect to.

- The hard disk space required to install GV-System must be at least 1 GB.
- To use Advance Video Analysis, at least 1 GB of memory is required.
- To use two or more of the following functions simultaneously, at least 2 GB of memory is required: Advance Video Analysis, Video Analysis, IP Camera and Pre-Record by Memory.

3. IP Camera with H.264 Codec

- To connect the IP cameras with H.264 codec and GV-IP Speed Dome (no matter which codec you select), the CPU 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.

4. CPU Requirements:

- For recording resolution of 640 x 480 or above, Pentium 4 processor with Hyper Threading is required.

5. Default Settings:

- For software recording rates, all GV Cards are set to CIF. For hardware recording rates, GV-4008 and GV-2008 Cards are set to D1.

6. The Card with PCI-E Interface:

- All GV-Video Capture Cards with PCI-E Interfaces have x1 interface which can be inserted into the PCI Express x1, x4, x8 or x16 slot.

7. GV-600A, GV-650A and GV-800A:

- Starting from V8.3.2, GV-600 (V4), GV-650 (V4) and GV-800 (V4) are renamed to GV-600A, GV-650A and GV-800A. These V4 Cards and A Cards are the same video capture cards.

8. End of Support:

- Starting from V8.3, GV-System will not support **GV-250 Card**, **GV-Hybrid DVR (MPEG2) Card** and **GV-DSP Card**.
- Starting from V8.3.2, GV-System will not support **GV-2004 Card**.
- Starting from V8.3.2, GV-System will not support **MPEG2** codec.

Chapter 1 Video Capture Cards

This chapter includes the following information:

- **Minimum system requirements**
- **Packing list**
- **Connection diagrams**
- **Specifications**
- **Driver installation**
- **Comparison chart**

1.1 GV-4008

The GV-4008 Card provides up to 8 video and 8 audio channels, recording up to 240/200 fps (NTSC/PAL) in total with H.264 hardware compression. The new technology of resolution is employed to enhance the live image of D1 without DSP Overlay. Even in screen divisions, the largest division can remain at the high-quality D1 resolution.

Minimum System Requirements

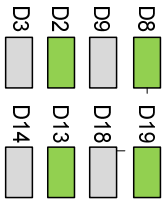
OS	Windows XP / Windows Vista / Windows Server 2008 (Not support 64-bit Windows versions)	
CPU	GV-4008	Core 2 Duo, 2.33 G
	GV-4008 x 2	Core 2 Quad, 2.4 G
RAM	GV-4008	2 x 1 GB Dual Channels
	GV-4008 x 2	2 x 1 GB Dual Channels
HDD	GV-4008	250 GB
	GV-4008 x 2	500 GB
VGA	ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E	
DirectX	9.0c	
Power Supply	400 Watts	

Packing List

1. GV-4008 Card x 1
2. 1-8 Cam Audio BNC Cable with BNC Male to RCA Female Adaptors x 1
3. 1-8 Cam Video BNC Cable x 1
4. Hardware Watchdog Jumper Wire x1
5. SATA Power Converter Cable x 1
6. USB Dongle x 1
7. Software DVD x 1
8. Feature Guide x 1
9. Installation Guide x 1

Connecting One GV-4008 Card

- Connect the video and audio cables to the GV-4008 Card.
- Using the supplied SATA Power Converter Cable, connect the GV-4008 Card to power supply. The Power LED in the top right corner should be lit in green and the 4 status LEDs (D2, D8, D13, D19) in the left corner should be lit in green to indicate the normal functionality.



- To connect Hardware Watchdog, insert the Hardware Watchdog Jumper Wire to the 2-pin connectors on the Card. The (+) pin on the Card must connect to the Reset (+) pin on the motherboard, and the (-) pin on the Card to the Ground (-) pin on the motherboard. If the connection is incorrect, the hardware watchdog will not function.

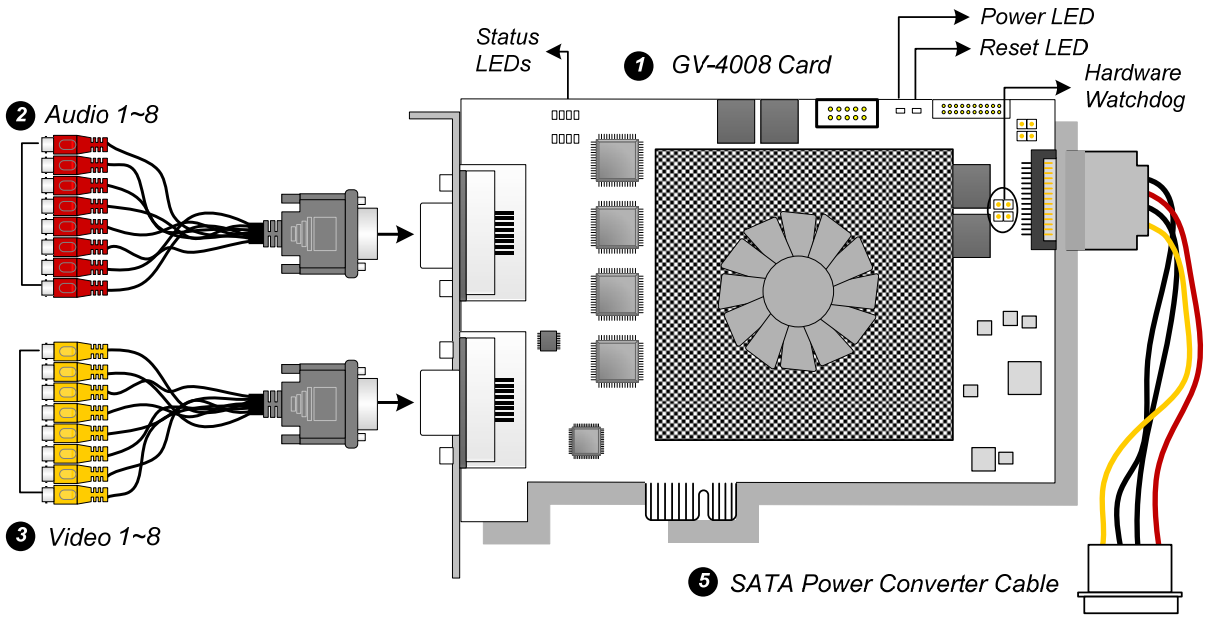


Figure 1-1

Note:

1. The GV-4008 Card only works when the supplied USB Dongle is inserted to PC.
2. The GV-4008 Card cannot work with microphones which acquire power from the PC. Use microphones which have external power supply.

Connecting Two GV-4008 Cards

You can install two GV-4008 Cards for a total of 16 channels. Master Card is the card with 1-8 channels and Slave Card is that with 9-16 channels. Normally, the card attached to the lower PCI slot number will act as Master, and the card attached to the higher PCI slot number will act as Slave.

- **Hardware Watchdog Connection:** Connect the supplied Hardware Watchdog Jump Wire to the Master Card.
- **Accessory Card Connections:** To work together with GV-4008 Cards, GV-NET/IO Card V3.1 must be set in the I/O Box Mode and connected to the PC through USB.

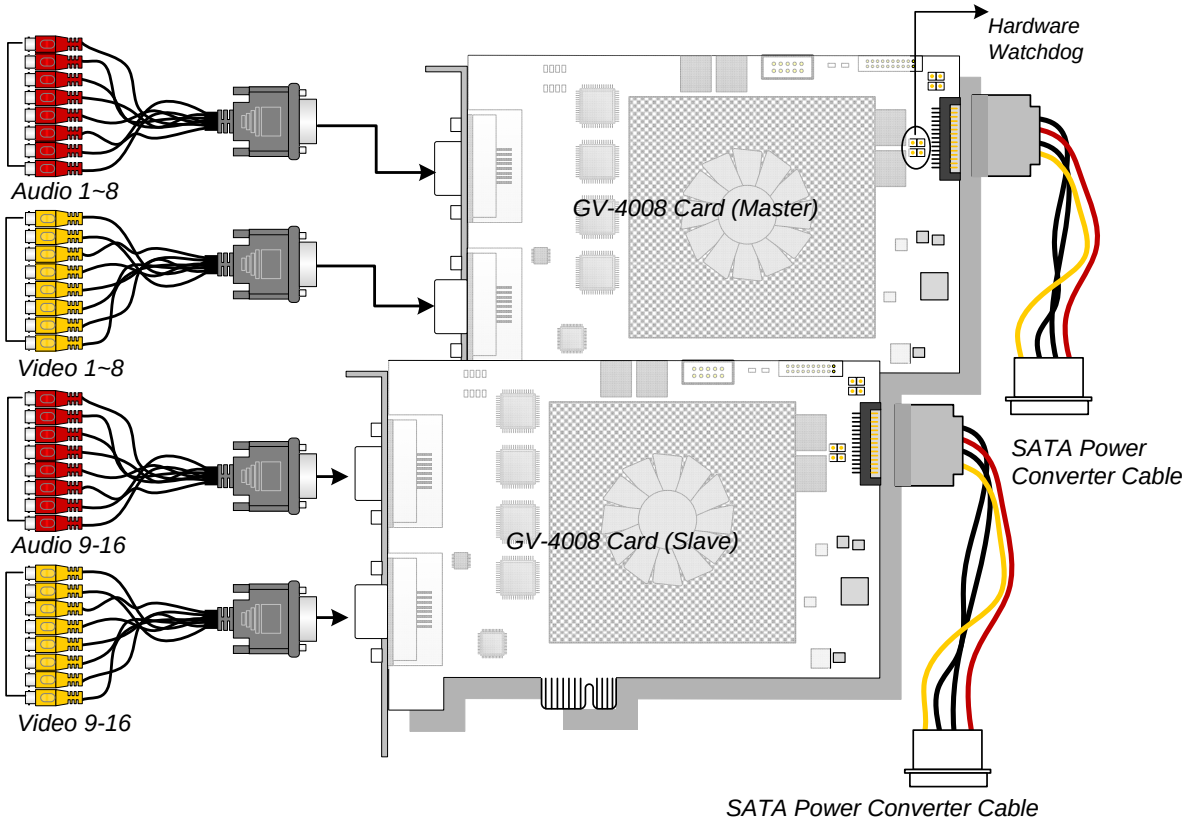


Figure 1-2

Troubleshooting Power Supply Issues

When the **Reset LED** on the top of the Card is flashing red color or the four **Status LEDs** are not all on, it indicates that the GV-4008 Card is short of power supply. Make sure your power supply is of 400 watts at least. If not, replace it with the power supply of 400 or larger watts. The power supply issues should be solved.

Adjusting the Video Settings in the Main System

One distinct feature of GV-4008 Cards is their ability of hardware compression, providing you with higher system performance and DVD recording quality.

To take full advantage of GV-4008 Cards, you can adjust the video settings, including the recording quality and frame rate, before running the GV-System.

Set the video settings of the recorded files:

Considering computer performance or recording quality, you may adjust the settings to meet your needs.

1. On the Main System, click the **Configure** button, select **General Setting**, select **Camera / Audio Install**, and click **Hybrid Camera Install**. This dialog box appears.

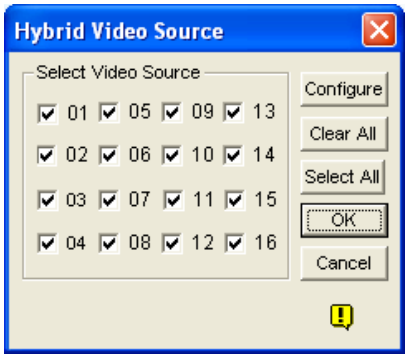


Figure 1-3

2. Select the cameras you want to set up, and click the **Configure** button. This dialog box appears.

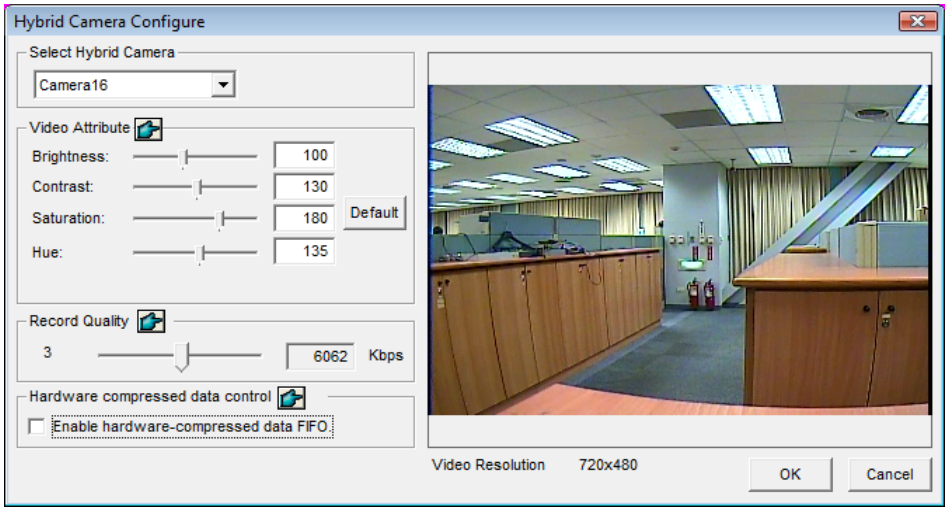


Figure 1-4

3. In the Select Hybrid Camera field, select one camera to be configured.
4. Select the video attributes and recording quality. If you want to apply the same setting to all selected cameras, click the Finger button in each field.
5. The **Enable hardware-compressed data FIFO** option is disabled by default. When the option is enabled, the hardware-compressed data from the video IP device, such as IP camera, video server and compact DVR, will be transmitted directly to remote servers instead of being compressed again on the DVR. The remote servers include CMS-related servers and WebCam Server. This feature can decrease the system load of DVR but increase that of remote servers.

6. To access the frame rate settings, on the Main System, click the **Configure** button, select **General Setting**, select **System Configure**, and then click the **Camera Record Setting** tab. In the Rec Control section, click the **Arrow** button. The Hardware Rec. Frame Rate Setting dialog box appears.

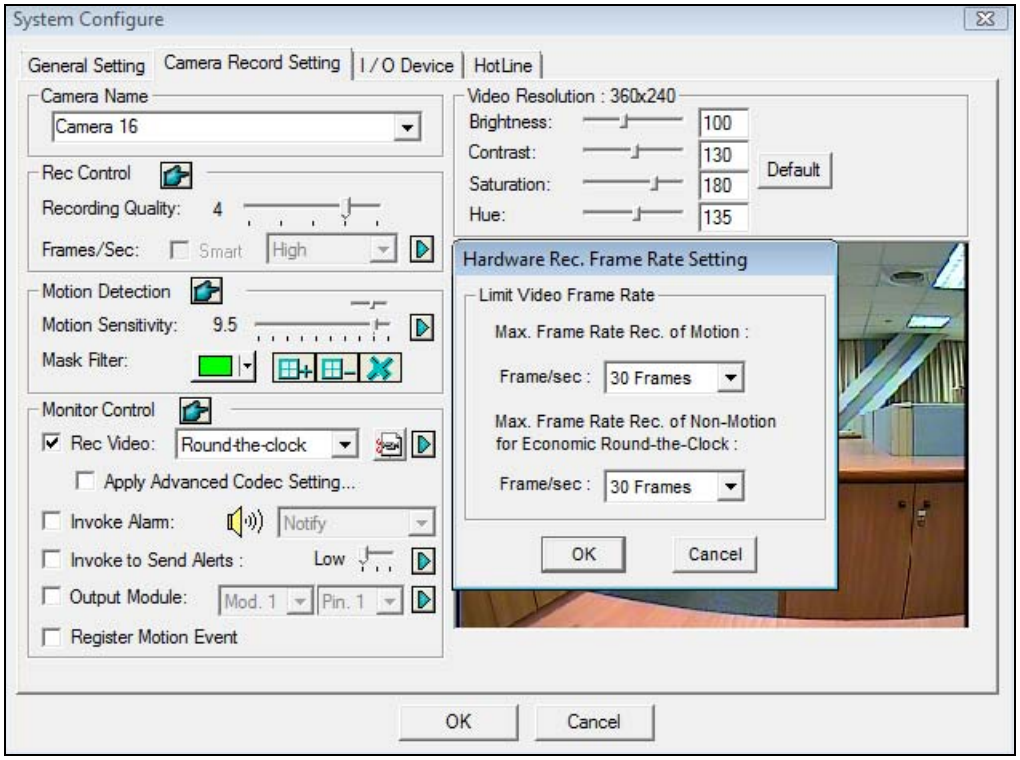


Figure 1-5

7. Set the maximum frame rate for motion and non-motion periods so as to save as much disk space as possible.

Note: The default settings are as follows: Recording Quality is 3, Video Resolution is 720 x 480 (NTSC) or 720 x 576 (PAL), Codec is H.264 and Frame Rate is 30 (NTSC) or 25 (PAL).

Specifications

		GV-4008		GV-4008 x 2
Interface		PCI-E		
Input Type		DVI x 2 (for Video and Audio)		DVI x 4 (for Video and Audio)
Video Input		8 Cams		16 Cams
Audio Input		8 Channels		16 Channels
Recording Rate	S/W (CIF)	240 fps (NTSC)		480 fps (NTSC)
		200 fps (PAL)		400 fps (PAL)
	H/W (D1)	240 fps (NTSC)		480 fps (NTSC)
		200 fps (PAL)		400 fps (PAL)
Display Rate	NTSC	240 fps		480 fps
	PAL	200 fps		400 fps
Video Resolution	NTSC	H/W	720 x 480	720 x 480
		S/W	360 x 240	360 x 240
	PAL	H/W	720 x 576	720 x 576
		S/W	360 x 288	360 x 288
Compression Format	S/W	Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2		
	H/W	H.264		
GV-NET/IO Card Support		Yes		
GV-Multi Quad Card Support		No		
Dimensions (W x H)		169 x 110 (mm) / 6.65 x 4.33 (in)		

Note:

1. GV-4008 does not support the TV-Out function.
2. To work together with GV-4008, GV-NET/IO Card V3.1 must be set in the I/O Box Mode and connected to the PC through USB.
3. In screen divisions, the largest division is set to D1 resolution and the other divisions to CIF resolution.

1.2 GV-1120A, 1240A, 1480A

GV-Combo A Card (GV-1120A, GV-1240A and GV-1480A) are the three-in-one combo cards, providing one single card solution for 16 video / audio recording, real-time display and TV-out display.

Minimum System Requirements

OS	32-bit	Windows XP / Windows Vista / Windows 7 / Windows Server 2008	
	64-bit	Windows 7 / Windows Server 2008	
CPU		GV-1120A	Pentium 4, 3.0 GHz with Hyper-Threading
		GV-1120A x 2	Pentium 4, 3.0 GHz, Dual Core
		GV-1240A	Pentium 4, 3.0 GHz Dual Core
		GV-1240A x 2	Core 2 Duo, 2.53 GHz
		GV-1480A	Core 2 Duo, 3.0 GHz
		GV-1480A x 2	Core 2 Quad, 2.4 GHz
RAM		Windows XP	2 x 512 MB Dual Channels
		Windows Vista / 7 / Server 2008	2 x 1 GB Dual Channels
HDD		GV-1120A	80 GB
		GV-1120 A x 2	160 GB
		GV-1240A	120 GB
		GV-1240A x 2	250 GB
		GV-1480A	250 GB
		GV-1480A x 2	500 GB
VGA		ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E	
DirectX		9.0c	

Packing List (D-Type)

1. GV-Combo A Card x 1
2. Audio Extension Card x 1
3. 1-8 D-Type Video Cable x 1
4. 9-16 D-Type Video Cable x 1
5. 1-8 D-Type Audio Cable x 1
6. 9-16 D-Type Audio Cable x 1
7. Internal Power Y Cable x 1
8. Hardware Watchdog Jumper Wire x 1
9. Software CD x 1
10. Feature Guide x 1
11. Installation Guide x 1

Packing List (DVI-Type)

1. GV- Combo A Card x 1
2. 1-8 DVI-Type Video plus TV Out Cable x 1
3. 9-16 DVI-Type Video Cable x 1
4. 1-8 DVI-Type Audio Cable x 1
5. 9-16 DVI-Type Audio Cable x 1
6. Internal Power Y Cable x 1
7. Hardware Watchdog Jumper Wire x 1
8. Software CD x 1
9. Feature Guide x 1
10. Installation Guide x1

Connecting One GV-Combo A Card (D-Type)

- Plug the Audio Extension Card in the assigned connectors on the GV-Combo A Card.
- Connect D-Type video and audio cables to the GV-Combo A Card and Audio Extension Card respectively.
- Connect the PC's internal power supply to the GV-Combo A Card.
- Connect the TV monitor to the GV-Combo A Card if needed.

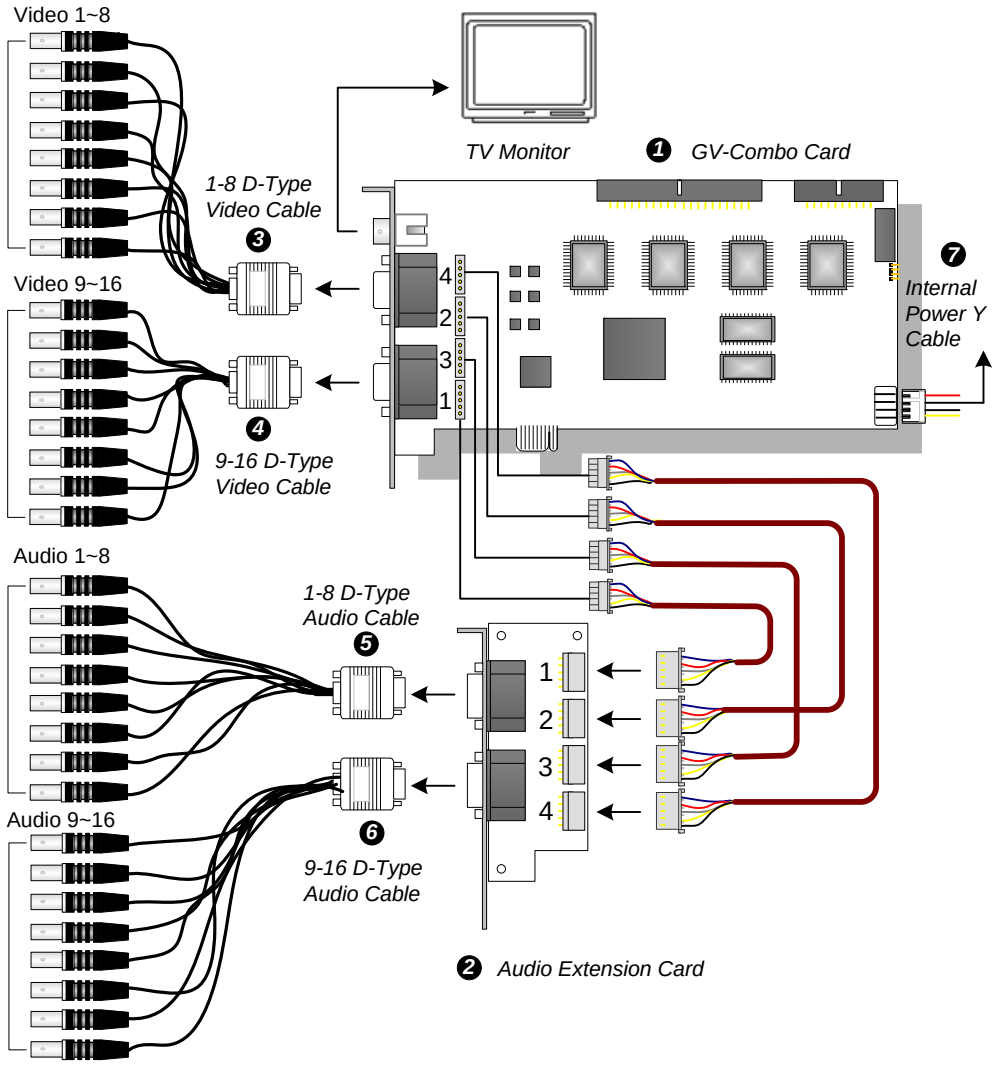


Figure 1-6

Note: The Card only works when it connects to PC's power supply with the supplied Internal Power Y Cable.

Connecting One GV-Combo A Card (DVI-Type)

- Connect the DVI video and audio cables to the GV-Combo A Card.
- Connect the PC's internal power supply to the GV-Combo A Card.
- Connect the DVI TV Out cable to the TV monitor if needed.

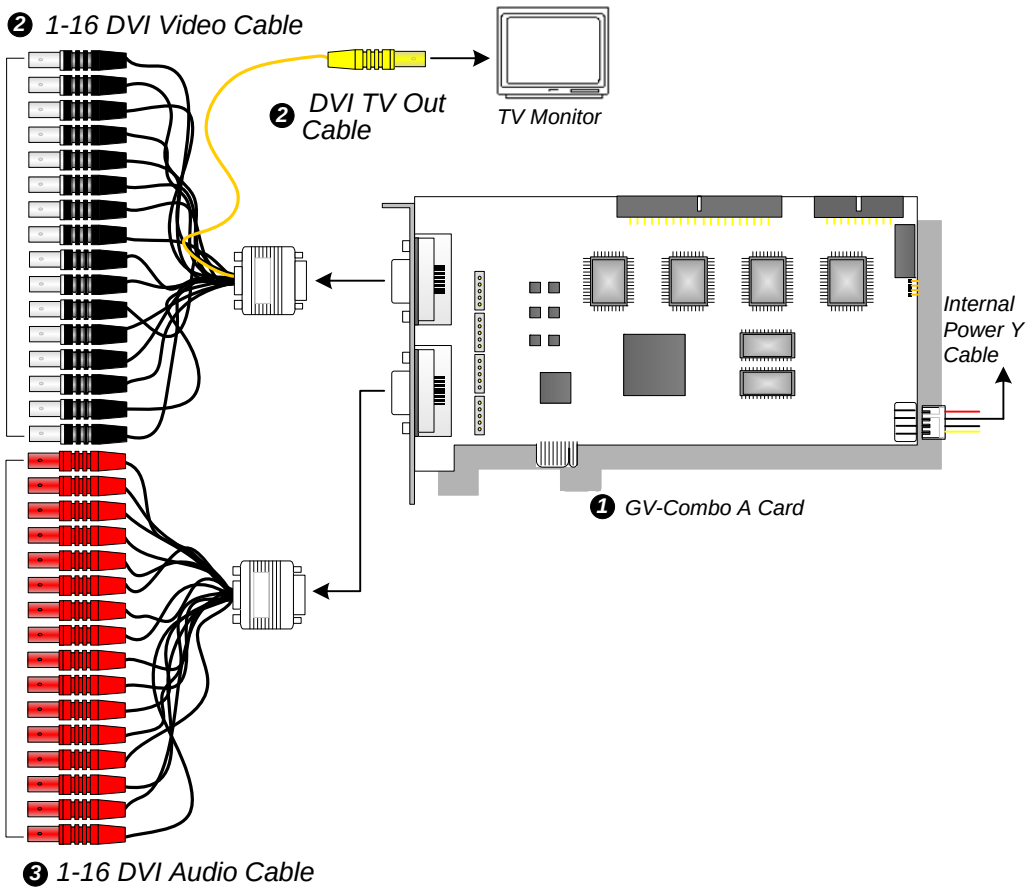


Figure 1-7

Note: The Card only works when it connects to PC's power supply with the supplied Internal Power Y Cable.

Connecting Two GV-Combo A Cards

You can install two GV-Combo A Cards of the same model for up to 32 channels. Master Card is the card with 1-16 channels and Slave Card is that with 17-32 channels. Normally, the card attached to the lower PCI slot number will act as Master, and the card attached to the higher PCI slot number will act as Slave.

- **TV Output Connection:** The RCA connector in the Master Card is for displaying 1-16 channels, and the one in the Slave Card is for displaying 17-32 channels.
- **Hardware Watchdog Connection:** Connect the supplied Hardware Watchdog Jump Wire to the Master Card.
- **Accessory Card Connections:**
  - GV-NET/IO Card: Connect the card only to the Master Card.
  - GV-Loop Through Card**:** Connect the card for each video capture card.
  - GV-Multi Quad Card: Only connect one card to any of two video capture cards.

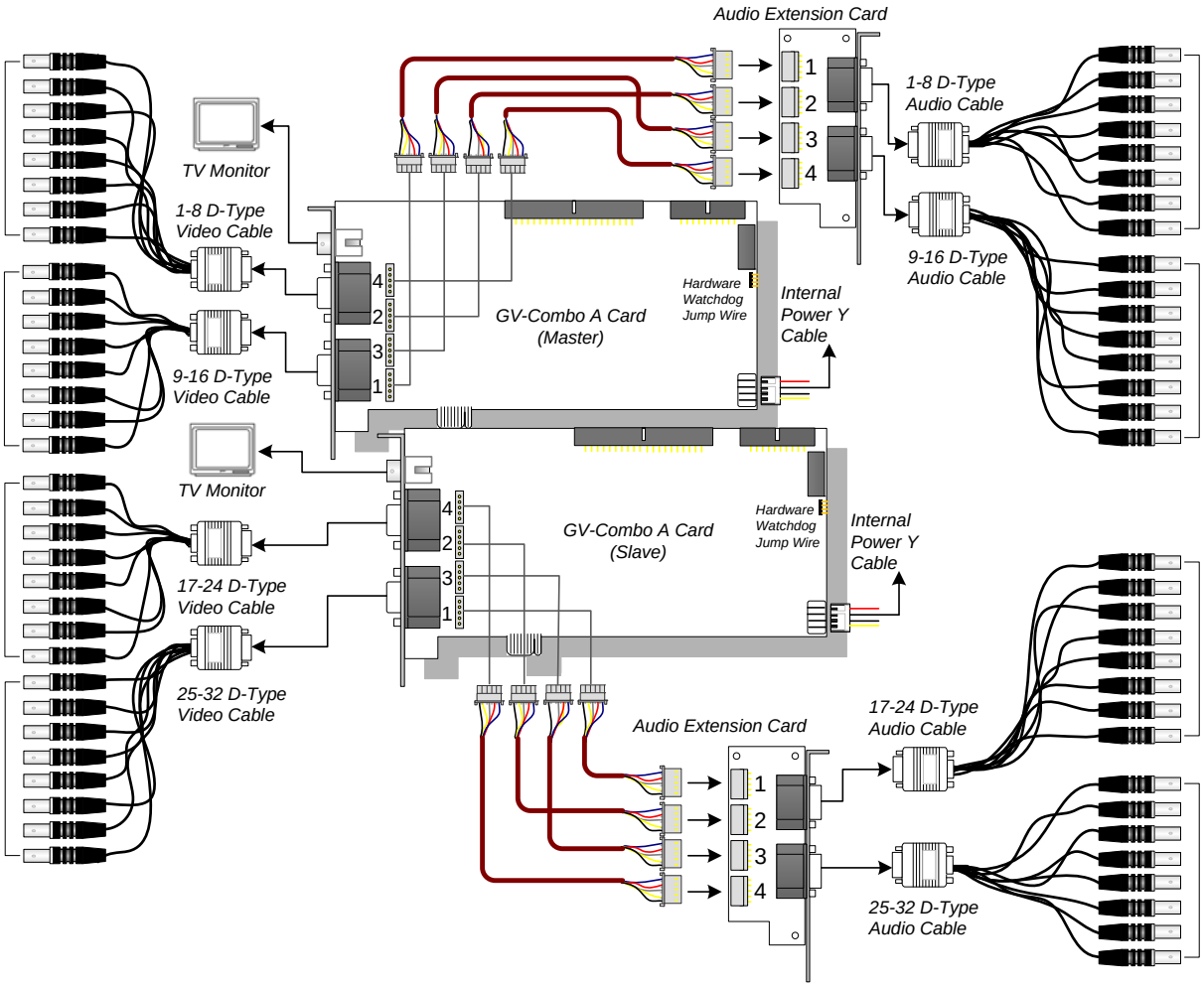

Audio Extension Card
1-8 D-Type
Audio Cable
9-16 D-Type
Audio Cable
TV Monitor
1-8 D-Type
Video Cable
9-16 D-Type
Video Cable
GV-Combo A Card
(Master)
Hardware
Watchdog
Jump Wire
Internal
Power Y
Cable
TV Monitor
17-24 D-Type
Video Cable
25-32 D-Type
Video Cable
GV-Combo A Card
(Slave)
Hardware
Watchdog
Jump Wire
Internal
Power Y
Cable
Audio Extension Card
17-24 D-Type
Audio Cable
25-32 D-Type
Audio Cable

Figure1-8

Specifications

			GV-1120A	GV-1240A	GV-1480A
Interface Type			PCI-E		
Input Type			DB15 x 2 (Video), DB9 x 2 (Audio)		
Video Input			8, 12, 16 Cams	8, 16 Cams	16 Cams
Audio Input			8, 12, 16 Channels	8, 16 Channels	16 Channels
TV Output			RCA Connector x 1		
Recording Rate	CIF	NTSC	120 fps	240 fps	480 fps
		PAL	100 fps	200 fps	400 fps
	D1	NTSC	80 fps	120 fps	240 fps
		PAL	72 fps	100 fps	200 fps
Display Rate	CIF	NTSC	480 fps		
		PAL	400 fps		
	D1	NTSC	480 fps		
		PAL	400 fps		
Video Resolution		NTSC	720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240		
		PAL	720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240		
Compression Format			Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2		
GV-Multi Quad Card Support			Yes		
GV-Loop Through Card Support			Yes		
GV-NET/IO Card Support			Yes		
Dimensions	D-Type		179 x 99 (mm) / 7.04 x3.89 (in)		
	DVI-Type				

1.3 GV-1008

The GV-1008, as a three-in-one combo card, provides one single card solution for 8 video/audio recording, real-time display and TV-out display. The Card can record each channel at D1 in real time or 30 fps. When the two Cards are installed in the system, it can be utilized to provide a single TV-out display of 16 cameras and maintain a high recording rate of 480 fps at D1 resolution.

