GeoVision inc
The Vision of Security

Surveillance System

Installation Guide V8.3

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.

GeoVision, Inc.
9F, No. 246, Sec. 1, Neihu Rd.,
Neihu District, Taipei, Taiwan
Tel: +886-2-8797-8377
Fax: +886-2-8797-8335
http://www.geovision.com.tw

January 2009

Contents

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-2004, 2008

The GV-2004 and GV-2008, as four-in-one combo cards, include the features of previous GV-Video Capture Card (recording of up to 16 video channels), GV-DSP Card (real-time display), GV-A16 Card (recording of up to 16 audio channels), and GV-Hybrid DVR Card (hardware compression). This economic device not only provides a single-card solution but also saves the PCI slots.

Minimum System Requirements

OS	Windows 2000 / Windows XP / Windows Server 2003 / Windows Vista	
CPU	GV-2004	Pentium 4-2.4 GHz with Hyper-Threading
	GV-2008	Pentium 4-2.6 GHz with Hyper-Threading
	GV-2008 x 2	Pentium 4-3.0 GHz with Hyper-Threading
RAM	GV-2004	2 x 512 MB Dual Channels
	GV-2008	2 x 512 MB Dual Channels
	GV-2008 x 2	2 x 1 GB Dual Channels
HDD	GV-2004	120 GB
	GV-2008	250 GB
	GV-2008 x 2	500 GB
VGA	ATI Radeon 9550 NVIDIA 6200	
DirectX	9.0	

Note:

1. Currently GV-Video Capture Cards are not compatible with VIA-series, ATI-series chipset motherboards, and 64-bit Windows operating system.
2. To install two GV-2008 Cards, ensure the PC power supply is 400 Watts or above.

Packing List

1. GV-2004 or GV-2008 Card x 1
2. 1-4 D-Type Video and Audio Cable x 1
3. 5-8 D-Type Video and Audio Cable x 1
   (only supplied with the GV-2008 Card)
4. 6-Pin Cable x 1
   (only supplied with the GV-2008 Card)
5. Hardware Watchdog Jumper Wire x1
6. Software CD x 1
7. Feature Guide x 1
8. Installation Guide x 1

Connections (GV-2004)

- Connect the D-Type video and audio cable to the GV-2004 Card.
- Connect the TV Monitor to the GV-2004 Card if needed.

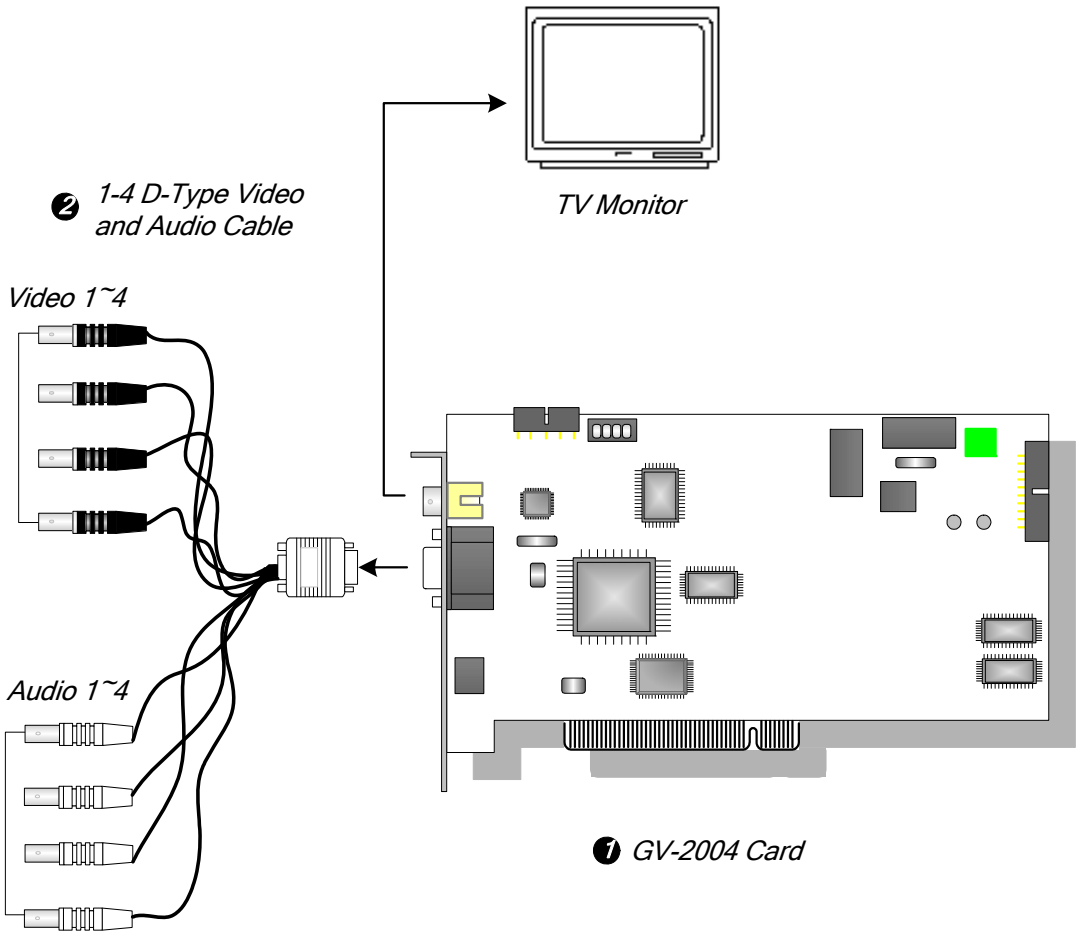


Figure 1-1 GV-2004 Card connections

Connections (GV-2008)

For the GV-2008 Card, you can choose to install one or two GV-2008 Cards to meet your different needs. Connect the D-Type video and audio cable to the GV-2008 Card. If needed, connect the TV monitor to the GV-2008 Card.

When you install two GV-2008 Cards in a computer, you need to classify them as a master and a slave card. Insert them to their own slots determined by the PCI slot IDs. Use the 6-pin cable to connect the slave card to the master card. See Figure 1-3.

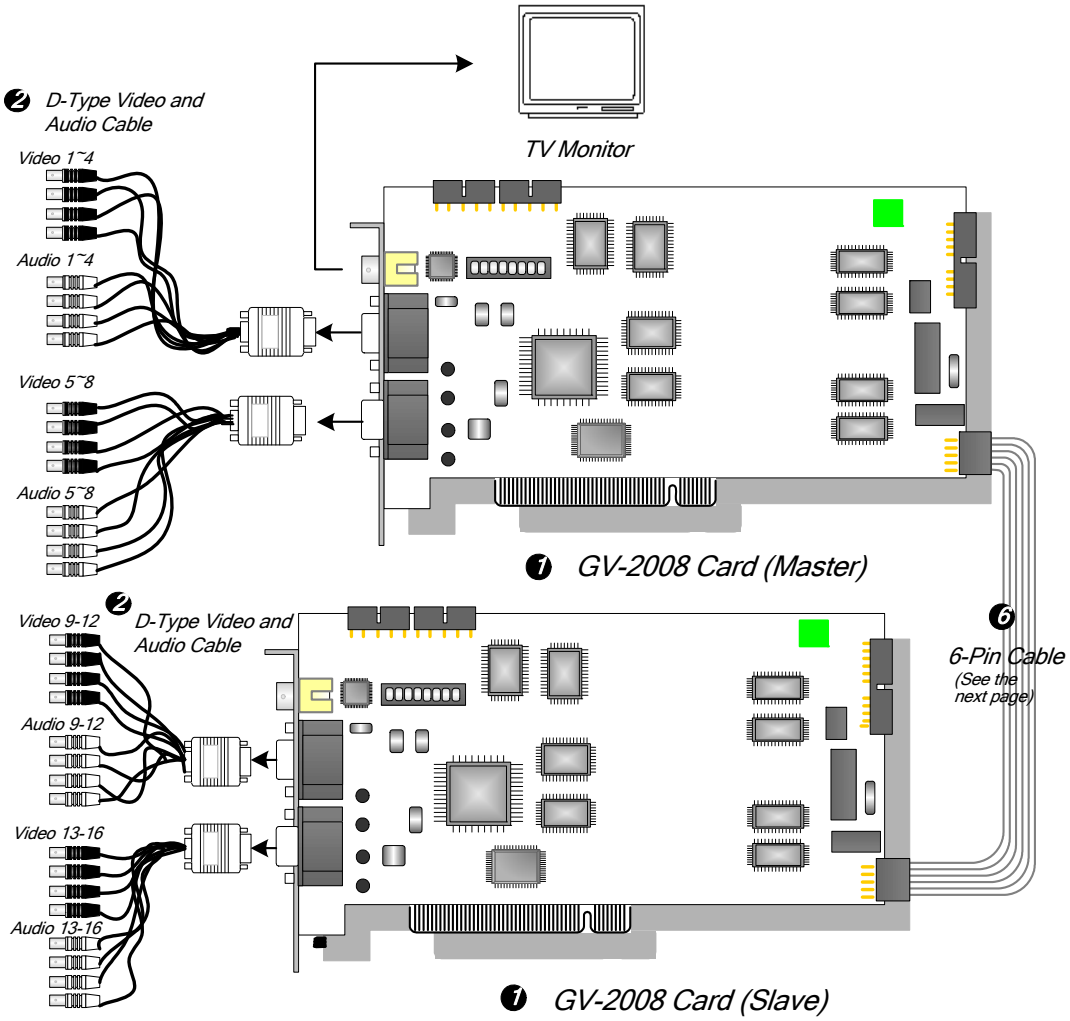


Figure 1-2 Connections of Two GV-2008 Cards

Connecting Slave Card to Master Card

- 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.
- Connect both cards' inner pins with the 6-Pin Cable. See **(A)** connection in the Figure below.
- In a computer where two GV-2008 Cards are installed, only 8 channels are functional when the GV-System is running. It may be that the position of Master card and Slave card is reversed, so the 6-Pin Cable is connected to the wrong pin assignment. To solve the problem, please try to connect both cards' outer pins with the 6-Pin Cable. See **(B)** connection in the Figure below.

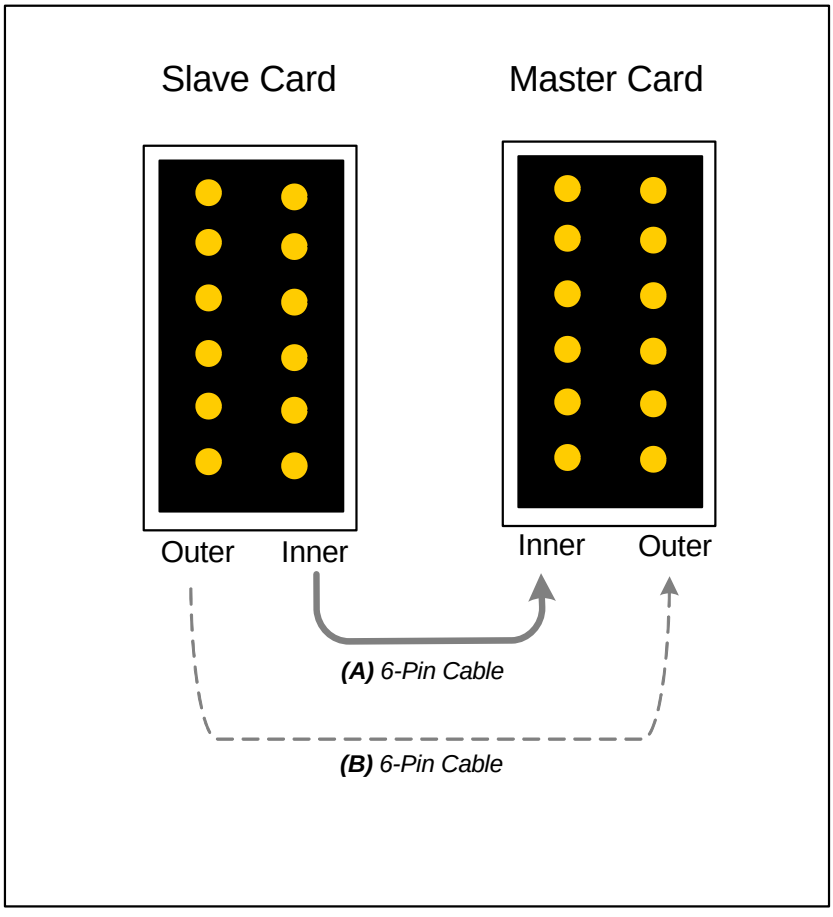


Figure 1-3 Connecting the slave card to the master card

Adjusting the Video Settings in the Main System

One distinct feature of GV-2004 and GV-2008 Cards is their ability of hardware compression, providing you with higher system performance and DVD recording quality.

To take full advantage of GV-2004 and GV-2008 Cards, you can adjust the video settings, including the codec, video resolution 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, point to **General Setting**, select **Camera / Audio Install**, and click **Hybrid Camera Install**. This dialog box appears.

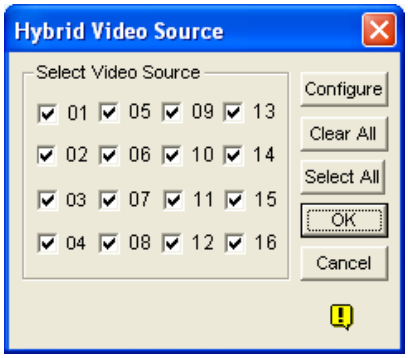


Figure 1-4

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

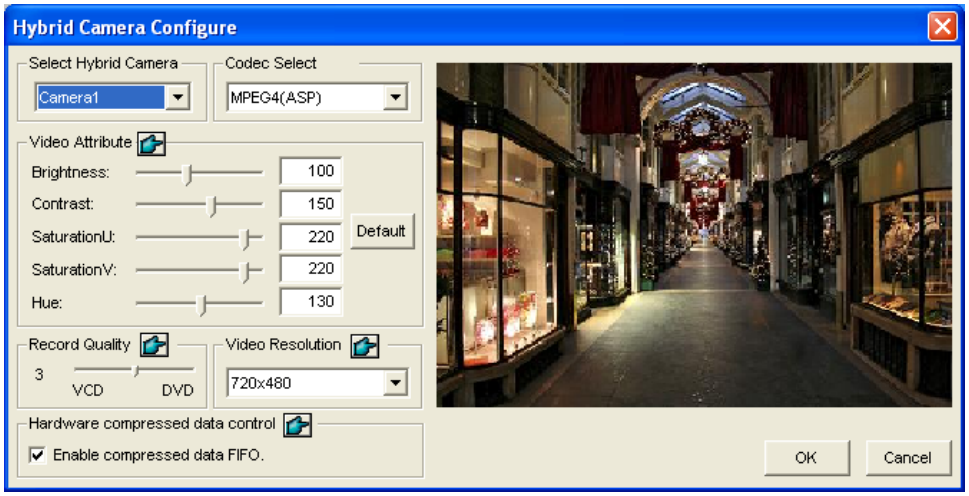


Figure 1-5

3. In the Select Hybrid Camera field, select one camera to be configured.
4. Select the desired codec, video attributes, recording quality and video resolution. If you want to apply the same setting to all selected cameras, click the Finger button in each field. However, the codec selection applies to all cameras. If you change the codec selection when you configure another camera, the newly selected codec will replace the previous selection.
5. The **Enable compressed data FIFO** option is enabled by default. 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, point to **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.