Minimum System Requirements

<table>
<tr><td rowspan="2">OS</td><td>32-bit</td><td colspan="3">Windows XP / Windows Vista / Windows 7 / Windows Server 2008</td></tr>
<tr><td>64-bit</td><td colspan="3">Windows 7 / Windows Server 2008</td></tr>
<tr><td colspan="2" rowspan="2">CPU</td><td>GV-1008</td><td colspan="2">Core 2 Duo, 3.0 GHz</td></tr>
<tr><td>GV-1008 x 2</td><td colspan="2">Core i5-750, 2.66 GHz</td></tr>
<tr><td colspan="2" rowspan="4">RAM</td><td rowspan="2">Windows XP</td><td>GV-1008</td><td>2 x 512 MB
Dual Channels</td></tr>
<tr><td>GV-1008 x 2</td><td>2 x 1 GB
Dual Channels</td></tr>
<tr><td rowspan="2">Windows Vista / 7 / Server 2008</td><td>GV-1008</td><td rowspan="2">2 x 1 GB
Dual Channels</td></tr>
<tr><td>GV-1008 x 2</td></tr>
<tr><td colspan="2" rowspan="2">HDD</td><td>GV-1008</td><td colspan="2">250 GB</td></tr>
<tr><td>GV-1008 x 2</td><td colspan="2">500 GB</td></tr>
<tr><td colspan="2">VGA</td><td colspan="3">ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E</td></tr>
<tr><td colspan="2">DirectX</td><td colspan="3">9.0c</td></tr>
</table>

Packing List

1. GV-1008 Card x 1
2. Audio Extension Card x 1
3. 1-8 D-Type Video Cable x 1
4. 1-8 D-Type Audio Cable x 1
5. 40-Pin Ribbon Cable with 3 headers x 1
6. Internal Power Y Cable x 1
7. Hardware Watchdog Jumper Wire x1
8. Software CD x 1
9. Feature Guide x 1
10. Installation Guide x 1

Connecting One GV-1008 Card

- Plug the Audio Extension Card in the assigned connectors on the GV-1008 Card.
- Connect D-Type video cable and audio cable to the GV-1008 Card and Audio Extension Card respectively.
- Connect the PC's internal power supply to the GV-1008 Card.
- Connect the TV monitor to the GV-1008 Card if needed.

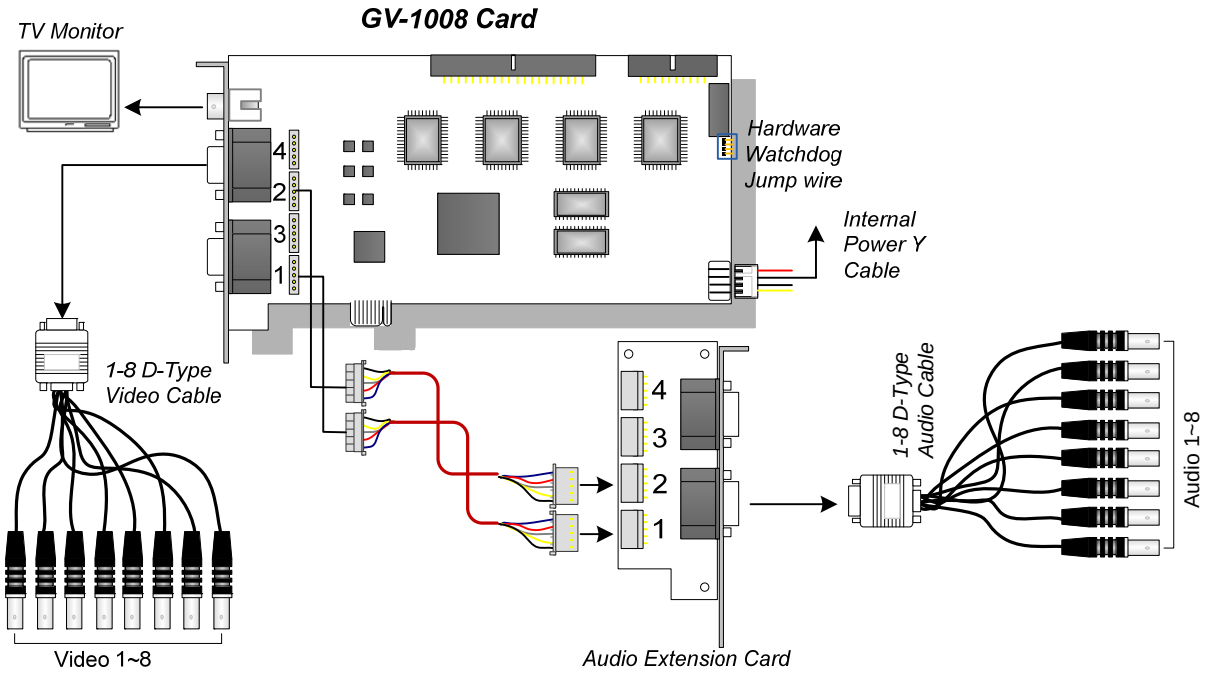


Figure 1-9

Note: The Card only works when it connects to PC's power supply with the supplied Internal Power Y Cable.

Connecting Two GV-1008 Cards

You can install the Master and Slave of GV-1008 Cards for a total of 16 channels. The Master and Slave are distinguished by the labels on cards, as shown below:

Mater Card: 

Slave Card: 

Use the supplied 40-pin cable to connect the Mater and Slave Cards together.

IMPORTANT:

1. The Slave Cards cannot work alone. They need to work in conjunction with the Master Cards.
2. If both GV-1008 Cards are Master Cards, it is required to identify which are Master and Slave by the PCI slot number. Normally, the card attached to the lower PCI slot number will act as Master, and the card attached to the higher PCI slot number will act as Slave.

- **Video Channels**: Connect only Video Channels 1~8 of the Master Card and Video Channels 9~16 of the Slave Card with the supplied D-Type Video Cables
- **Audio channels:** Connect only Audio Channels 1~8 of the Master Card and Audio Channels 9~16 of the Slave Card to Audio Extension Card.
- **TV Output Connection**: Connect a TV Monitor to any of the RCA connectors on the Master and Slave Cards for displaying 1-16 channels.
- **Hardware Watchdog Connection**: Connect the supplied Hardware Watchdog Jump Wire to the Master Card.
- **Accessory Card Connections**:
  - ⊙ GV-NET/IO Card: Connect the card only to the Master Card.
  - ⊙ GV-Loop Through Card**:** Connect one card to the 40-pin cable which connects both Master and Slave Cards.
  - ⊙ GV-Multi Quad Card: Connect one card to the 40-pin cable which connects both Master and Slave Cards.

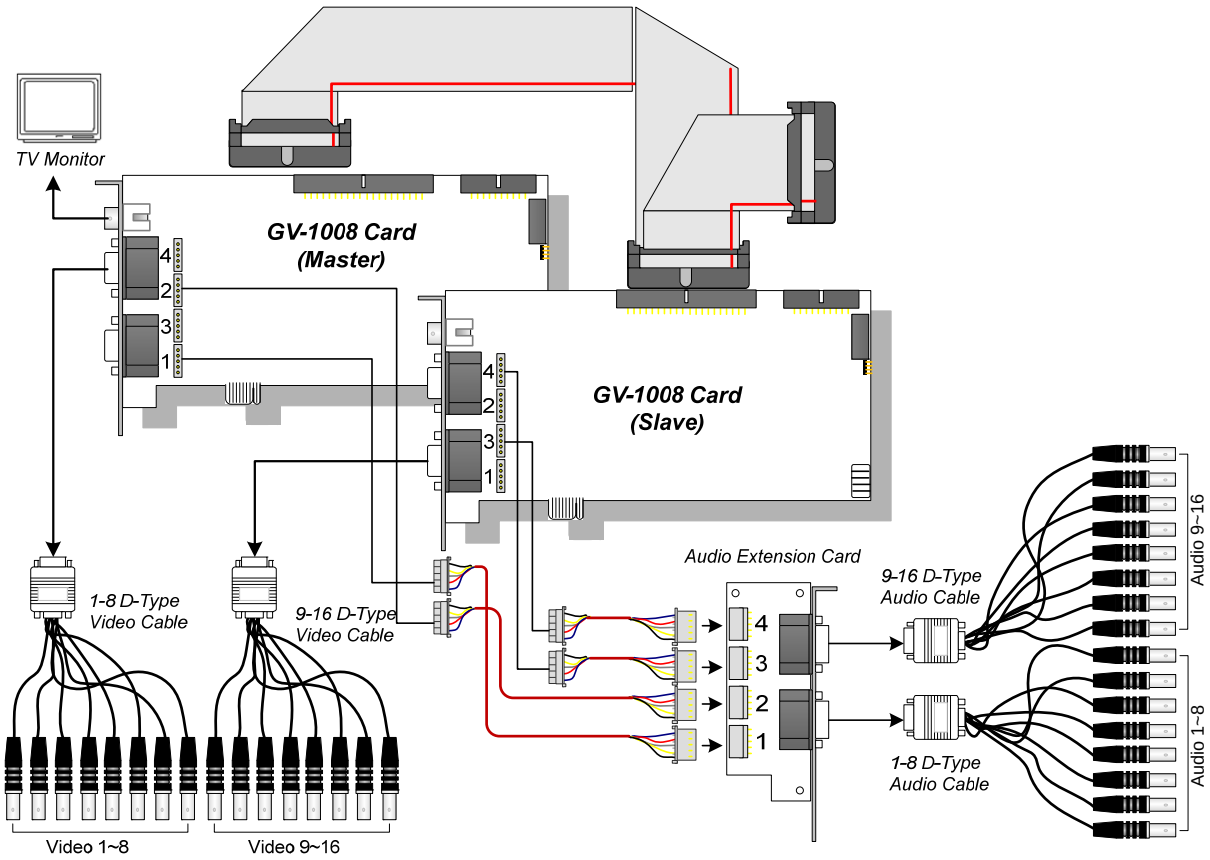

TV Monitor
GV-1008 Card
(Master)
GV-1008 Card
(Slave)
Audio Extension Card
1-8 D-Type
Video Cable
9-16 D-Type
Video Cable
9-16 D-Type
Audio Cable
1-8 D-Type
Audio Cable
Audio 9~16
Audio 1~8
Video 1~8
Video 9~16
4
2
3
1

Figure 1-10

Specifications

			GV-1008	GV-1008 x 2
Input Type	D-Type		DB 15 x 1 (Video) DB 9 x 1 (Audio)	DB 15 x 2 (Video) DB 9 x 2 (Audio)
	DVI-Type		DV1 x 1 (Video) DVI x 1 (Audio)	DV1 x 2 (Video) DVI x 2 (Audio)
Video Input			8 Cams	16 Cams
TV Output			RCA Connector x 1	
Audio Input			8 Channels	16 Channels
Recording Rate	CIF	NTSC	240 fps	480 fps
		PAL	200 fps	400 fps
	D1	NTSC	240 fps	480 fps
		PAL	200 fps	400 fps
Display Rate	CIF	NTSC	240 fps	480 fps
		PAL	200 fps	400 fps
	D1	NTSC	240 fps	480 fps
		PAL	200 fps	400 fps
Video Resolution	NTSC		720 x 480, 720 x 480 (De-interlace), 640 x 480, 640 X 480 (De-interlace), 360 x 240, 320 x 240	
	PAL		720 x 576, 720 x 576 (De-interlace), 640 x 480, 640 X 480 (De-interlace), 360 x 288, 320 x 240	
Compression Format			Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2	
GV-Multi Quad Card Support			Yes	
GV-Loop Through Card Support			Yes	
GV-NET/IO Card Support			Yes	
Dimensions (W x H)			179 x 99 (mm) / 7.04 x3.89 (in)	

1.4 GV-650A, GV-800A

The GV-650A and GV-800A Cards have similar appearances, system requirements and packing list so that we introduce both together in this section. However, you may choose between the two according to your need for recording rate and audio channels.

Minimum System Requirements

OS	32-bit	Windows XP / Windows Vista / Windows 7 / Windows Server 2008	
	64-bit	Windows 7 / Windows Server 2008	
CPU		GV-650A	Pentium 4, 2.4 GHz
		GV-650A x 2	Pentium 4, 2.8 GHz with Hyper-Threading
		GV-800A	Pentium 4, 3.0 with Hyper-Threading
		GV-800A x 2	Pentium 4, 3.0 GHz Dual Core
RAM		Windows XP	2 x 512 MB Dual Channels
		Windows Vista / 7 / Server 2008	2 x 1 GB Dual Channels
HDD		GV-650A / GV-800A	80 GB
		GV-650A x 2 / GV-800A x 2	160 GB
VGA		GV-650A / GV-800A	ATI Radeon X600 / NVIDIA 6200
		GV-650A x 2	ATI Radeon X600 / NVIDIA 6200
		GV-800A x 2	ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E
DirectX		9.0c	

Packing List

1. GV-800A or GV-650A Card x 1
2. Audio Extension Card x 1 **
3. 1-8 Cams with 4-Port Audio D-Type Cable x 1
4. 9-16 Cams D-Type Cable x 1 *
5. Hardware Watchdog Jumper Wire x 1
6. Software CD x 1
7. Feature Guide x 1
8. Installation Guide x 1

* Supplied with 12-16 Cams D-Type Video Capture Card

** Supplied with BNC Video Capture Card

Connecting One GV-650A/GV-800A Card

There are two types of GV-800A and GV-650A Cards: BNC and D-Type. BNC type only provides four video channels; video and audio extension cards are required for extension. D-Type can provide up to 16 video channels and four audio channels together.

For the D-Type video capture card, plug the black video/audio cable into the black connector on the GV-650A/800A Card; the blue video cable into the blue connector, as illustrated below.

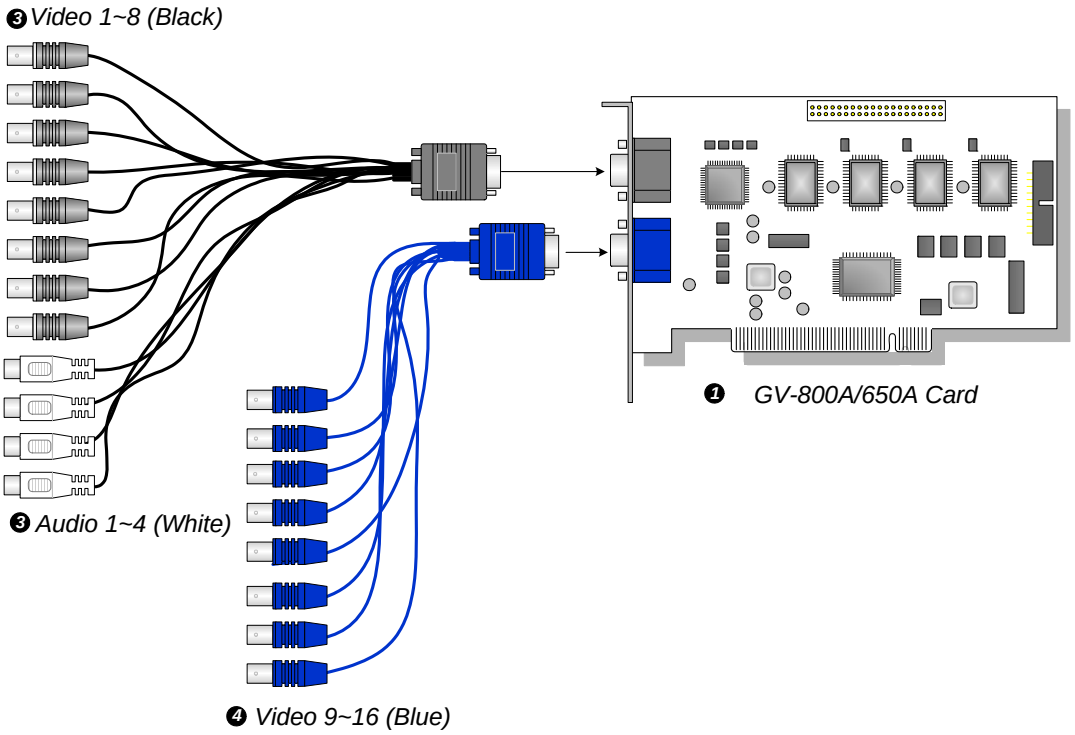


Figure 1-11 D-Type GV-650A or GV-800A Card connections

Note:

1. The GV-650A Card only supports two audio channels so that only two audio ports can work in the supplied 1-8 Cams with 4-Port Audio D-Type cable.
2. To install two GV-800A Cards, ensure one of both must have PCI-E interface.

For the BNC-type video capture card, plug the Audio Extension Card into No. 1 or No. 2 connector on the GV-650A/804A Card, as illustrated below. Both connectors are okay for connection.

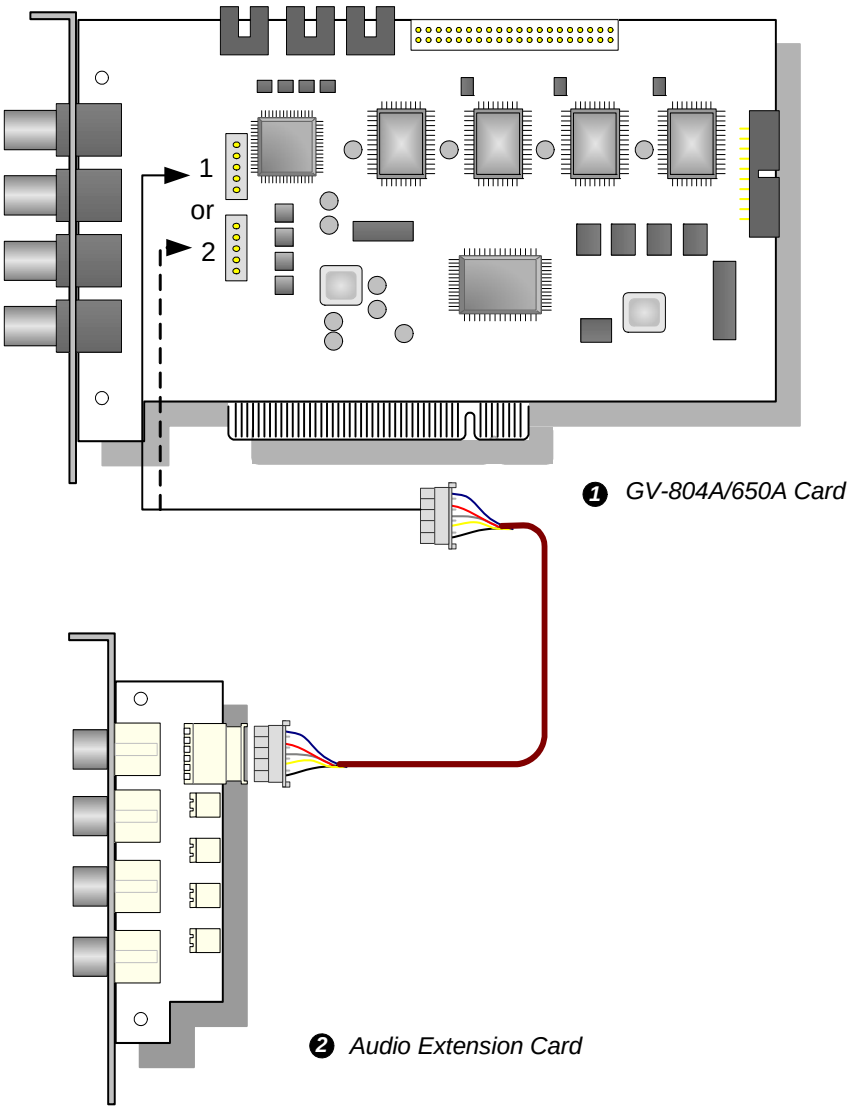


Figure 1-12 BNC-type GV-650A or GV-804A Card connections

Connecting Two GV-600A/GV-650A/GV-800A Cards

You can install two GV-600A/GV-650A/GV-800A of the same model for up to 32 channels. Master Card is the card with 1-16 channels and Slave Card is that with 17-32 channels. Normally, the card attached to the lower PCI slot number will act as Master, and the card attached to the higher PCI slot number will act as Slave.

- **Two GV-600A Cards only support two audio channels:** Connect microphones to Audio 1 connector of the Master Card, and Audio 5 connector of the Slave Card.
- **Two GV-650A Cards only support four audio channels**: Connect microphones to Audio 1 and Audio 2 connectors of the Master Card, and Audio 5 and Audio 6 connectors of the Slave Card.
- **Hardware Watchdog Connection**: Connect the supplied Hardware Watchdog Jump Wire to the Master Card.
- **Accessory Card Connections:**
  - ⊙ GV-NET/IO Card: Connect the card only to the Master Card.
  - ⊙ GV-Loop Through Card**:** Connect the card for each video capture card.
  - ⊙ GV-Multi Quad Card: Only connect one card to any of two video capture cards.

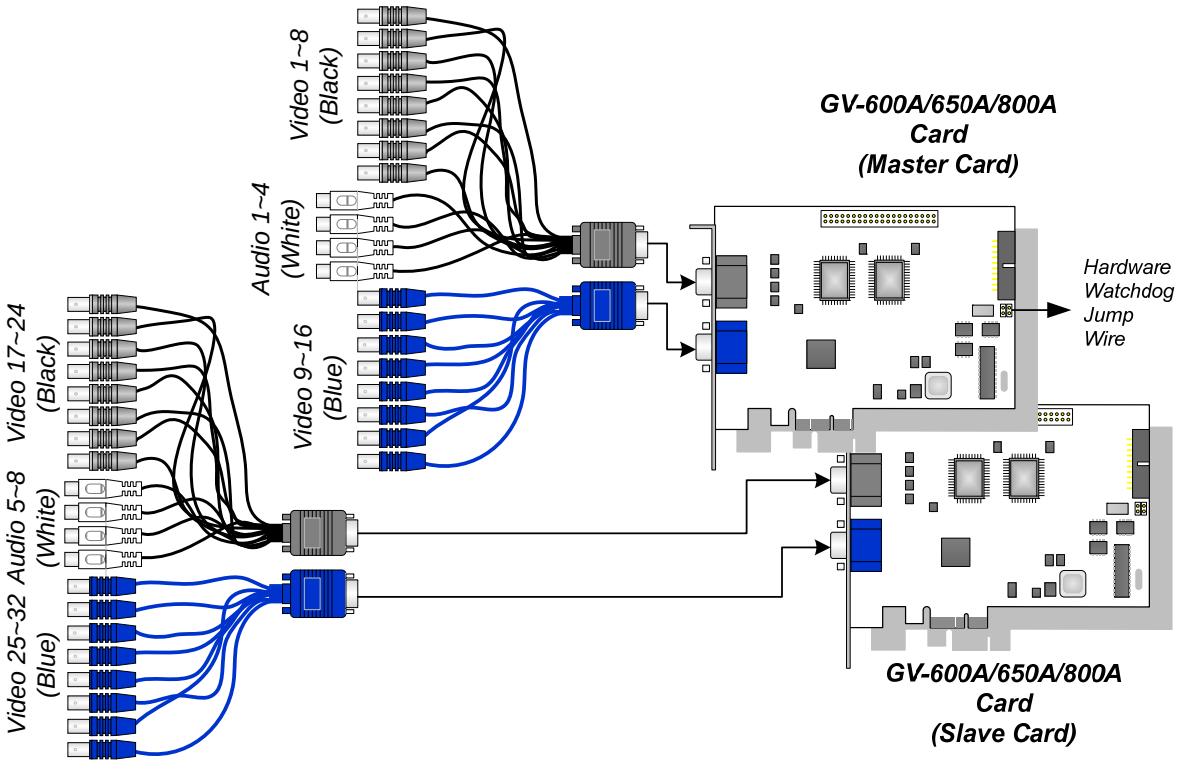


Figure 1-13

Specifications

			GV-650A	GV-800A
Interface Type			PCI, PCI-E	
Input Type		BNC	BNC x 4	
		D-Type	DB15 x 2	
Video Input			4, 8, 12, 16 Cams	
Audio Input			2 Channels	4 Channels
Recording Rate	CIF	NTSC	60 fps	120 fps
		PAL	50 fps	100 fps
	D1	NTSC	30 fps	60 fps
		PAL	25 fps	50 fps
Display Rate	CIF	NTSC	60 fps	120 fps
		PAL	50 fps	100 fps
	D1	NTSC	30 fps	60 fps
		PAL	25 fps	50 fps
Video Resolution		NTSC	720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240	
		PAL	720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240	
Compression Format			Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2	
GV-NET/IO Card Support			Yes	
Dimensions (W x H)		BNC	GV-650A	144 x 98 (mm) / 5.67 x 3.86 (in)
			GV-804A	152 x 94 (mm) / 5.98 x 3.7 (in)
		D-Type	GV-650A	144 x 98 (mm) / 5.67 x 3.86 (in)
			GV-800A	174 x 98 (mm) / 6.85 x 3.86 (in)

1.5 GV-600A

There are two types of GV-600A Cards: BNC and D-Type. BNC-Type only provides four video channels; video and audio extension cards are required for extension. D-Type can provide up to 16 video channels and one audio channel together.

Minimum System Requirements

OS	32-bit	Windows XP / Windows Vista / Windows 7 / Windows Server 2008	
	64-bit	Windows 7 / Windows Server 2008	
CPU		GV-600A	Pentium 4, 2.0 GHz
		GV-600A x 2	Pentium 4, 2.6 GHz with Hyper-Threading
RAM		Windows XP	2 x 512 MB Dual Channels
		Windows Vista / 7 / Server 2008	2 x 1 GB Dual Channels
HDD		GV-600A	80 GB
		GV-600A x 2	160 GB
VGA		ATI Radeon X600 / NVIDIA 6200	
DirectX		9.0c	

Packing List

1. GV-600A Card x 1
2. Audio Extension Card x 1 **
3. 1-8 Cams with 4-Port Audio D-Type
4. 9-16 Cams D-Type Cable x 1 *
5. Hardware Watchdog Jumper
6. Software CD x 1
7. Feature Guide x 1
8. Installation Guide x 1

* Supplied with 10-16 Cams D-Type Video Capture Card

** Supplied with BNC Video Capture Card

Connecting One GV-600A Card

For the D-Type video capture card, plug the black video/audio cable into the black connector on the GV-600A Card; the blue video cable into the blue connector, as illustrated below.

Note: The GV-600A Card only supports one audio channel so that only one audio port can work in the supplied 1-8 Cams with 4-Port Audio D-Type cable.

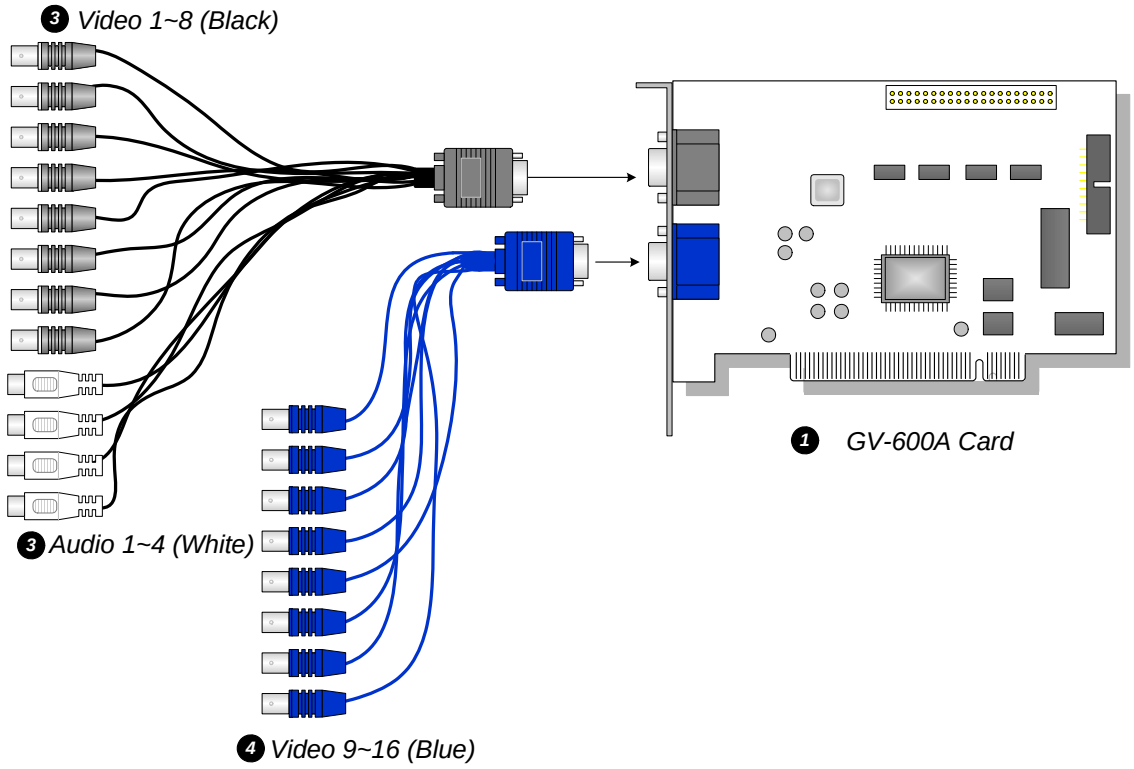


Figure 1-14 D-Type GV-600A Card connections

For the BNC-Type video capture card, plug the Audio Extension Card into No. 1 or No. 2 connector on the GV-600A Card, as illustrated below. Both connectors are okay for connection.

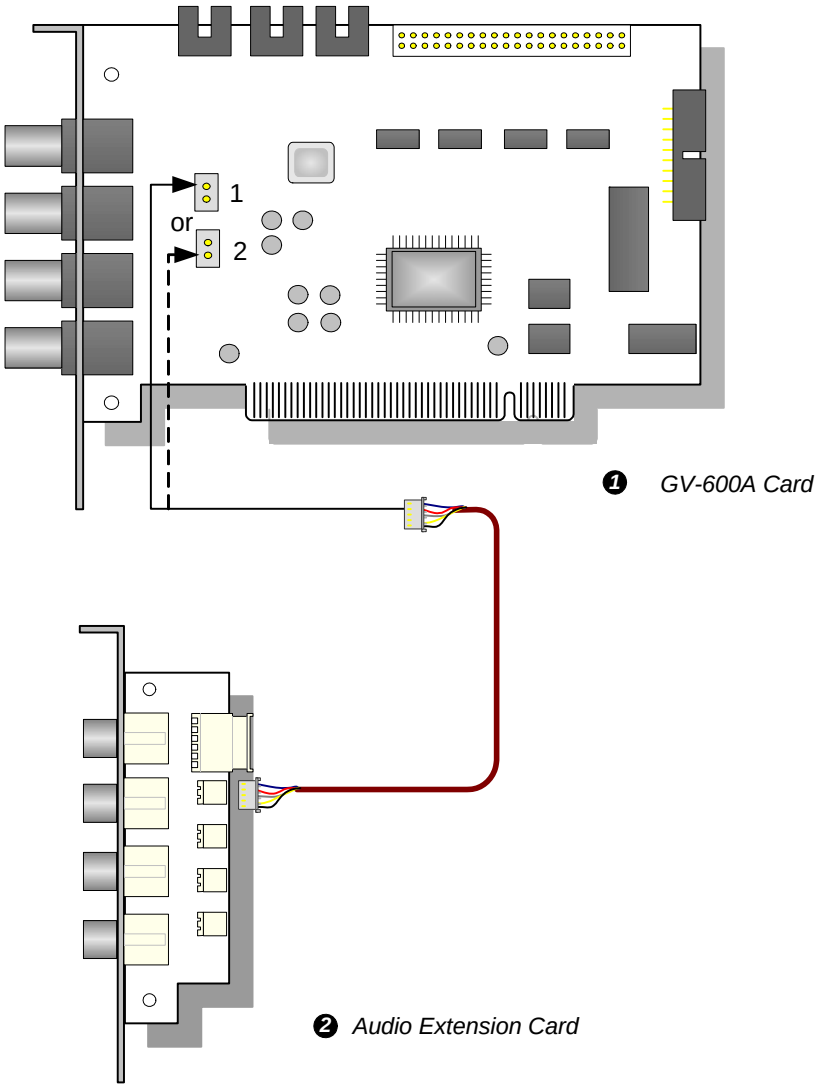


Figure 1-15 BNC-Type GV-600A Card connections

Connecting Two GV-600A Cards

See “Connecting Two GV-600A/GV-650A/GV-800A Cards” in *1.4 GV-650A, GV-800A*.

Specifications

GV-600A			
Input Type	BNC		BNC x 4
	D-Type		DB15 x 2
Video Input			1, 2, 4, 6, 8, 10, 12, 14, 16 Cams
Audio Input			1 Channel
Recording Rate	CIF	NTSC	30 fps
		PAL	25 fps
	D1	NTSC	15 fps
		PAL	12.5 fps
Display Rate	CIF	NTSC	30 fps
		PAL	25 fps
	D1	NTSC	15 fps
		PAL	12.5 fps
Video Resolution		NTSC	720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240
		PAL	720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240
Compression Format			Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2
GV-NET/IO Card Support			Yes
Dimensions (W x H)			144 x 89 (mm) / 5.67 x 3.50 (in)

1.6 Installing Two Cards

You can install two video capture cards of the same model for a total of 32 channels. For example, 2 x GV-650A Cards (16 channels) = 32 channels.

It is also possible to implement two video capture cards of different channels. For example, GV-650A Card (12 channels) + GV-650A Card (16 channels) = 28 channels.

Note:

1. Besides **GV-804A** Card, all GV video capture cards support two-card mode.
2. Starting from V8.3.2, GV-600 (V4), GV-650 (V4) and GV-800 (V4) are renamed to GV-600A, GV-650A and GV-800A. These V4 Cards and A Cards are the same video capture cards.

Rules to Use Two Cards

GV video capture cards have two interface types: PCI and PCI Express (PCI-E). When you install two video capture cards, ensure they are installed in the right slots as instructed in the following tables.

- **GV-600A, GV-650A, GV-800A**

<table>
<tr><th>Card Combination</th><th>V3.20 and later</th><th colspan="2">V4.20 and later</th></tr>
<tr><td>V3.20 and later</td><td>X</td><td colspan="2">X</td></tr>
<tr><td rowspan="5">V4.20 and later</td><td rowspan="5">X</td><td>GV-600A</td><td>PCI x 2</td></tr>
<tr><td rowspan="3">GV-650A</td><td>PCI x 2</td></tr>
<tr><td>PCI-E x 2</td></tr>
<tr><td>PCI x 1+ PCI-E x 1</td></tr>
<tr><td rowspan="2">GV-800A</td><td>PCI-E x 2</td></tr>
<tr><td>PCI x 1+ PCI-E x 1</td></tr>
</table>

1. The V3.20 (and later) Cards or the combination of V3.20 and V4.20 (and later) Cards do not support two-card mode.
2. For GV-600A cards, it is required to use two PCI slots.
3. For GV-650A cards, you can use two PCI slots, two PCI Express slots, or the combination of PCI and PCI Express slots.
4. For GV-800A cards, it is required to use two PCI Express slots, or the combination of PCI and PCI Express slots.