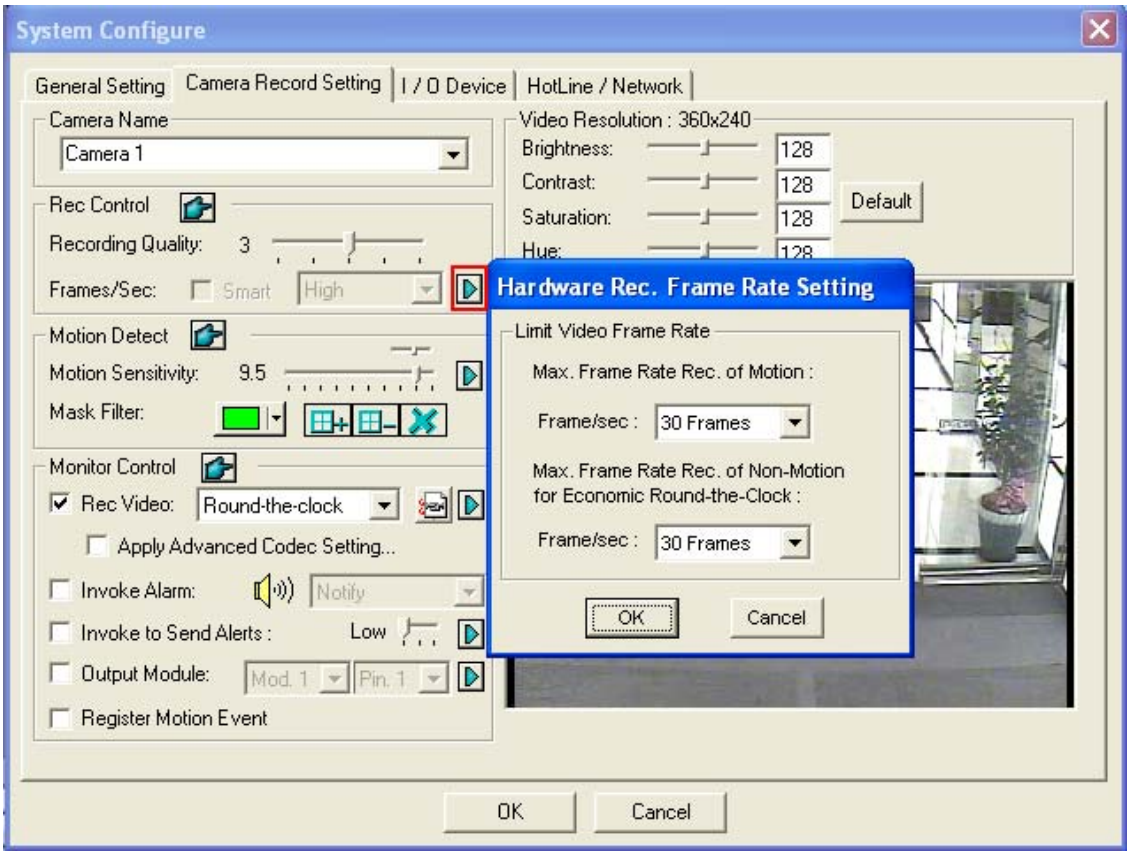


Figure 1-6

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

Note:

1. The default settings are as follows: Record Quality is 3, Video Resolution is 720 x 480 (NTSC) or 720 x 576 (PAL), Codec is MPEG 4 (ASP) and Frame Rate is 30 (NTSC) or 25 (PAL).
2. When the Codec is set at MPEG-2 on GV-System V8.2 or later, the Frame Rate is fixed at 30, and the Economic Round-the-Clock function cannot be used.

Specifications

		GV-2004	GV-2008	GV-2008 x 2
Input Type		DB 15 x 1 (for Video and Audio)	DB 15 x 2 (for Video and Audio)	DB 15 x 4 (for Video and Audio)
Video Input		4 Cams	8 Cams	16 Cams
TV Output		RCA Connector x 1		
Audio Input		4 Channels	8 Channels	16 Channels
Recording Rate	S/W (CIF)	120 fps (NTSC)	240 fps (NTSC)	480 fps (NTSC)
		100 fps (PAL)	200 fps (PAL)	400 fps (PAL)
	H/W (D1 or Half D1)	120 fps (NTSC)	240 fps (NTSC)	480 fps (NTSC)
		100 fps (PAL)	200 fps (PAL)	400 fps (PAL)
Display Rate	NTSC	120 fps	240 fps	480 fps
	PAL	100 fps	200 fps	400 fps
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)	
Compression Format	S/W	Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2		
	H/W	MPEG-2, MPEG-4 (ASP)		
GV-NET/IO Card Support		Yes		
Dimensions (W x H)		195 x 102 (mm) / 7.67 x 4.02 (in)	240 x 102 (mm) / 9.45 x 4.02 (in)	

1.2 GV-1120, 1240, 1480

GV-1120, GV-1240 and GV-1480 are the three-in-one combo cards, providing one single card solution for 16 video / audio recording, real-time display and TV-out display. To meet different needs, there are three types of GV-Combo cards: D-Type, DVI Type and PCI-E.

Minimum System Requirements

OS	Windows 2000 / Windows XP / Windows Server 2003 / Windows Vista	
CPU	GV-1120	Pentium 4-3.0 GHz with Hyper-Threading
	GV-1240	Pentium 4-3.0 GHz Dual Core
	GV-1480	Pentium 4-3.0 GHz Dual Core
RAM	2 x 512 MB Dual Channels	
HDD	GV-1120	80 GB
	GV-1240	120 GB
	GV-1480	250 GB
VGA	ATI Radeon 9550 NVIDIA 6200	
DirectX	9.0	

Note: Currently GV-Video Capture Cards are not compatible with VIA-series, ATI-series chipset motherboards, and 64-bit Windows operating system.

Packing List (D-Type PCI and PCI-E)

1. GV-1120/1240/1480 Combo 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 x1

Packing List (DVI Type PCI)

1. GV-1120/1240/1480 Combo Card x 1
2. 1-16 DVI Video plus TV Out Cable x 1
3. 1-16 DVI Audio Cable x 1
4. Hardware Watchdog Jumper Wire x 1
5. Software CD x 1
6. Feature Guide x 1
7. Installation Guide x1

Connections (D-Type PCI)

- Plug the Audio Extension Card in the assigned connectors on the GV-Combo Card.
- Connect D-Type video and audio cables to the GV-Combo Card and Audio Extension Card respectively.
- Connect the TV monitor to the GV-Combo Card if needed.

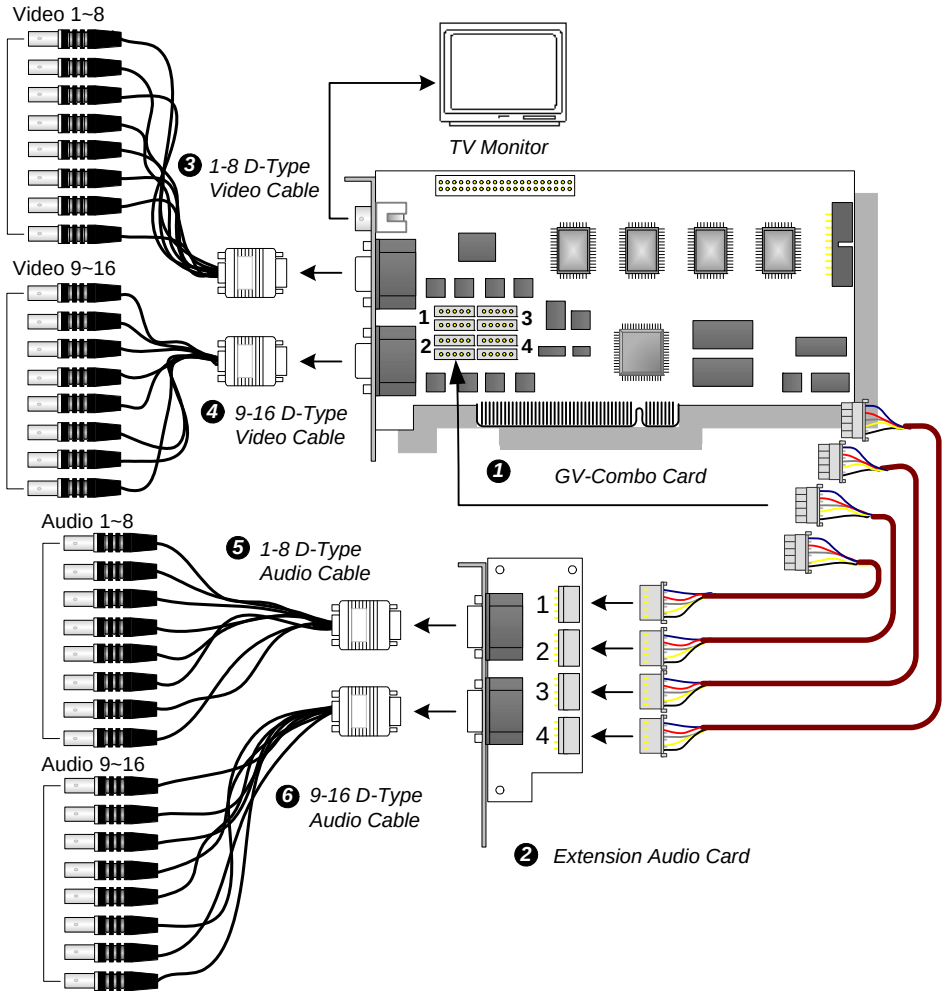


Figure 1-7 GV-Combo Card (D-Type) connections

Connections (D-Type PCI-E)

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

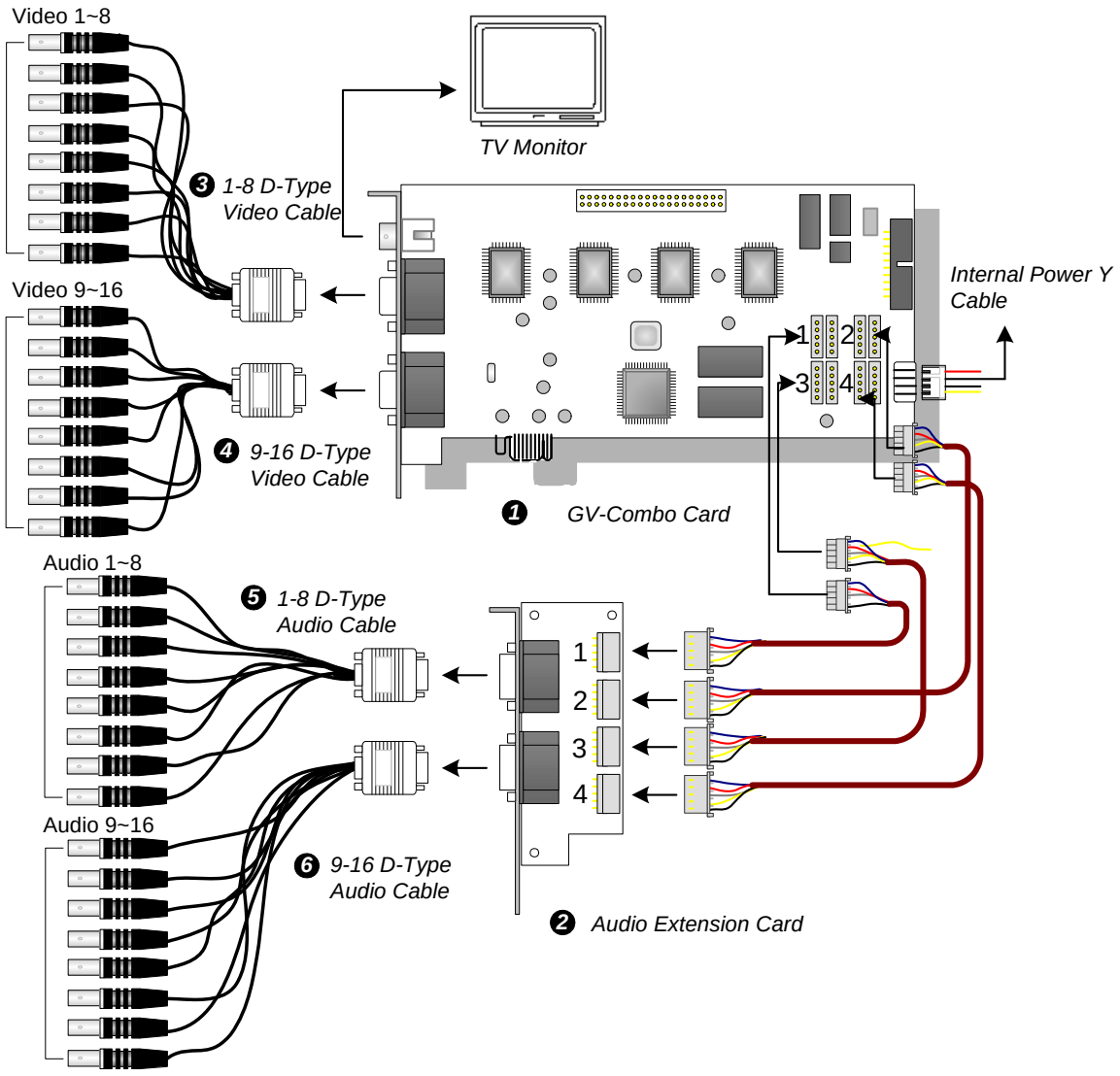


Figure 1-8 GV-Combo Card (PCI-E) connections

Note:

1. The GV-Combo Card (PCI-E) has PCI Express x 1 interface, and it can be inserted into the PCI Express x1, x4, x8 or x16 slot.
2. This card only works when it connects to PC's power supply.

Connections (DVI-Type PCI)

- Connect the DVI video and audio cables to the GV-Combo Card.
- Connect the DVI TV Out cable to the TV monitor if needed.

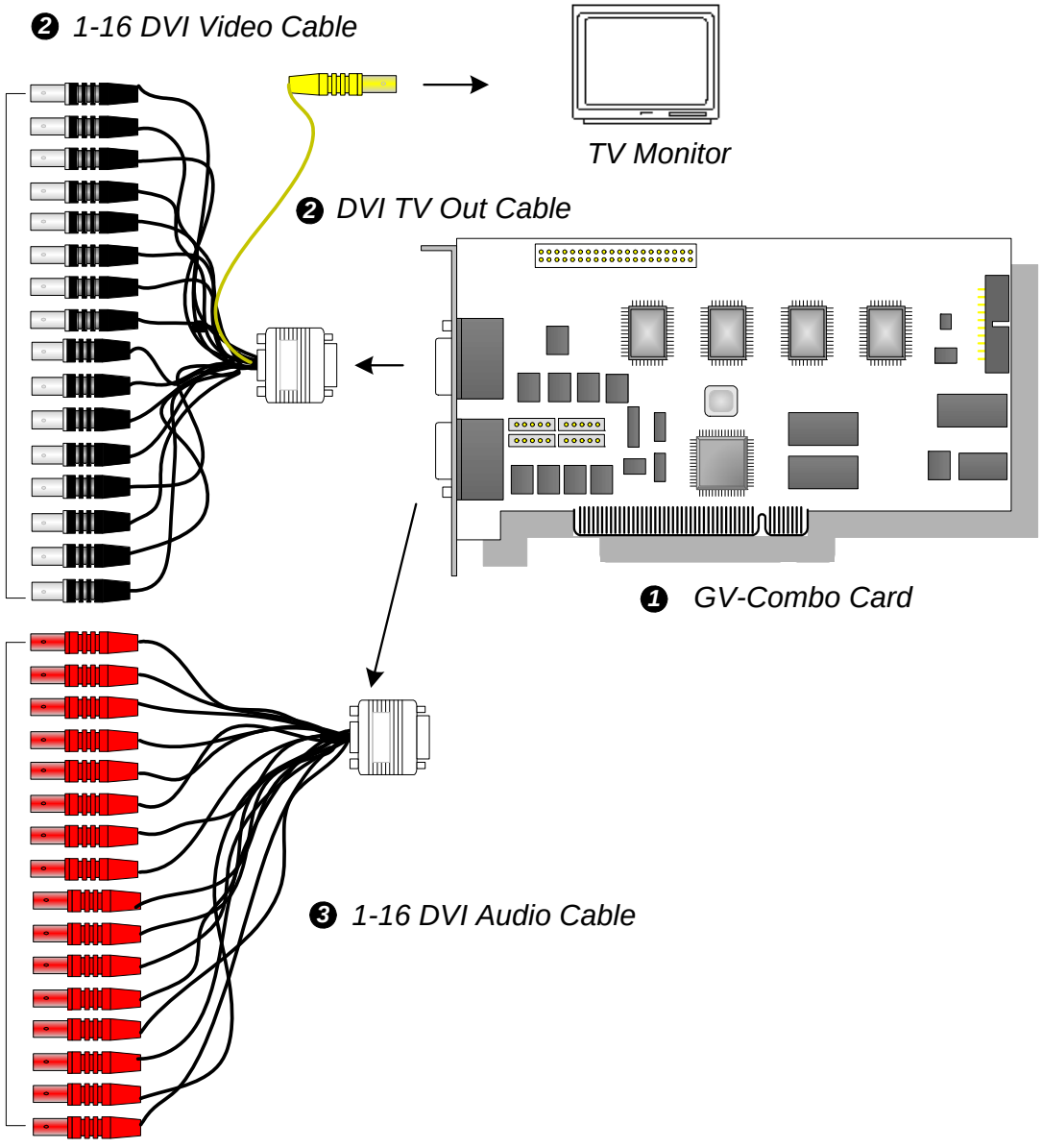


Figure 1-9 GV-Combo Card (DVI-Type) connections

Specifications

		GV-1120	GV-1240	GV-1480
Input Type	D-Type	DB15 x 2 (Video), DB9 x 2 (Audio)		
	DVI-Type	DVI x 1 (for Video), DVI x 1 (for 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 (At 320 x 240 Resolution)	NTSC	120 fps	240 fps	480 fps
	PAL	100 fps	200 fps	400 fps
Display Rate	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-NET/IO Card Support		Yes		
Dimensions (W x H)	D-Type PCI	170 x 95 (mm) / 6.69 x 3.74 (in)		
	D-Type PCI-E	212 x 99 (mm) / 8.35 x 3.90 (in)		
	DVI-Type PCI	165 x 95 (mm) / 6.50 x 3.74 (in)		

1.3 GV-650, GV-800

The GV-650 and GV-800 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	Windows 2000 / Windows XP / Windows Server 2003 / Windows Vista	
CPU	GV-650	Pentium 4-2.4 GHz
	GV-800	Pentium 4-3.0 with Hyper-Threading
RAM	2 x 512 MB Dual Channels	
HDD	80 GB	
VGA	ATI Radeon 9550 NVIDIA 6200	
DirectX	9.0	

Note: Currently GV-Video Capture Cards are not compatible with VIA-series, ATI-series chipset motherboards, and 64-bit Windows operating system.