- **GV-1120A, GV-1240A, GV-1480A**

<table>
<tr><th>Card Combination</th><th>V1.02/V2.00 and later</th><th>Combo A Cards (GV-1120A/GV-1240A/ GV-1480A)</th></tr>
<tr><td rowspan="2">V1.02/V2.00 and later</td><td>PCI-E x 2</td><td rowspan="2">X</td></tr>
<tr><td>PCI x 1+ PCI-E x 1</td></tr>
<tr><td>Combo A Cards (GV-1120A/GV-1240A/ GV-1480A)</td><td>X</td><td>PCI-E x 2</td></tr>
</table>

1. V1.02/V2.00 (and later) and Combo A Cards all support two-card mode, but the combination of V1.02/V2.00 (and later) and Combo A Cards does not support two-card mode.
2. When you install two V1.02/V2.00 (and later) Cards, it is required to use two PCI Express slots or the combination of PCI and PCI Express slots.
3. When you install two Combo A Cards, it is required to use only two PCI Express slots.

Comparison Charts for Single-Card and Two Cards

- **GV-600A, GV-650A, GV-800A**

GV-600A/GV-650A/GV-800A	Single Card		Two Cards	
Video Input	1-16 Cams		2-32 Cams	
Audio Input	GV-600A	1 Channels (Ch1)	GV-600A	2 Channels (Ch1, Ch17)
	GV-650A	2 Channels (Ch1-Ch2)	GV-650A	4 Channels (Ch1-Ch2, Ch17-Ch18)
	GV-800A	4 Channels (Ch1-Ch4)	GV-800A	8 Channels (Ch1-Ch4, Ch17-Ch20)
Support for				
GV-NET/IO Card	O		O [1]	
GV-Loop Through Card	O		O [2]	
GV-Multi Quad Card	O		O [3]	

- **GV-1120A, GV-1240A, GV-1480A, GV-1008**

GV-1120A/GV-1240A/GV-1480A	Single Card	Two Cards
Video Input	8-16 Cams	16-32 Cams
Audio Input	8-16 Channels	16-32 Channels
Real-Time Display (DSP)	O	O
Support for		
GV-NET/IO Card	O	O [1]
GV-Loop Through Card	O	O [2]
GV-Multi Quad Card	O	O [3]

Note:

1. Connect the GV-NET/IO Card to the video capture card of 1 to16 channels.
2. You can connect the GV-Loop Through Card for each video capture card,
3. Only connect one GV-Multi Quad Card to any of two cards.

1.7 Installing Drivers

After you install the GV-Video Capture Card on the computer, the Found New Hardware Wizard will automatically detect the device. Ignore the wizard and follow these steps to install drivers:

1. Insert the software DVD. It will run automatically and pop up a window.
2. Select **Install or Remove GeoVision GV-Series Cards Driver**. This dialog box appears.

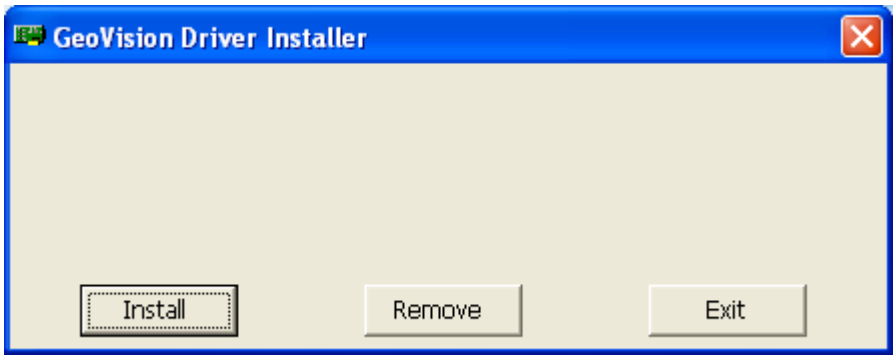


Figure 1-16

3. Click **Install** to install the drivers. When the installation is complete, this message will appear: *Install Successfully*.
4. Click **Exit** to close the dialog box.

Note:

1. In Windows XP, the wizard will disappear after installation. In Windows 2000, close the wizard manually.
2. For the installation of two GV-4008 cards, it is required to restart the computer after the driver is installed.

To verify the drivers are installed correctly, go to Device Manager and see if the following entries are listed.

Expand the **Sound, video and game controller** field, you can see:

Model	Entry
GV-604A	GV604(V4) Audio GV604(V4) Video Capture
GV-600A	GV600(V4) Audio GV600(V4) Video Capture
GV-650A	GV650(V4) Audio #1 - #2 GV650(V4) Video Capture #1 - #2
GV-804A	GV800 Audio #1 - #4 GV800_4A Video Capture #1 - #4
GV-800A	GV800(V4) Audio #1 - #4 GV800(V4) Video Capture #1 - #4

Expand the **DVR-Devices** field, you can see:

Model	Entry
GV-1008	GV1480A/GV1240A/GV1248A/GV1120A/GV1008
GV-1120A	GV1480A/GV1240A/GV1248A/GV1120A/GV1008
GV-1240A	GV1480A/GV1240A/GV1248A/GV1120A/GV1008
GV-1480A	GV1480A/GV1240A/GV1248A/GV1120A/GV1008
GV-2008	GV2008-MP4 (CAP), GV2008-MP4 (NEC), GV2008-MP4 (NEC)
GV-2008 x 2	GV2008-MP4 (CAP), GV2008-MP4 (NEC), GV2008-MP4 (NEC) GV2008-MP4 (NEC), GV2008-MP4 (NEC)
GV-4008	GV4008 GV-Series USB Protector

1.8 Connecting Hardware Watchdog

To reboot the computer by the hardware watchdog on the GV-Video Capture Card, a connection needs to be made from the card to the motherboard.

1. Using the supplied jumper wire, connect the reset jumper pins on the card and on the motherboard.

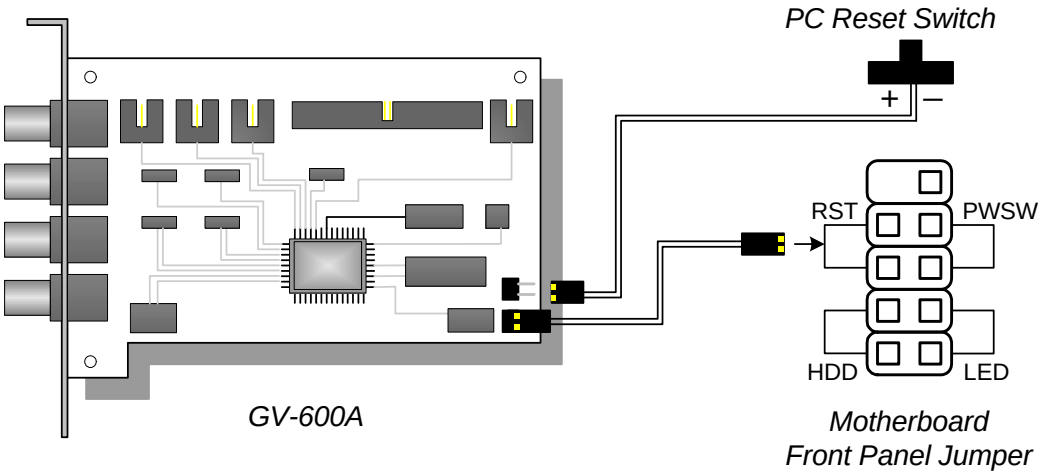


Figure 1-17 Watchdog connections

2. If the computer has a reset switch, the switch's jumper wire should already be connected to the motherboard's reset jumper pins. Remove the switch wire from the motherboard and connect it to the reset jumper pins on the card.

1.9 Comparison Chart (H/W Compression)

			GV-4008	GV-4008 x 2
Input Type			DVI x 2	DVI x 4
Video Input			8	16
Total Recording Rate (D1)	NTSC		240 fps	480 fps
	PAL		200 fps	400 fps
Display Rate	NTSC		240 fps	480 fps
	PAL		200 fps	400 fps
Video Codec	H/W		H.264	
	S/W		Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2	
Video Resolution	NTSC	H/W	720 x 480	
		S/W	360 x 240	
	PAL	H/W	720 x 576	
		S/W	360 x 288	
Audio Input			8	16
Audio Codec			ADPCM 8Khz 8 bit Mono	
GV-Multi Quad Card Support			X	X
GV-Loop Through Card Support			X	X
GV-NET/IO Card Support			O[1]	O[1]
GV-I/O 12-In Card Support			O[1]	O[1]
GV-I/O 12-Out Card Support			O[1]	O[1]
GV-I/O Support			O	O
Hardware Watchdog			O	O
Minimum System Requirements				
OS			Windows XP (32-bit) / Vista (32-bit) / Server 2008 (32-bit)	
DirectX			9.0c	
CPU			Core 2 Duo, 2.33G	Core 2 Quad, 2.4G
RAM			2 x 1 GB Dual Channels	
HDD			250 GB	500 GB
VGA			ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E	

Note:

1. GV-Net/IO Card V3.1 must be set in the I/O Box Mode and connected to the PC through USB.
2. All Specifications are subject to change without notice.

			GV-2008	GV-2008 x 2
Input Type			D-Type	
Video Input			8	16
Total Recording Rate (D1)	NTSC		240 fps	480 fps
	PAL		200 fps	400 fps
Display Rate	NTSC		240 fps	480 fps
	PAL		200 fps	400 fps
Video Codec	H/W		MPEG-4 (ASP)	
	S/W		Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2	
Video Resolution	NTSC	H/W	720 x 480, 720 x 480 De-interlace	
		S/W	360 x 240, 720 x 480, 720 x 480 De-interlace	
	PAL	H/W	720 x 576, 720 x 576 De-interlace	
		S/W	360 x 288, 720 x 576, 720 x 576 De-interlace	
Audio Input			8	16
Audio Codec			ADPCM 8Khz 4 bit Mono	
GV-Multi Quad Card Support			O	O
GV-Loop Through Card Support			O	O
GV-NET/IO Card Support			O	O
GV-I/O 12-In Card Support			O	O
GV-I/O 12-Out Card Support			O	O
GV-I/O Support			O	O
Hardware Watchdog			O	O
Minimum System Requirements				
OS			Windows XP (32-bit) / Vista (32-bit) / 7 (32-bit) / Server 2008 (32-bit)	
DirectX			9.0c	
CPU			Pentium 4, 2.6 GHz with HT	Pentium 4, 3.0 GHz with HT
RAM			2 x 512 MB Dual Channels (Windows 2000 / XP)	2 x 1 GB Dual Channels
			2 x 1GB Dual Channels (Windows Server 2003 / Vista)	
HDD			250 GB	500 GB
VGA			ATI Radeon X600 / NVIDIA 6200	ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E

Note: All specifications are subject to change without notice.

1.10 Comparison Chart (S/W Compression: Single Card)

			GV-600A	GV-650A	GV-800A
Input Type			BNC / D-Type		
Video Input			1, 2, 4, 6, 8, 10, 12, 14, 16	4, 8, 12, 16	4, 8, 12, 16
Total Recording Rate	CIF	NTSC	30 fps	60 fps	120 fps
		PAL	25 fps	50 fps	100 fps
	D1	NTSC	15 fps	30 fps	60 fps
		PAL	12.5 fps	25 fps	50 fps
Display Rate	CIF	NTSC	30 fps	60 fps	120 fps
		PAL	25 fps	50 fps	100 fps
	D1	NTSC	15fps	30 fps	60 fps
		PAL	12.5 fps	25 fps	50 fps
Video Codec			Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2		
Video Resolution		NTSC	720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240		
		PAL	720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240		
Audio Input			1	2	4
Audio Codec			ADPCM 8Khz 4 bit Mono		
GV-Multi Quad Card Support			O	O	O
GV-Loop Through Card			O	O	O
GV-NET/IO Card Support			O	O	O
GV-I/O 12-In Card Support			O	O	O
GV-I/O 12-Out Card Support			O	O	O
GV-I/O Support			O	O	O
Hardware Watchdog			O	O	O
Minimum System Requirements					
OS			Windows XP (32-bit) / Vista (32-bit) / 7 (32-bit and 64-bit) / Server 2008 (32-bit and 64-bit)		
DirectX			9.0c		
CPU			Pentium 4, 2.0 GHz	Pentium 4, 2.4 GHz	Pentium 4, 3.0 GHz with HT
RAM			2 x 512 MB Dual Channels (Windows 2000 / XP)		
			2 x 1 GB Dual Channels (Windows Server 2003 / Vista)		
HDD			80 GB		
VGA			ATI Radeon X600A / NVIDIA 6200		

Note: All specifications are subject to change without notice.

GV-1008	GV-1120A	GV-1240A	GV-1480A
D-Type / DVI-Type			
8	8, 12, 16	8, 16	16
240 fps	120 fps	240 fps	480 fps
200 fps	100 fps	200 fps	400 fps
240 fps	80 fps	120 fps	240 fps
200 fps	72 fps	100 fps	200 fps
240 fps	480 fps	480 fps	480 fps
200 fps	400 fps	400 fps	400 fps
240 fps	480 fps	480 fps	480 fps
200 fps	400 fps	400 fps	400 fps
Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2			
720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240			
720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240			
8	8, 12, 16	8, 16	16
ADPCM 8Khz 4 bit Mono			
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
Minimum System Requirements			
Windows XP (32-bit) / Vista (32-bit) / 7 (32-bit and 64-bit) / Server 2008 (32-bit and 64-bit)			
9.0c			
Core 2 Duo, 3.0 GHz	Pentium 4, 3.0 GHz With HT	Pentium 4, 3.0 GHz Dual Core	Core 2 Duo, 3.0 GHz
2 x 512 MB Dual Channels (Windows 2000 / XP)			
2 x 1 GB Dual Channels (Windows Server 2003 / Vista)			
250GB	80 GB	120 GB	250 GB
ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E			

1.11 Comparison Chart (S/W Compression: Two Cards)

			GV-600A x 2	GV-650A x 2	GV-800A x 2
Input Type			BNC / D-Type	BNC / D-Type	D-Type
Video Input			32 (Max)	32 (Max)	16, 20, 24, 28, 32
Total Recording Rate	CIF	NTSC	60 fps	120 fps	240 fps
		PAL	50 fps	100 fps	200 fps
	D1	NTSC	30 fps	60 fps	120 fps
		PAL	25 fps	50 fps	100 fps
Display Rate	CIF	NTSC	60 fps	120 fps	240 fps
		PAL	50 fps	100 fps	200 fps
	D1	NTSC	30 fps	60 fps	120 fps
		PAL	25 fps	50 fps	100 fps
Video Codec			Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2		
Video Resolution		NTSC	720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240		
		PAL	720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240		
Audio Input			2	4	8
Audio Codec			ADPCM 8Khz 4 bit Mono		
GV-Multi Quad Card Support			O	O	O
GV-Loop Through Card Support			O	O	O
GV-NET/IO Card Support			O	O	O
GV-I/O 12-In Card Support			O	O	O
GV-I/O 12-Out Card Support			O	O	O
GV-I/O Support			O	O	O
Hardware Watchdog			O	O	O
Minimum System Requirements					
OS			Windows XP (32-bit) / Windows Vista (32-bit) / Windows 7 (32-bit and 64-bit) / Windows Server 2008 (32-bit and 64-bit)		
DirectX			9.0c		
CPU			Pentium 4, 2.6 GHz with HT	Pentium 4, 2.8 GHz with HT	Pentium 4, 3.0 GHz Dual Core
RAM			2 x 1 GB Dual Channels		
HDD			160 GB		
VGA			ATI Radeon X600 NVIDIA 6200		ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E

Note: All specifications are subject to change without notice.

GV-1008 x 2	GV-1120A x 2	GV-1240A x 2	GV-1480A x 2
D-Type / DVI-Type			
16	16, 20, 24, 28, 32	16, 24, 32	32
480 fps	240 fps	480 fps	960 fps
400 fps	200 fps	400 fps	800 fps
480 fps	160 fps	240 fps	480 fps
400 fps	144 fps	200 fps	400 fps
480 fps	960 fps	960 fps	960 fps
400 fps	800 fps	800 fps	800 fps
480 fps	960 fps	960 fps	960 fps
400 fps	800 fps	800 fps	800 fps
Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2			
720 x 480, 720 x 480 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 240, 320 x 240			
720 x 576, 720 x 576 De-interlace, 640 x 480, 640 x 480 De-interlace, 360 x 288, 320 x 240			
16	16, 20, 24, 28, 32	16, 24, 32	32
ADPCM 8Khz 4 bit Mono			
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
O	O	O	O
Minimum System Requirements			
Windows XP (32-bit) / Windows Vista (32-bit) / Windows 7 (32-bit and 64-bit) / Windows Server 2008 (32-bit and 64-bit)			
9.0c			
Core i5-750, 2.66 GHz	Pentium 4, 3.0 GHz Dual Core	Core 2 Duo, 2.53 GHz	Core 2 Quad, 2.4 GHz
2 x 1 GB Dual Channels			
500 GB	160 GB	250 GB	500 GB
ATI Radeon X1300 PCI-E / NVIDIA GeForce 7300 PCI-E			

Chapter 2 Hardware Accessories

This chapter includes the following information:

- **System requirements**
- **Packing list**
- **Connection diagrams**
- **Specifications**
- **Driver installation**

2.1 GV-Multi Quad Card

The GV-Multi Quad Card connects up to 5 TV monitors (spot monitors). One port supports up to 16 screen divisions, while the other 4 ports support 1 and 4 screen divisions. It also allows self-defined channel sequence and position changes of divisions on the monitor screen.

For further operations on GV-System, see *Quad Spot Monitors Controller,* Chapter 11, *User's Manual* on the Surveillance System Software DVD.

System Requirement

- GV-System Version 8.1 or above

Packing List

1. GV-Multi Quad Card x 1
2. 1-5 D-Type Video Cable x 1
3. 40-Pin Ribbon Cable x 1
4. 40-Pin Ribbon Cable with Four 10-Pin Headers x 1
5. Installation Guide x 1

Connections

- Use the supplied Ribbon Cable to connect the GV-Multi Quad Card to the GV-Video Capture Card as illustrated below.
- For the connection to the GV-2008 Card, the supplied Ribbon Cable splits at one end with four 10-pin headers. Plug the corresponding cable headers into the connectors of GV-2008 Card by the numbers marked on the headers and connectors. For instance, when connecting to two GV-2008 Cards, connect the headers “(1-4) 1” and “(5-8) 1” to video inputs 1-4 and 5-8 of the Master GV-2008 Card. And then connect the headers “(1-4) 2” and “(5-8) 2” to the video inputs of the Slave GV-2008 Card.

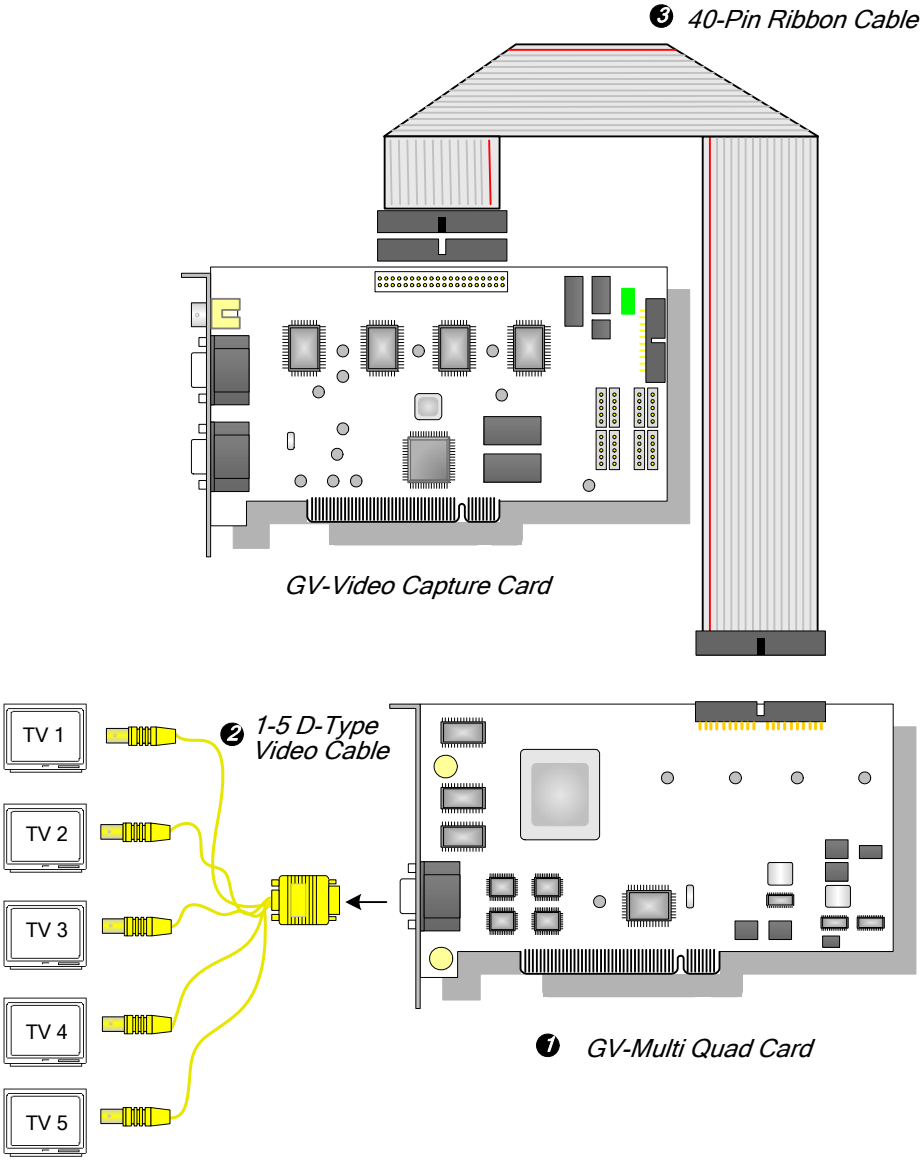


Figure 2-1 GV-Multi Quad Card connections

Connections with Two Video Capture Cards

In the computer where two video capture cards are installed, the GV-Multi Quad Card should connect to only one video capture card. Use the supplied Ribbon Cable to connect the GV-Multi Quad Card to the video capture card of your choice.

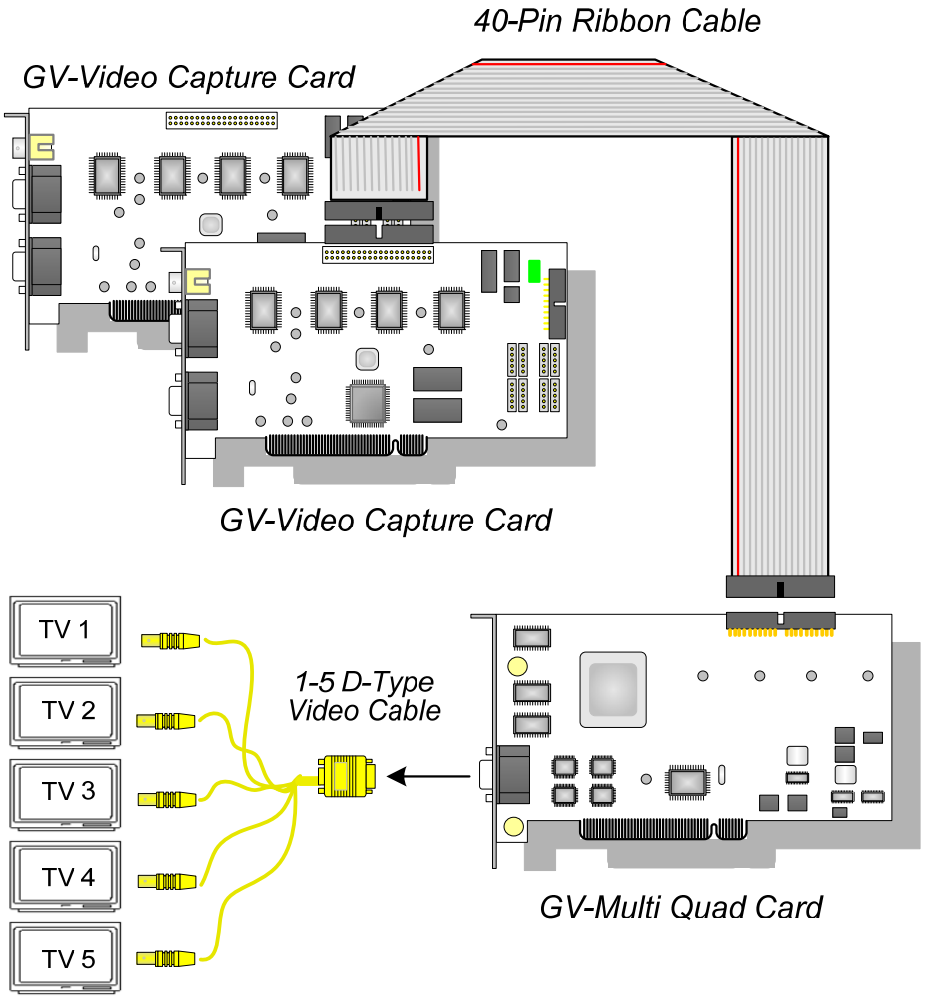


Figure 2-2

Installing Drivers

After you install the GV-Multi Quad Card to the computer, the Hardware Wizard will automatically detect the device. Ignore the wizard, and follow the steps in *1.8 Installing Drivers* to install drivers.

To verify the drivers are installed correctly, go to **Device Manager**. Expanding the **Sound, video and game controllers** field, you should see the entries for **GVTVOUT Audio #A** and **GVTVOUT Video Capture #A**.

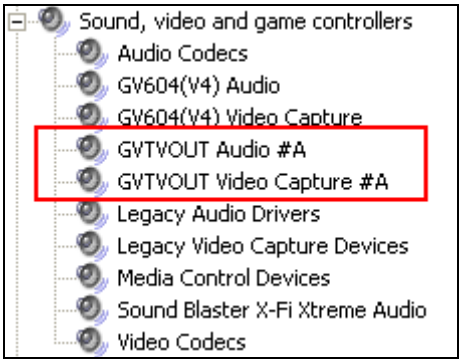


Figure 2-3 Verifying GV-Multi Quad Card drivers

Specifications

Interface for GV-Video Capture Card	40-Pin Connector
TV Output	DB15 to 5 BNC Connectors
Input Signal	16 Channels
TV Monitor Layout	Port 1: supports up to 16 screen divisions. Port 2 ~ Port 5: support 1 and 4 screen divisions.
Compatible Model	All GV-Video Capture Card models
Dimensions (W x H)	178 x 104 (mm) / 7.01 x 4.09 (in)

Ordering Information

55-TVOUT-050

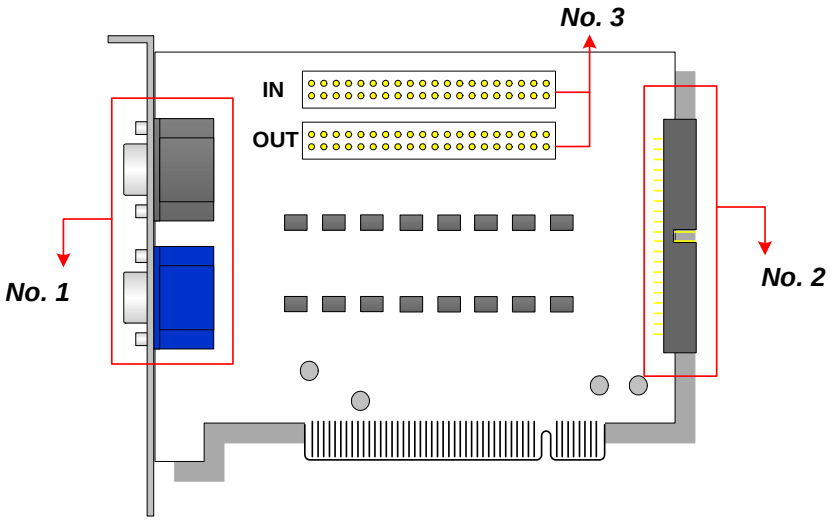
2.2 GV-Loop Through Card

The GV-Loop Through Card is designed to take the video signal directly from the GV-Video Capture Card, without internal device processes, and then split it into 16 signals while maintaining video quality. With the duplicate 16 signals, the card can meet your need for multiple monitors.

Packing List

1. GV-Loop Through Card x 1
2. 1-8 D-Type Video Cable x 1
3. 9-16 D-Type Video Cable x 1
4. 40-Pin Ribbon Cable x 1
5. 40-Pin Ribbon Cable with Four 10-Pin Headers x 1
6. Installation Guide x 1

Overview



No. 1: Video OUT
No. 2: Video OUT
No. 3: Video IN (IN for GV Video Capture Card only)

Figure 2-4 GV-Loop Through Card

Note:

1. For No. 2 Video Out, an extra D-Type extension card is required.
2. Select either No. 1 or No. 2 for video out. Using both at the same time may cause video degradation.
3. Only connect GV-Video Capture Card to No. 3. Other devices are prohibited.

Connections

- Connect D-type cables and the GV-Video Capture Card to the GV-Loop Through Card as illustrated below.
- For the connection to the GV-2008 Card, the supplied Ribbon Cable splits at one end with four 10-pin headers. Plug the corresponding cable headers into the connectors of GV-2008 Card by the numbers marked on the headers and connectors. For instance, when connecting to two GV-2008 Cards, connect the headers “(1-4) 1” and “(5-8) 1” to video inputs 1-4 and 5-8 of the Master GV-2008 Card. And then connect the headers “(1-4) 2” and “(5-8) 2” to the video inputs of the Slave GV-2008 Card.

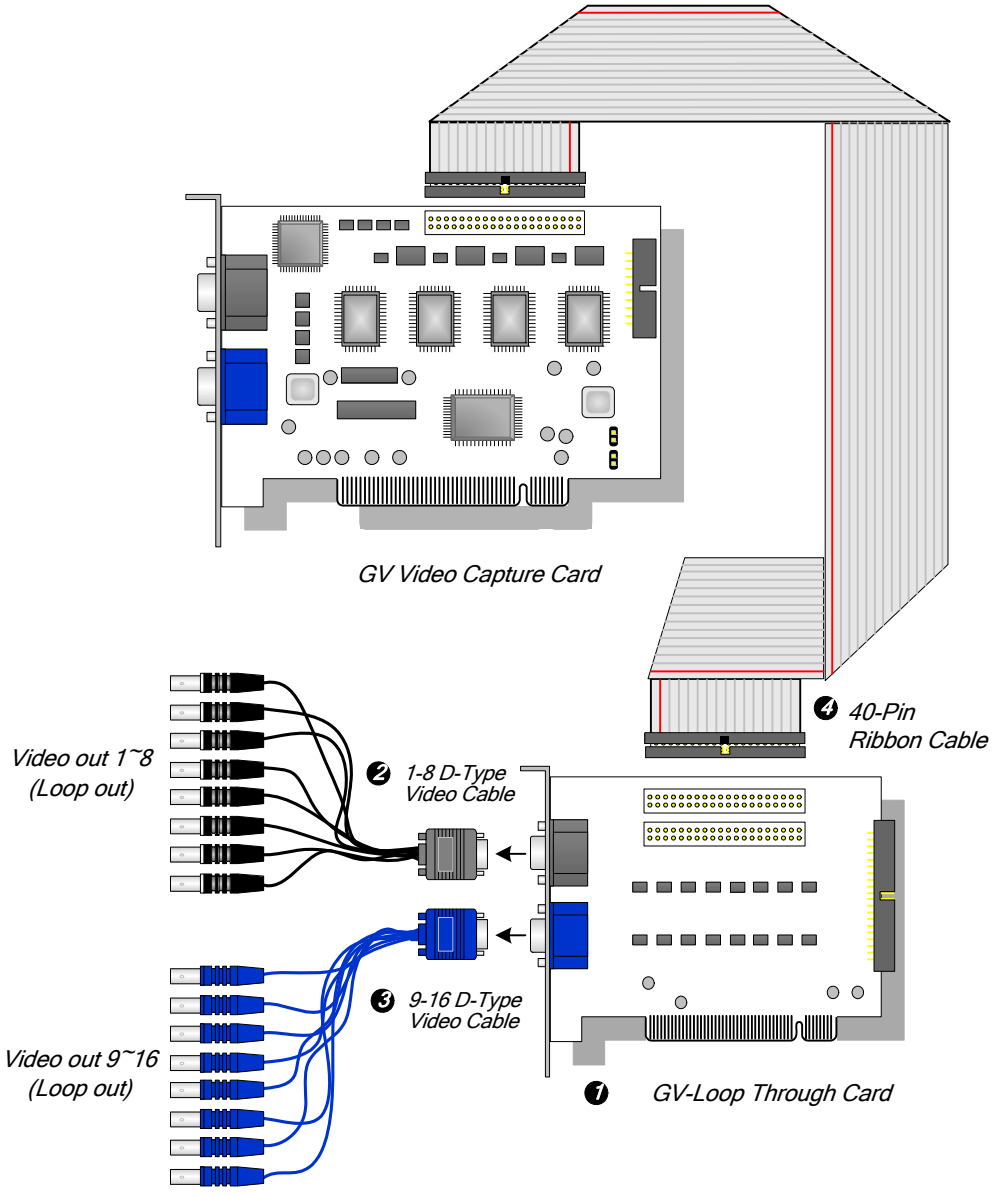


Figure 2-5 GV-Loop Through Card connections

Connections with Two Video Capture Cards

If your system is equipped with two video capture cards, you can connect the GV-Loop Through Card to each video capture card.

Specifications

Interface for GV-Video Capture Card	40-Pin Connector x 2
Output Interface	DB15 Connector x 2
	40-Pin Connector x 1
Input Signal	16 Channels
Compatible Model	All GV-Video Capture Card models
Dimensions (W x H)	130 x 98 (mm) / 5.12 x 3.86 (in)

Ordering Information

55-VLP16-111

2.3 GV-NET Card V3.1

The GV-NET Card is a RS-485 / RS-232 interface converter. This Card connects to the RS-232 port or USB port on your computer, and allows RS-485 devices, such as PTZ domes, to be connected through the Card.

Packing List

1. GV-NET Card x 1
2. RJ-11 to DB9 Cable x 1
3. RJ-11 to USB Cable x 1
4. 3-Pin Internal USB Cable x 1
5. 4-Pin to 4-Pin Mini Power Cable x 1
6. Installation Guide x 1

Overview

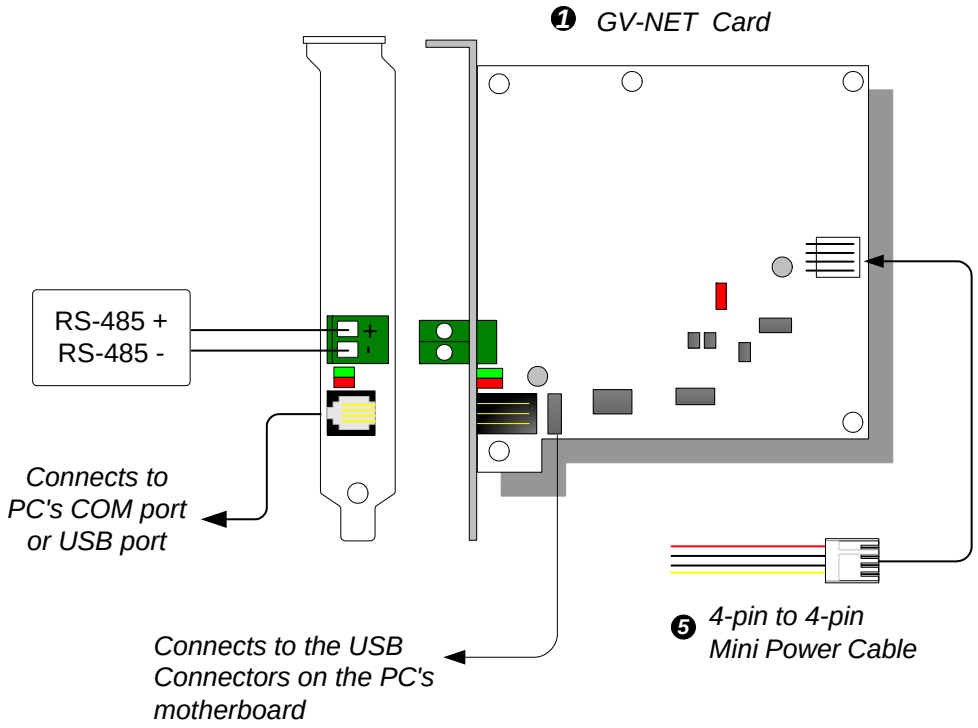


Figure 2-6 GV-Net Card V3.1 Connections

Note: The GV-NET Card only provides RS-485 / RS-232 data conversion; the connection to the GV-Video Capture Card is not required.

RS-485 Device Connections

To connect the GV-NET Card to the RS-485 devices, there are three ways of connections. See the pictures below.

1. You can connect a RJ-11 to DB9 Cable to the PC's COM Port when a RS-485 device is connected.

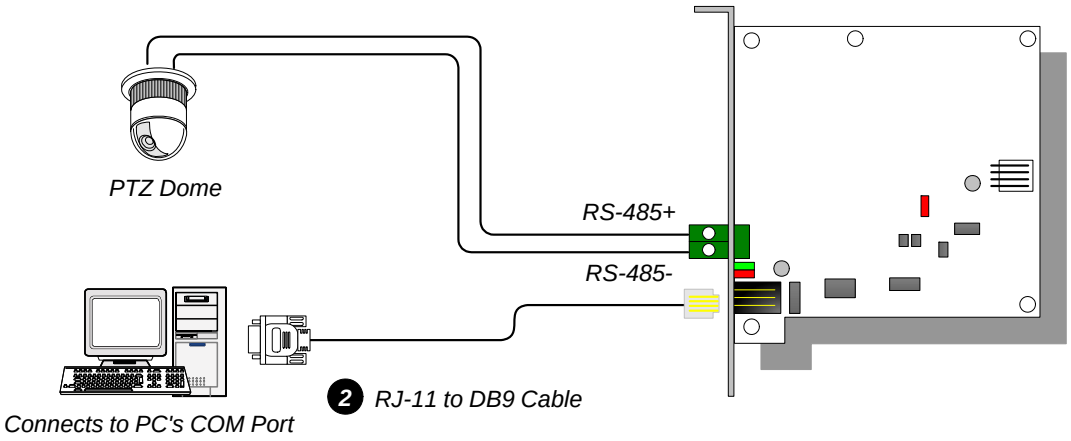


Figure 2-7

2. You can connect a RJ-11 to USB Cable to the PC's USB Port when a RS-485 device is connected.

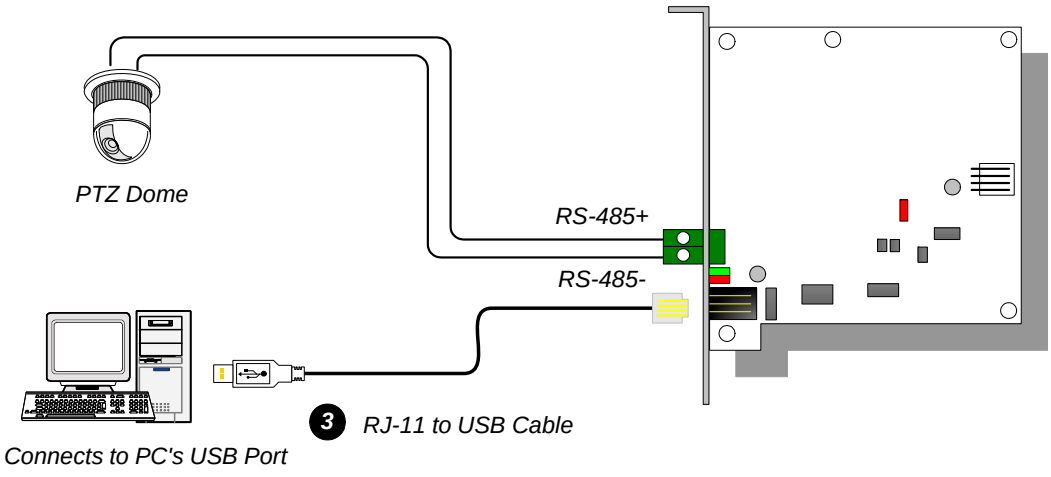


Figure 2-8

Note: It is required to install the USB driver. For details, see *2.22 Installing USB Driver.*

3. You can connect a 3-Pin Internal USB Cable to the USB connectors on the PC's Motherboard when a RS-485 device is connected.

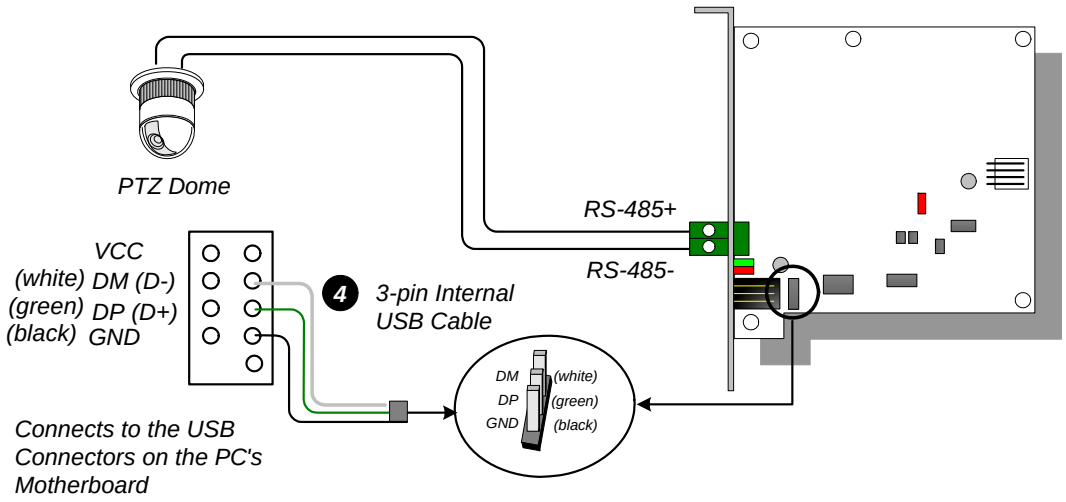


Figure 2-9

Note: It is required to install the USB driver. For details, see *2.22 Installing USB Driver.*

Specifications

Interface	RJ-11 to DB9 (RS-232)
	RJ-11 to USB
	3-Pin Internal USB to Internal USB
	RS-485+ / RS-485-
Communication	RS-485 1,200~115,200 bps; USB
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)
Compatible Model	All GV-Video Capture Card Models
Dimensions (W x H)	97 x 90 (mm) / 3.82 x 3.54 (in)

Ordering Information

55-NETCR-310

2.4 GV-NET/IO Card V3.1

The GV-NET/IO Card is a RS-485 / RS-232 interface converter, providing 4 inputs and 4 relay outputs as well. It supports both DC and AC output voltages.

Key Features

- A USB port is provided for PC connection, and it is used with 30 DC output voltages.
- It can switch between two modes, NET/IO Card Mode and I/O Box Mode, which expand its capability.
- Up to 4 GV-NET/IO Cards can be chained together when it is on the I/O Box Mode.
- It can act as an independent device when it is on the I/O Box Mode.

Packing List

1. GV-NET/IO Card x 1
2. 20-Pin Ribbon Cable with 4 Connectors x1
3. RJ-11 to DB9 Cable x 1
4. RJ-11 to USB Cable x 1
5. 3-Pin Internal USB Cable x 1
6. 4-Pin to 4-Pin Mini Power Cable x 1
7. Installation Guide x 1

Overview

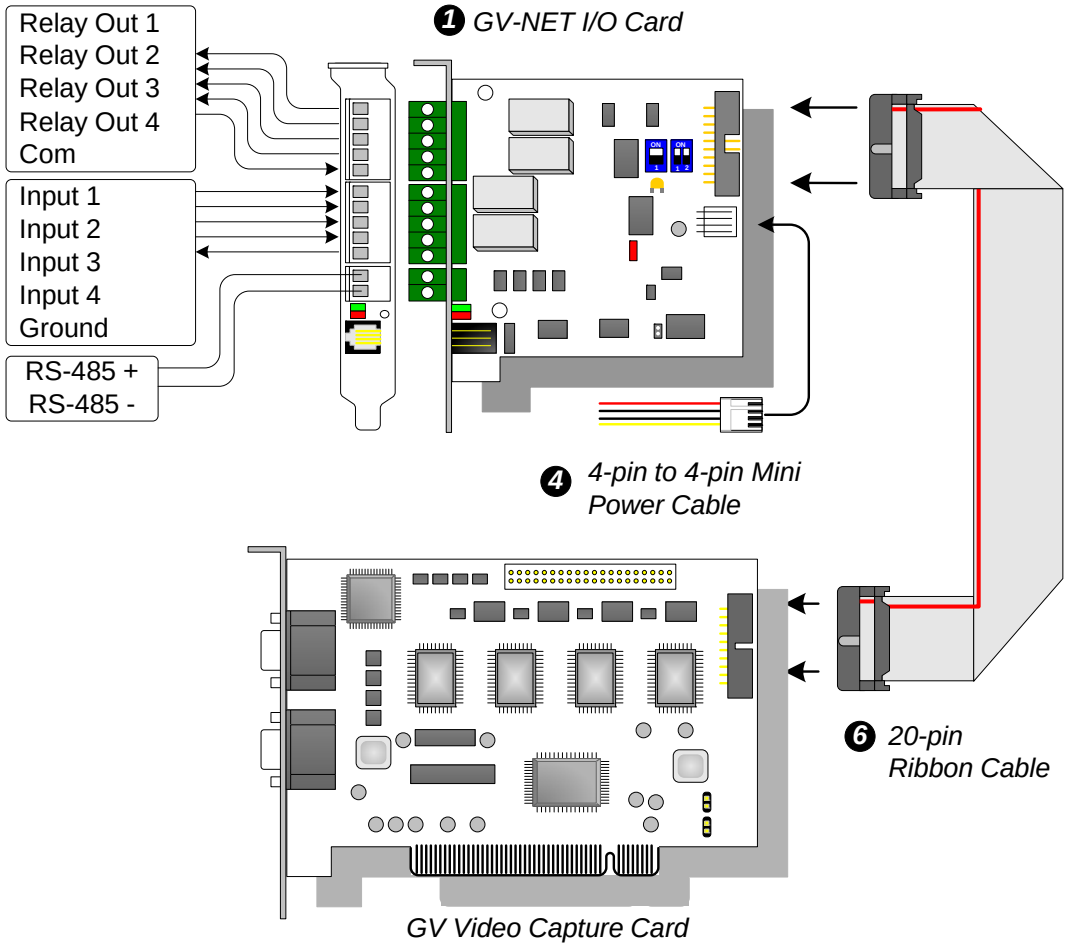
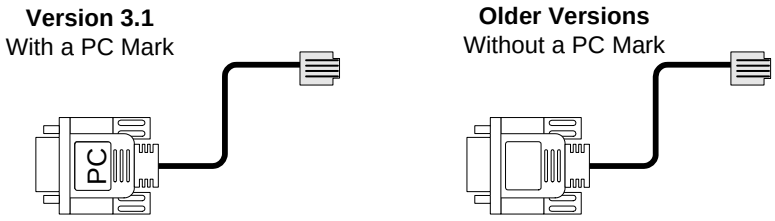


Figure 2-10 GV-NET/IO Card connections

Note:

1. The supplied RJ-11 to DB9 Cable of older versions is not compatible with the GV-NET/IO Card V3.1.



2. When the GV-NET/IO Card V3.1 is in the I/O Box mode, it is incompatible with the GV-IO 12-In Card of versions earlier than V3.
3. To prevent the noise interference in I/O operation, tightly screw the GV-NET/IO Card V3.1 to the PC case.

Connections with Two Video Capture Cards

If your system is equipped with two video capture cards, connect the GV-NET/IO Card to the video capture card of 1-16 channels.

Connections in NET/IO Card Mode

For the connections in the NET/IO Card Mode, please follow the instructions below:

- It is required to connect the GV-NET/IO Card to GV-Video Capture Card with the 20-Pin Ribbon Cable.
- If you want to connect the GV-NET/IO Card to RS-485 devices, you have three ways of connections. See below.

Three Ways of Connections of GV-NET/IO Card and RS-485 Devices:

1. You can connect a RJ-11 to DB9 Cable to the PC's COM Port when a RS-485 device is connected. **(Allowed for AC/DC Output Voltage)**

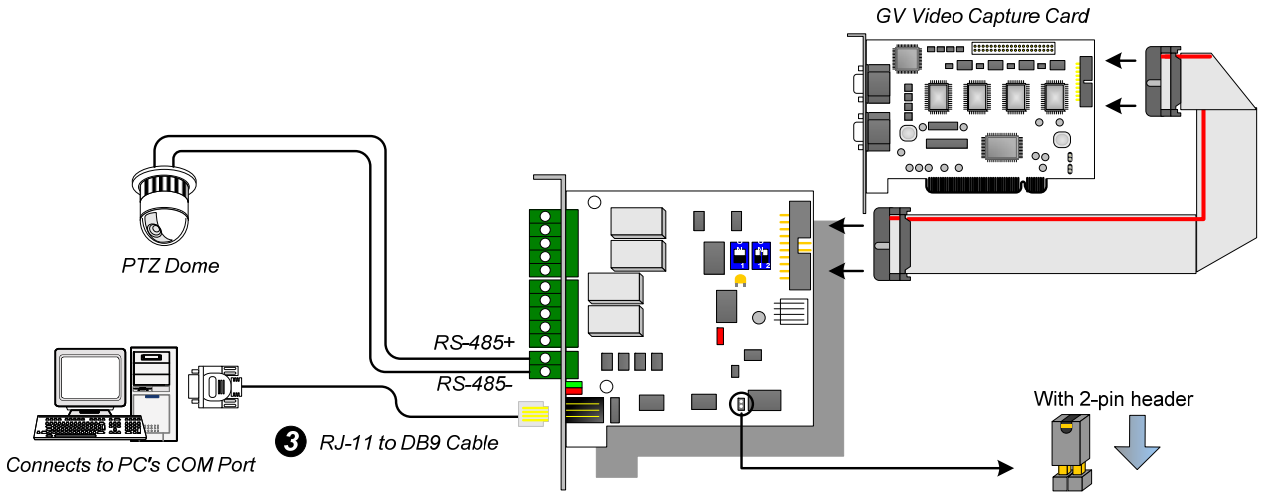


Figure 2-11

2. You can connect a RJ-11 to USB Cable to the PC's USB Port when a RS-485 device is connected. **(Allowed for AC/DC Output Voltage)**

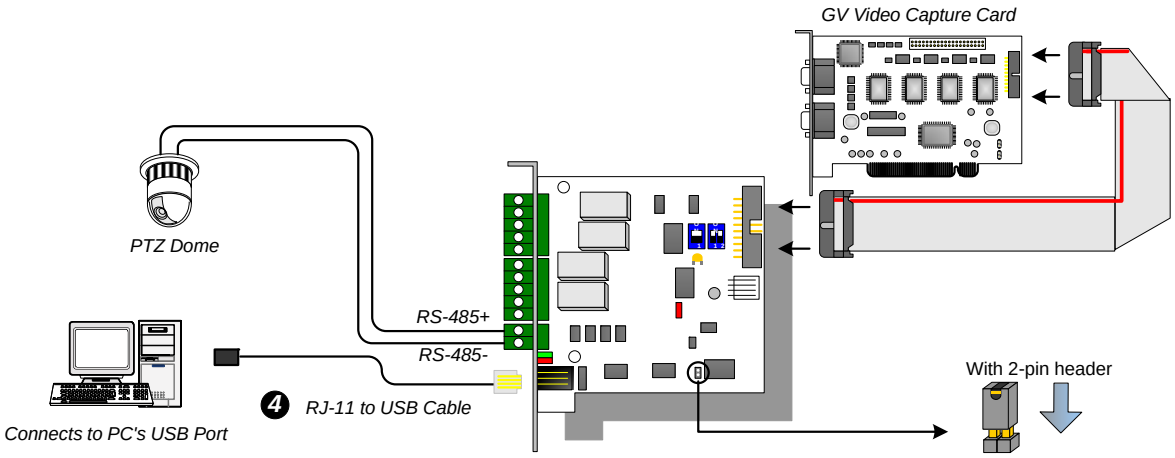


Figure 2-12

Note: It is required to install the USB driver. For details, see *2.22 Installing USB Driver.*

3. You can connect a 3-Pin Internal USB Cable to the USB Connectors on the PC's Motherboard when a RS-485 device is connected. **(Allowed for AC/DC Output Voltage)**

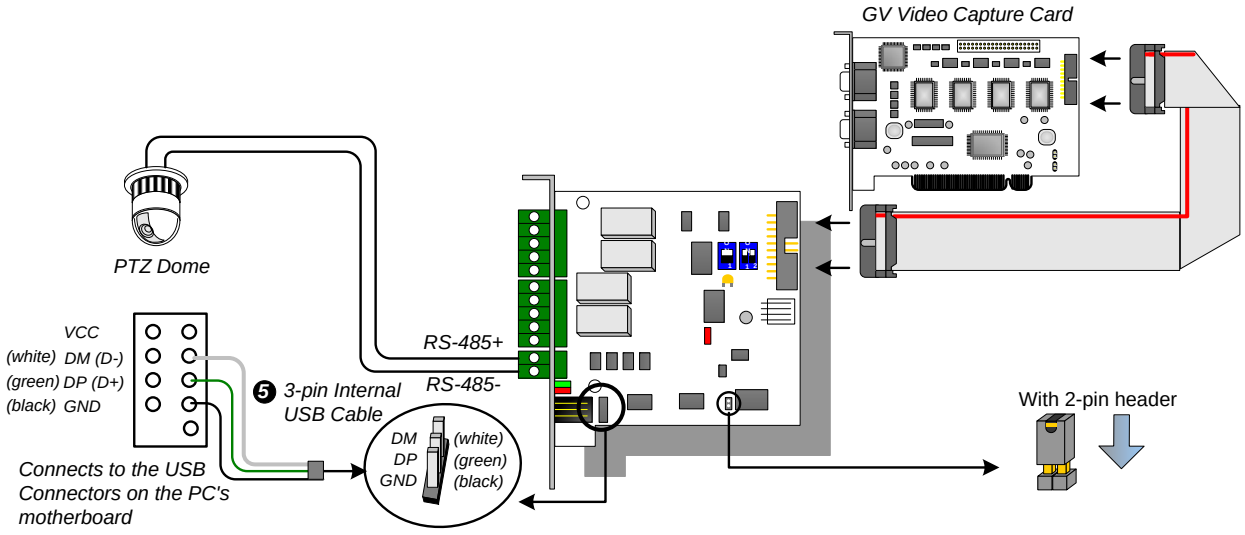


Figure 2-13

Note: It is required to install the USB driver. For details, see *2.22 Installing USB Driver.*

Connections In I/O Box Mode

For the connections in the I/O Box Mode, please follow the instructions below:

- It is not necessary to connect the GV-NET/IO Card to GV-Video Capture Card.
- Connect the GV-NET/IO Card to the PC by one of the following three ways.

Three Ways of Connections of GV-NET/IO Card and PC:

1. You can connect a RJ-11 to DB9 Cable to the PC's COM Port. **(Allowed for AC/DC Output Voltage)**

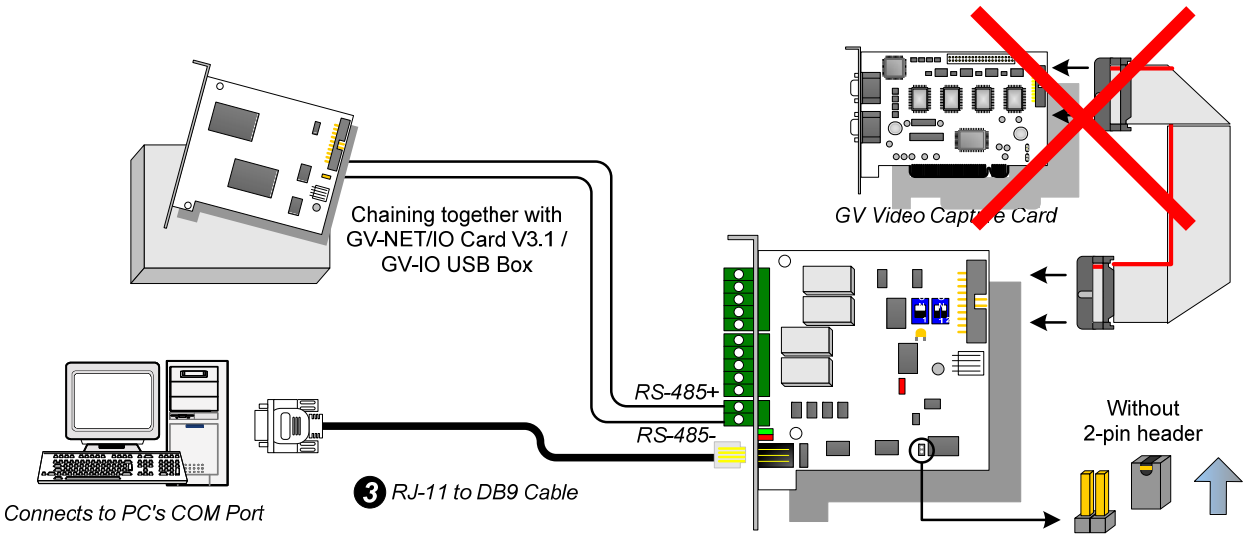


Figure 2-14

2. You can connect a RJ-11 to USB Cable to the PC's USB Port. **(Allowed for DC Output Voltage only)**

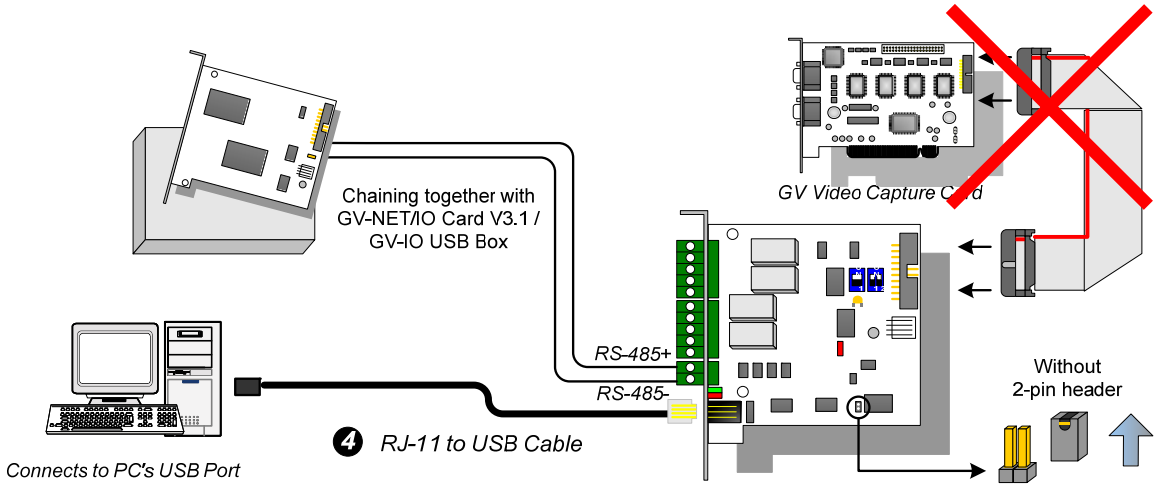


Figure 2-15

Note: It is required to install the USB driver. For details, see *2.22 Installing USB Driver.*

3. You can connect a 3-Pin Internal USB Cable to the USB Connectors on the PC's Motherboard. **(Allowed for DC Output Voltage only)**

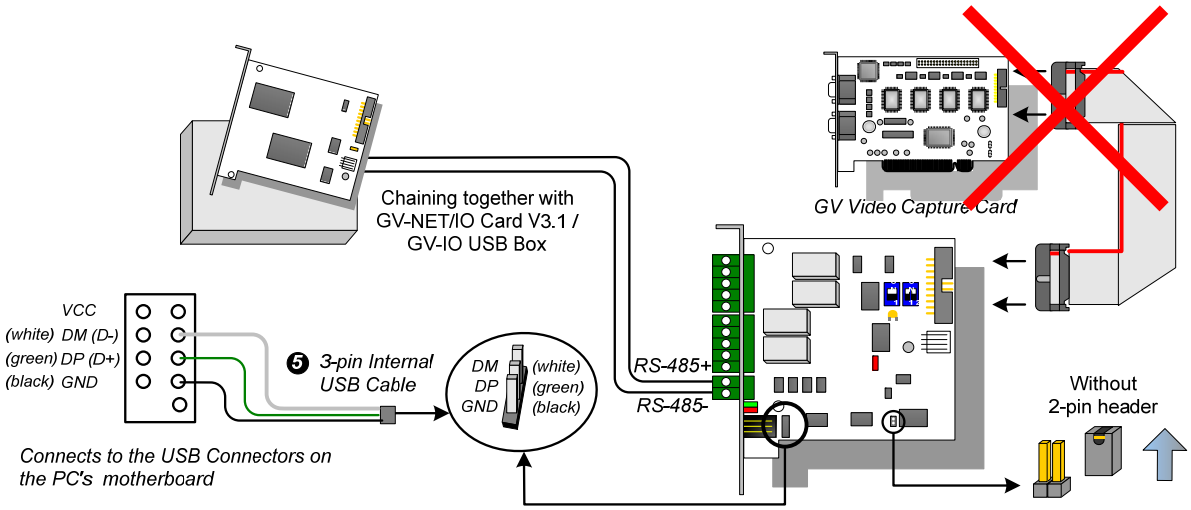


Figure 2-16

Note: It is required to install the USB driver. For details, see *2.22 Installing USB Driver.*

Switching Modes

The GV-NET/IO Card provides two modes for users to expand its capability: I/O Box Mode and NET/IO Card Mode. With a mode-switch jumper to insert on the 2-pin header, you can switch between modes.

- **NET/IO Card Mode (default):** With the switch jumper inserted, this default mode acts as a GV-NET/IO Card. It is required to connect the GV-NET/IO Card to the GV-Video Capture Card for usage.
- **I/O Box Mode:** Without the switch jumper inserted, the GV-NET/IO Card can work as an independent device. It is NOT necessary to connect to the GV-Video Capture Card for usage.

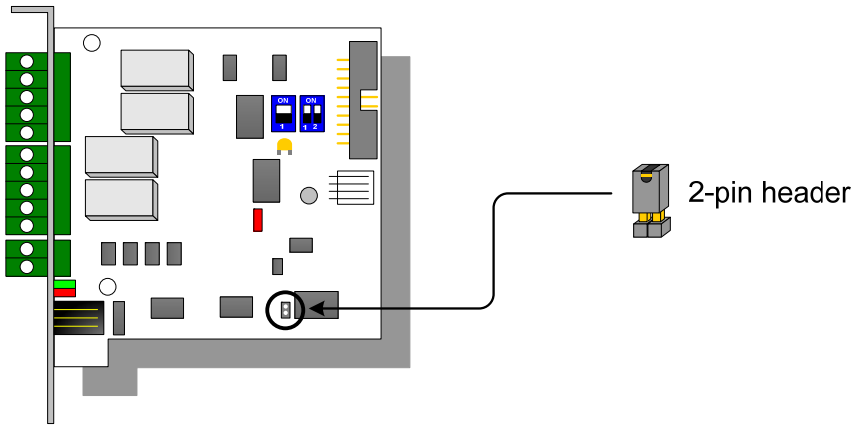


Figure 2-17

Extended Connections

Via the RS-485 connectors, up to 4 GV-NET/IO Cards can be chained together when the GV-NET/IO Card is on the I/O Box mode. For extended connections, the address assignment is shown below.

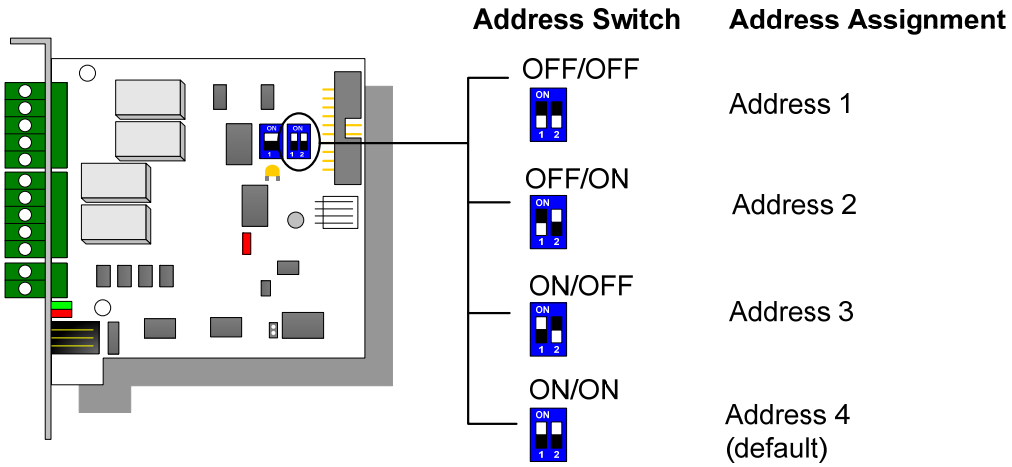


Figure 2-18

Note: When the GV-NET/IO Card is set to the I/O Box Mode, it can have extended connections with GV-I/O Boxes.

DIP Switch

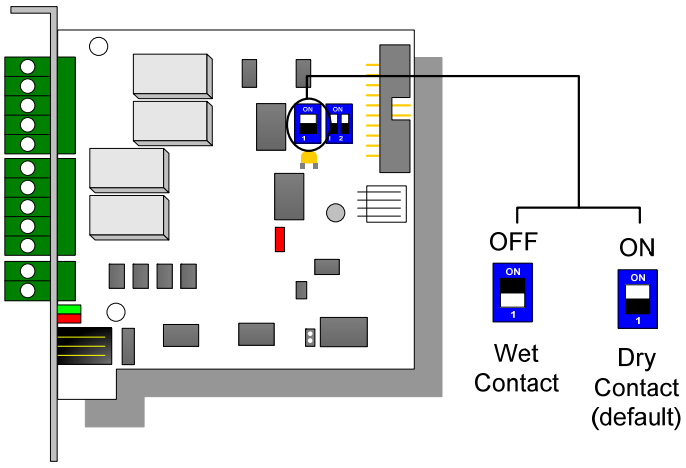


Figure 2-19

Specifications

Input	Input	4	
	Input Signal	Dry Contact, Wet Contact 9~30V AC/DC	
Output	Relay Output	4	
	Relay Status	Normal Open	
	Relay Capacitance	USB Connection	30V DC, 3A
		RS-232 Connection	125 / 250V AC, 3A 30V DC, 3A
Interface	RJ-11 to DB9		
	RJ-11 to USB		
	3-Pin Internal USB to Internal USB		
Mode Switch	I/O Box Mode	Without GV-Video Capture Card	
	NET/IO Card Mode	With GV-Video Capture Card	
Address	1~4		
Communication	RS-485, USB, RS-232		
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)		
Compatible Model	All GV-Video Capture Card Models		
Dimensions (W x H)	99 x 90 (mm) / 3.90 x 3.54 (in)		

Ordering Information

55-IOCRD-310

2.5 GV-Hub Box

The GV-Hub adds four RS-232/RS-485 serial ports through your computer's USB port. The plug and play USB solution for serial port extension is perfect for mobile instrumentation and POS applications.