Packing List

1. GV-800 or GV-650 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. BNC Video Extension Card ***
   (Quantity depends on model purchased)
6. Hardware Watchdog Jumper Wire x 1
7. Software CD x 1
8. Feature Guide x 1
9. Installation Guide x1

* Supplied with 12-16 Cams D-Type Video Capture Card
** Supplied with BNC Video Capture Card
*** Supplied with 8-16 Cams BNC Video Capture Card

Connections

There are two types of GV-800 and GV-650 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-650/800 Card; the blue video cable into the blue connector, as illustrated below.

Note: The GV-650 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.

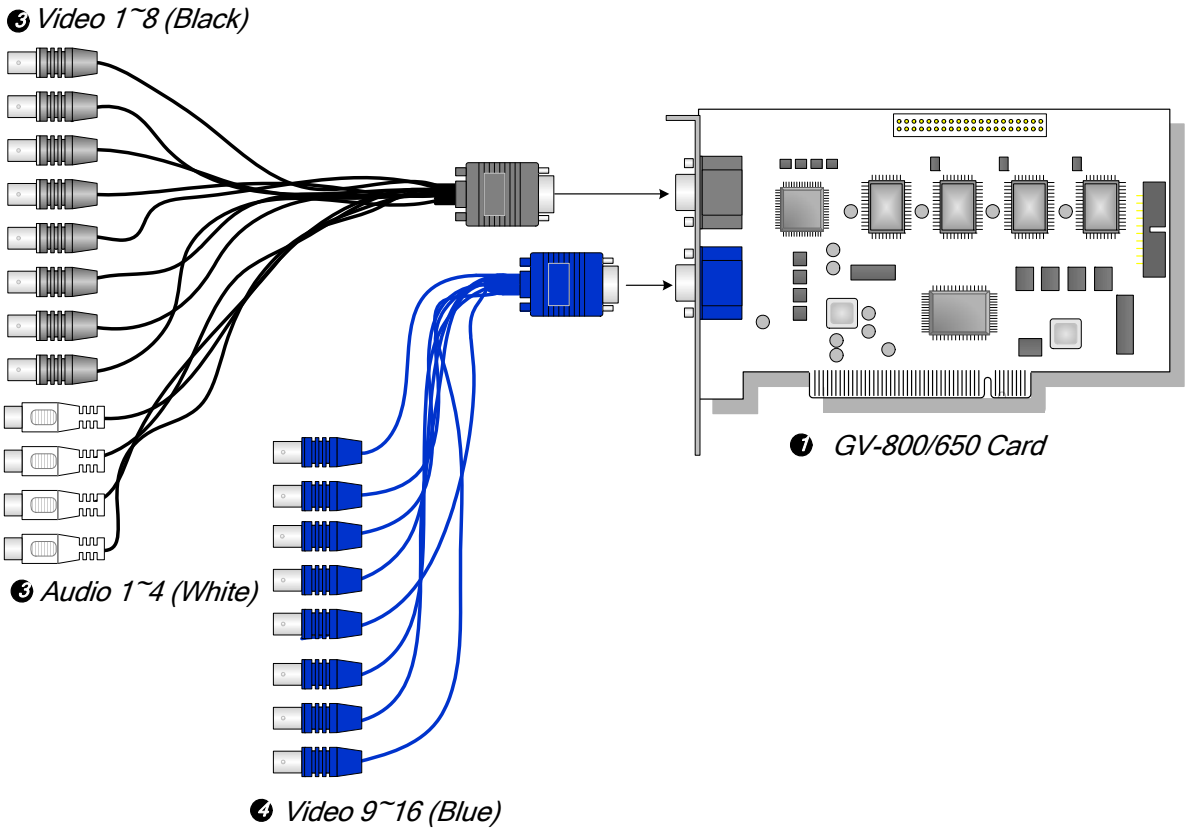


Figure 1-10 D-Type GV-650 or GV-800 Card connections

For the BNC-type video capture card, plug the Audio Extension Card into No. 1 or No. 2 connector on the GV-650/800 Card, as illustrated below. Both connectors are okay for connection.

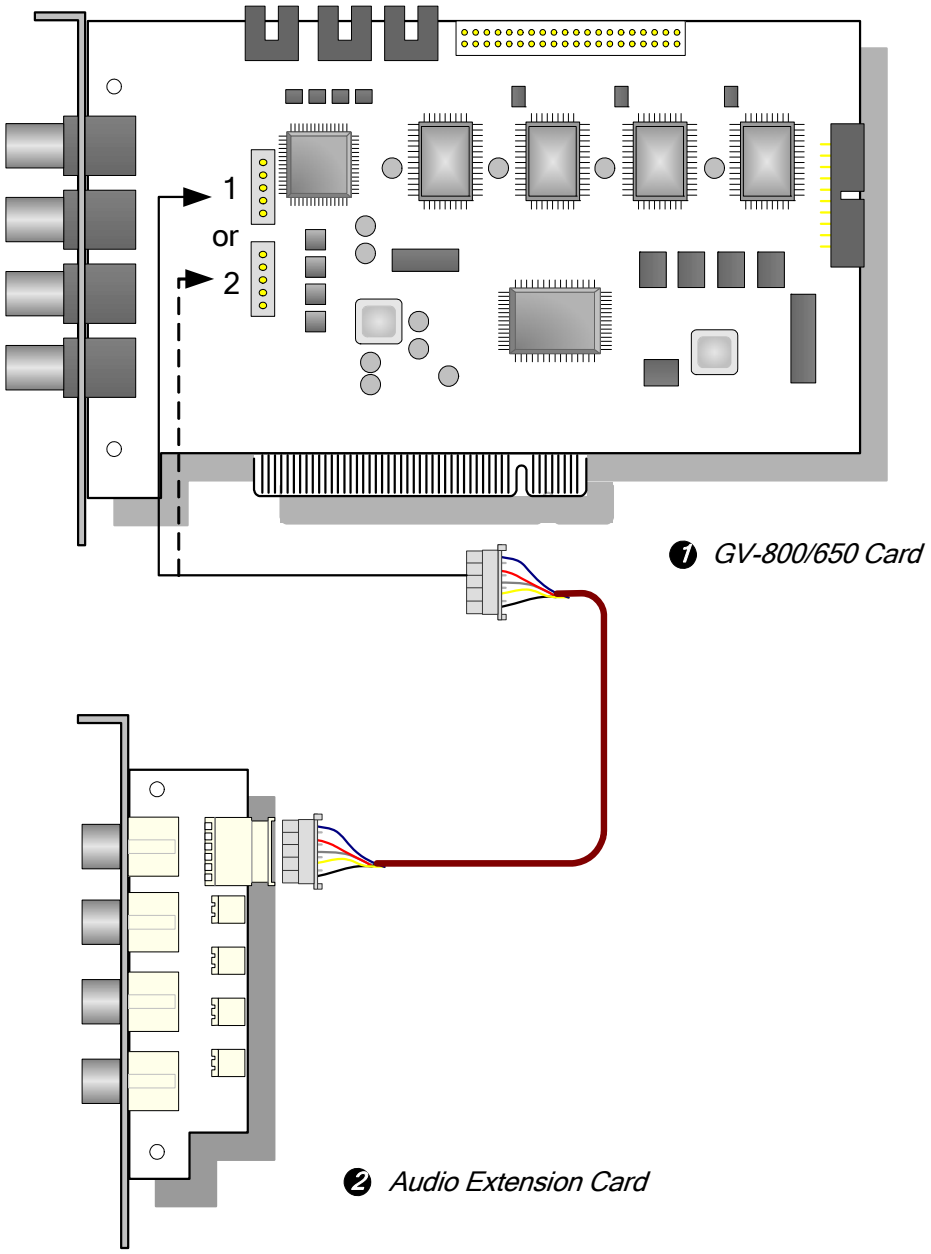


Figure 1-11 BNC-type GV-650 or GV-800 Card connections

Specifications

		GV-650	GV-800
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 (At 320 x 240 Resolution)	NTSC	60 fps	120 fps
	PAL	50 fps	100 fps
Display Rate	NTSC	60 fps	120 fps
	PAL	50 fps	100 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-A16 Support		Yes	
GV-NET/IO Card Support		Yes	
Dimensions (W x H)	BNC	GV-650 (V4)	144 x 98 (mm) / 5.67 x 3.86 (in)
	D-Type	GV-650 (V4)	144 x 98 (mm) / 5.67 x 3.86 (in)
		GV-800 (V4)	174 x 98 (mm) / 6.85 x 3.86 (in)

1.4 GV-600

There are two types of GV-600 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	Windows 2000 / Windows XP / Windows Server 2003 / Windows Vista
CPU	Pentium 4-2.0 GHz
RAM	512 MB
HDD	80 GB
VGA	ATI Radeon 9550 NVIDIA 6200
DirectX	9.0

Note: Currently GV-Video Capture Cards are not compatible with VIA-series, ATI-series chipset motherboards, and 64-bit Windows operating system.

Packing List

1. GV-600 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. BNC Video Extension Card ***

   (Quantity depends on model purchased)
6. Hardware Watchdog Jumper
7. Software CD x 1
8. Feature Guide x 1
9. Installation Guide x1

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

** Supplied with BNC Video Capture Card

*** Supplied with 6-16 Cams BNC Video Capture Card

Connections

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

Note: The GV-600 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.