Packing List

1. GV-Hub Box x 1
2. A to B USB Cable x 1
   (1.2 meters / 3.93 feet)
3. DB9 RS-232 Cable x 4
   (1.8 meters / 5.90 feet)
4. Installation CD x 1
5. Installation Guide x 1

Overview

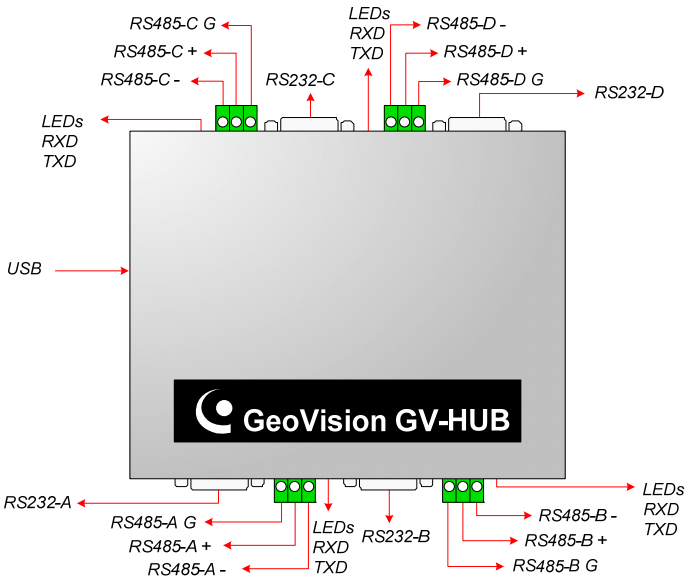


Figure 2-20 GV-Hub

Note: There are four sets of RS-232 / 485 ports (A-D). In a single set, you can only choose RS-232 or RS-485 port for connection.

Connections

Following provides two examples of using the GV-Hub:

Connecting POS Systems

The GV-Hub can provide a local connection for up to four POS systems, and deliver transaction data to the GV-System over a USB cable.

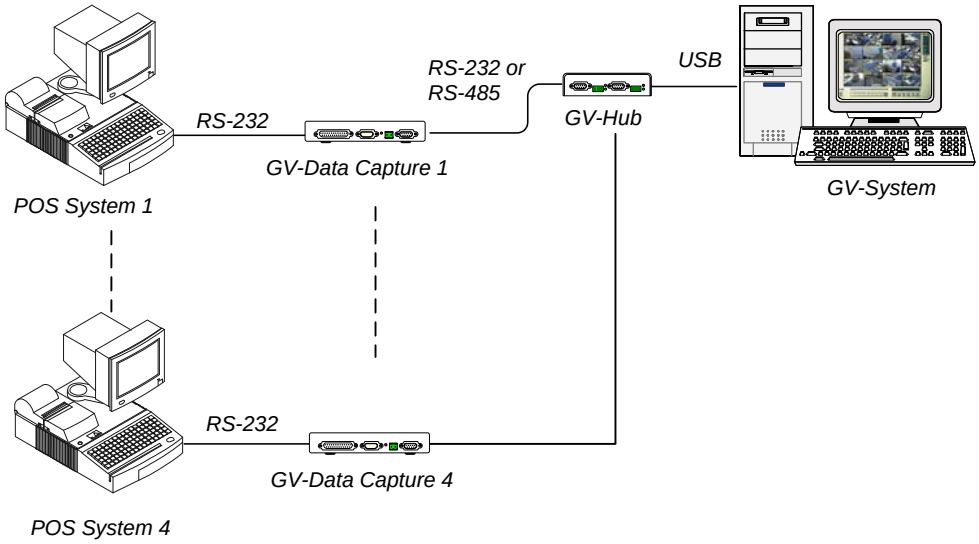


Figure 2-21 Connecting POS systems

Connecting RS-485 Devices

With the GV-Hub, the GV-System can connect up to 16 PTZ domes and nine GV-I/O and GV-Relay modules simultaneously.

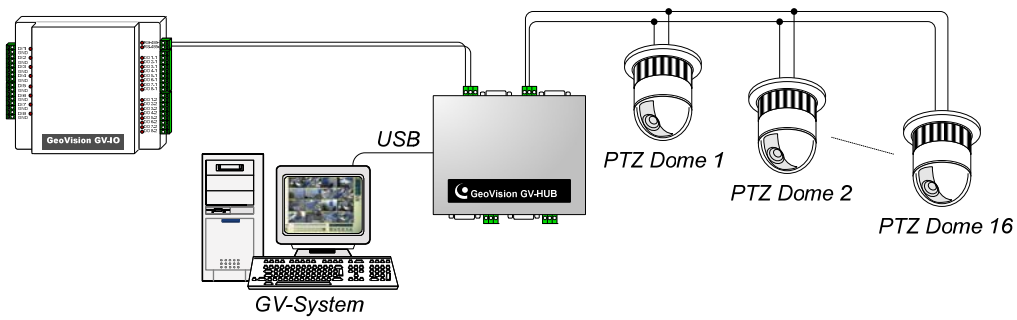


Figure 2-22 Connecting RS-485 devices

Installing Drivers

When you connect the GV-Hub Box to the computer, the Found New Hardware Wizard will automatically detect the device. Ignore the wizard, and follow these steps to install the drivers.

1. Insert the installation CD to your computer.
2. Run **GvUsb.exe**.
3. When this warning window appears, click **Continue Anyway**. The drivers will be installed automatically.

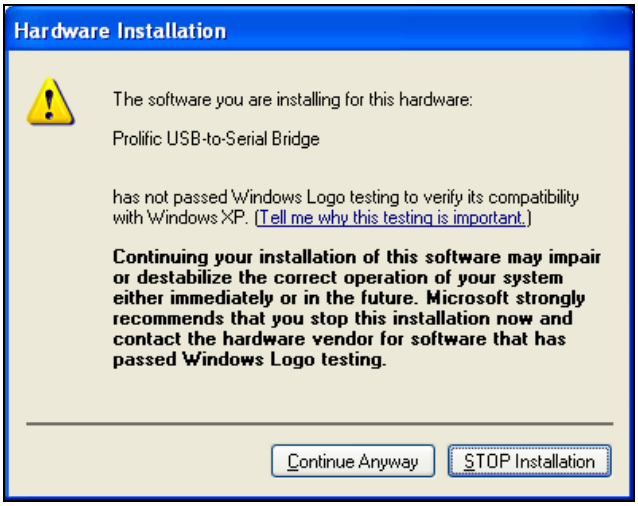


Figure 2-23 Hardware Installation

To verify the drivers are installed correctly, go to **Device Manager**. Expanding the **Ports** field, you should see the 4 entries for **Prolific USB-to Serial Bridge**.

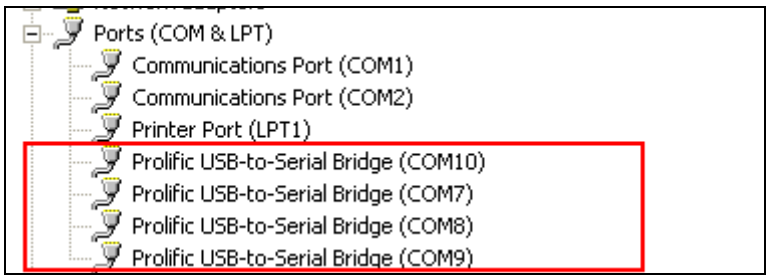


Figure 2-24 Prolific USB-to Serial Bridge

Specifications

Serial Interface	RS-232	Signal: DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS
		Connecter: 4 x DB9 Male (A, B, C, D)
	RS-485	Signal: D+, D-, GND
		Connector: 4 x Terminal Block (A, B, C, D)
	Serial Line Protection	16 KV ESD for All Signals
USB	Compliance	USB 1.1, 1.0
		USB 2.0 Backward Compatible
	Speed	Full Speed 12 Mbps
Communication Parameters	Parity	None, Even, Odd
	Data Bit	7, 8
	Stop Bit	1 (Default), 2
	Flow Control	RTS/CTS, XON/XOFF
	Speed	600 bps to 115,200 bps
Environmental Conditions	0~55 Degree C / 32~131 Degree F 5%~95% (Non-Condensing)	
Dimensions (W x H x D)	103 x 30 x 125 (mm) / 4.06 x 1.18 x 4.92 (in)	

Ordering Information

55-HUB04-000

2.6 GV-COM Box

The GV-COM adds one RS-232/RS-485 serial port through your computer's USB port. The plug and play USB solution for serial port extension is perfect for mobile instrumentation and POS applications.

Packing List

1. GV-COM Box x 1
2. A to B USB Cable x 1 (1.2 meters / 3.93 feet)
3. DB9 RS-232 Cable x 1 (1.8 meters / 5.90 feet)
4. Terminal Resistor x 1
5. Installation CD x 1
6. Installation Guide x1

Overview

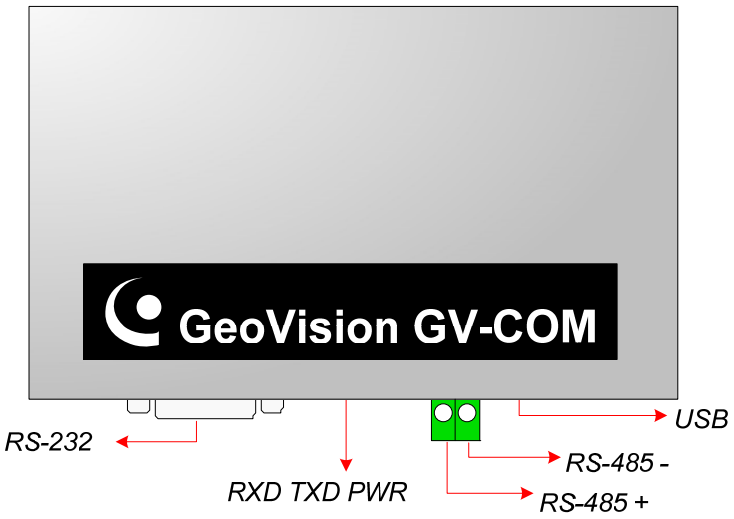


Figure 2-25 GV-COM

Extending Transmission over the Distance

When the transmission signals between the RS-485 communications become weak over the distance, use the supplied Terminal Resistor to maintain the signals.

The diagram below illustrates how to use Terminal Resistor on Terminal Block attached to the RS-485 device:

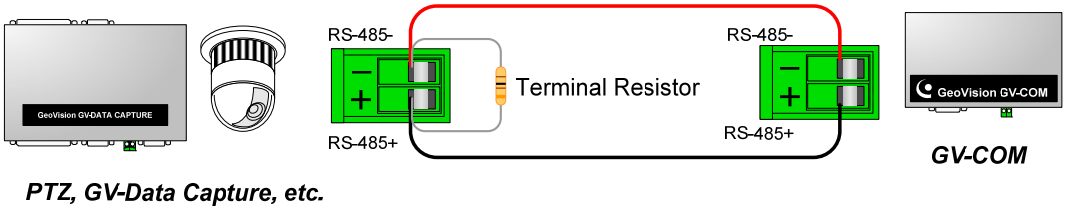


Figure 2-26 Terminal Resistor connections

Installing Drivers

When you connect GV-COM to the computer, the Found New Hardware Wizard will automatically detect the device. To install the drive, follow the steps described in *1.8 Installing Drivers*.

To verify the drivers are installed correctly, go to **Device Manage**r. Expand the **Ports** field, and you should see one entry for Prolific USB-to-Serial Bridge.

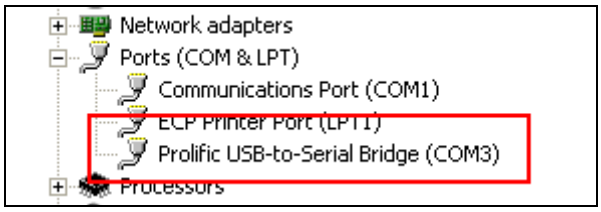


Figure 2-27 Prolific USB-to-Serial Bridge

Specifications

Serial Interface	RS-232	Signal: DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS
		Connecter: DB9 Male
	RS-485	Signal: D+, D-
		Connector: Terminal Block
	Serial Line Protection	16 KV ESD for All Signals
USB	Compliance	USB 1.1, 1.0
		USB 2.0 Backward Compatible
	Speed	Full speed 12 Mbps
Communication Parameters	Parity	None, Even, Odd
	Data Bit	7, 8
	Stop Bit	1 (Default), 2
	Flow Control	RTS/CTS, XON/XOFF
	Speed	600 bps to 115,200 bps
Environmental Conditions	0~55 Degree C / 32~131 Degree F 5%~95% (Non-Condensing)	
Dimensions (W x H x D)	103 x 32 x 64 (mm) / 4.06 x 1.26 x 2.52 (in)	

Ordering Information

55-GVCOM-100

2.7 GV-I/O 12-In Card V3

The GV-I/O 12-In Card is designed to work with the GV-NET/IO Card. With 12 digital inputs, the GV-I/O 12-In Card can expand the GV-System's capacity up to 16 digital inputs.

System Requirements

- GV-NET/IO Card

Packing List

1. GV-I/O 12-In Card x 1
2. 20-Pin Ribbon Cable with 4 connectors x 1
3. 4-Pin to 4-Pin Mini Power Cable x 1
4. Installation Guide x 1

Connections

Insert the GV-I/O 12-In Card to an empty card slot. Connect the 20-Pin Ribbon Cable to the GV Video Capture Card, the GV-I/O 12-Out Card, and the GV-NET/IO Card as shown below.

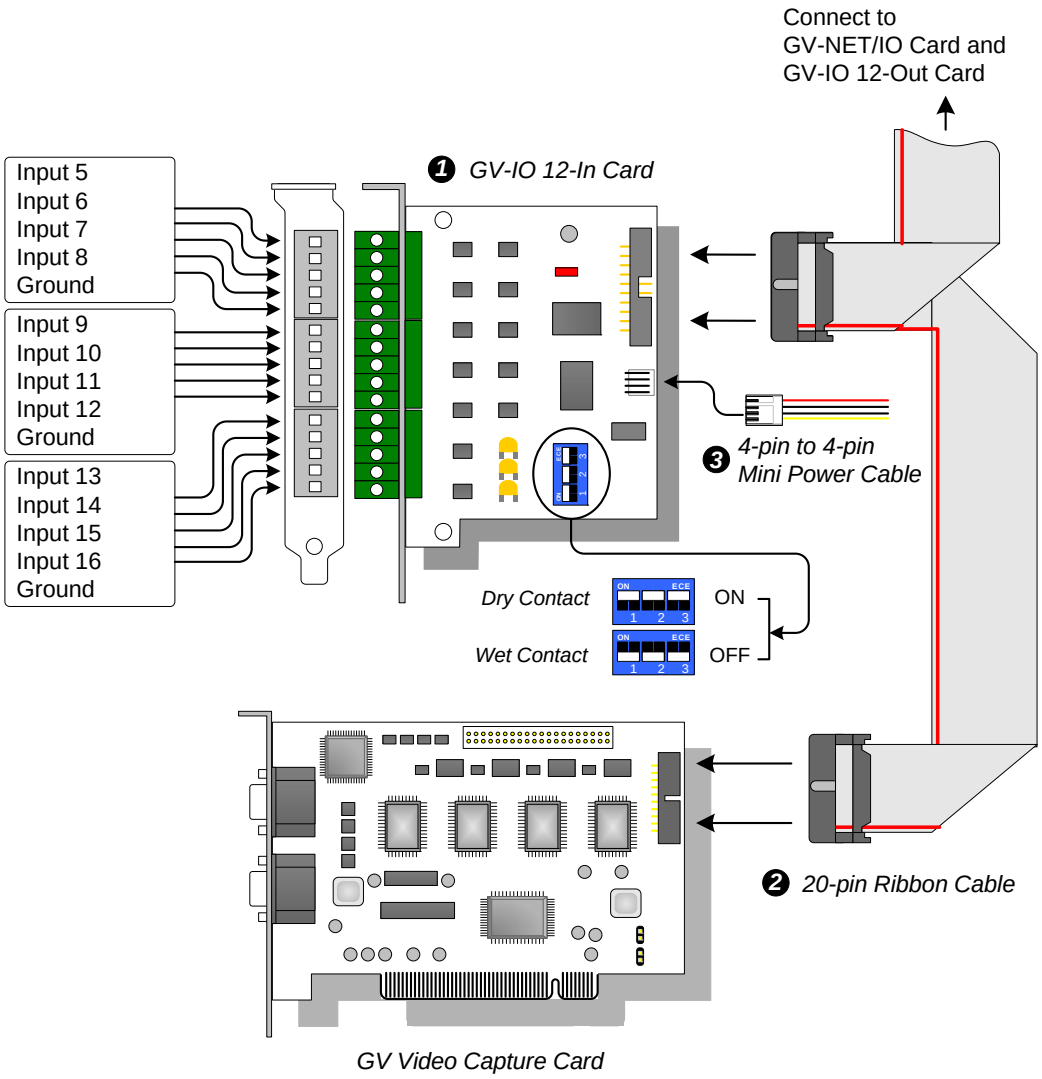


Figure 2-28 GV-I/O 12-In Card connections

Note:

1. Use of DIP switch:
   a. Use the switch for dry contact and 9-30V wet contact.
   b. The card allows the use of mixing dry and wet contact devices together. (Default Setting: Dry Contact)
   c. The 12 inputs divided as four-in-one groups are related to the three switches on the card for dry and wet contact.
2. To prevent the noise interference in I/O operation, tightly screw the GV-I/O 12-In Card to the PC case.
3. The GV-I/O 12-In Card must work with the GV-NET/IO Card together.

Specifications

Input	Input	12
	Input Signal	Dry Contact, Wet Contact 9~30V AC/DC
DC IN	DC 5V, 1A	
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)	
Compatible Model	All GV-Video Capture Card Models	
Dimensions (W x H)	90 x 99 (mm) / 3.54 x 3.90 (in)	

Ordering Information

55-IO12I-300

2.8 GV-I/O 12-Out Card V3

The GV-I/O 12-Out Card is designed to work with the GV-NET/IO Card. With 12 relay outputs, the GV-I/O 12-out Card can expand the GV-System's capacity up to 16 relay outputs.

System Requirements

- GV-NET/IO Card

Packing List

1. GV-I/O 12-Out Card x 1
2. 20-Pin Ribbon Cable with 4 Connectors x 1
3. 4-Pin to 4-Pin Mini Power Cable x 1
4. Installation Guide x 1

Connections

Insert the GV-I/O 12-Out Card to an empty card slot. Connect the 20-Pin Ribbon Cable to the GV Video Capture Card, the GV-I/O 12-In Card, and the GV-NET/IO Card as shown below.

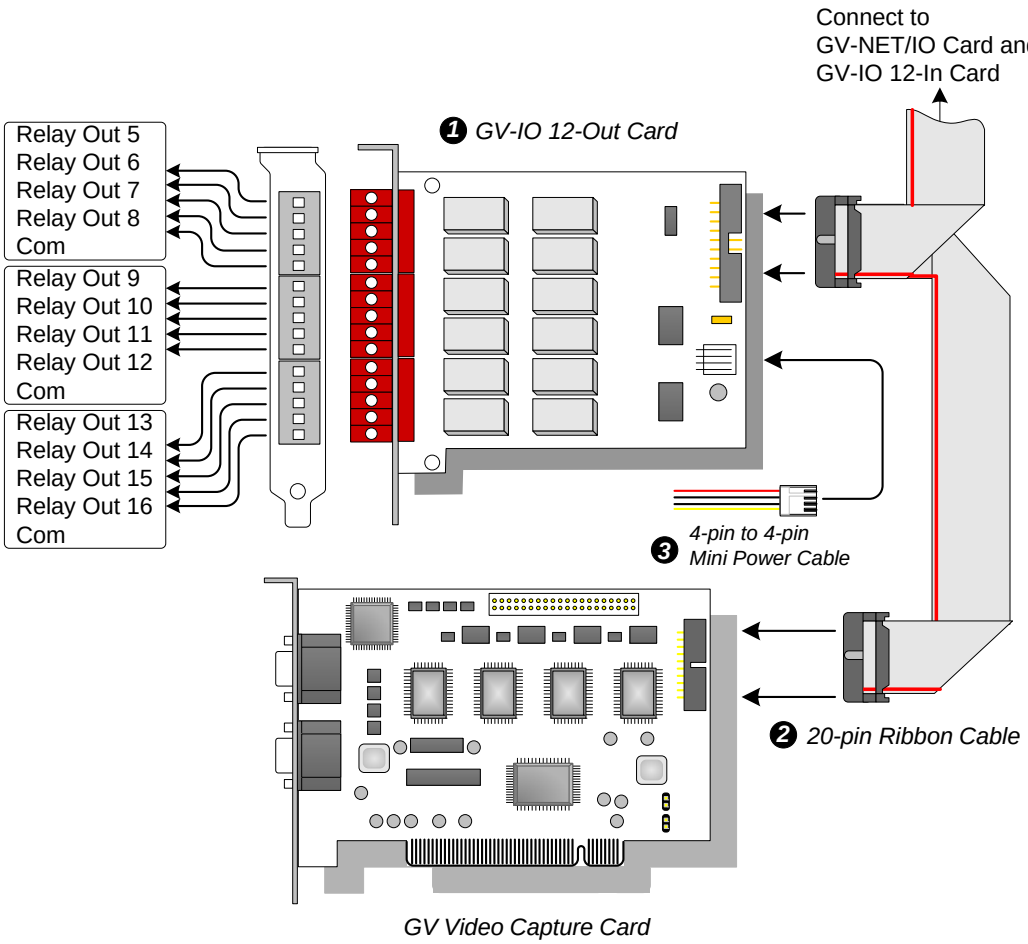


Figure 2-29 GV-I/O 12-Out Card connections

Note:

1. To prevent noise interference in I/O operation, tightly screw the GV-I/O 12-Out Card to the computer case.
2. The GV-I/O 12-Out Card must work together with the GV-NET/IO Card.

Specifications

Output	Relay Output	12	
	Relay Status	Normal Open	
	Relay Capacitance	USB Connection	30V DC, 3A
		RS-232 Connection	125 / 250V AC, 3A
DC IN	DC 5V, 1A		
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)		
Compatible Model	All GV-Video Capture Card Models		
Dimensions (W x H)	120 x 99 (mm) / 4.72 x 3.90 (in)		

Ordering Information

55-IO12O-300

2.9 GV-I/O Box (16 Ports)

The GV-I/O Box 16 provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages.

Key Features

- 16 inputs and 16 outputs are provided.
- Up to 9 pieces of GV-I/O Box 16 can be chained together.
- A USB port is provided for PC connection, and it is only used for 30 DC output voltage.

System Requirements

- GV-System version 8.2 or above

Packing List

1. GV-I/O Box 16 x 1
2. USB Cable (Type A to B) x 1
3. Power Adapter DC 12V x 1
4. Installation Guide x 1

Note: The GV-I/O box (16 Ports) comes with the option of an Ethernet module. See *2.23 Accessing GV-I/O Box over Networks*.

Overview

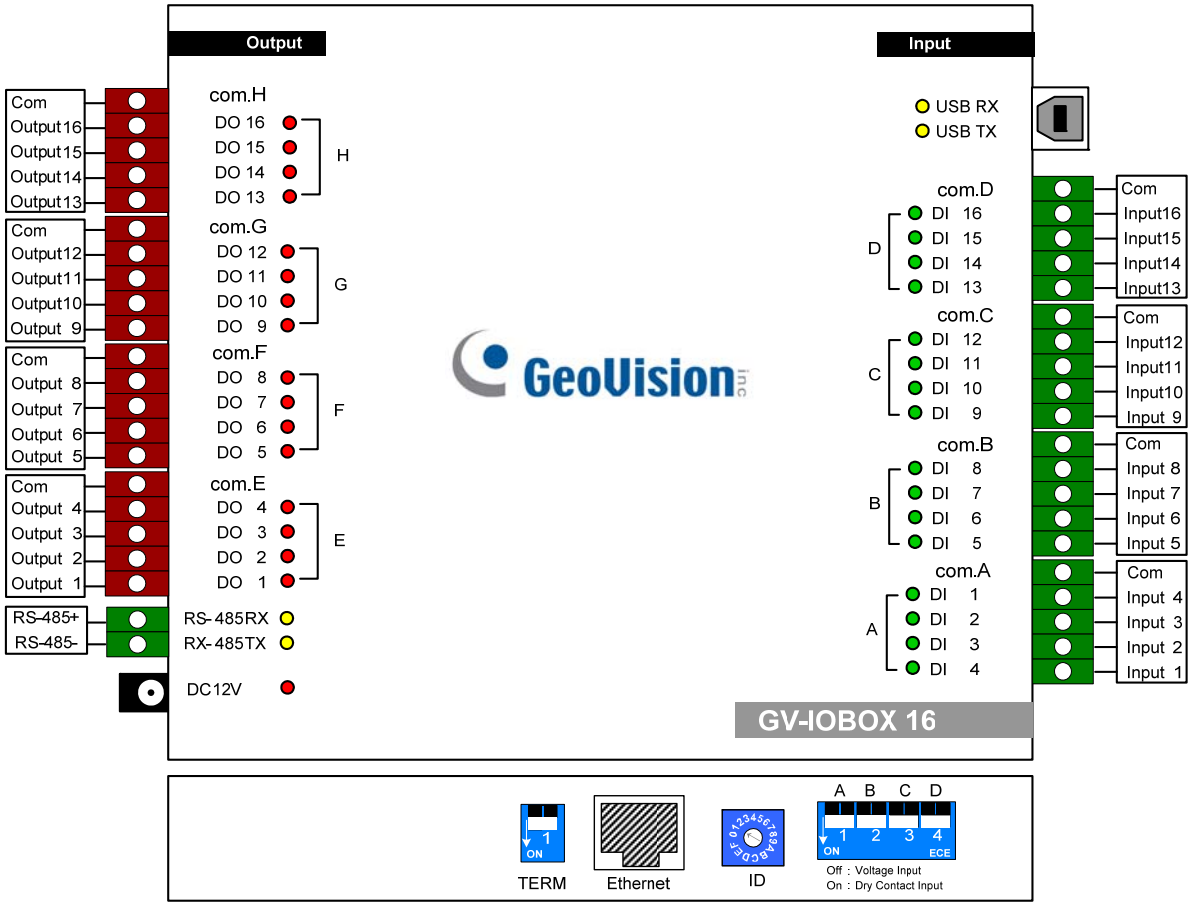


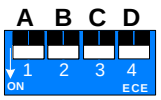
Figure 2-30

DIP Switch

The GV-I/O Box 16 allows the use of mixing dry and wet contact devices together. The 16 inputs divided as four-in-one groups (A, B, C and D) are related to the 4 switches on the box for dry and wet contact.

Wet Contact

To change the inputs to different kind of contact, push the switch upward.



Dry Contact

To change the inputs to different kind of contact, push the switch downward.

Note: The RS-485 connectors do not have the conversion function from RS-485 to RS-232, so don't connect RS-485 devices, such as PTZ camera, to the connectors.

Connections to PC

There are three ways to connect the GV-I/O Box 16 to the PC:

(1) Use the USB cable to connect the PC.

(2) Through the option of GV-Hub, GV-COM, GV-NET Card or GV-NET/IO Card, use the RS-485 connectors to connect the PC.

(3) Through network connection. This is an optional function. See *2.23 Accessing GV-I/O Box over Networks*.

Note: Only one of the three methods can be used one time. If your GV-I/O Box has network connectivity, ensure to unplug the network cable before switching the connection to USB or RS-485. See [Connection to IO BOX] in *2.23.3 Other Setting*.

---

1. Use the USB cable to connect one GV-I/O Box 16 to PC. **(Allowed for DC Output Voltage only)**

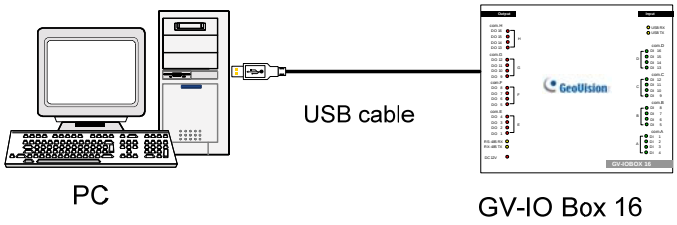


Figure 2-31

Note: It is required to install the USB driver. See *2.22 Installing USB Driver*.

---

2. Use the RS-485 connectors to connect one GV-I/O Box 16 to PC. **(Allowed for AC/DC Output Voltage)**

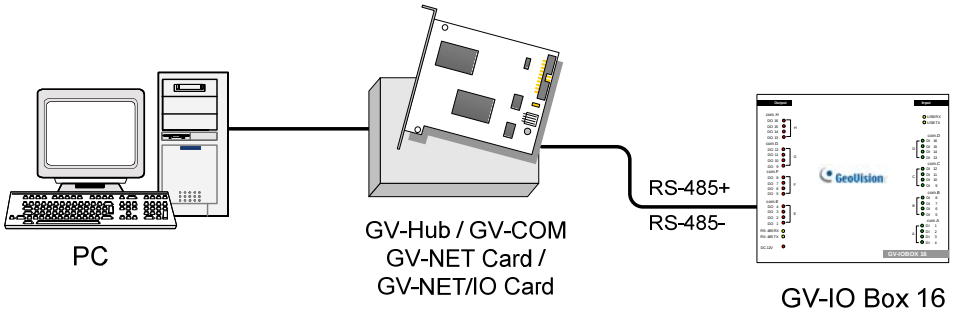


Figure 2-32

Assigning Addresses to GV-I/O Box 16

Up to 9 pieces of GV-I/O Box 16 can be chained together to expand the I/O capacity. Use the ID switch (1~9) to assign addresses 1~9 to the connected GV-I/O Box 16.

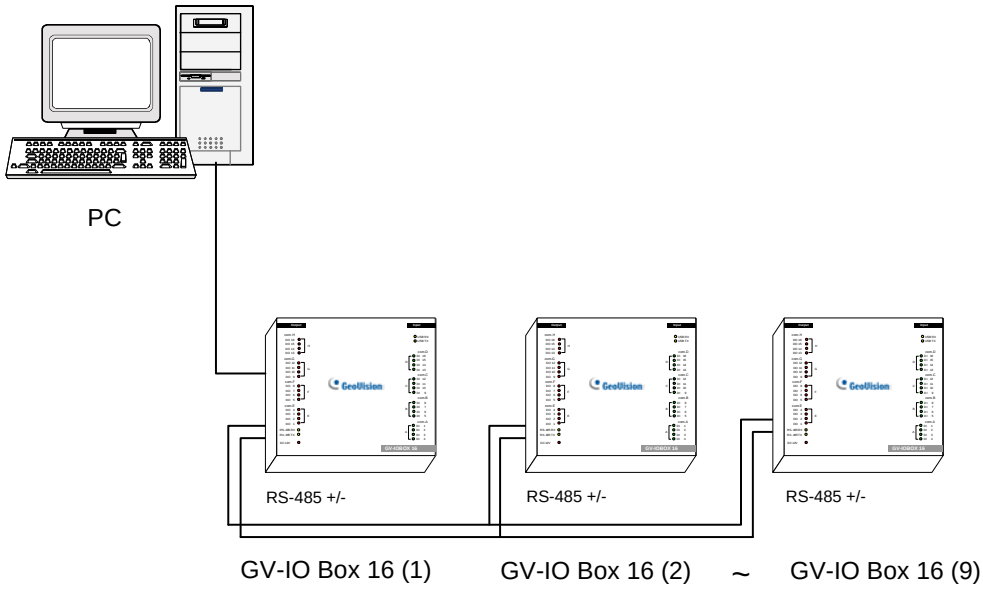
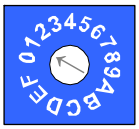


Figure 2-33

ID Switch



ID

1. Addresses 0 and A to F are NOT functional.
2. Assign the addresses when the power is off.
3. If you want to change the assigned address of the connected GV-I/O Box 16, set the switch to the new address, and then re-plug the power adaptor.

Extending Transmission over the Distance

When the transmission signals between the RS-485 communications become weak over the distance, switch on the Terminal Resistance Switches to maintain the signals. Three conditions below illustrate how the Terminal Resistance Switches should be switched on.

1. **Multiple pieces of GV-I/O Box 16 are connected with the PC through one single RS-485 cable.**

   After you connect multiple pieces of GV-I/O Box 16 with the PC, only switch on the Terminal Resistance Switches in the first and last connected pieces of GV-I/O Box 16.

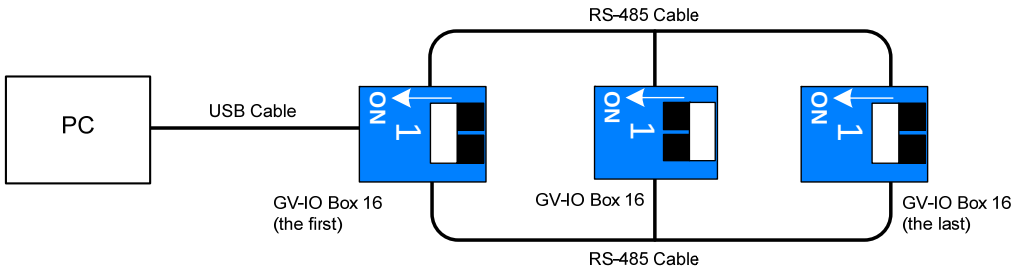


Figure 2-34

2. **Multiple pieces of GV-I/O Box 16 are connected with the PC through a RS-485 / RS-232 conversion device.**

   After you connect multiple pieces of GV-I/O Box 16 with the PC through a RS-485 / RS-232 conversion device, such as GV-NET/IO Card and GV-Hub, insert a Terminal Resistor in the conversion device and switch on the Terminal Resistance Switch of the last connected GV-I/O Box 16.

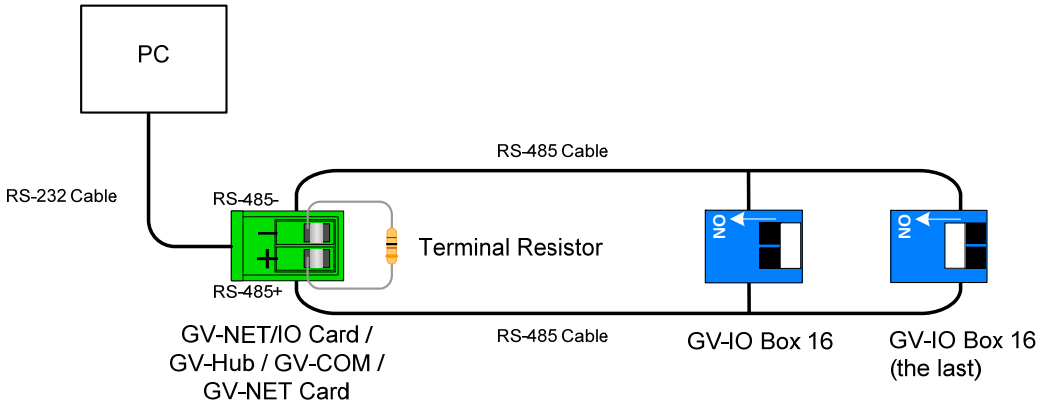


Figure 2-35

3. **Multiple pieces of GV-I/O Box 16 are connected with the PC through separate RS-485 cables.**

   After you connect multiple pieces of GV-I/O Box 16 with the PC through separate RS-485 cables, switch on Terminal Resistance Switches of the connected piece of GV-I/O Box 16 at the end of each cable.

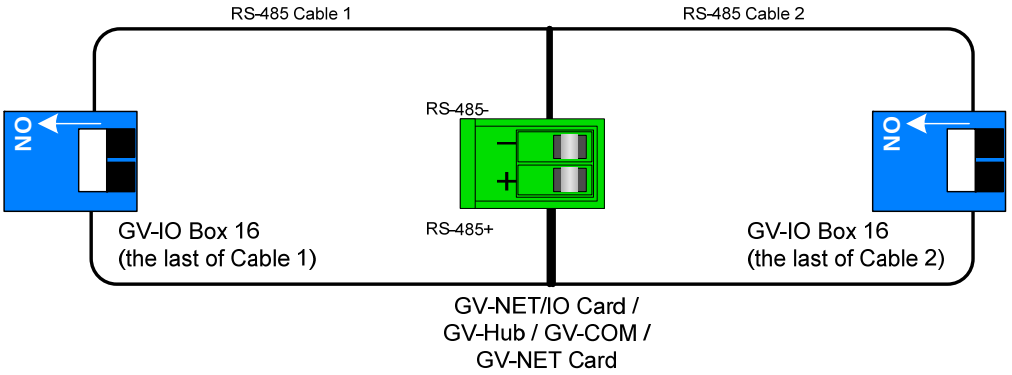
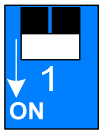


Figure 2-36

Terminal Resistance Switch



The default setting of the Switch is OFF. To switch on the Terminal Resistance Switch, push the switch downward.

Specifications

Input	Input	16	
	Input Signal	Dry Contact	
		Wet Contact, 9-30V AC/DC	
Output	Relay Output	16	
	Relay Status	Normal Open	
	Relay Capacitance	USB Connection	30V DC, 3A
		RS-485 Connection	125 / 250V AC, 3A 30V DC, 3A
Ethernet	RJ-45, 10/100 Mbps		
DC IN	DC 12V, 1A		
Address	0-9, A-F		
Terminal Resistance	120Ω		
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)		
Dimensions (W x H x D)	180 x 27 x 183 (mm) / 7.09 x 1.06 x 7.2 (in)		

Ordering Information

84-IOB16-100

2.10 GV-I/O Box (8 Ports)

The GV-I/O Box 8 provides 8 inputs and 8 relay outputs, and supports both DC and AC output voltages.

Key Features

- 8 inputs and 8 outputs are provided.
- Up to 9 pieces of GV-I/O Box 8 can be chained together.
- A USB port is provided for PC connection, and it is only used for 30 DC output voltage.

System Requirements

- GV-System version 8.2 or above

Packing List

1. GV-I/O Box 8 x 1
2. USB Cable (Type A to B) x 1
3. Power Adapter DC 12V x 1
4. Installation Guide x 1

Note: The GV-I/O box (8 Ports) comes with the option of an Ethernet module. See *2.23 Accessing GV-I/O Box over Networks*.

Overview

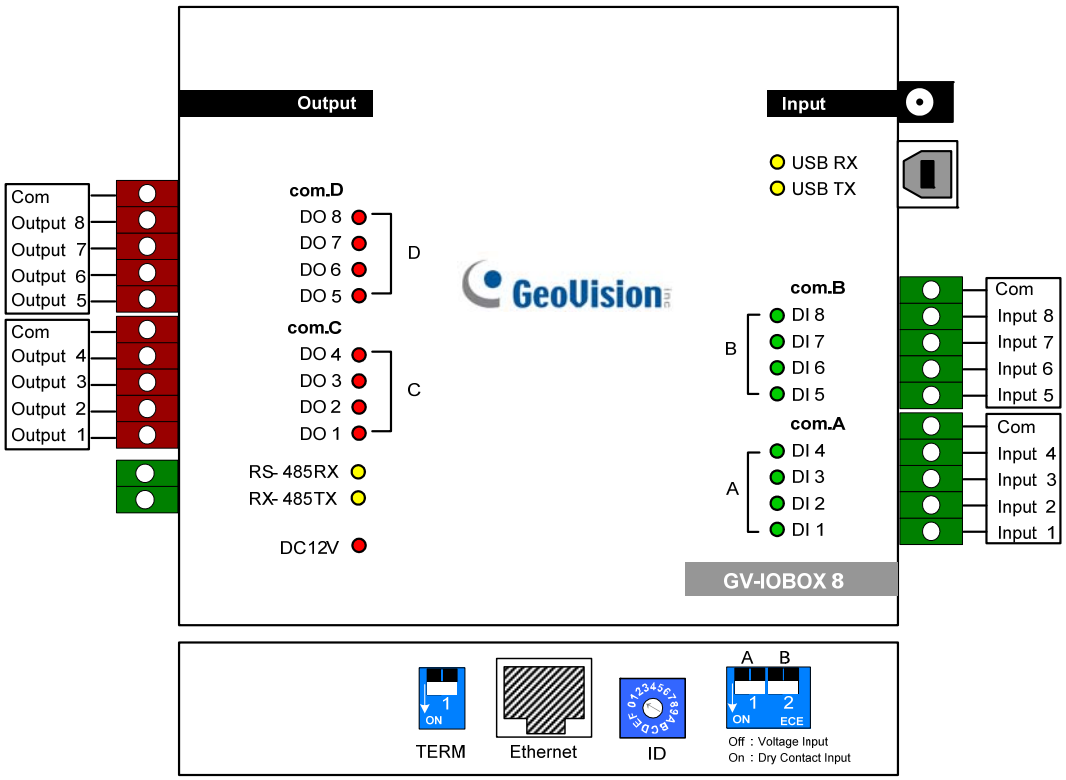
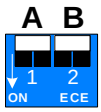


Figure 2-37

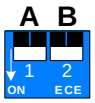
DIP Switch

The GV-I/O Box 8 allows the use of mixing dry and wet contact devices together. The 8 inputs divided as four-in-one groups (A and B) are related to the 2 switches on the box for dry and wet contact.



Wet Contact

To change the inputs to different kind of contact, push the switch upward.



Dry Contact

To change the inputs to different kind of contact, push the switch downward.

Note:

1. The RS-485 connectors do not have the conversion function from RS-485 to RS-232, so don't connect RS-485 devices, such as PTZ camera, to the connectors.
2. To add a GV-I/O Box 8 to the GV-System of version 8.2, select **GVIO-USB (16)** from the Device drop-down list in the System Configure dialog box.

Connections

There are three ways to connect a GV-I/O Box 8 to the PC:

(1) Use the USB cable to connect the PC.

(2) Through the option of GV-Hub, GV-COM, GV-NET Card or GV-NET/IO Card, use the RS-485 connectors to connect the PC.

(3) Through network connection that is an optional function. See *2.23 Accessing GV-I/O Box over Networks*

Note: Only one of the three methods can be used one time. If your GV-I/O Box has network connectivity, ensure to unplug the network cable before switching the connection to USB or RS-485. See [Connection to IO BOX] in *2.23.3 Other Setting*.

---

1. Use the USB cable to connect one GV-I/O Box 8 to the PC. **(Allowed for DC Output Voltage only)**

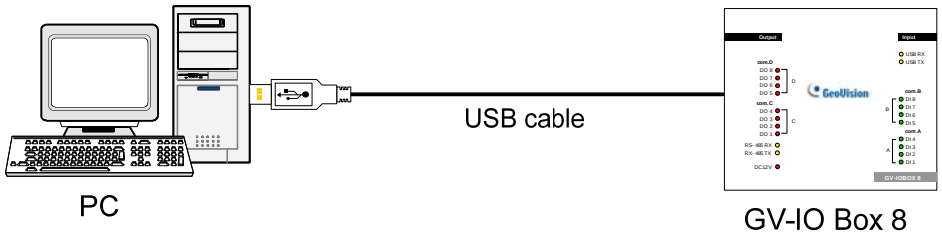


Figure 2-38

Note: It is required to install the USB driver. See *2.22 Installing USB Driver.*

---

2. Use the RS-485 connectors to connect one GV-I/O Box 8 with the PC. **(Allowed for AC/DC Output Voltage)**

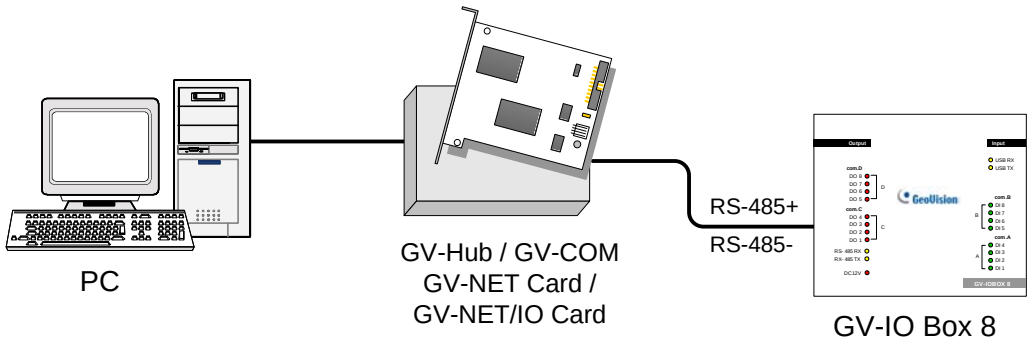


Figure 2-39

Assigning Addresses to GV-I/O Box 8

Up to 9 pieces of GV-I/O Box 8 can be chained together to expand the I/O capacity. Use the ID switch (1~9) to assign addresses 1~9 to the connected pieces of GV-I/O Box 8.

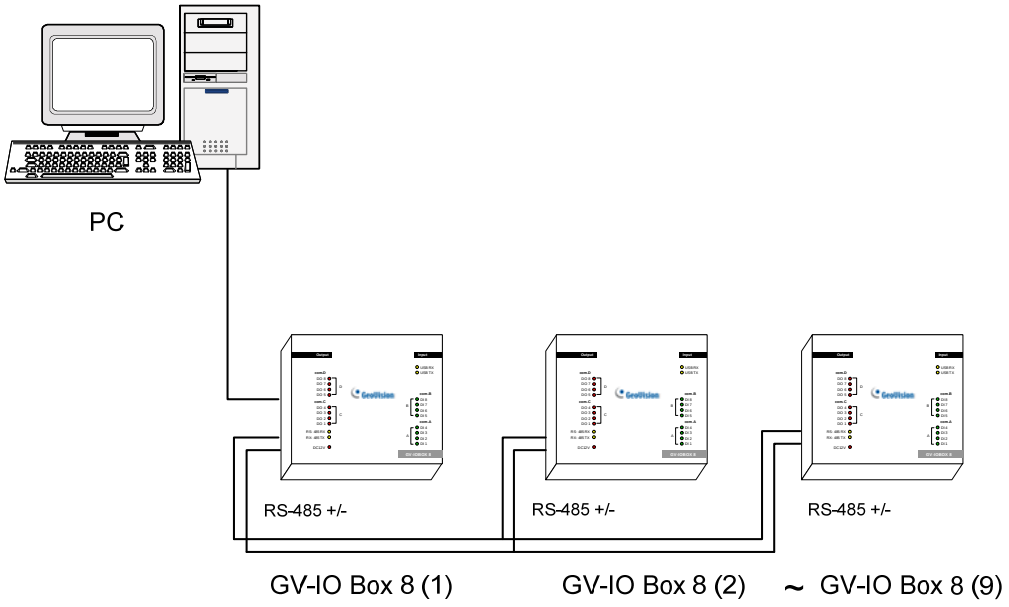
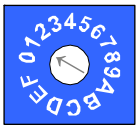


Figure 2-40

ID Switch



ID

1. Addresses 0 and A to F are NOT functional.
2. Assign the addresses when the power is off.
3. If you want to change the assigned address of the connected GV-I/O Box 8, set the switch to the new address, and then re-plug the power adaptor.

Extending Transmission over the Distance

When the transmission signals between the RS-485 communications become weak over the distance, switch on the Terminal Resistance Switches to maintain the signals. Three conditions below illustrate how the Terminal Resistance Switches should be switched on.

1. **Multiple pieces of GV-I/O Box 8 are connected with the PC through one single RS-485 cable.**

   After you connect multiple pieces of GV-I/O Box 8 with the PC, only switch on the Terminal Resistance Switches in the first and last connected pieces of GV-I/O Box 8.

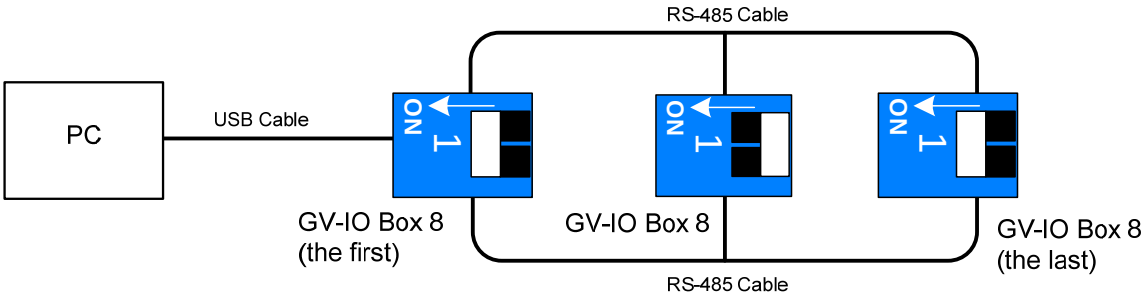


Figure 2-41

2. **Multiple pieces of GV-I/O Box 8 are connected with the PC through a RS-485 / RS-232 conversion device.**

   After you connect multiple pieces of GV-I/O Box 8 with the PC through a RS-485 / RS-232 conversion device, such as GV-NET/IO Card and GV-Hub, insert a Terminal Resistor in the conversion device and switch on the Terminal Resistance Switch of the last connected GV-I/O Box 8.

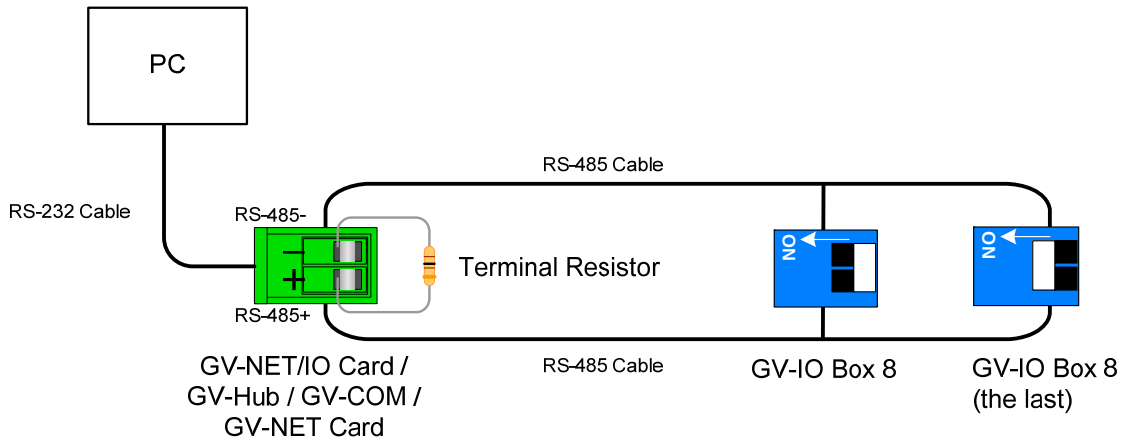


Figure 2-42

3. **Multiple pieces of GV-I/O Box 8 are connected with the PC through separate RS-485 cables.**

   After you connect multiple pieces of GV-I/O Box 8 with the PC through separate RS-485 cables, switch on Terminal Resistance Switches of the connected piece of GV-I/O Box 8 at the end of each cable.

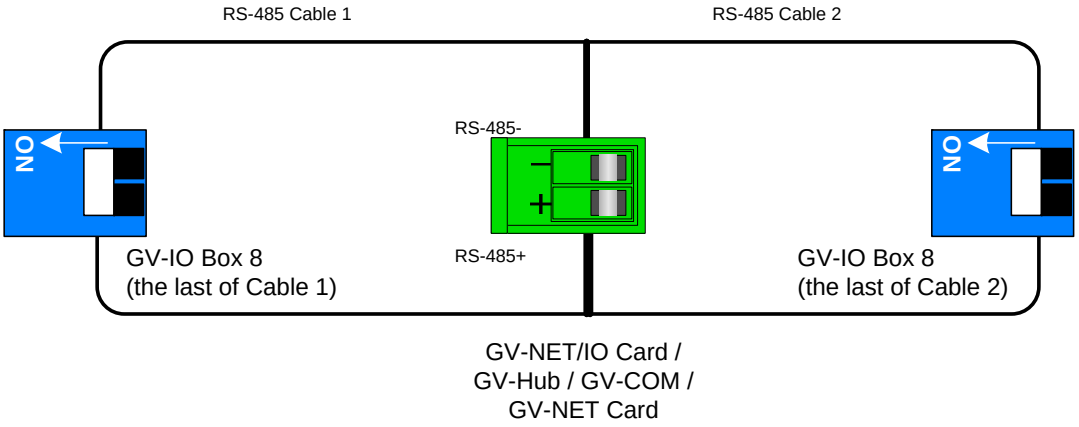
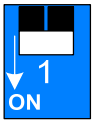


Figure 2-43

Terminal Resistance Switch



The default setting of the Switch is OFF. To switch on the Terminal Resistance Switch, push the switch downward.

Specifications

Input	Input	8	
	Input Signal	Dry Contact	
		Wet Contact, 9-30V AC/DC	
Output	Relay Output	8	
	Relay Status	Normal Open	
	Relay Capacitance	USB Connection	30V DC, 3A
		RS-485 Connection	125 / 250V AC, 3A 30V DC, 3A
Ethernet	RJ-45, 10/100 Mbps		
DC IN	DC 12V, 1A		
Address	0-9, A-F		
Terminal Resistance	120Ω		
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)		
Dimensions (W x H x D)	135 x 28 x 145 (mm) / 5.31 x 1.10 x 5.70 (in)		

Ordering Information

84-IOB08-100

2.11 GV-I/O Box (4 Ports)

As a small but a capable device, the GV-I/O Box 4 provides 4 inputs and 4 relay outputs. It supports both DC and AC output voltages, and provides a USB port for PC connection.

Key Features

- 4 inputs and 4 outputs are provided.
- Up to 9 pieces of GV-I/O Box 4 can be chained together.
- A USB port is provided for PC connection, and it is only used for 30 DC output voltage.

System Requirements

- GV-System version 8.2 or above

Packing List

1. GV-I/O Box 4 x 1
2. RJ-11 to DB9 Cable x 1
3. RJ-11 to USB Cable x 1
4. Terminal Resistor x 1
5. Power Adapter DC 12V x 1
6. Installation Guide x 1

Note: The GV-I/O Box (4 Ports) does not provide the option of an Ethernet module.

Overview

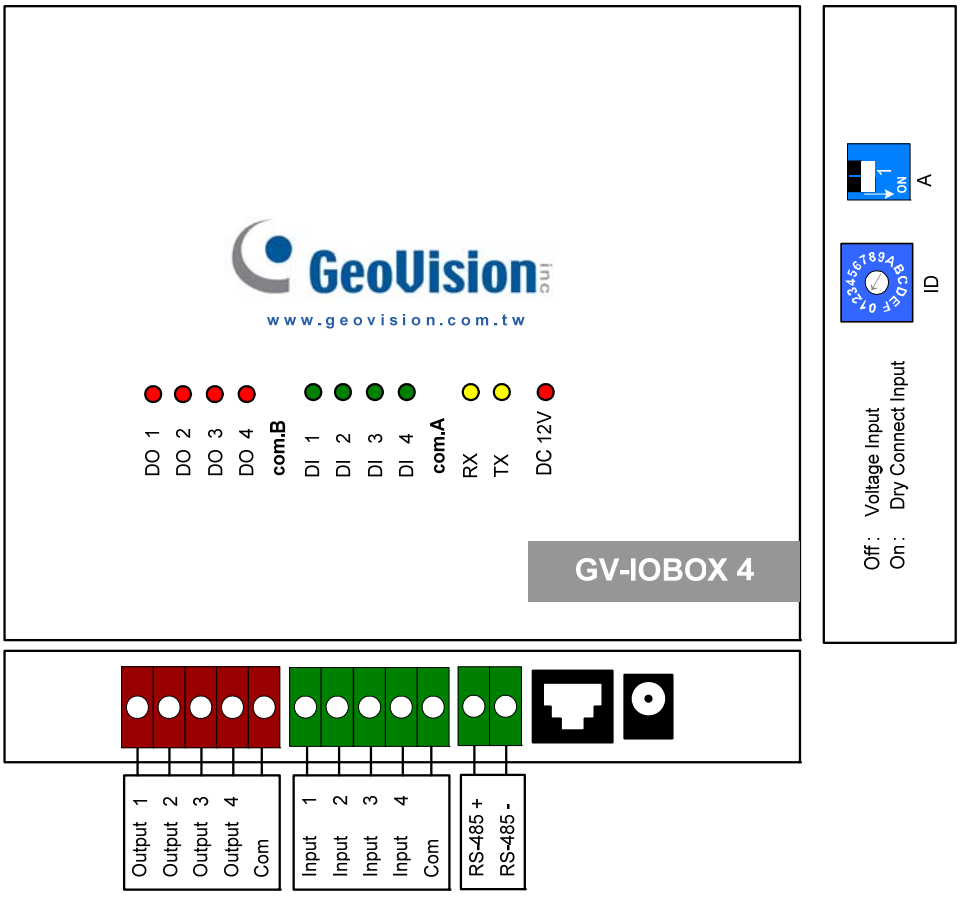
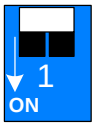


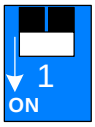
Figure 2-44

DIP Switch



A
Wet Contact

To change the inputs to different kind of contact, push the switch upward.



A
Dry Contact

To change the inputs to different kind of contact, push the switch downward.

Note: The RS-485 connectors do not have the conversion function from RS-485 to RS-232. It will not work if you connect RS-485 devices, such as PTZ camera, to the connectors.

Connections to PC

There are two ways to connect a GV-I/O Box 4 to the PC:

1. Use the RJ-11 to USB cable to connect a GV-I/O Box 4 to the PC. **(Allowed for DC Output Voltage only)**

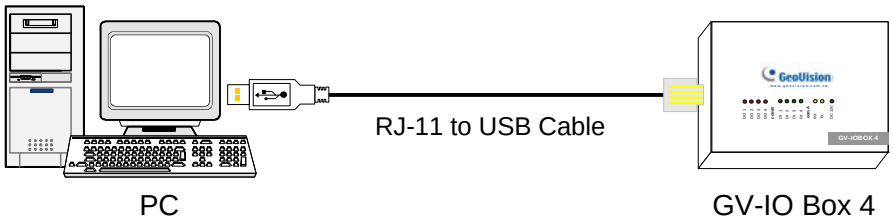


Figure 2-45

Note: It is required to install the USB driver. See *2.22 Installing USB Driver*.

2. Use the RJ-11 to DB9 cable to connect a GV-I/O Box 4 to the PC. **(Allowed for AC/DC Output Voltage)**

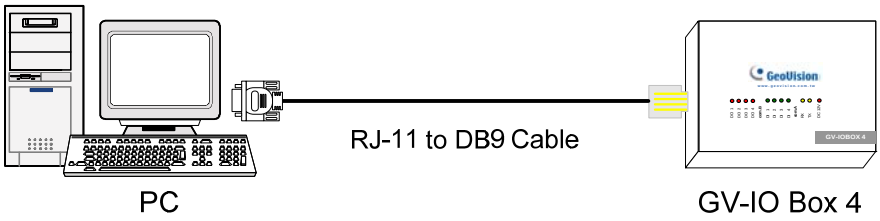


Figure 2-46

Assigning Addresses to GV-I/O Box 4

Up to 9 pieces of GV-I/O Box 4 can be chained together to expand the I/O capacity. Use the ID switch to assign addresses 1~ 9 to the connected pieces of GV-I/O Box 4.

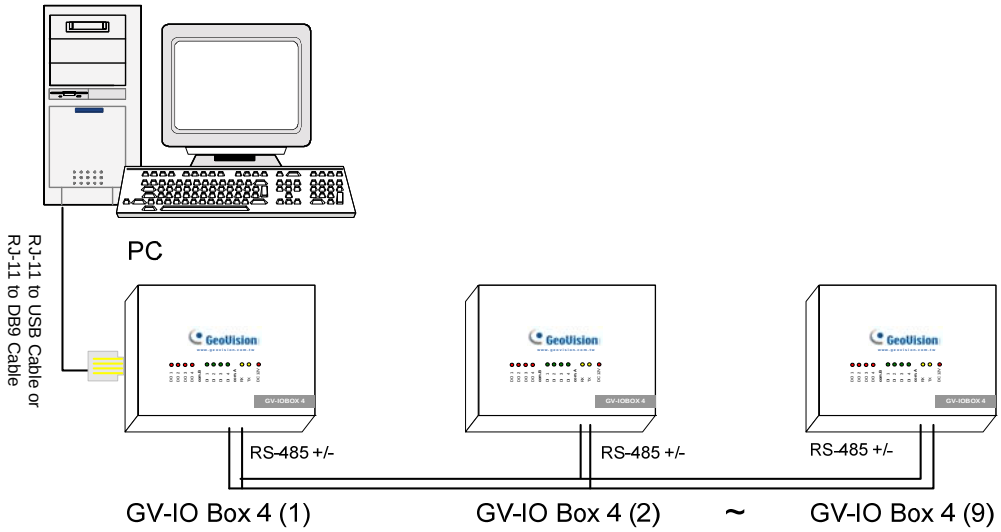


Figure 2-47

ID Switch

ID

1. Address 0 and A to F are NOT functional.
2. Assign the addresses when the power is off.
3. If you want to change the assigned address of the connected GV-I/O Box 4, set the switch to the new address, and then re-plug the power adaptor.

Extending Transmission over the Distance

When the transmission signals between the RS-485 communications become weak over the distance, use the supplied Terminal Resistor to maintain the signals. Three conditions below illustrate how the Terminal Resistors should be inserted.

1. **Multiple pieces of GV-I/O Box 4 are connected with the PC through one single RS-485 cable.**

   When you connect one GV-I/O Box 4 to another GV-I/O Box 4 or more, only insert the Terminal Resistors in the first and last connected pieces of GV-I/O Box 4.

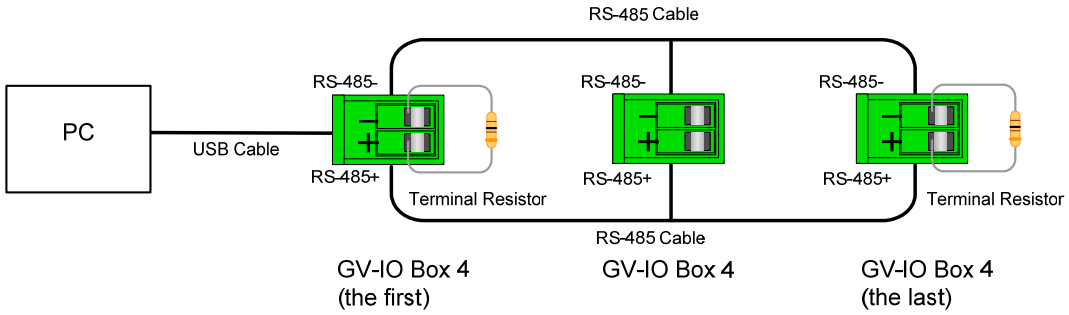


Figure 2-48

2. **Multiple pieces of GV-I/O Box 4 are connected with the PC through a RS-485 / RS-232 conversion device.**

   After you connect multiple pieces of GV-I/O Box 4 with the PC through RS-485 / RS-232 conversion device, such as GV-NET/IO Card and GV-Hub, insert the Terminal Resistors in the conversion device and the last connected GV-I/O Box 4.

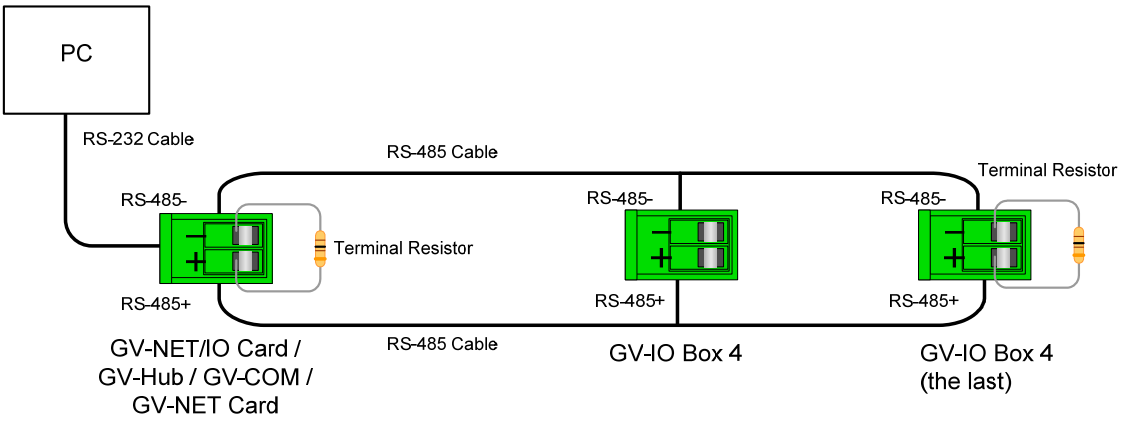


Figure 2-49

3. **Multiple pieces of GV-I/O Box 4 are connected with the PC through separate RS-485 cables.**

   After you connect multiple pieces of GV-I/O Box 4 with the PC through separate RS-485 cables, insert the Terminal Resistors in the connected piece of GV-I/O Box 4 at the end of each cable.

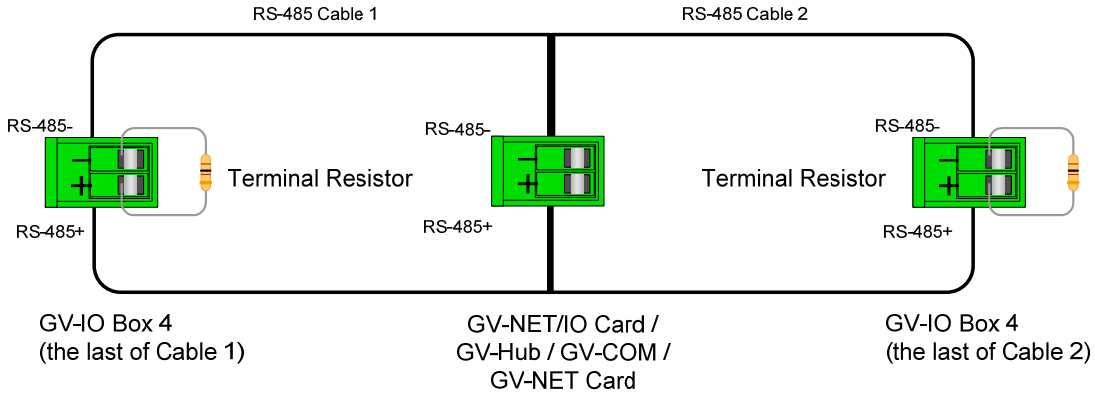


Figure 2-50

Specification

Input	Input	4	
	Input Signal	Dry Contact	
		Wet Contact, 9-30V AC/DC	
Output	Relay Output	4	
	Relay Status	Normal Open	
	Relay Capacitance	USB Connection	30V DC, 3A
		RS-232 / RS-485 Connection	125 / 250V AC, 3A 30V DC, 3A
DC IN	DC 12V, 1A		
Address	0-9, A-F		
Terminal Resistance	120Ω		
Environmental Condition	0~50 Degree C / 32~122 Degree F 5%~95% (Non-Condensing)		
Dimensions (W x H x D)	111.4 x 27.5 x 101 (mm) / 4.39 x 1.08 x 3.98 (in)		

Ordering Information

84-IOB04-100

2.12 GV-Data Capture V2 Box

The GV-Data Catpure V2 can integrate your POS system (cash register) with the GV-System. Through the intergration, you can investigate a transaction with transaction data overlaying on video footage.

System Requirements

- GV-System Version 6.0.2.0 or above

For details on GV-Data Capture V2 Box, see *GV-Data Capture V2 User's Manual* attached with the product.

Ordering Information

55-POS1P-200

2.13 GV-Data Capture V2E Box

The GV-Data Capture V2E is the network version of GV-Data Capture V2. With an Ethernet jack, the V2E allows you to integrate POS systems (cash registers) with the GV-System through LAN.

System Requirements

- GV-System Version 8.0 or above

For details on GV-Data Capture V2E Box, see *GV-Data Capture V2E User's Manual* attached with the product.

Ordering Information

55-ENPOS-100

2.14 GV-Data Capture V3 Series

Compared to the V2E, the GV-Data Capture V3 Series, including V3 and V3E, not only provides LAN but Internet connection. In addition, the V3 Series can support both serial and parallel POS systems (cash registers).

System Requirements

- GV-Data Capture V3: GV-System version 6.0.2.0 or above
- GV-Data Capture V3E: GV-System version 8.0.4.0 or above

For details on GV-Data Capture V3 Series, see *GV-Data Capture V3 Series User's Manual* attached with the product.