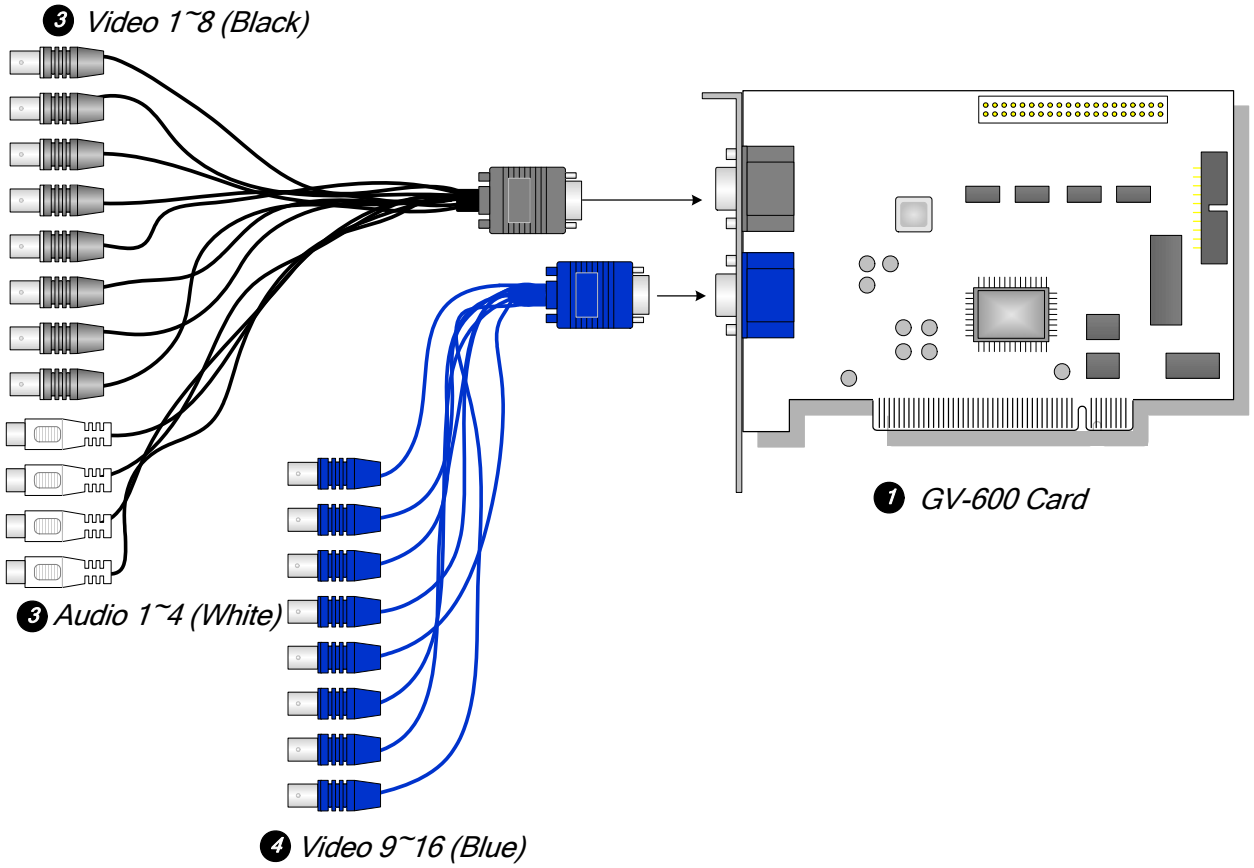


Figure 1-12 D-Type GV-600 Card connections

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

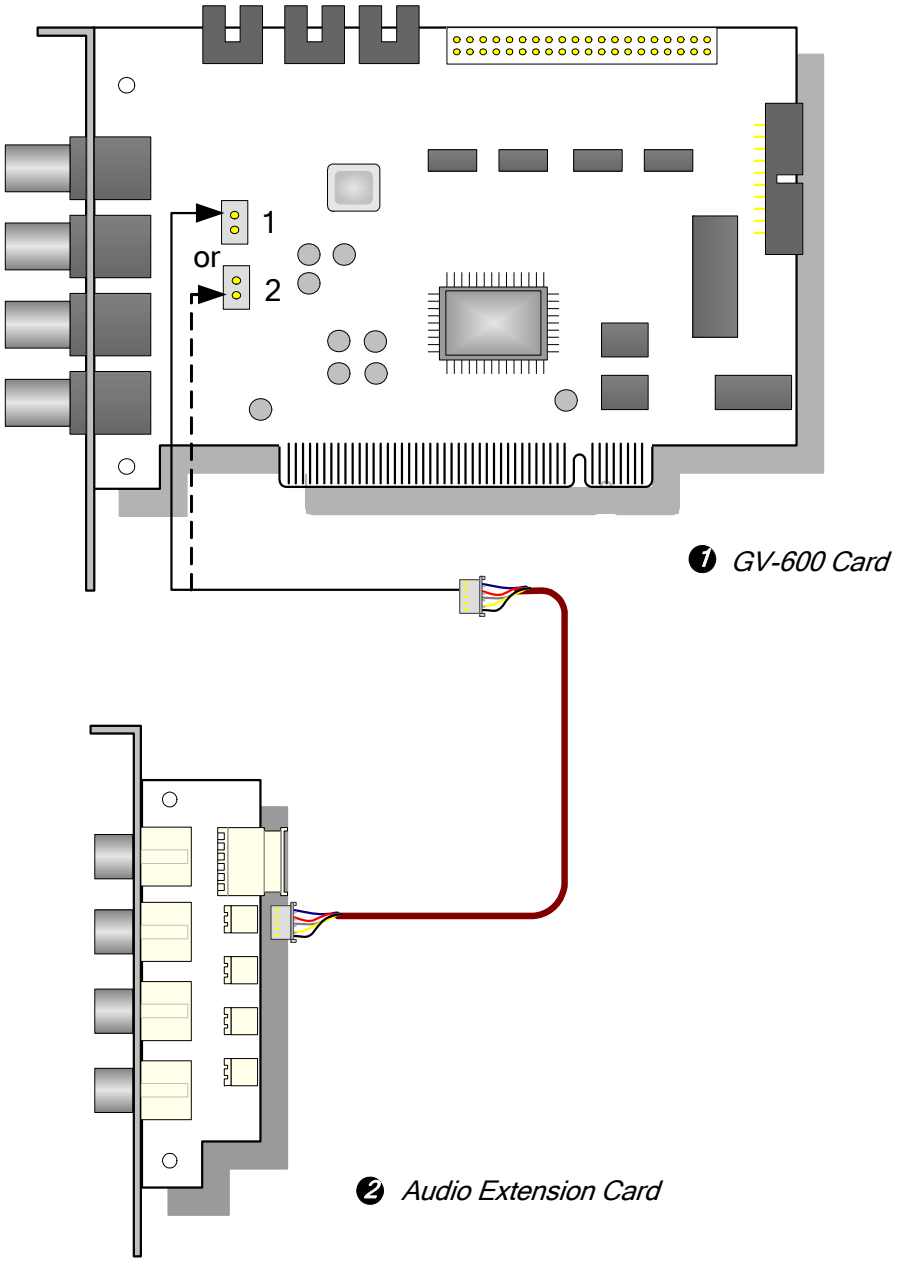


Figure 1-13 BNC-Type GV-600 Card connections

Specifications

GV-600			
Input Type		GV-600 BNC: BNC x 4	
		GV-600 D-Type: DB15 x 2	
Video Input		1, 2, 4, 6, 8, 10, 12, 14, 16 Cams	
Audio Input		1 Channel	
Recording Rate (At 320 x 240 Resolution)	NTSC	30 fps	
	PAL	25 fps	
Display Rate	NTSC	30 fps	
	PAL	25 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-A16 Support		Yes	
GV-NET/IO Card Support		Yes	
Dimensions (W x H)	BNC	GV-600 (V4)	144 x 89 (mm) / 5.67 x 3.50 (in)
	D-Type	GV-600 (V4)	144 x 89 (mm) / 5.67 x 3.50 (in)

1.5 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-650 Cards (16 channels) = 32 channels.

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

Note: Besides **GV-250** and **GV-800_4A** Cards, all GV video capture cards support two-card mode.

Minimum System Requirements

<table>
<tr><th></th><th>CPU</th><th>RAM</th><th>VGA</th></tr>
<tr><td>GV-600 x 2</td><td>Pentium 4, 2.6 GHz with HT</td><td rowspan="2">2 x 512 MB
Dual Channels</td><td rowspan="2">ATI Radeon 9550 /
NVIDIA 6200</td></tr>
<tr><td>GV-650 x 2</td><td>Pentium 4, 2.8 GHz with HT</td></tr>
<tr><td>GV-800 x 2</td><td rowspan="2">Pentium 4, 3.0 GHz, Dual Core</td><td rowspan="8">2 x 1 GB
Dual Channels</td><td rowspan="8">ATI Radeon X550 PCI-E /
NVIDIA 6200 PCI-E</td></tr>
<tr><td>GV-1120 x 2</td></tr>
<tr><td>GV-1240 x 2</td><td rowspan="2">Core 2 Duo, 2.53 GHz</td></tr>
<tr><td>GV-1480 x 2</td></tr>
<tr><td>GV-1120A x 2</td><td>Pentium 4, 3.0 GHz, Dual Core</td></tr>
<tr><td>GV-1240A x 2</td><td>Core 2 Duo, 2.53 GHz</td></tr>
<tr><td>GV-1480A x 2</td><td>Core 2 Quad, 2.4 GHz</td></tr>
</table>

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

Card Combination	V3.20 and later	V4.20 and later	
V3.20 and later	X	X	
V4.20 and later	X	GV-600 (V4)	PCI x 2
		GV-650 (V4)	PCI x 2
			PCI-E x 2
			PCI x 1+ PCI-E x 1
		GV-800 (V4)	PCI-E x 2
			PCI x 1+ PCI-E x 1

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-600 (V4) cards, it is required to use two PCI slots.
3. For GV-650 (V4) cards, you can use two PCI slots, two PCI Express slots, or the combination of PCI and PCI Express slots.
4. For GV-800 (V4) cards, it is required to use two PCI Express slots, or the combination of PCI and PCI Express slots.

Note: GV-800_4A (4 Ports) Card does not support two cards.

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

Card Combination	V1.02/V2.00 and later	Combo A Cards (GV-1120A/GV-1240A/GV-1480A)
V1.02/V2.00 and later	PCI-E x 2	X
	PCI x 1+ PCI-E x 1	
Combo A Cards (GV-1120A/GV-1240A/GV-1480A)	X	PCI-E x 2

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

GV-600/GV-650/GV-800	Single Card		Two Cards	
Video Input	1-16 Cams		2-32 Cams	
Audio Input	GV-600	1 Channels (Ch1)	GV-600	2 Channels (Ch1, Ch17)
	GV-650	2 Channels (Ch1-Ch2)	GV-650	4 Channels (Ch1-Ch2, Ch17-Ch18)
	GV-800	4 Channels (Ch1-Ch4)	GV-800	8 Channels (Ch1-Ch4, Ch17-Ch20)
Support for				
GV-A16 Card	O		X	
GV-NET/IO Card	O		O [1]	
GV-Loop Through Card	O		O [2]	
GV-Multi Quad Card	O		O [3]	

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

GV-1120/GV-1240/GV-1480	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-A16 Card	X	X
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.
4. Since version 8.3, GV-System will not support GV-Hybrid DVR (MPEG2) Card and GV-DSP Card.

1.6 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 CD. It will run automatically and pop up a window.
2. Select **Install or Remove GeoVision GV-Series Cards Driver**. This dialog box appears.

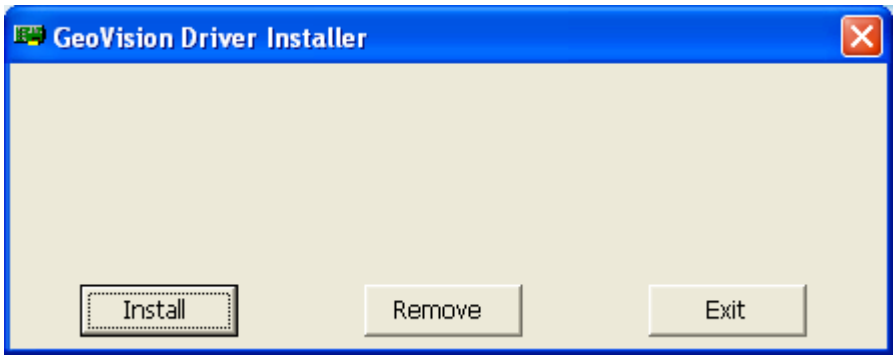


Figure 1-14

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-2008 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-600-4	GV-604(S) Audio #A, or GV604(V4) Audio GV604(S) Video Capture #A, or GV604(V4) Video Capture
GV-600	GV600(S) Auido #A, or GV600(V4) Audio GV600(S) Video Capture #A, or GV600(V4) Video Capture
GV-650	GV650(S) Auido #A - #B, or GV650(V4) Audio #1 - #2 GV650(S) Video Capture #A - #B, or GV650(V4) Video Capture #1 - #2
GV-800-4	GV-800(S) Audio #A - #D, or GV800 Audio #1 - #4 GV-800(S) Video Capture #A - #D, or GV800_4A Video Capture #1 - #4
GV-800	GV800(S) Audio #A - #D, or GV800(V4) Audio #1 - #4 GV800(S) Video Capture #A - #D, or GV800(V4) Video Capture #1 - #4

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

Model	Entry
GV-1120	GV1480/GV1240/GV1248/GV1120 Driver
GV-1240	GV1480/GV1240/GV1248/GV1120 Driver
GV-1480	GV1480/GV1240/GV1248/GV1120 Driver
GV-2004	GV2004-MP4 (CAP), GV2004-MP4 (ENC)
GV-2008	GV2008-MP4 (CAP), GV2008-MP4 (ENC), GV2008-MP4 (ENC)
GV-2008 (2 GV-2008 Cards)	GV2008-MP4 (CAP), GV2008-MP4 (CAP), GV2008-MP4 (ENC), GV2008-MP4 (ENC), GV2008-MP4 (ENC), GV2008-MP4 (ENC)

1.7 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.

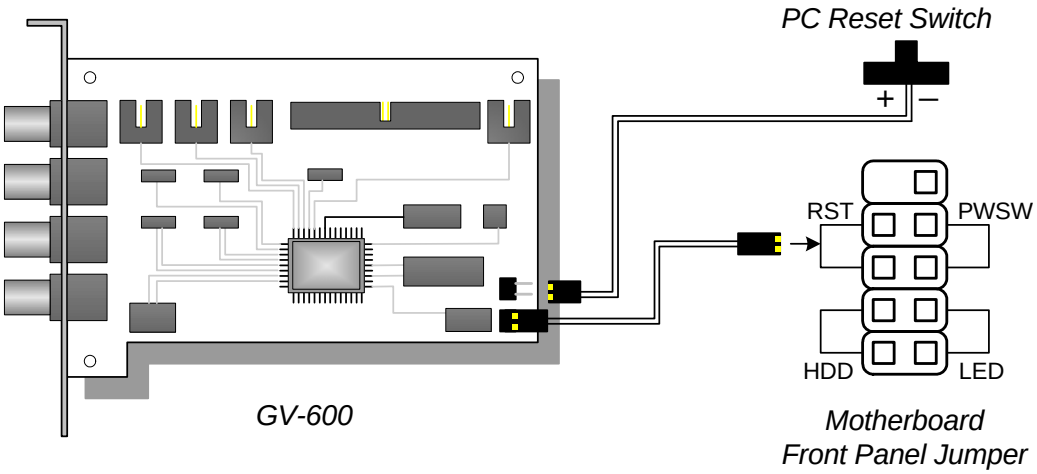


Figure 1-15 Watchdog connections

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.

1.8 Comparison Chart (H/W Compression)

			GV-2004	GV-2008	GV-2008 x 2
Input Type			D-Type		
Video Input			4	8	16
Total Recording Rate (at D1)	NTSC		120 fps	240 fps	480 fps
	PAL		100 fps	200 fps	400 fps
Display Rate	NTSC		120 fps	240 fps	480 fps
	PAL		100 fps	200 fps	400 fps
Video Codec	H/W		MPEG-4 (ASP), MPEG-2		
	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			4	8	16
Audio Codec			ADPCM 8Khz 4 bit Mono		
GV-Multi Quad Card Support			O	O	O
GV-A16 Card Support			X	X	X
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 2000 / XP / Server 2003 / Vista		
Direct X			9.0		
CPU			Pentium 4- 2.4 GHz with HT	Pentium 4-2.6 GHz with HT	Pentium 4-3.0 GHz with HT
RAM			2 x 512 MB Dual Channels		2 x 1GB Dual Channels
HDD			120 GB	250 GB	500 GB
VGA			ATI Radeon 9550 / NVIDIA 6200		

Note:

1. Currently GV-Video Capture Cards are not compatible with VIA-series and ATI-series chipset motherboards.
2. For software recording rates, all GV cards are set to CIF. For hardware recording rates, GV-2004 and GV-2008 Cards are set to D1 and Half D1.
3. To use Advance Video Analysis, at least 1 GB of memory is required.
4. 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.
5. All specifications are subject to change without notice.

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

		GV-600	GV-650	GV-800
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 (at 320 x 240)	NTSC	30 fps	60 fps	120 fps
	PAL	25 fps	50 fps	100 fps
Display Rate	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		1	2	4
Audio Codec		ADPCM 8Khz 4 bit Mono		
GV-Multi Quad Card Support		O	O	O
GV-A16 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 2000 / XP / Server 2003 / Vista		
Direct X		9.0		
CPU		Pentium 4-2.0 GHz		Pentium 4-2.4 GHz Pentium 4-3.0 GHz with HT
RAM		512 MB		2 x 512 MB Dual Channels
HDD		80 GB		
VGA		ATI Radeon 9550 / NVIDIA 6200		

Note:

1. Currently GV-Video Capture Cards are not compatible with VIA-series and ATI-series chipset motherboards.
2. For recording resolution of 640 x 480 or above, Pentium 4 processor with Hyper Threading is required.
3. For software recording rates, all GV cards are set to CIF. For hardware recording rates, GV-2004 and GV-2008 Cards are set to D1 and Half D1.

GV-1120	GV-1240	GV-1480	GV-1120A	GV-1240A	GV-1480A
D-Type / DVI-Type			D-Type / DVI-Type		
8, 12, 16	8, 16	16	8, 12, 16	8, 16	16
120 fps	240 fps	480 fps	120 fps	240 fps	480 fps
100 fps	200 fps	400 fps	100 fps	200 fps	400 fps
480 fps	480 fps	480 fps	480 fps	480 fps	480 fps
400 fps	400 fps	400 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, 12, 16	8, 16	16	8, 12, 16	8, 16	16
ADPCM 8Khz 4 bit Mono					
O	O	O	O	O	O
X	X	X	X	X	X
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	O	O
O	O	O	O	O	O
Minimum System Requirements					
Windows 2000 / XP / Server 2003 / Vista					
9.0					
Pentium 4-3.0 GHz with HT	Pentium 4-3.0 GHz Dual Core		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					
80 GB	120 GB	250 GB	80 GB	120 GB	250 GB
ATI Radeon 9550 / NVIDIA 6200			ATI Raden X550 PCI-E / NVIDIA 6200 PCI-E		

4. To use Advance Video Analysis, at least 1 GB of memory is required.
5. 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.
6. All specifications are subject to change without notice.

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

		GV-600 x 2	GV-650 x 2	GV-800 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 (at 320 x 240)	NTSC	60 fps	120 fps	240 fps
	PAL	50 fps	100 fps	200 fps
Display Rate	NTSC	60 fps	120 fps	240 fps
	PAL	50 fps	100 fps	200 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-A16 Card Support		X	X	X
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 2000 / XP / Server 2003 / Vista		
Direct X		9.0		
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 512 MB Dual Channels		
HDD		160 GB		
VGA		ATI Raden 9550 / NVIDIA 6200		ATI Raden X550 PCI-E / NVIDIA 6200 PCI-E

Note:

1. Currently GV-Video Capture Cards are not compatible with VIA-series and ATI-series chipset motherboards.
2. For software recording rates, all GV cards are set to CIF. For hardware recording rates, GV-2004 and GV-2008 Cards are set to D1 and Half D1.