Ordering Information

- GV-Data Capture V3: 55-POS1P-300
- GV-Data Capture V3E: 55-ENPOS-300

2.15 GV-Keyboard

The GV-Keyboard is designed to program and operate GV-Systems. Through RS-485 configuration, it can control up to 16 additional GV-Systems.

System Requirements

- GV-System Version 7.0 or above

For details on GV-Keyboard, see *GV-Keyboard Instruction Manual* attached with the product.

Ordering Information

55-KEYBD-200

2.16 GV-Joystick

The GV-Joystick facilitates the PTZ camera control such as pan, tilt, zoom and focus. It can work on the GV-System independently, and its compatibility with GV-Keyboard empowers the operation of GV-System as well.

System Requirements

- GV-System Version 8.2 or above

For details on GV-Joystick, see *GV-Joystick User's Manual* attached with the product.

Ordering Information

55-JOYSK-110

2.17 GV-IR Remote Control

The GV-IR Remote Control is designed for basic system operation.

System Requirements

- GV-System Version 6.1 or above

For details on GV-IR Remote Control, see *IR Remote Control User's Manual* attached with the product.

Ordering Information

- Type A: 81-RMS00-00A
- Type B: 81-RMS00-00B
- Type C: 81-RMS00-00C

2.18 GV-Wiegand Capture Box

The GV-Wiegand Capture can integrate your access control system with the GV-System. Through the integration, you can investigate the video footage overlaid with the cardholder's name, ID, photo and related information.

System Requirements

- GV-System Version 8.1 or above

For details on GV-Wiegand Capture Box, see *GV-Wiegand Capture User's Manual* attached with the product.

Ordering Information

55-WT001-000

2.19 GV-Video Server

The GV-Video Server can stream the real-time digital video over the Internet in the same way that current IP cameras do. With the GV-Video Server attached to analog cameras, you can see camera images through a web browser anywhere and anytime. With the GV-Video Server connected to the GV-System, your existing surveillance system can be upgraded and networked into a new IP surveillance system.

System Requirements

- GV-System Version 8.1 or above

For details on GV-Video Server, see *GV-Video Server User's Manual* attached with the product.

Ordering Information

- GV-VS12: 84-VS120-100
- GV-VS04A: 84-VS04A-100
- GV-VS02A: 84-VS02A-100

2.20 GV-Compact DVR

GV-Compact DVR is an all-in-one solution that makes monitoring more convenient. Its connection to Internet also makes the remote access possible.

System Requirements

- GV-System Version 8.2 or above

For details on GV-Compact DVR, see *GV-Compact DVR User's Manual* attached with the product.

Ordering Information

84-GLX4C-120

2.21 Installing USB Driver

To use the USB function, it is required to install the driver on the PC. Follow these steps to install the driver:

1. Insert the software CD. It will run automatically and pop up a window.
2. Select **Install or Remove GeoVision GV-Series Driver**, and then click **Install GeoVision USB Devices Driver**. This dialog box appears.

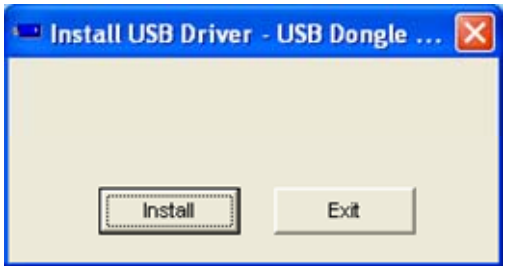


Figure 2-51

3. Click **Install** to install the drivers. When the installation is complete, this message will appear: *Install done!*
4. Click **Exit** to close the dialog box.
5. To verify the drivers are installed correctly, go to **Device Manager**. Expanding the **Ports** field, you should see one entry for Prolific USB-to-Serial Bridge.

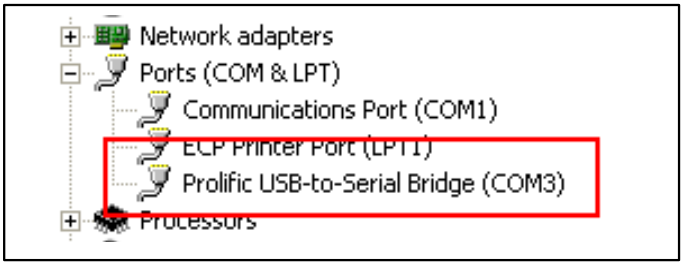


Figure 2-52

2.22 Accessing GV-I/O Box over Networks

GV-I/O Box 8 and **GV-I/O Box 16** come with the option of network connectivity. With network connectivity, GV-I/O Box can be linked to GV-System, GV-GIS and Control Center over networks for I/O management.

GV-I/O Box with network connectivity can support two network environments: Fixed IP and DHCP. Depending on your network, choose Fixed IP for a static IP address or DHCP for a dynamic IP address such as those assigned by an ISP or other DHCP server.

GV-I/O Box is linked to GV-System by using the **Virtual I/O** function. Please note these specifications when GV-I/O Box works with GV-System:

1. GV-System supports up to 9 I/O modules which include real I/O devices and virtual I/O devices linked through networks.
2. Up to 5 connections, which include GV-System and any CMS applications, are allowed to control one GV-I/O Box.

Note:

1. GV-I/O Box has a default IP address of **192.168.0.100**. The computer used to set the IP address must be under the same network or subnet sequence assigned to the Box.
2. To link GV-I/O Box to GV-System, see *Virtual I/O Control*, Chapter 6 in *User's Manual* on the Surveillance System Software DVD.
3. It is required to use **Internet Explorer 7** or above to access the Web interface of GV-I/O Box.

2.22.1 Fixed IP Connection

To assign GV-I/O Box to a fixed IP:

1. Open an Internet browser, and type the default IP address **https://192.168.0.100**. The login dialog box appears.
2. Type default value **admin** for both Username and Password, and click **OK**. This page appears.

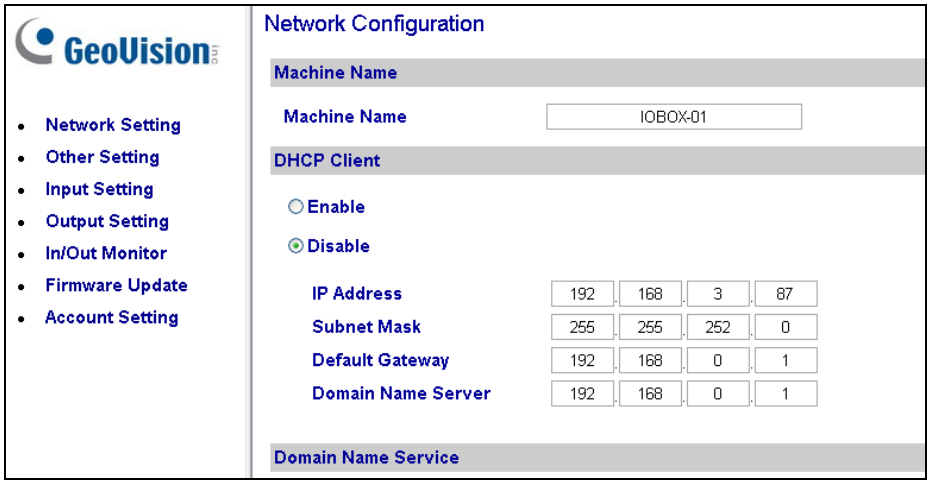


Figure 2-53

3. In the Machine Name field, edit the name of the connected GV-I/O Box.
4. Click **Disable**. Type the static IP address information, including IP Address, Subnet Mask, Default Gateway and Domain Name Server.
5. Click **Submit**. When the setting is complete, the Status field will indicate *Register Success*. Then GV-I/O Box can be accessed with this fixed IP address.

Note: If you like to use the domain name instead of IP address, you may use Domain Name Service as well. For details on domain name service, see 2.23.2 *DHCP Connection*.

2.22.2 DHCP Connection

DDNS (Dynamic Domain Name System) provides another way of accessing GV-I/O Box when using a dynamic IP from a DHCP server. DDNS assigns a domain name to GV-I/O Box so that GV servers can always access GV-I/O Box by using the domain name.

To enable the DDNS function, first you should apply for a domain name from the DDNS service provider's website. There are 2 providers listed in GV-I/O Box: **GeoVision DDNS Server** and **DynDNS.org**. To register at GeoVision DDNS Server, see the following instructions. For details on DynDNS, please consult them at www.dyndns.org.

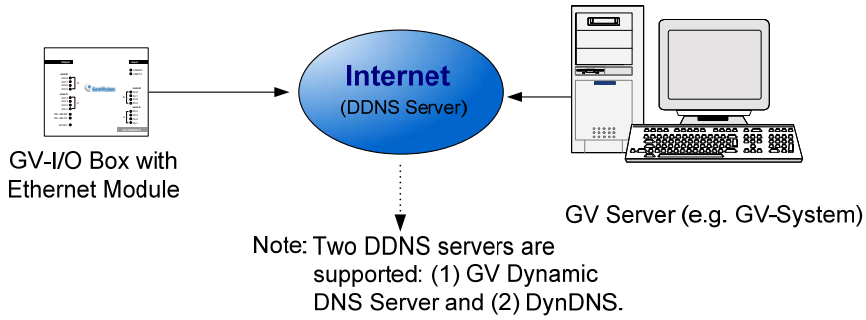


Figure 2-54

2.22.2.1 Registering a DDNS Domain Name

To obtain a domain name from the GeoVision DDNS Server:

1. Click the **GeoVision DDNS** button on the Network Configuration page (*Figure 2-53)*. Or open an Internet browser, and type the Web address **http://ns.dipmap.com/register.aspx**. This page appears.

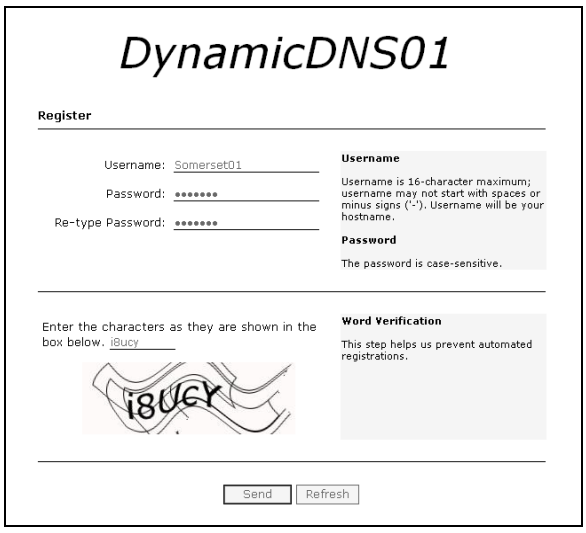


Figure 2-55

2. In the Username field, type a name. Username can be up to 16 characters with the choices of “a ~ z”, “0 ~9”, and “-”. Note that space or “-” cannot be used as the first character.
3. In the Password filed, type a password. Passwords are case-sensitive and must be at least 6 characters. Type the password again in the Re-type Password field for confirmation.
4. In the Word Verification section, type the characters or numbers shown in the box. For example, type *i8UCY* in the required field. Word Verification is not case-sensitive.
5. Click the **Send** button. When the registration is complete, this page will appear. The **Hostname** is the domain name, consisting of the registered username and “dipmap.com”, e.g. somerset01.dipmap.com.

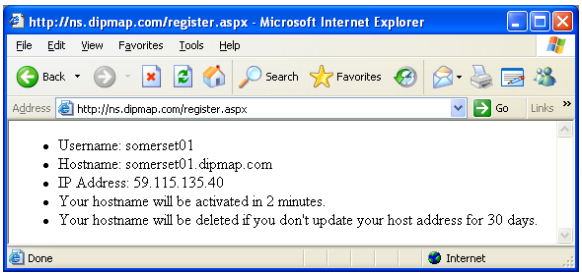


Figure 2-56

Note: The registered username will be invalid when it is not used for one month.

2.22.2.2 Configuring GV-I/O Box on Internet

After acquiring a domain name from the DDNS Server, you need to configure the domain name on GV-I/O Box so that GV servers can access GV-I/O Box by using the domain name on Internet.

1. Follow the Steps 1 to 2 in *2.22.1 Fixed IP Connect*ion. The Network Configuration page appears.
2. Click **Enable**, and select **Send to DDNS**.
3. Type **Host Name**, **User Name** and **Password** that are registered on the DDNS Server. If you select GeoVision DDNS, the system will automatically bring up the Host Name.

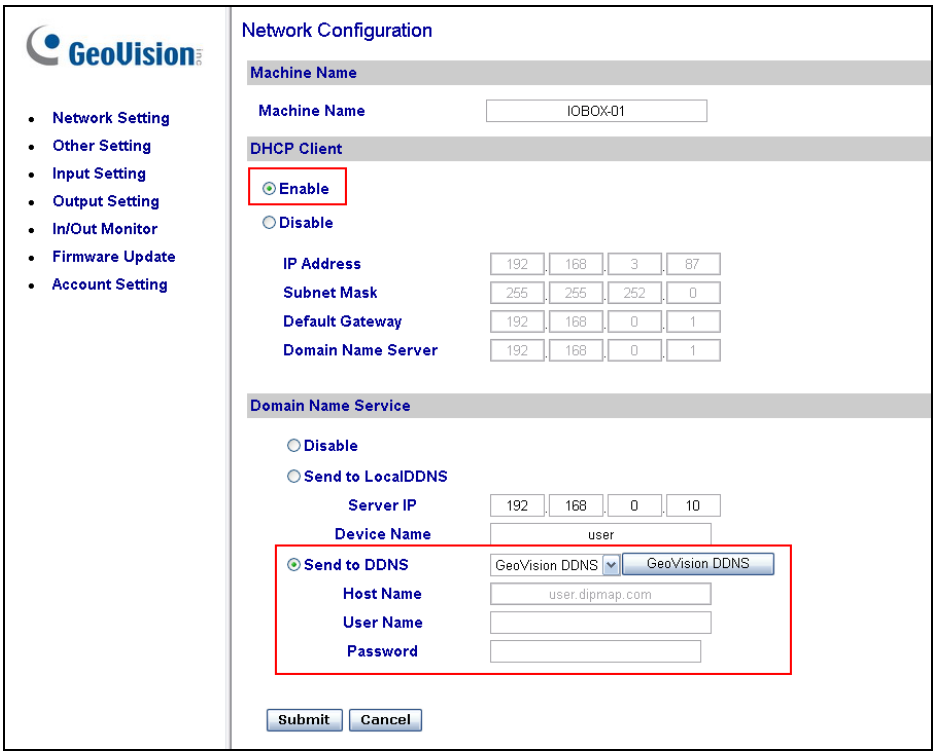


Figure 2-57

4. Click **Submit**. When the setting is complete, the Status field will indicate: Register Success. Then GV-I/O Box can be accessed with this domain name.

2.22.3 Other Setting

In the left menu, click **Other Setting**. This page appears.

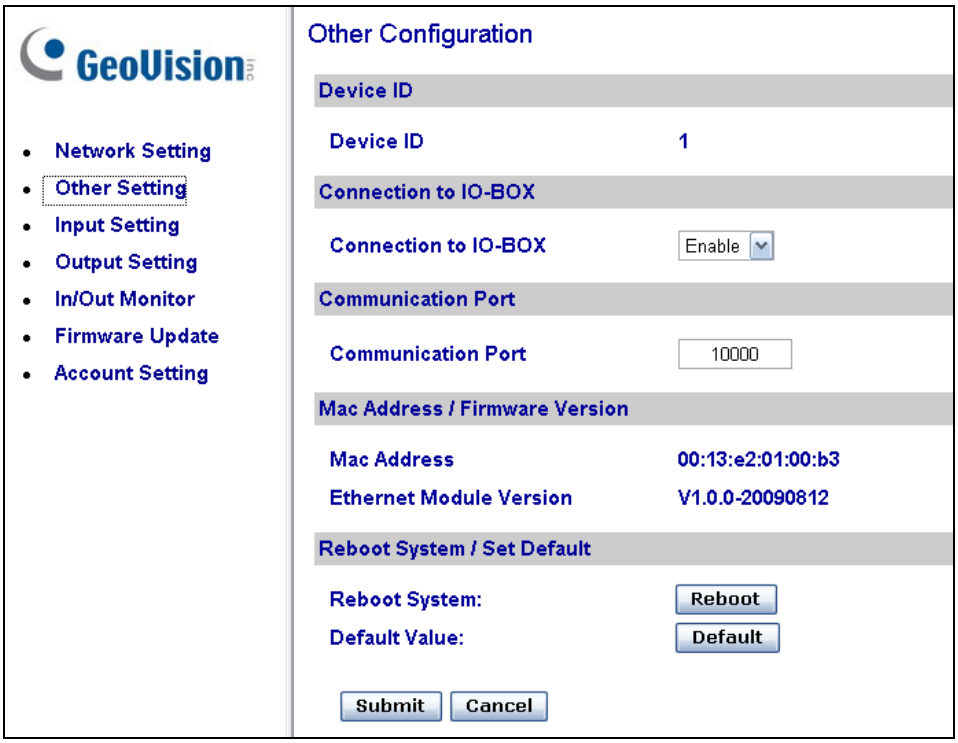


Figure 2-58

[Device ID] Indicates the current ID of the device.

[Connection to IO-BOX] Select **Enable** to use GV-I/O Box through network or select **Disable** to use GV-I/O Box through USB or RS-485 connection. GV-I/O Box cannot support more than one method simultaneously.

[Communication Port] Keeps the default port value **10000**.

[Mac Address/Firmware Version] Indicates the MAC address of the network medium and the Ethernet module version of GV-I/O Box.

[Reboot System/Set Default]

- **Reboot System:** Performs a warm boot of GV-I/O Box. This operation keeps the current configuration.
- **Default Value:** Resets all configuration parameters to their factory settings. This may take 5 seconds to complete.

Note: If you switch the connection from USB or RS-485 to network, first remove the USB or RS-485 cable from GV-I/O Box and then select **Enable** in this setting page; otherwise, the network connection will not function.

2.22.4 Input Setting

In the left menu, click **Input Setting**. This page appears.

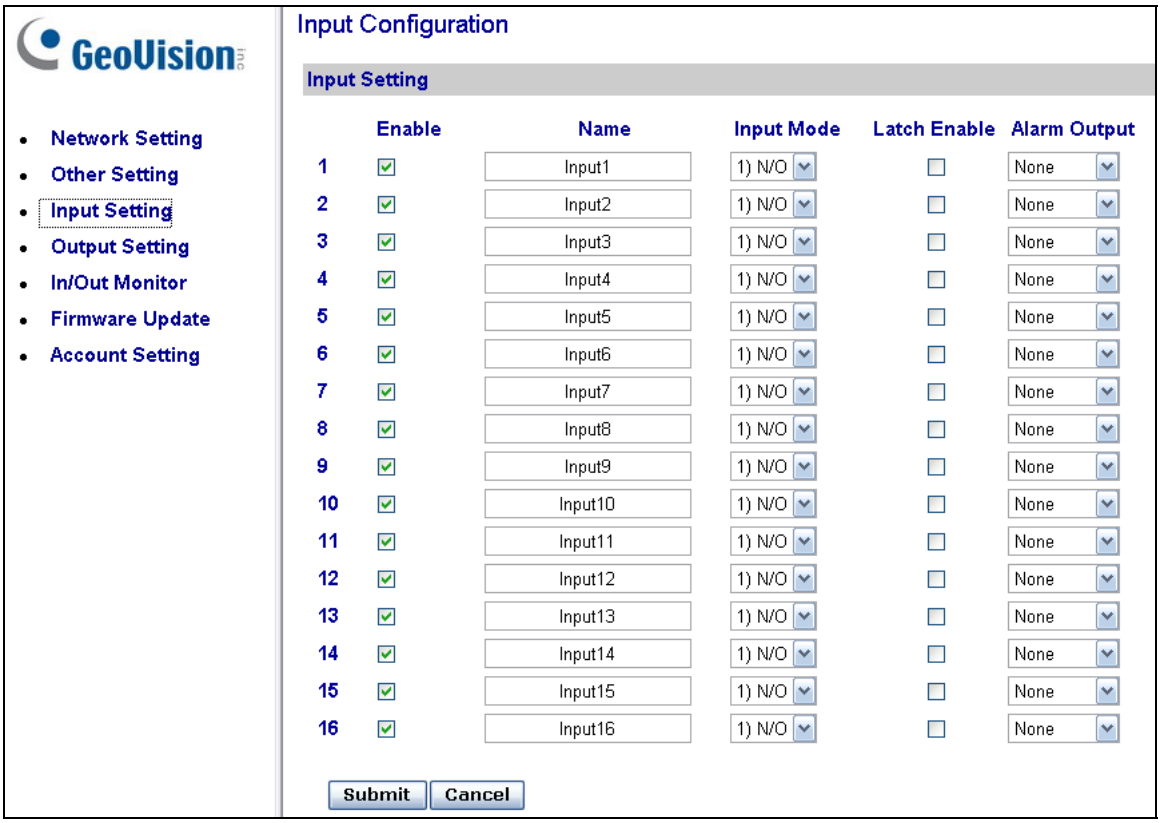


Figure 2-59

- **Enable:** Select to enable this Input function to be used by GV-I/O Box.
- **Name:** Edit the name of the Input.
- **Input Mode:** Configure the input to **NC** (normally closed) or **NO** (normally open) mode.
- **Enable Latch:** Instead of constant output alarm in N/O and N/C, the option provides a momentary alarm when triggered.
- **Alarm Output:** Select **None** for no alarm output, or select between **Output 1** and **Output 16** to trigger when the input is detected.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

2.22.5 Output Setting

In the left menu, click **Output Setting**. This page appears.

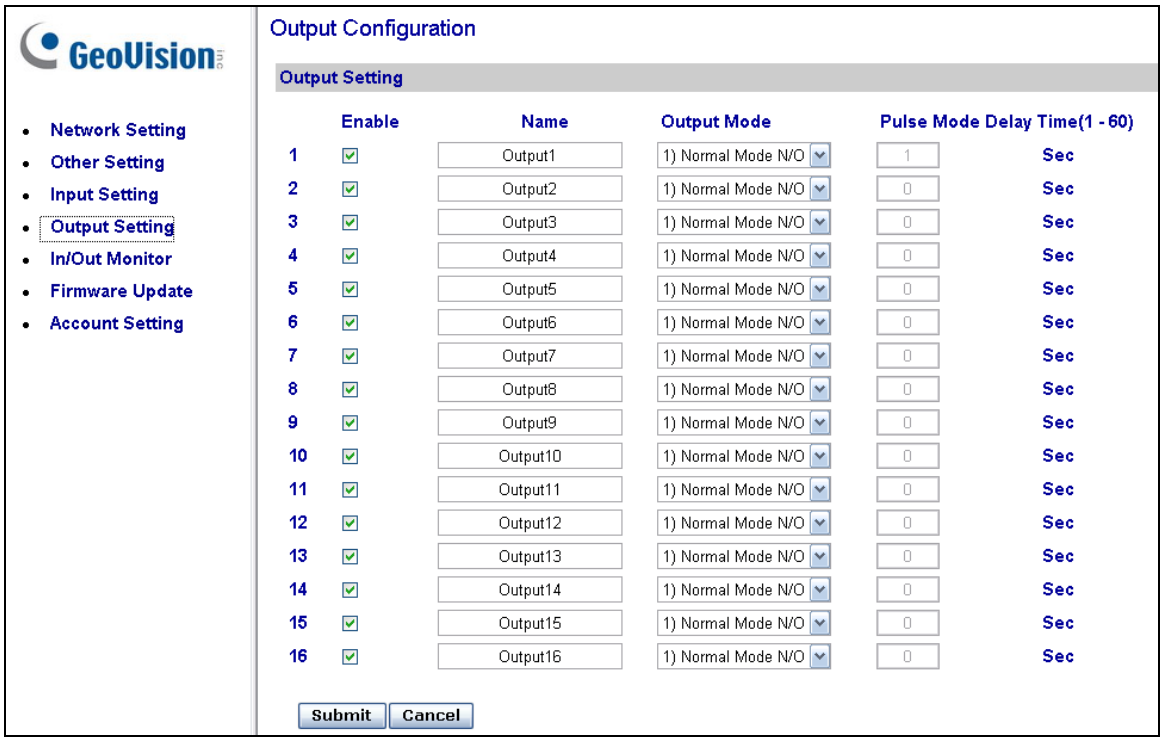


Figure 2-60

- **Enable:** Select to enable this Output function to be used by GV-I/O Box.
- **Name:** Edit the name of the Output.
- **Output Mode:** Configure the input to **NC** (normally closed) or **NO** (normally open) mode.
  - ⊙ **Normal Mode (N/O and N/C):** Output continues to be triggered until the source of the output condition is stopped.
  - ⊙ **Toggle Mode (N/O and N/C):** Output continues to be triggered until a new input trigger ends the output.
  - ⊙ **Pulse Mode (N/O and N/C):** Output is triggered for the amount of time set in the **Pulse Mode Delay Time (1-60)** field.
- **Pulse Mode Delay Time (1-60):** Enter the time in seconds for the pulse delay time between 1 and 60 seconds.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

2.22.6 In/Out Monitor

In the left menu, click **In/Out Monitor**. This page appears.

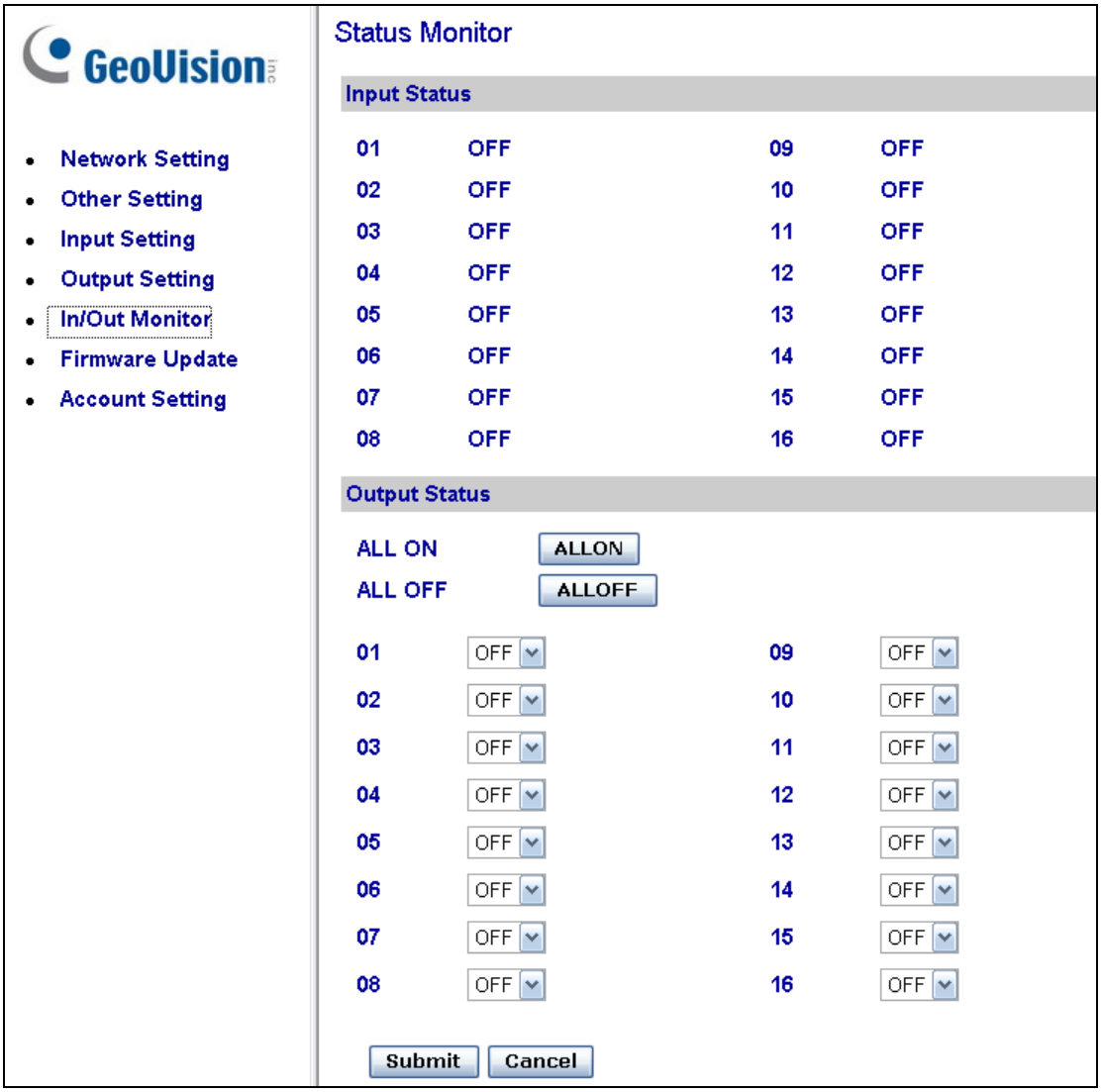


Figure 2-61

- **Input Status:** Indicates the current status of the 16 inputs, whether it is **On** (triggered) or **OFF** (no input).
- **Output Status:** Indicates the current status of the 16 outputs, whether it is **ON** (triggered) or **Off** (no output). Click **ALL ON** button to force all 16 outputs to be triggered. Click **ALL OFF** button to turn off all 16 outputs. Select the individual outputs to turn it **ON** to force the output to be triggered or turn it **OFF**.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

2.22.7 Updating Firmware

To update the firmware of GV-I/O Box:

1. In the left menu, click **Firmware Update**. This page appears.

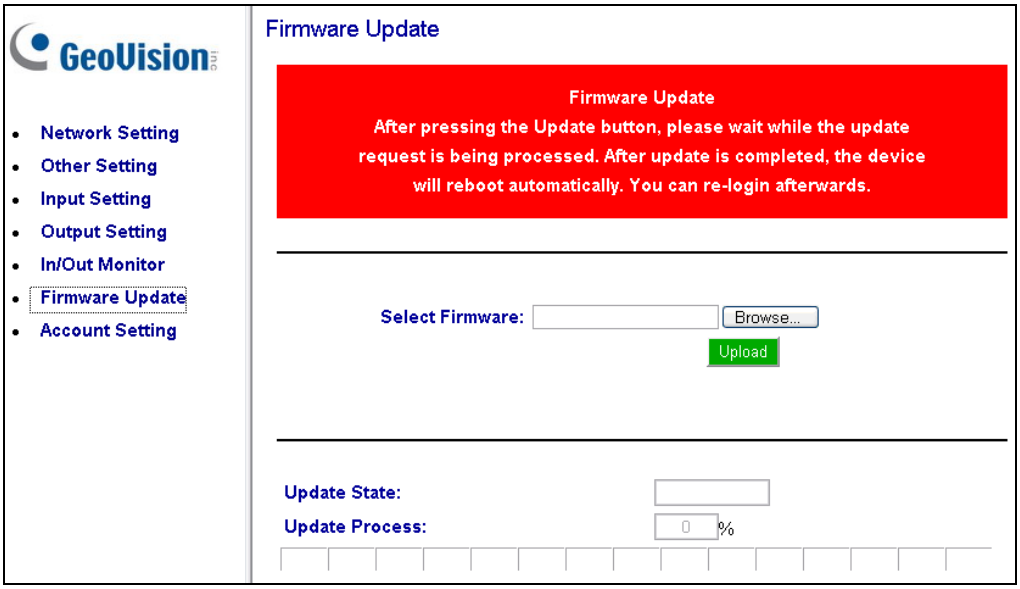


Figure 2-62

2. Click the **Browse…** button to open the firmware file (*.bin)
3. Click the **Upload** button. This update procedure may take 60 seconds to complete.
4. When the Update is complete, a dialog box appears and asks you to reboot the system.
5. Click **OK**. GV-I/O Box starts the Reboot operation.

Note: It is required to reboot GV-I/O Box after updating the firmware. Without rebooting, the firmware update is not complete.

2.22.8 Changing Login ID and Password

In the left menu, click **Account Setting**. This page appears. You can modify the login name and password. The password is case sensitive and is limited to 4 characters with the choices of “a ~ z” and “0 ~ 9”.

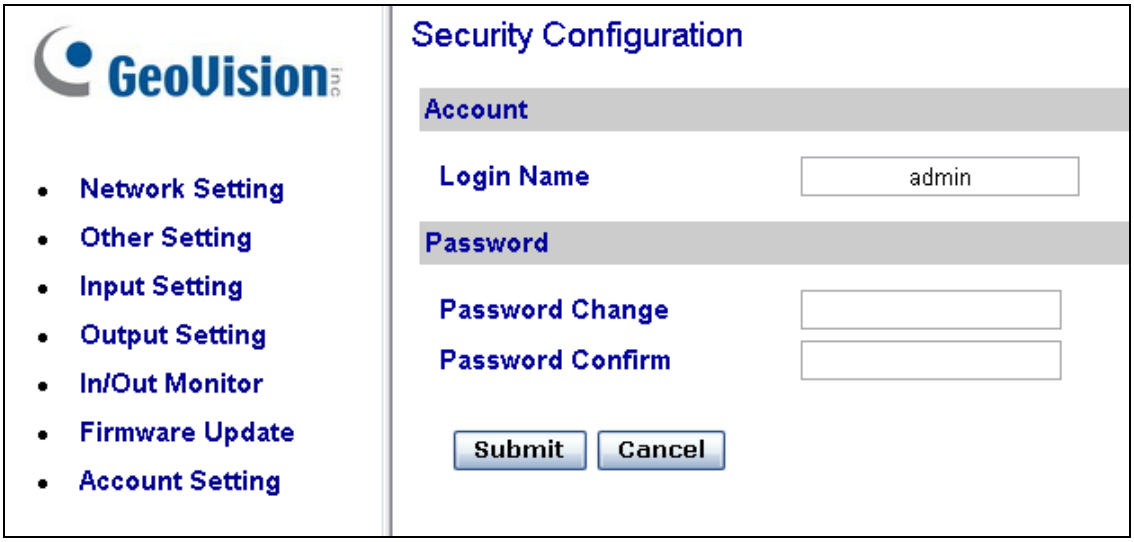


Figure 2-63

Chapter 3 Software Installation

This chapter includes the following information:

- **Important notice**
- **Installing a program**
- **Program list**

3.1 Before You Start

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

- It is strongly recommended to use two separate hard disks. One is for installing Windows OS and GV-System 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-System 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-System 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-System software and video files are stored on two separated hard disks, the performance of GV-System will not be affected.

3.2 Installing the System

When you insert the Surveillance System Software CD, the Install Program window will pop up automatically:

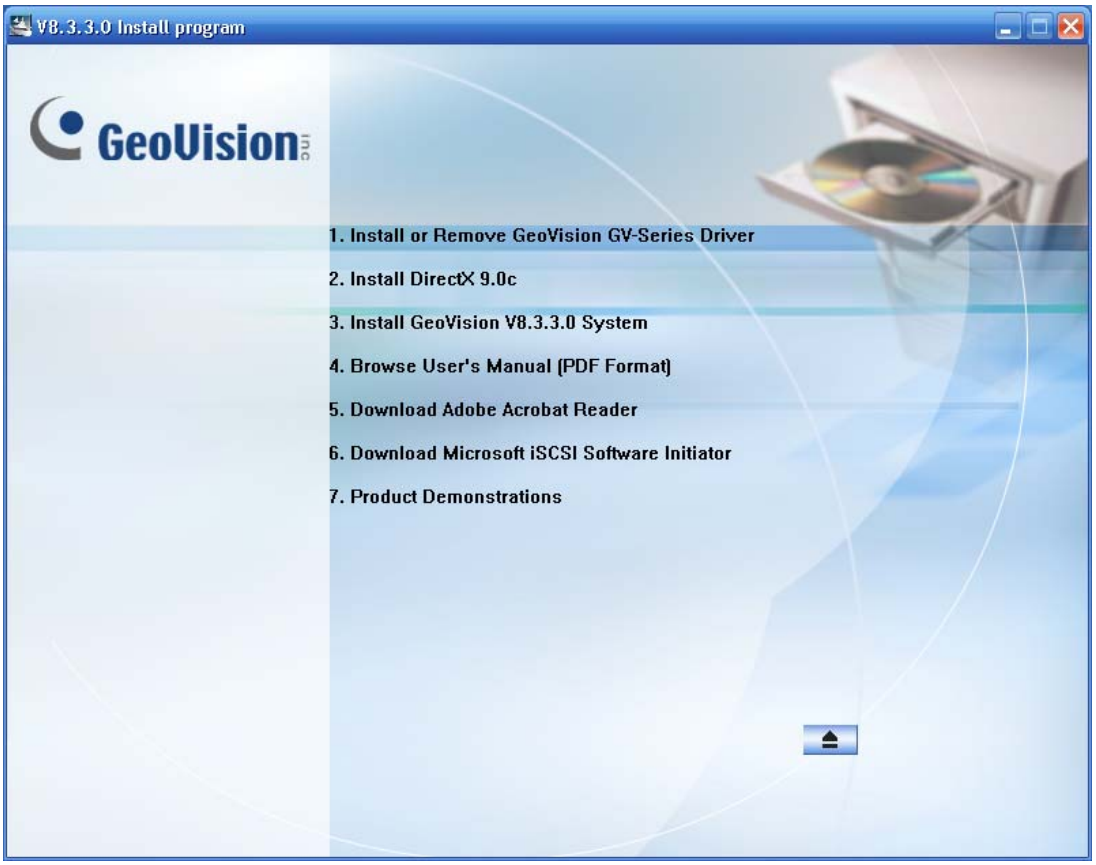


Figure 3-1 The Install Program Window

Before installing the system software, make sure **DirectX 9.0c** is already installed on your computer.

DirectX

If your computer doesn't have the latest version of Direct X, click **Install DirectX 9.0c** in the Install Program window.

Installing the System

To install the GV-System, follow these steps:

1. In the Install Program window, click **Install GeoVision xxx System** (ex. Install GeoVision V8.3.3.0 System).
2. To install the Main System, select **GeoVision Main System**, and follow the on-screen instructions.
3. Follow the above steps to install other programs one by one.

Uninstalling the System

To uninstall the GV-System, follow these steps:

1. Close any open programs because your computer will restart during the uninstalling process.
2. On the taskbar, click **Start**, point to **Programs**, select the system folder, and then click **Uninstall GeoVision System**.

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

3.3 Program List

The Surveillance System Software CD includes the following programs:

First Page:

1. Main System
2. Remote ViewLog
3. Remote Playback Client Site
4. Single Player
5. Center V2
6. Multi View
7. Audio Broadcast
8. Multicast
9. Microsoft PDA Viewer V2
10. Microsoft Smartphone Viewer V2 (For Windows Mobile 5.0)

Figure 3-2 First page of program installation

Second page:

11. Microsoft Smartphone Viewer V3 (For Windows Mobile 6.0)
12. Symbian Smartphone Viewer V3 (For Nokia S60 2nd edition and 3rd edition)
13. BlackBerry Smartphone Viewer (For BlackBerry OS)
14. E-Map Server
15. Remote E-Map
16. POS Data Sender (Only for Graphic mode POS device)
17. POS Text Sender (Only for Windows-Based and Text Mode POS device)
18. Fast Backup and Restore Multicam System
19. Dynamic DNS Service
20. Local DDNS Server

Figure 3-3 Second page of program installation

Third page:

21. Authentication Server
22. Twin DVR System
23. SMS Server
24. Bandwidth Control Client Site
25. Backup Viewer

Figure 3-4 Third page of program installation

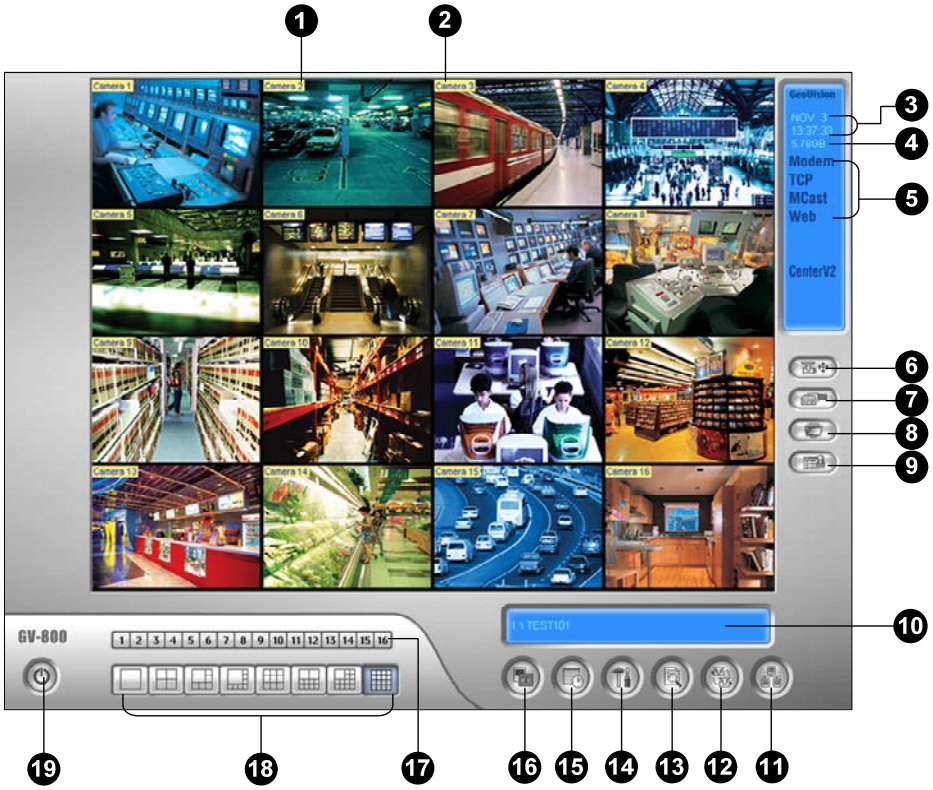
Chapter 4 Screen Overview

The GV-System provides two skin types: Silver and Conventional. The factory default is Silver. Each skin type has its own interface design. Therefore, this chapter gives you an overview of the following major screens:

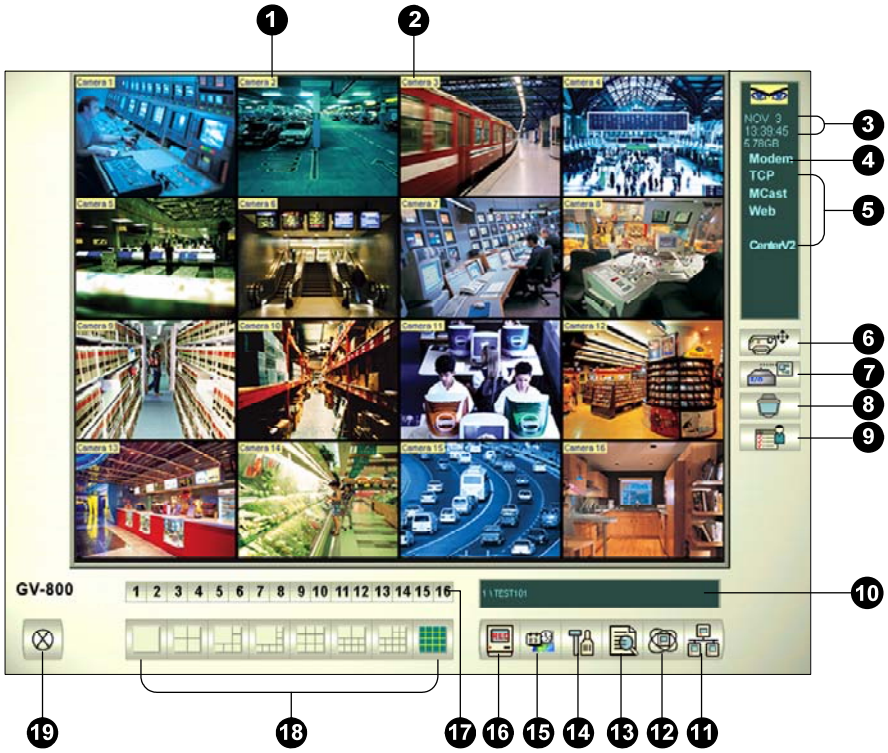
- **Main System**
- **ViewLog**
- **Remote Playback Client**
- **SingleView MPEG4 Encoder Viewer**
- **MultiView MPEG4 Encoder Viewer**
- **Center V2**
- **Control Center**

4.1 Main System

Silver



Conventional



The controls in the main screen:

No	Name	Description
1	Camera Number	Indicates the camera number matching the port number in the GV video capture card.
2	Camera Name	Indicates the given camera name.
3	Date/Time	Indicates the current date and time.
4	Storage Space	Indicates the remaining disk space.
5	Connection	Indicates the connection status of remote applications.
6	PTZ Control	Displays the PTZ control panel.
7	I/O Control	Displays the I/O control panel.
8	TV-Out	Displays the TV Quad control panel.
9	User-Defined	Accesses other applications.
10	Location Name	Indicates the GV-System's name, usually named by its geographical location.
11	Network	Enables the connection to remote applications
12	Camera Scan	Rotates through the screen divisions.
13	ViewLog	Brings up these options: Instant Play, Video/Audio Log, System Log, Search POS Data, POS Live View, Live Object Index, Search Object Index, Live Panorama View and E-Map.
14	Configure	Accesses system settings.
15	Schedule	Sets up recording schedules.
16	Monitor	Starts or stops monitoring.
17	Camera Select	Selects the desired camera number for main division view.
18	Screen Division	Selects screen divisions.
19	Exit	Brings up these options: Login/Change User, Logout, Minimize, Restart Multicam and Exit.

4.2 ViewLog

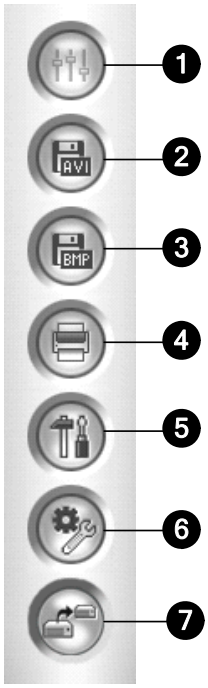
Silver

Conventional

The controls in the ViewLog window:

No	Name	Description
1	Camera Name	Indicates the given camera name.
2	Camera View	Displays the playback video.
3	Date Tree	Displays date folders.
4	Video Event List	Displays video events within a certain date folder.
5	Arrow Switch	Switches between Event List and Connect Multi Host list.
6	View Mode	Sets screen divisions: Single View, Panorama View, Quad View or Multi View. The Single View mode also includes these options: Standard, Thumbnail, Mega Pixel (PIP) and Mega Pixel (PAP).
7	Camera Select	Sets a desired camera for display.
8	Advanced	Accesses the basic, advanced search, timeline search and reloads video event list.
9	Normal	Displays the date tree, video event list and multiple host connection list.
10	Function Panel	Provides various settings for ViewLog.
11	Slider	Rewinds or forwards the video during playback.
12	Audio Playback	Enables audio playback.
13	Playback Panel	Contains typical playback control buttons.
14	Function Icons	A highlighted icon indicates an enabled function. From left to right are the A to B Mode, auto playing of next events, the contrast and brightness function, the light enhancement and equalization function, the sharpness and smoothness function, the grayscale function, and reconnection to Remote ViewLog.
15	Playback Speed	Indicates the playback speed. x 1 represents normal playback speed.
16	Time Display	Indicates the time of the playback video.
17	Date Display	Indicates the date of the playback video.
18	Exit	Closes or minimizes the ViewLog window.
19	A to B Mode	Plays repeatedly the set frames A to B.
20	Frame by Frame / Real Time	Plays back video frame by frame or on real time.

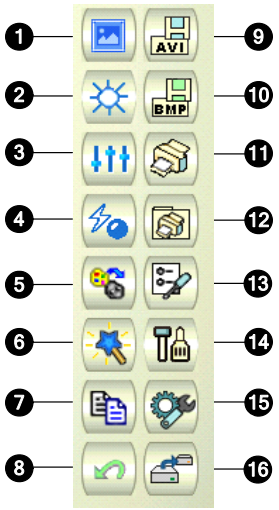
Silver Functional Panel



The controls in the Functional Panel:

No	Name	Description
1	Effects	Adds effects to the images. The effect options include: Sample, Contrast/Brightness, Light Enhancement, Equalization, Sharpen, Smooth, Grayscale, Undo to Prev. Action, Undo All Effects, Copy image to clipboard, Sample and Advanced Video Analysis.
2	Save As AVI	Saves a video file as avi or exe format and displays the Merging List.
3	Save As Image	Saves a video image as bmp, jpg, gif, png, or tif format.
4	Print	Specifies various settings for printing.
5	Setting	Accesses system settings of ViewLog.
6	Tools	Brings up these options: Object Search, Advanced Log Browser, Delete Log, Remote ViewLog Service, Remote Storage System, Address Book, Display GIS Window, Select Map API and Tool Kit.
7	Backup	Backs up video files.

Conventional Functional Panel

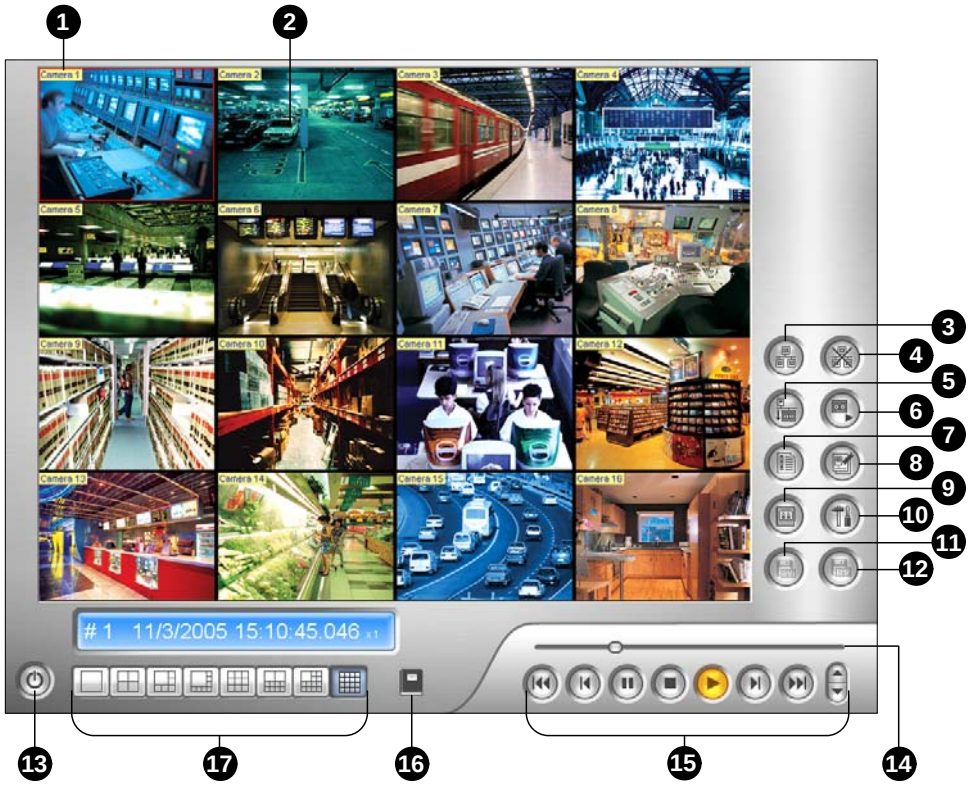


The controls in the Function Panel:

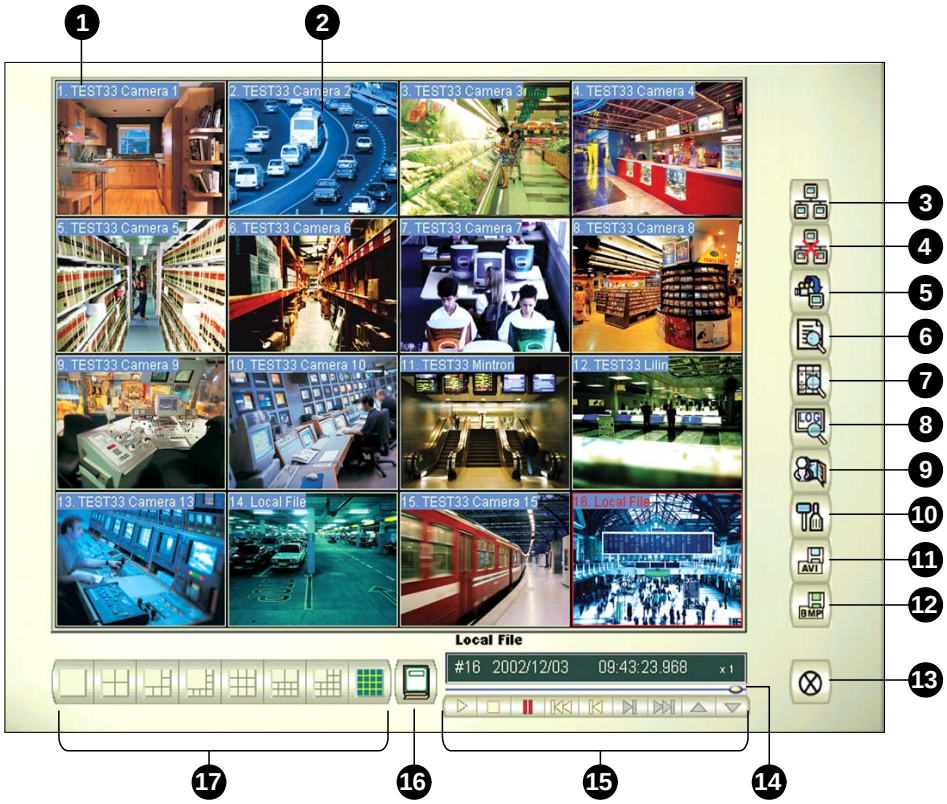
No	Name	Description
1	Sample	Gives the examples of “Before” and “After” effects of contrast, brightness, light enhancement, equalization, sharpness, smoothness and Grayscale.
2	Contrast/Brightness	Modifies color contrast and brightness of the video image.
3	Light Enhancement/ Equalization	Modifies light enhancement and equalization of the video image. To remove the applied effect, click the Undo button.
4	Sharpen/Smooth	Modifies smoothness and sharpness of the video image. To remove the applied effect, click the Undo button.
5	Grayscale	Switches to the black/white image.
6	Advanced Video Analysis	Enhances the video image using defogging or stabilizing effects.
7	Copy	Copies the video image.
8	Undo	Undoes the applied effects on the video image.
9	Save AVI File	Saves a video file as avi or exe format and displays the Merging List.
10	Save As Image	Saves a video image as bmp, jpg, gif, png, or tif format.
11	Print	Prints out the image.
12	Print Setup	Specifies various settings for printing.
13	Page Setup	Adjusts the page layout.
14	Setting	Accesses system settings of ViewLog.
15	Tools	Brings up these options: Object Search, Advanced Log Browser, Delete Log, Remote ViewLog Service, Remote Storage System, Address Book, Display GIS Window, Select Map API and Tool Kit.
16	Backup	Backs up video files.

4.3 Remote Playback Client

Silver



Conventional



The controls in the RPB Client window:

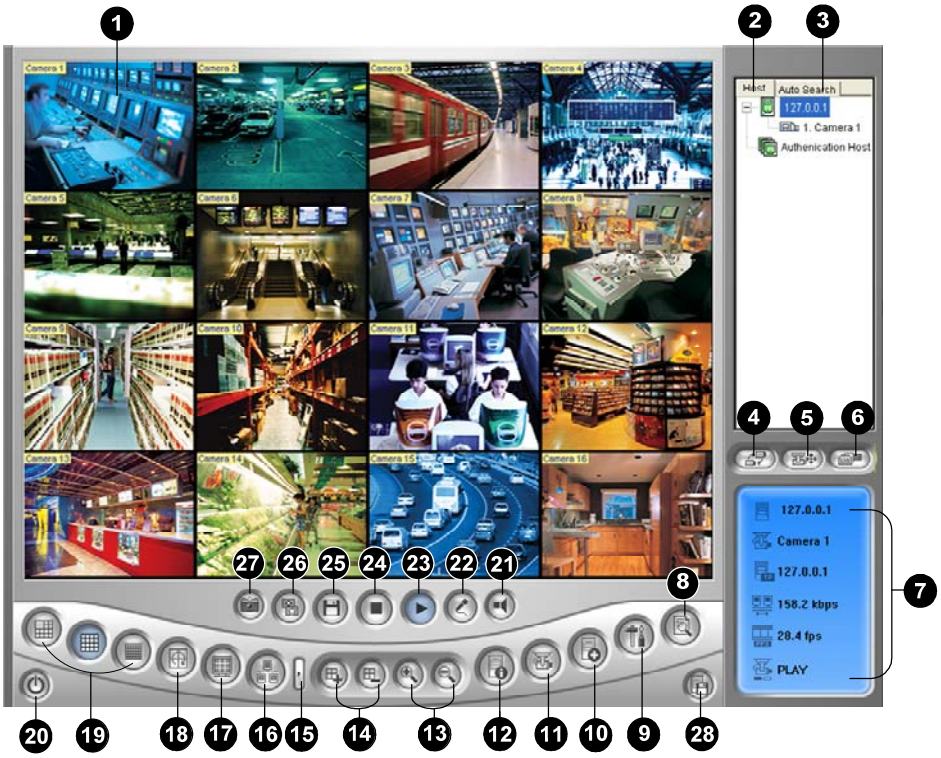
No	Name	Description
1	Camera Name	Indicates the given camera name.
2	Camera View	Displays the playback video.
3	Connect	Sets the connection to the RPB servers.
4	Disconnect	Closes all or selected connections to the RPB servers.
5	Download (Play) Remote Video	Downloads and plays the remote video.
6	Play Local Video	Plays back video files at the client computer.
7	View List	Keeps track of connection activities.
8	Connection Record	Keeps record of connection status.
9	Address Book	Creates a quick connection to the RPB server.
10	Preference Setting	Sets download status, text display and panel resolution.
11	Save As AVI	Saves a video file as avi or exe format.
12	Save As BMP	Saves a video image as bmp format.
13	Exit	Closes or minimizes the RPB Client window.
14	Slider	Rewinds or forwards the video during playback.
15	Playback Panel	Contains typical playback buttons.
16	Page Select	Toggles between channels 1~16 and 17~32.
17	Screen Division	Sets the screen divisions.

4.4 SingleView MPEG4 Encoder Viewer

The controls in the SingleView Viewer:

No	Name	Description
1	Countdown Timer	Indicates the remaining time when you log in as Guest. When the time is up, you will be logged out automatically.
2	Menu	Includes these options: Information, Video, Audio, Preset Go, I/O Control, Alarm Notify, Camera Adjustment, Download and POS/Wiegand.
3	Expand / Close	Expands or closes the Menu option list.
4	Option Selection Bar	Selects the Menu option. For the list of options, see “Menu” above.
5	Show System Menu	Brings up these options: Alarm Notify, Video and Audio Configuration, Remote Config, Change Server, Show Camera Name and Image Enhance.
6	Show Camera Menu	Select the desired camera for display.
7	PTZ Control	Displays the PTZ control panel.
8	I/O Control	Displays the I/O control panel.
9	Full Screen	Switches to full screen view.
10	File Save	Saves live video in the local computer.
11	Change Quality	Adjusts video quality with two options: **Geo H264** and **Geo MPEG4**. For hardware-compressed or megapixel video stream, you have options of **IP Camera JPEG, IP Camera MEPG2** or **IP Camera MEPG4**.
12	Snapshot	Takes a snapshot of the displayed live video.
13	Speaker	Enables live audio from the remote GV-System.
14	Microphone	Enables speaking to the remote GV-System.
15	Stop	Terminates the connection to the remote GV-System.
16	Play	Connects to the remote GV-System.

4.5 MultiView MPEG4 Encoder Viewer



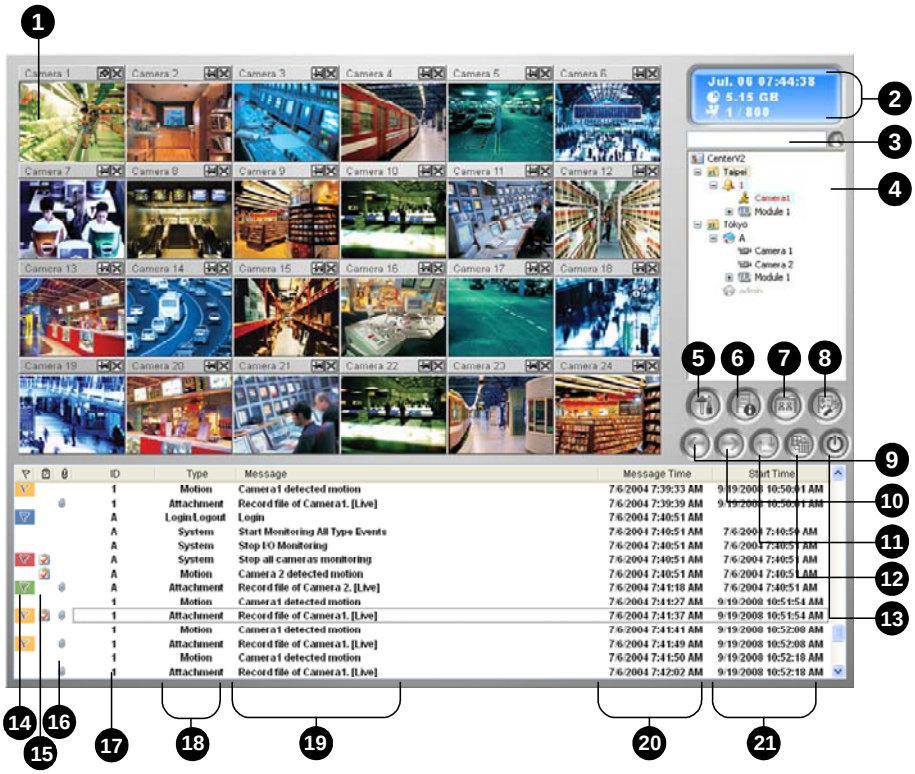
The controls in the MultiView Viewer:

No	Name	Description
1	Monitoring Window	Displays live video.
2	Host Window	Displays the connected GV-Systems and their available cameras.
3	Auto Search	Displays all hosts on the same LAN.
4	Show Camera Menu	Select the desired camera for display. If a panorama view is created at the GV-System, it is also included in this menu.
5	PTZ Control	Displays the PTZ control panel.
6	I/O Control	Displays the I/O control panel.
7	Channel Status	Indicates the general information of the selected channel.
8	ViewLog	Accesses Remote ViewLog.
9	Configure	Accesses system settings of the MultiView.
10	Edit Host	Adds, deletes or modifies GV-System.
11	Camera Status	Displays the camera status of the connected GV-System.
12	Host Information	Displays the general information of the connected GV-System.

13	Zoom in and out	Zooms in or out the selected channel.
14	Add/Remove Channel	Adds or deletes the channels for video polling.
15	Next	Goes to the next page of Screen Division buttons.
16	Multicast	Accesses the Multicast function.
17	Full Screen	Switches to a full screen view.
18	Video Polling	Rotates through the selected channels.
19	Screen Division	Sets the screen divisions to 4, 6, 8, 9, 10, 13, 16 or 32.
20	Exit/Minimize	Closes or minimizes the MultiView window.
21	Speaker	Enables speaking to the remote GV-System.
22	Microphone	Enables live audio from the remote GV-System.
23	Play	Establishes the connection to a GV-System.
24	Stop	Terminates the connection to a GV-System.
25	Save	Saves live video.
26	Quality	Changes video resolution.
27	Snapshot	Takes a snapshot of the selected channel.
28	Save Camera to Multiple Host	Saves the selected cameras and creates a Multiple Host.

4.6 Center V2

Silver



Conventional

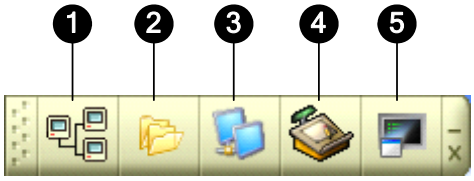
The controls in the Center V2 window:

No	Name	Description
1	Monitoring Window	Displays live video.
2	Status Panel	Indicates the date, time, remaining disk space and the total number of online channels versus available channels.
3	Find A Subscriber	Searches for desired ID in the Current Subscriber field.
4	Subscriber List	Displays subscribers' IDs and online status. Blue Icon: Indicates the subscriber is online. Gray Icon: Indicates the subscriber is offline. Alarm Icon: Indicates either motion has been detected or the I/O has been triggered at the subscriber's site.
5	Tools	Accesses Event Log, Event List, audio and microphone control, SMS Server configuration, and short message notification.
6	Host Information	Displays the connection status of subscribers.
7	Accounts	Adds, deletes or modifies subscriber accounts.
8	Preference Settings	Brings up these options: System Configure, Event Log Settings, Notification, Password Setup, E-mail Setup, Customize Alarm Report, SMS Setup, I/O Device, Automatic Failover Support and Version Information.
9	Previous Page	Displays the previous page of camera views.
10	Next Page	Displays the next page of camera views.
11	Refresh Channel	Refreshes the connection status.
12	Split Mode	Sets the screen division. Different resolution provides options of screen divisions for a single monitor and dual monitors.
13	Exit	Closes or minimizes the Center V2 window.
14	Flag	Flags an event for later reference.
15	Clipboard	Displays the Alarm Report dialog box.
16	Clip	Indicates an event coming with an attachment. Double-click the event to open the attached video file.
17	ID	Indicates a subscriber's ID.
18	Event Type	Indicates the event type: Alarm, Attachment, Connection, Login/Logout, Motion, System and Trigger.
19	Message	Indicates associated information for each event type.
20	Message Time	Indicates when Center V2 receives an event.
21	Start Time	Indicates when an event happens at the subscriber's site.

4.7 Control Center Toolbar

Silver

Conventional



The controls on the Control Center Toolbar:

No	Name	Description
1	Host List	Opens the Host List to create and edit DVRs.
2	Group List	Opens the Group List to group cameras from different DVRs.
3	IP Matrix List	Opens the IP Matrix List to display up to 36 Matrix views.
4	Edit	Opens the Edit toolbar to display these buttons: Search Host, Configure, Save, and Delete. The Add Host button only appears after the Host List is opened.
5	Service	Opens the Service toolbar to display these buttons: Remote Control, Remote ViewLog, VMD System, Remote E-Map and I/O Central Panel. The Matrix button only appears after the Group List is opened.

Troubleshooting

GV-System is designed to provide you with trouble-free performance. If it does not appear to be functioning correctly, please make sure all connectors are properly attached and follow these troubleshooting steps:

GV-System has video and/or audio lost.

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

1. Check the video/audio connection.
2. Make sure the video/audio device is turned on.
3. Make sure the video standard in your country matches the setting in GV-System.
4. 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 GV-System.
2. Make sure the camera and its cable are not damaged or frayed. Try to replace a camera or cable to see if this fixes the problem.

Messages “Can’t find keypro” and “Card Setup Fail” appear when GV-System starts.

1. Verify the video capture card driver. See *1.7 Installing Drivers*.
2. Insert the video capture card to a different PCI slot to see if this fixes the problem.
3. If you are using the video capture card V1, attach an appropriate Keypro to the PC’s parallel port and run **Dos2kreg.exe** from the GV-System folder.
4. If using GV-600, GV-650 or GV-650 and running the version between 7.0 and 7.0.5.0, you may need an appropriate USB dongle.
5. If running the version of 8.0 or later and using GV-250, GV-600 (S), GV-650 (S), GV-800 (S), GV-600 (V4), GV-650 (V4), GV-800 (V4), GV-1120, GV-1240, GV-1480, GV-2004 or GV-2008, you may follow Steps 1 and 2 to fix the problem.

A message “Can’t find new xxx Module:1, Address:1, in Com1” appears.

1. Check the RS-485 or USB connection between the GV-System and the GV I/O device.
2. Check whether the power adapter is properly attached to the GV I/O device.
3. Check whether the Port and Address settings on the I/O Devices tab in the System Configure dialog box are correct.

A message “No PTZ Device Installed” or “Default PTZ Device not Activate” appears.

1. Make sure the **Activate** option is enabled in Main System. See Step 4, “PTZ Control Panel”, Chapter 1, *User’s Manual* on the Surveillance System Software CD.
2. If multiple PTZ cameras are installed, make sure to activate each PTZ camera individually.

How can I find more help?

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