GV-1120 x 2	GV-1240 x 2	GV-1480 x 2	GV-1120A x 2	GV-1240A x 2	GV-1480A x 2
D-Type / DVI-Type			D-Type / DVI-Type		
16, 20, 24, 28, 32	16, 24, 32	32	16, 20, 24, 28, 32	16, 24, 32	32
240 fps	480 fps	960 fps	240 fps	480 fps	960 fps
200 fps	400 fps	800 fps	200 fps	400 fps	800 fps
960 fps	960 fps	960 fps	960 fps	960 fps	960 fps
800 fps	800 fps	800 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, 20, 24, 28, 32	16, 24, 32	32	16, 20, 24, 28, 32	16, 24, 32	32
ADPCM 8Khz 4 bit Mono					
O	O	O	O	O	O
X	X	X	X	X	X
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	O	O
O	O	O	O	O	O
Minimum System Requirements					
Windows 2000 / XP / Server 2003 / Vista					
9.0					
Pentium 4-3.0 GHz, Dual Core	Core 2 Duo, 2.53 GHz		Pentium 4-3.0 GHz Dual Core	Core 2 Duo, 2.53 GHz	Core 2 Quad, 2.4 GHz
2 x 1GB Dual Channels					
160 GB	250 GB	500 GB	160 GB	250 GB	500 GB
ATI Raden X550 PCI-E / NVIDIA 6200 PCI-E					

3. 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.
4. All specifications are subject to change without notice.

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 1, *User's Manual* on the Surveillance System Software CD.

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-2004 and 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-2004 or 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.

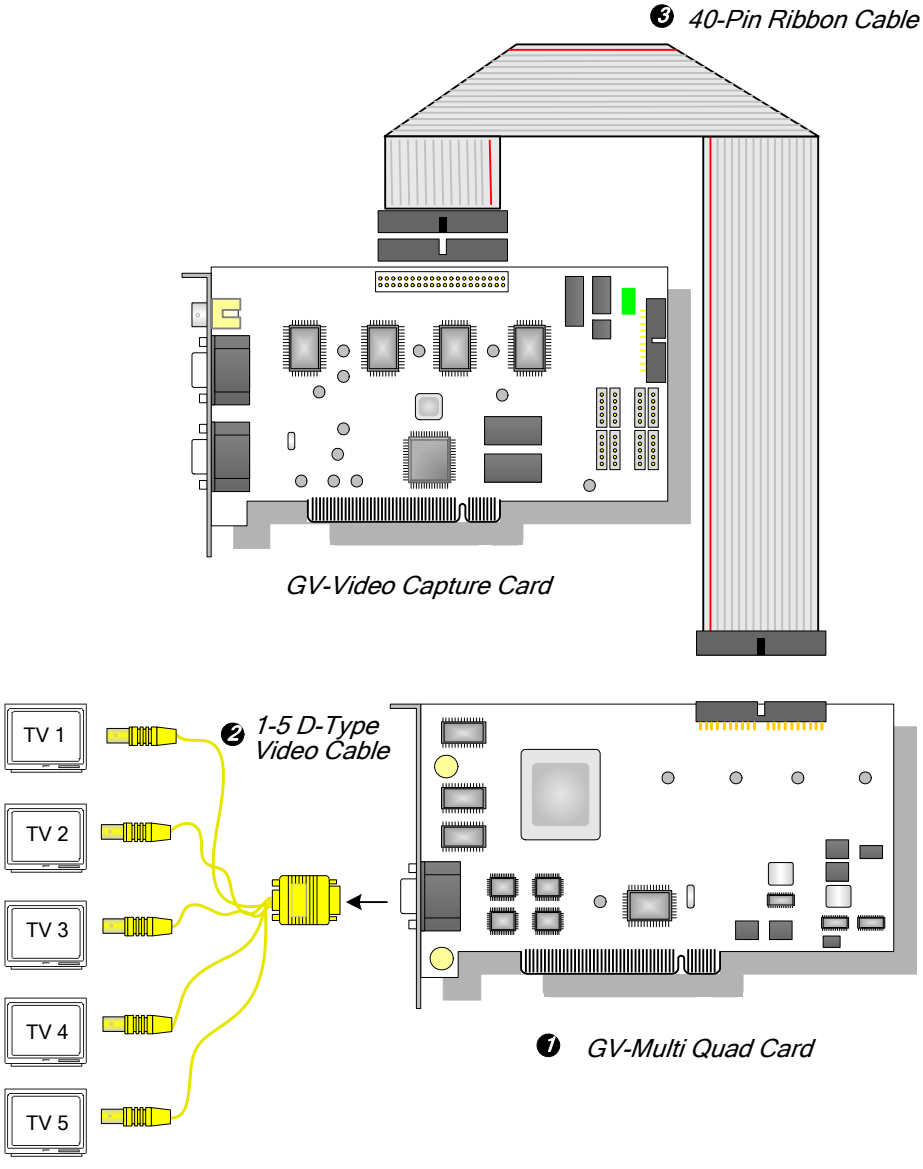


Figure 2-1 GV-Multi Quad Card connections

Connections in Two Video Capture Cards

If your system is equipped with two video capture cards, connect only one GV-Multi Quad Card to any of two cards.

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 *1.5 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**.

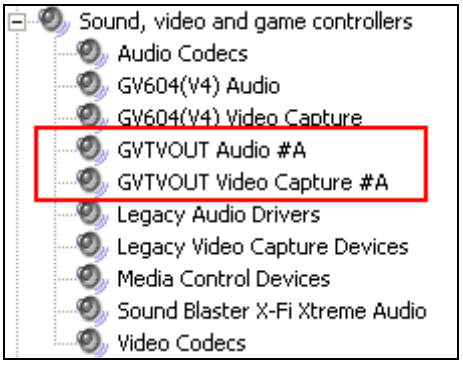


Figure 2-2 Verifying GV-Multi Quad Card drivers

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)

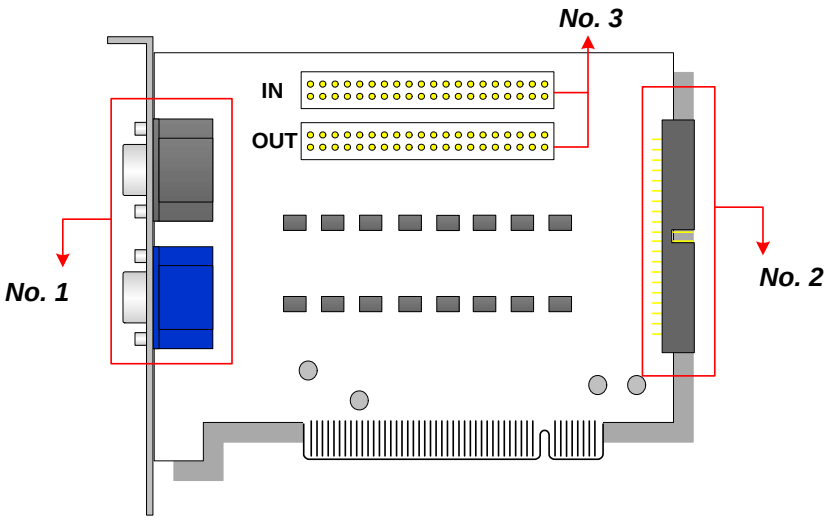
2.2 GV-Loop Through Card

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/OUT (IN for GV Video Capture Card, OUT for DSP Card or Hybrid DVR Card.)

Figure 2-3 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-series cards, such as Video Capture Card, DSP Card or Hybrid DVR 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-2004 and 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-2004 or 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.

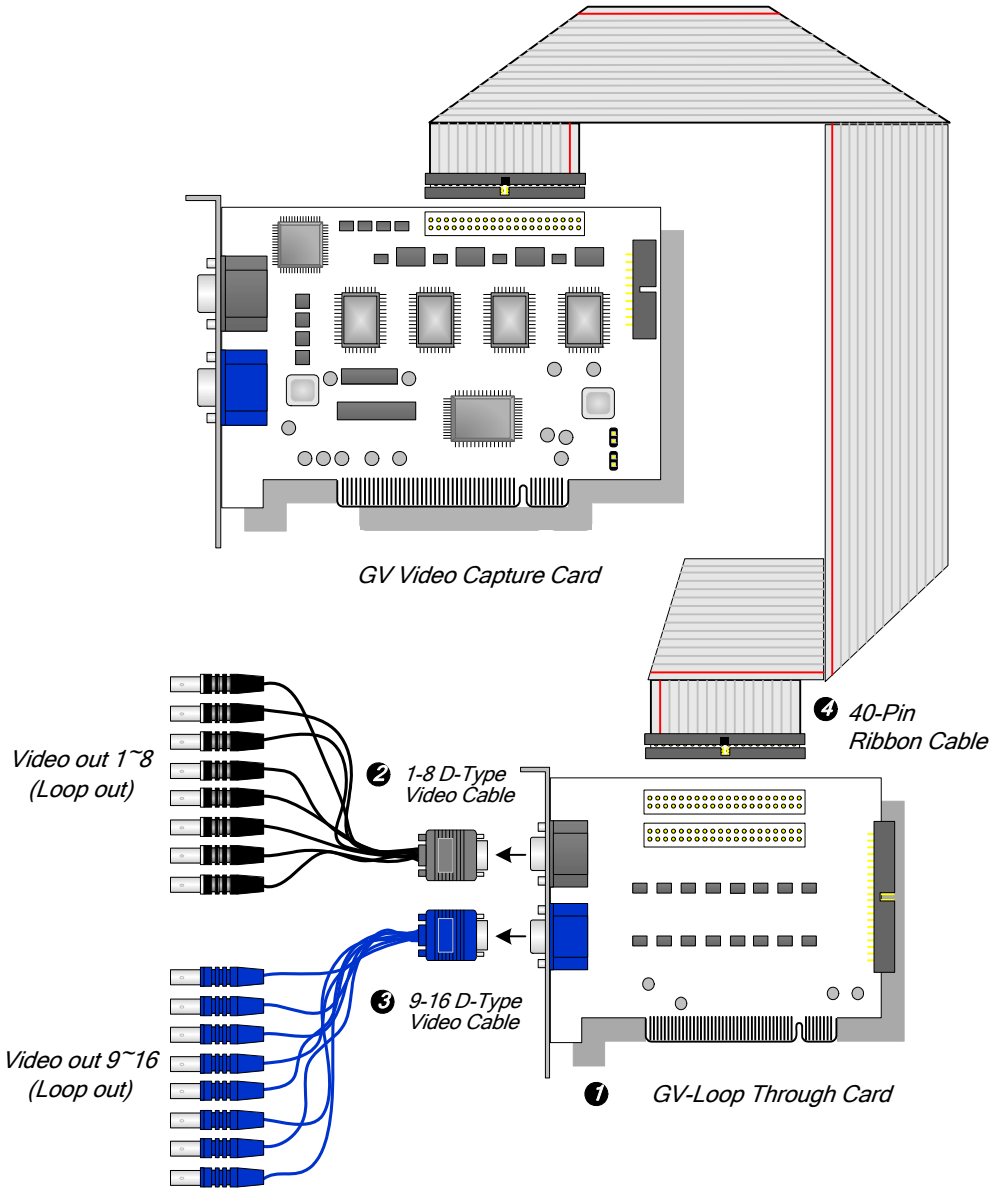


Figure 2-4 GV-Loop Through Card connections

Connections in 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)

2.3 GV-A16 Card

The GV-A16 Card can work with the GV-Video Capture Card to record audio for 16 channels, and to provide full duplex audio communication between local and remote users.

Packing List

1. GV-A16 Card x 1
2. 1-8 D-Type Audio Cable x 1
3. 9-16 D-Type Audio Cable x 1
4. Installation Guide x 1

Connections

Connect the audio cables to the GV-A16 Card as illustrated below.

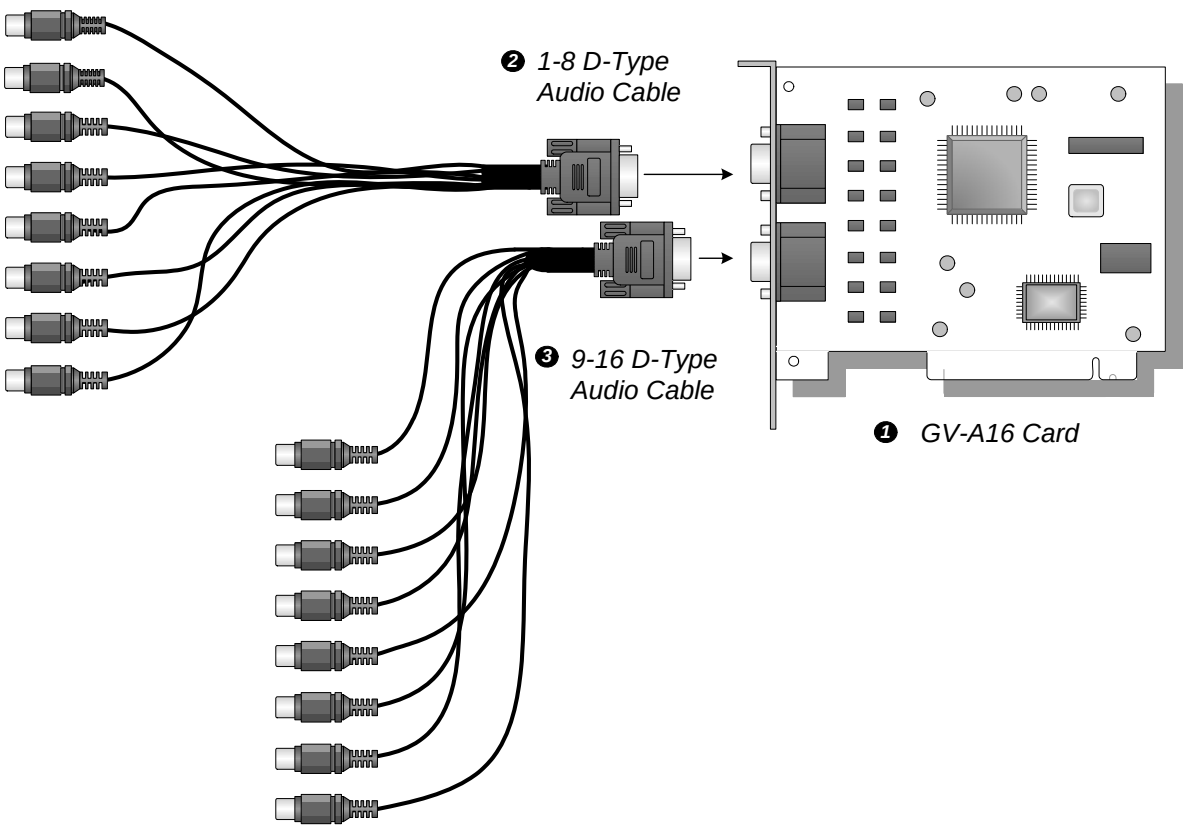


Figure 2-5 GV-A16 Card Connections

Installing Drivers

After you install the GV-A16 Card to the computer, the Hardware Wizard will automatically detect the device. Ignore the wizard, and follow the steps in *1.6 Installing Drivers, Chapter 1* 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 **GVA16 Audio** and **GVA16 Video**.

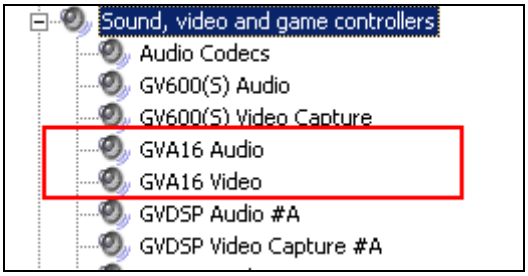


Figure 2-6 Verifying GV-A16 Card drivers

Specifications

Interface	DB9 Connector x 2
Number of Channels	16
Audio Compression	ADPCM 8 bit Mono
Compatible Model	GV-600, GV-650, GV-800, GV-900, GV-1000
Dimensions (W x H)	120 x 91 (mm) / 4.72 x 3.58 (in)

2.4 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

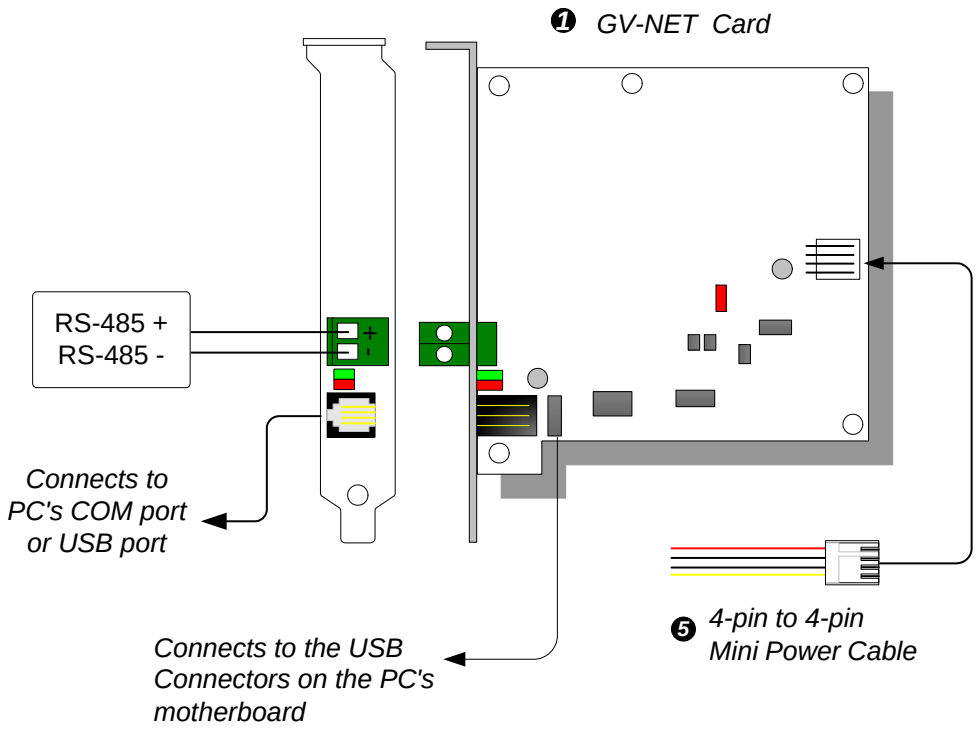


Figure 2-7 GV-Net Card V3.1 Connections

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.

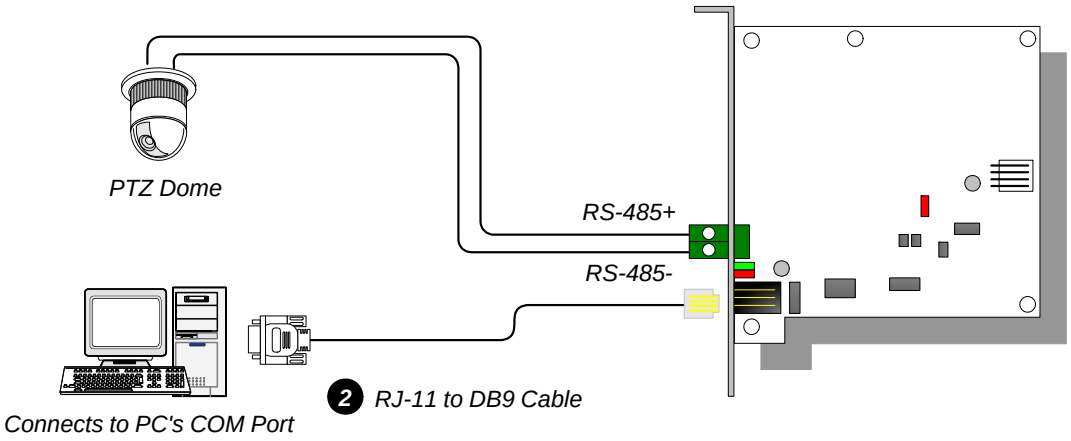


Figure 2-8

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

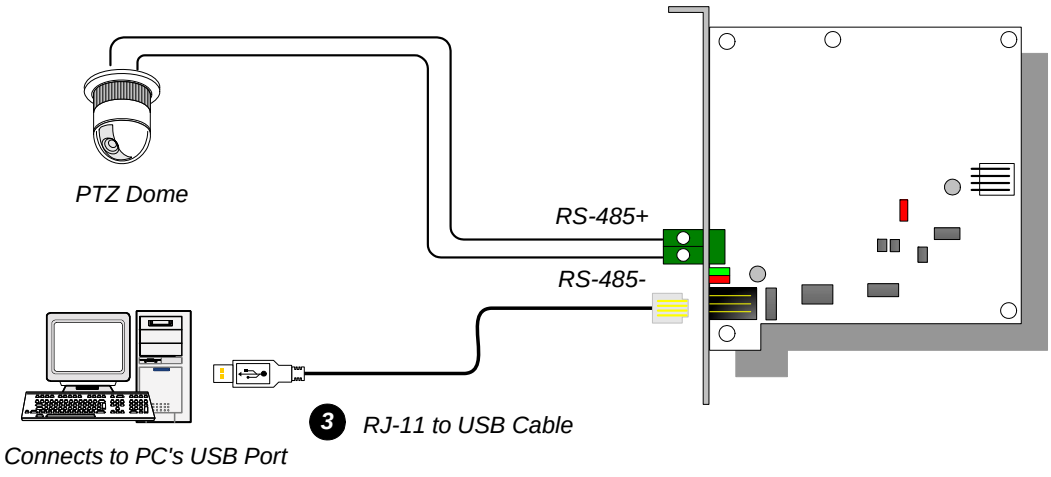


Figure 2-9

Note: It is required to install the USB driver. For details, see *2.24 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.

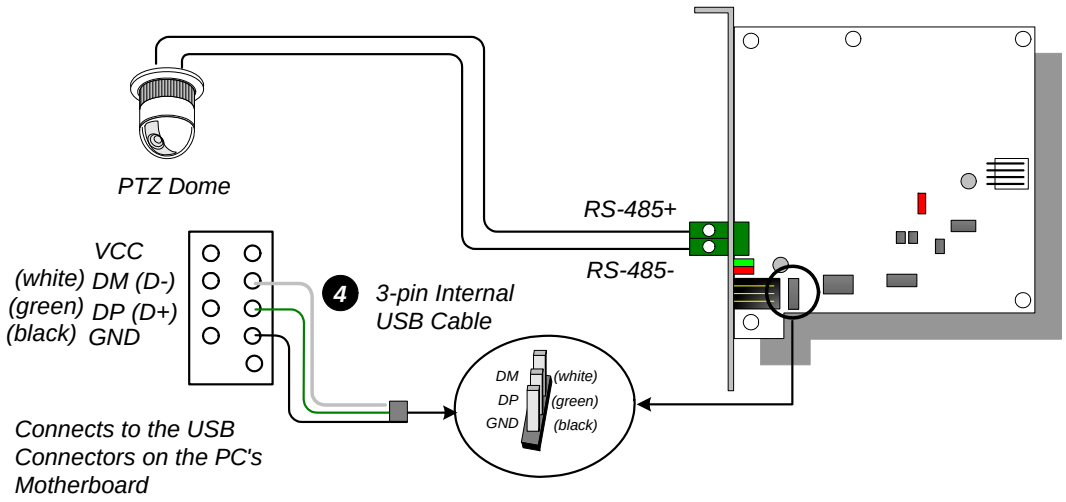


Figure 2-10

Note: It is required to install the USB driver. For details, see *2.24 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)

2.5 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

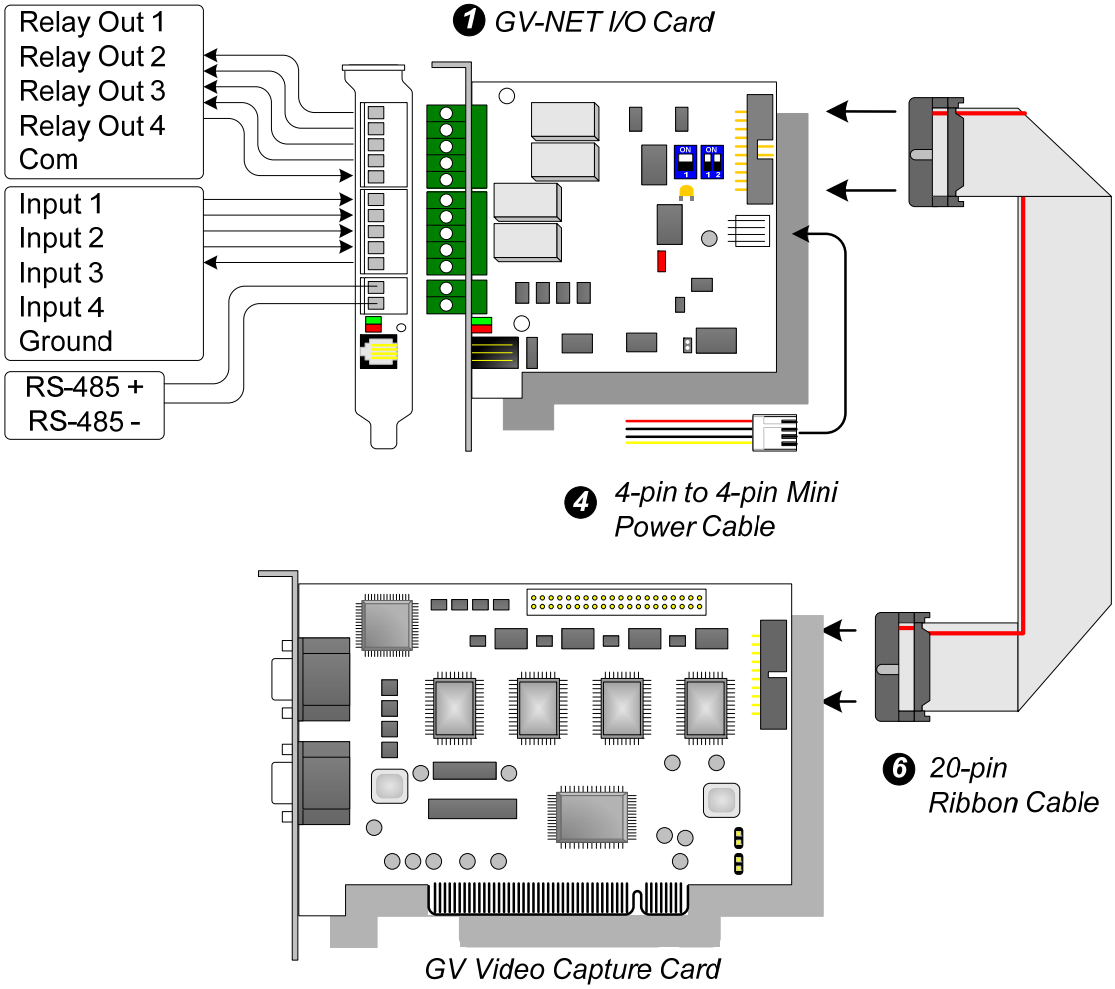
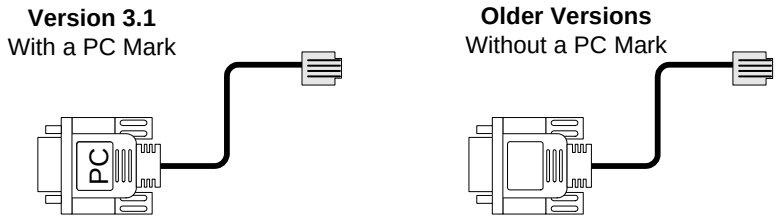


Figure 2-11 GV-NET/IO Card connections

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 to the PC case.

Connections in 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)**

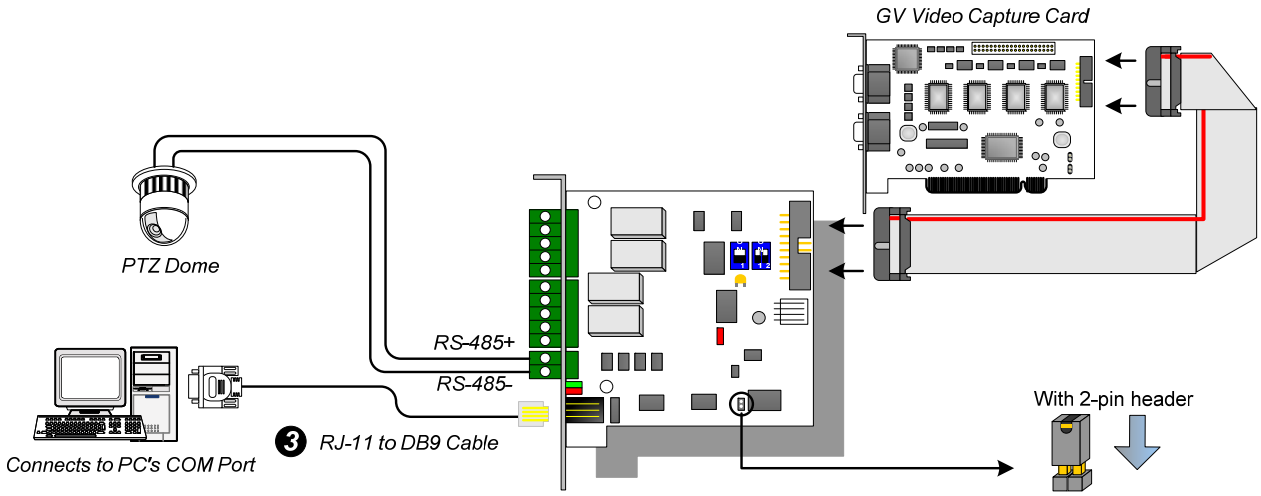


Figure 2-12

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)**

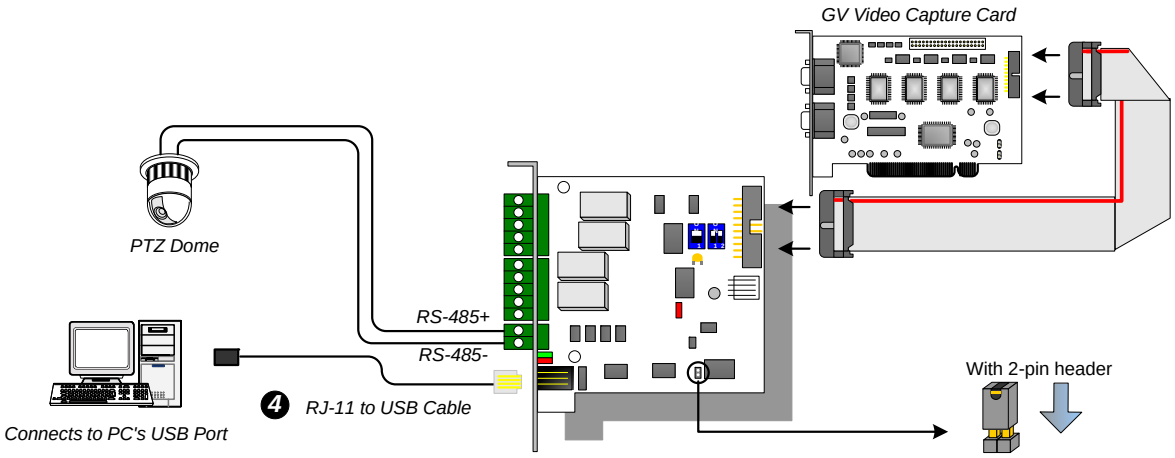


Figure 2-13

Note: It is required to install the USB driver. For details, see *2.24 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)**

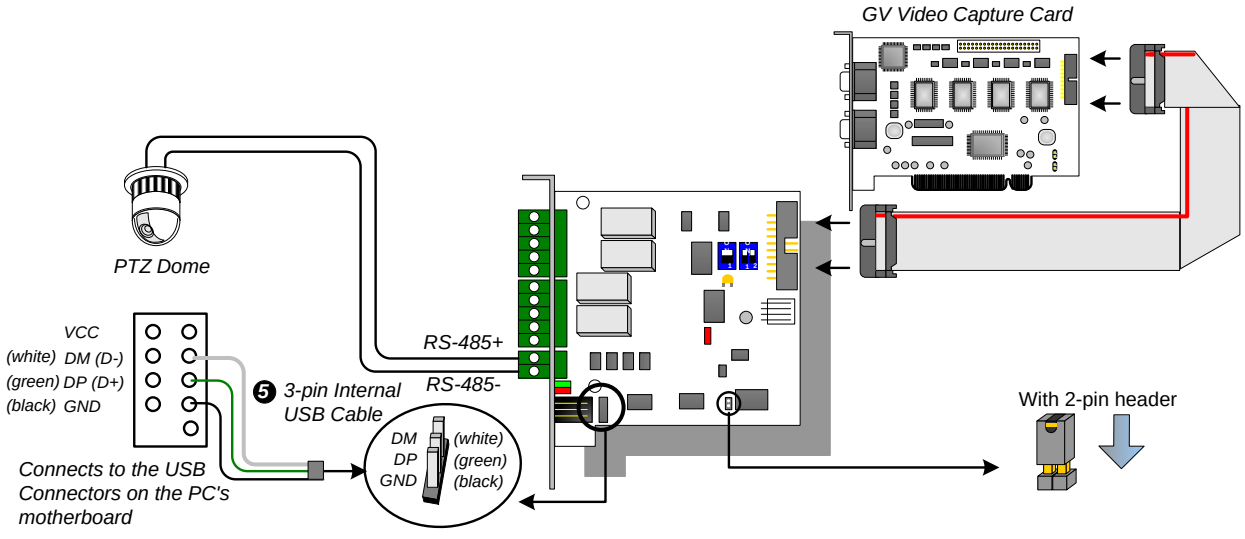


Figure 2-14

Note: It is required to install the USB driver. For details, see *2.24 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)**

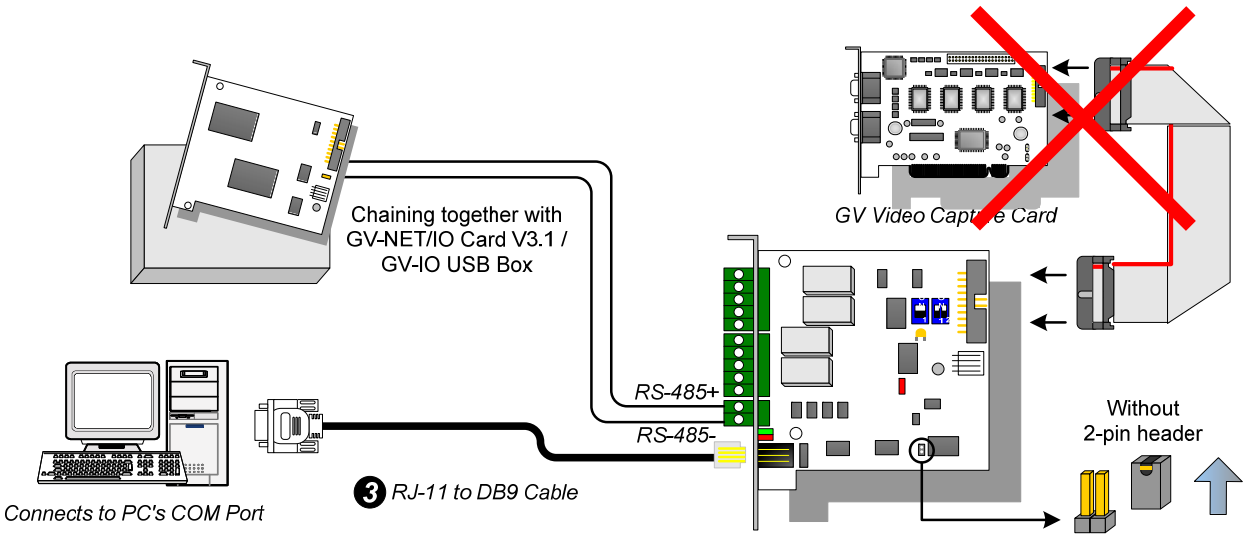


Figure 2-15

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

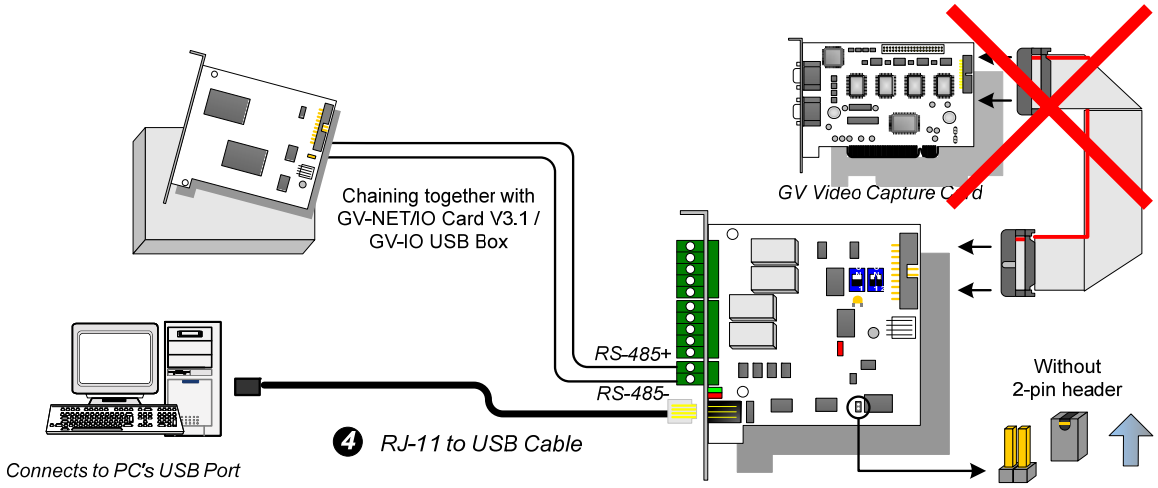


Figure 2-16

Note: It is required to install the USB driver. For details, see *2.24 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)**

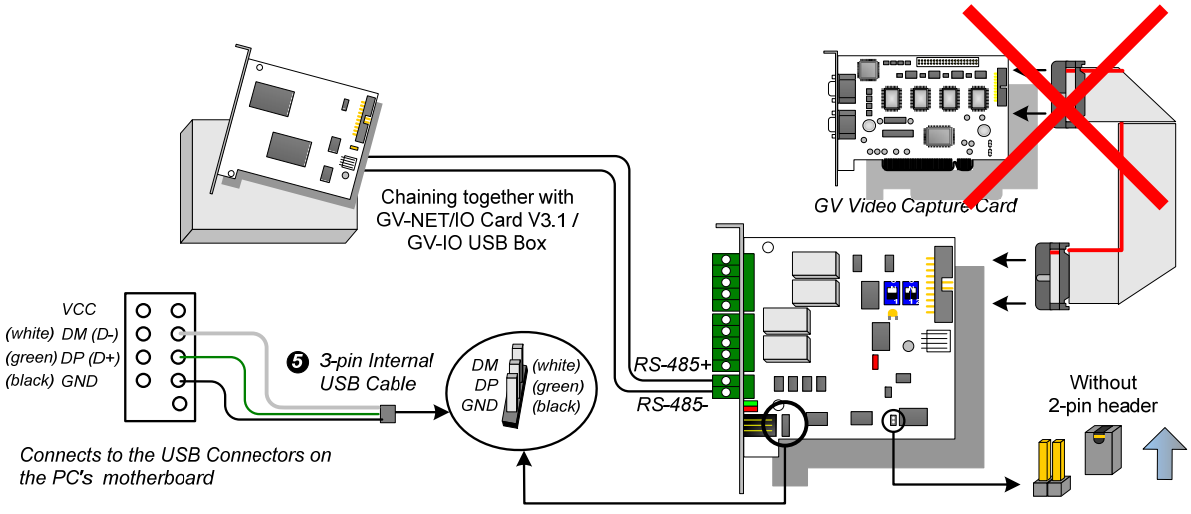


Figure 2-17

Note: It is required to install the USB driver. For details, see *2.24 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.

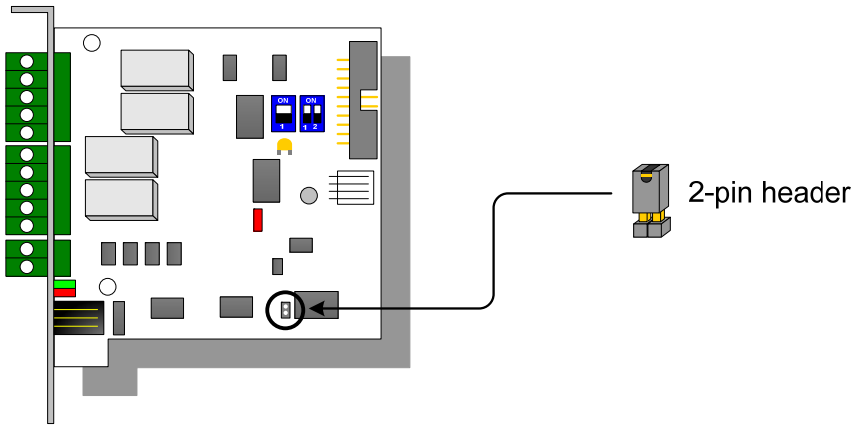


Figure 2-18

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.

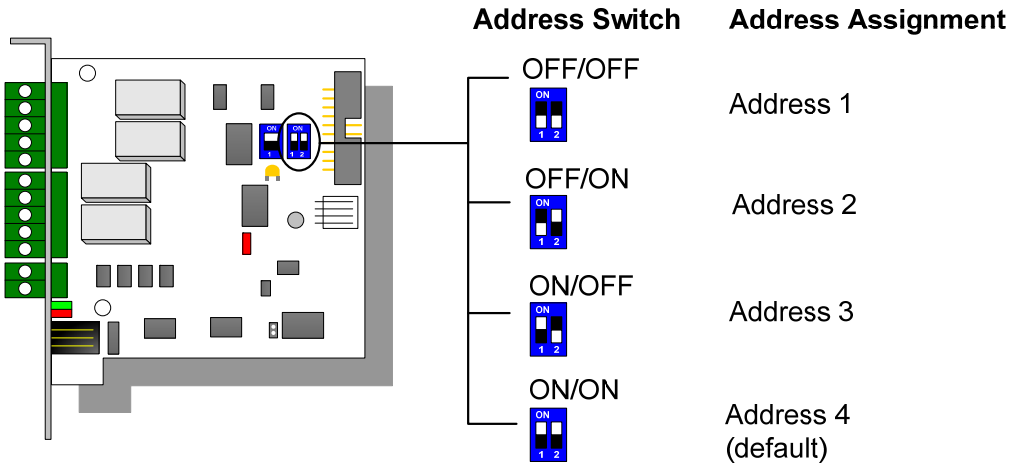


Figure 2-19

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

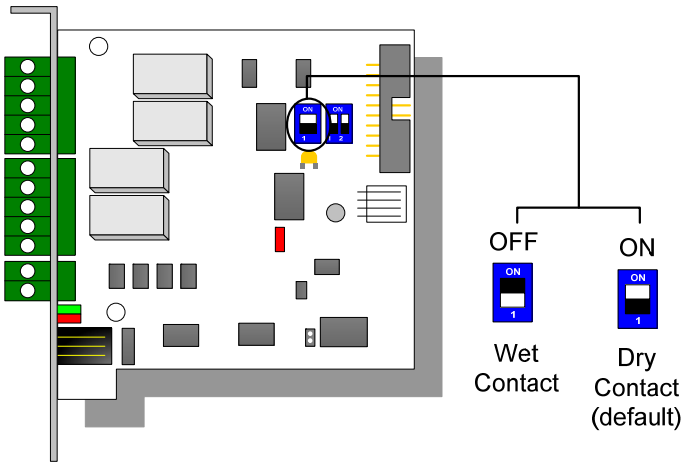


Figure 2-20

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)		

2.6 GV-NET Box

The GV-NET Box is a RS-485 / RS-232 interface converter, the same function as the GV-NET Card. The differences are that the GV-NET Card is fixed within the computer and receives the power supply from your computer, while the GV-NET Box is an independent box and has its own power supply adaptor.

Packing List

1. GV-NET Box x 1
2. DB9 RS-232 Cable x 1
   (1.8 meters / 5.90 feet)
3. Power Adapter DC 5V x 1
4. Installation Guide x 1

Connections

- Use the supplied RS-232 cable to connect the GV-NET Box to the computer.
- Use the power adaptor to connect the GV-NET Box to the power outlet.

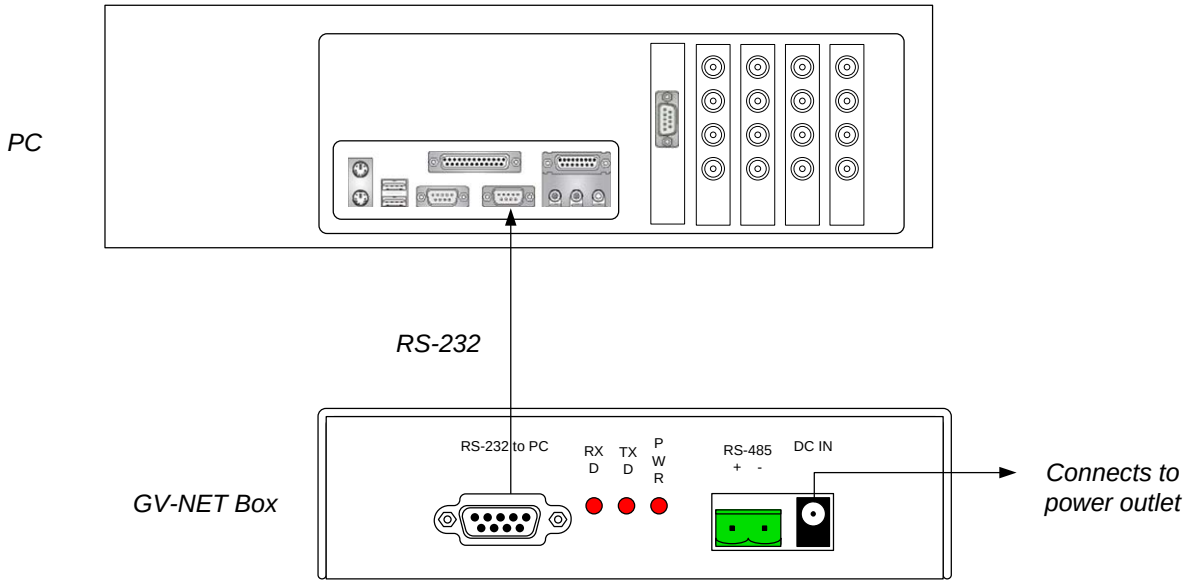


Figure 2-21 GV-NET Box connections

RS-485 Device Connections

The connections of RS-485 devices to the GV-NET Box are the same as the GV-NET Card. Refer to the diagrams in *RS-485 Device Connections, 2.6 GV-NET Card.*

Specifications

RS-232 to PC	DB9 Male to DB9 Female Cable
RS-485 Interface	Two Wires
Communication	RS-485, 1,200-19,200 bps
DC IN	Power Adapter DC 5V, IA Inner Positive
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 x D)	103 x 32 x 64 (mm) / 4.06 x 1.26 x 2.52 (in)

2.7 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

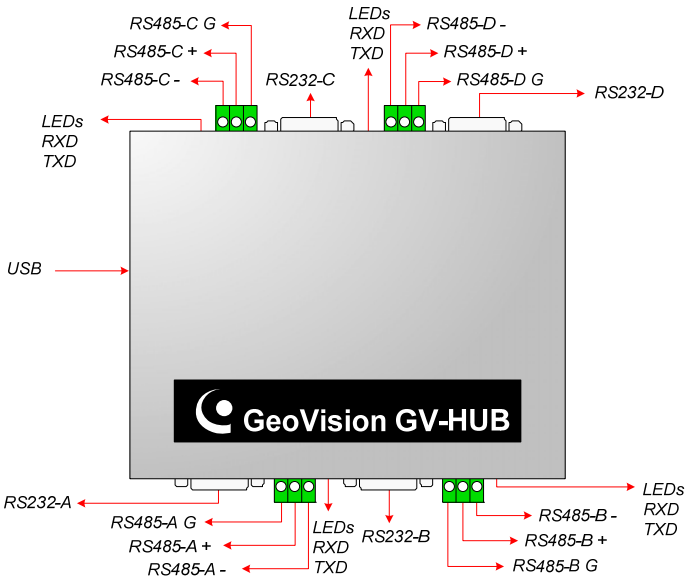
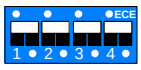
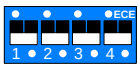


Figure 2-22 GV-Hub

DIP Switches

To change the DIP switches, you must open the GV-Hub Box.

Default Setting		Standard Mode (TX Feedback)	

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.

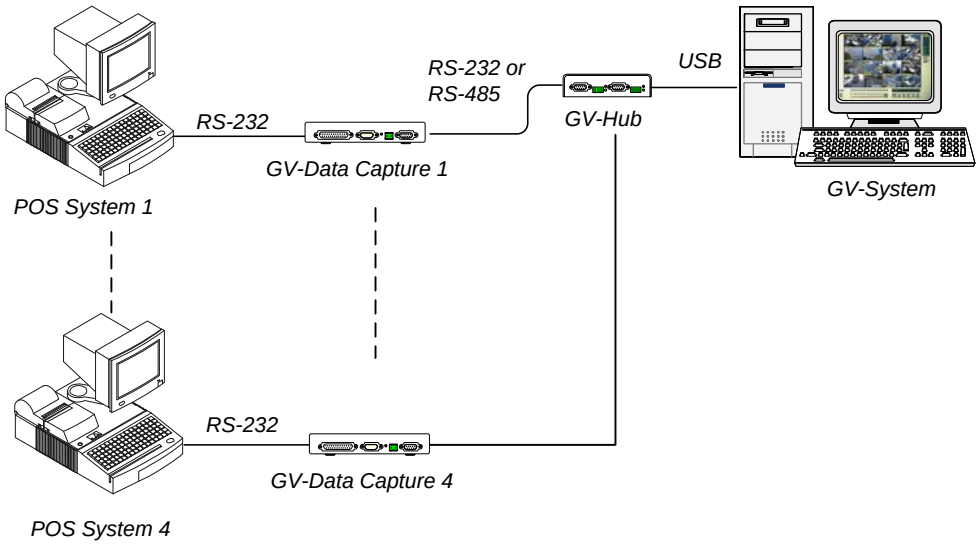


Figure 2-23 Connecting POS systems

Connecting RS-485 Devices

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

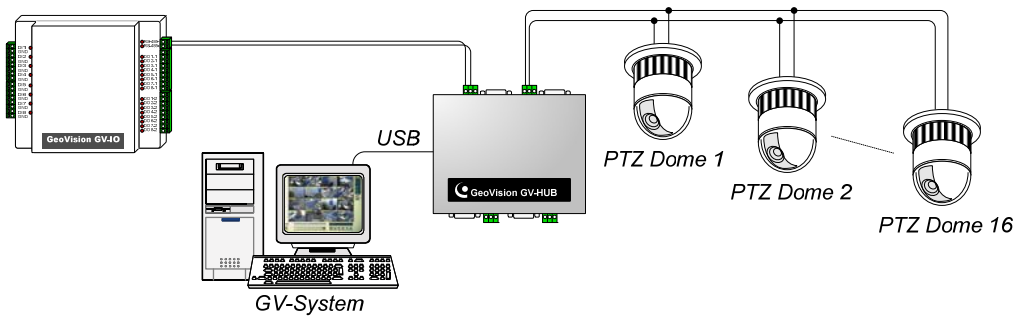


Figure 2-24 Connecting RS-485 devices

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.

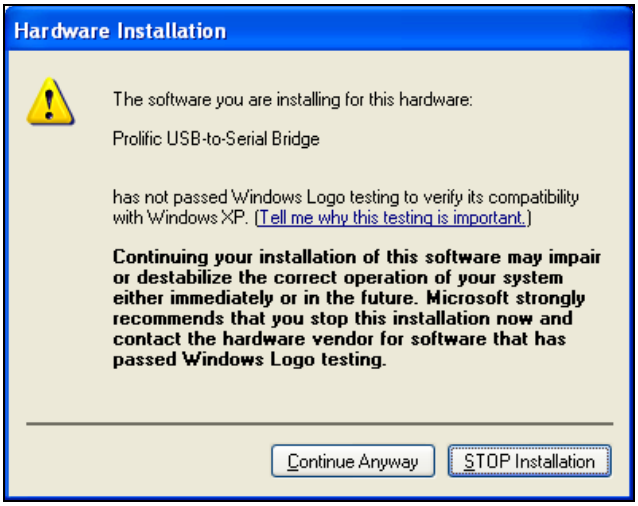


Figure 2-25 Hardware Installation

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**.

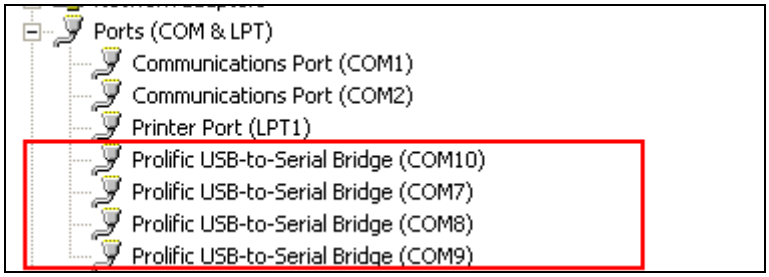


Figure 2-26 Prolific USB-to Serial Bridge

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)	

2.8 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

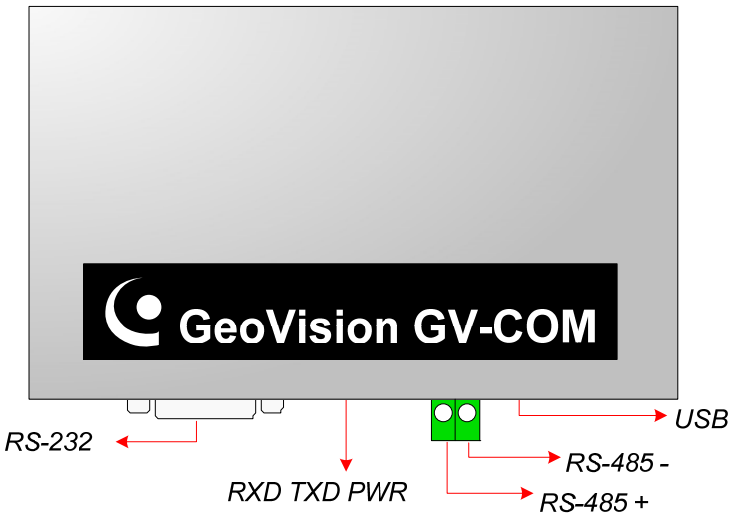


Figure 2-27 GV-COM

Long-Distance Connection

When the two conditions below are met, the supplied Terminal Resistor needs to be used:

1. Conneciton distance is greater than 600 meters (1968.50 feet).
2. High-speed baud rate is applied, ex. 115200.

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

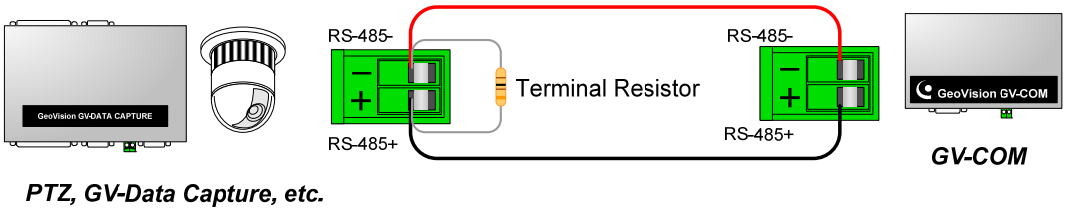


Figure 2-28 Terminal Resistor connections

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 *Installing Drivers*, 2.*12 GV-Hub Box*.

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.

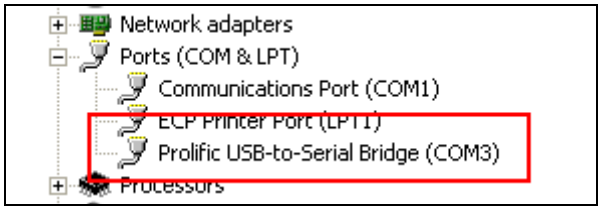


Figure 2-29 Prolific USB-to-Serial Bridge

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)	

2.9 GV-IO 12-In Card V3

The GV-IO 12-In Card is designed to work with the GV-NET/IO Card. With 12 digital inputs, the GV-IO 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-IO 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-IO 12-In Card to an empty card slot. Connect the 20-Pin Ribbon Cable to the GV Video Capture Card, the GV-IO 12-Out Card, and the GV-NET/IO Card as shown below.

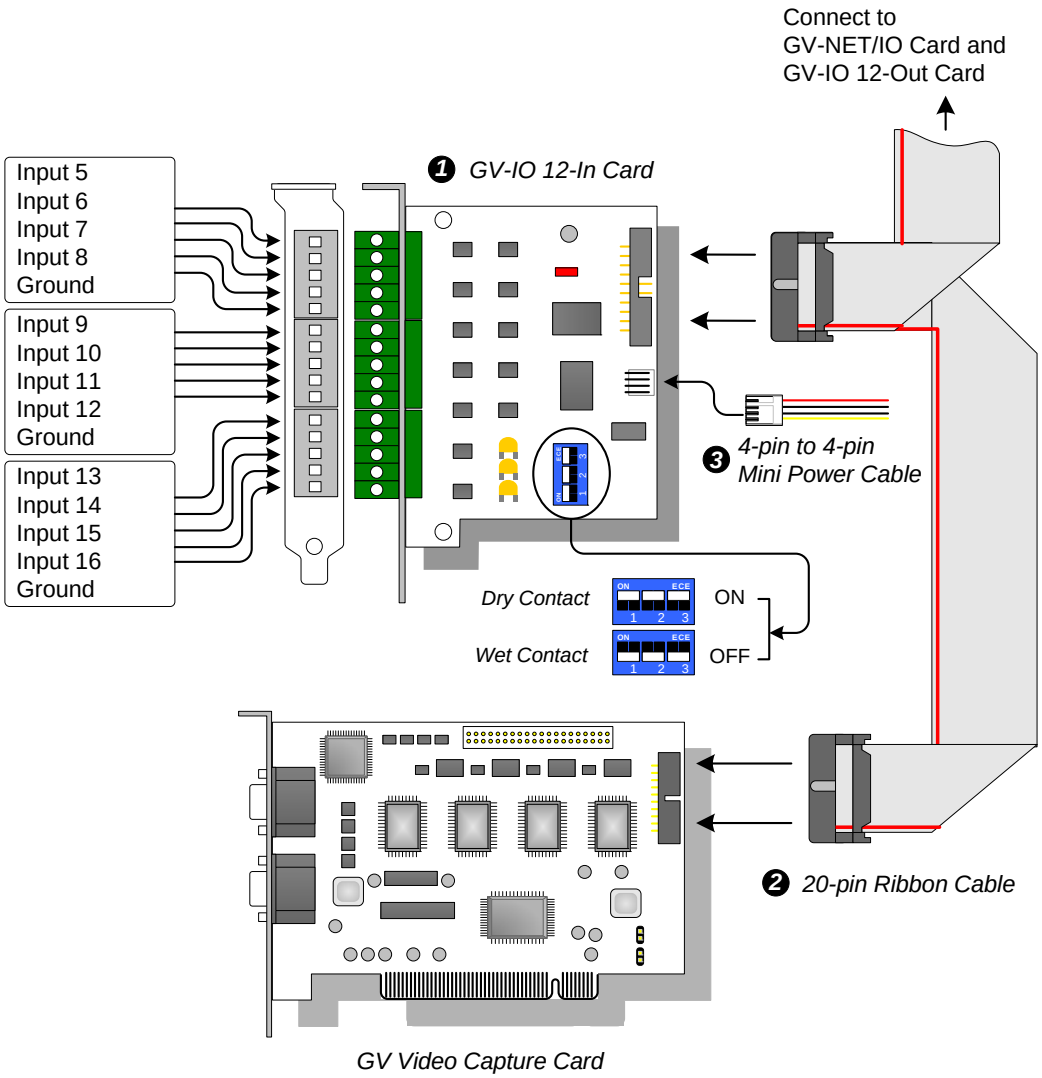


Figure 2-30 GV-IO 12-In Card connections

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-IO 12-In Card to the PC case.
3. The GV-IO 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)	

2.10 GV-IO 12-Out Card V3

The GV-IO 12-Out Card is designed to work with the GV-NET/IO Card. With 12 relay outputs, the GV-IO 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-IO 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-IO 12-Out Card to an empty card slot. Connect the 20-Pin Ribbon Cable to the GV Video Capture Card, the GV-IO 12-In Card, and the GV-NET/IO Card as shown below.

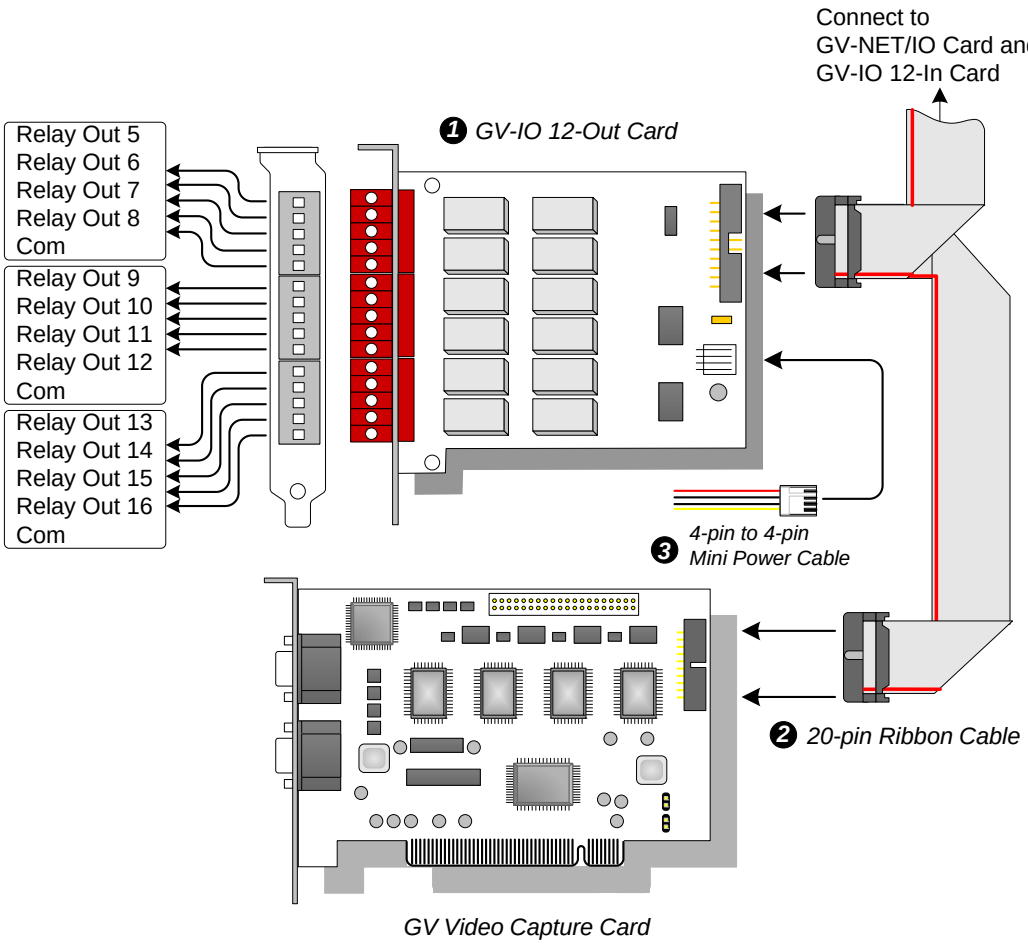


Figure 2-31 GV-IO 12-Out Card connections

Note:

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

2.11 GV-I/O USB Box (16 Ports)

The GV-I/O USB Box provides 16 inputs and 16 relay outputs. It not only supports both DC and AC output voltages but also provides a USB port.

Key Features

- It is a combination of both GV-I/O Box and GV-Relay Box.
- 16 inputs and 16 outputs are provided. See *Important Notice* for details.
- A USB port is provided for PC connection, and it is used for 30 DC output voltage.
- Up to 9 GV-I/O USB Boxes can be chained together. See *Important Notice* for details.

Important Notice

- Running with the GV-System earlier than V8.2, the GV-I/O USB Box only supports 8 inputs and 16 outputs. Up to 9 GV-I/O USB Boxes can be chained together.
- Running with the GV-System V8.2 and later, the GV-I/O USB Box can support 16 inputs and 16 outputs. Up to 9 GV-I/O USB Boxes can be chained together.

Packing List

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

Overview

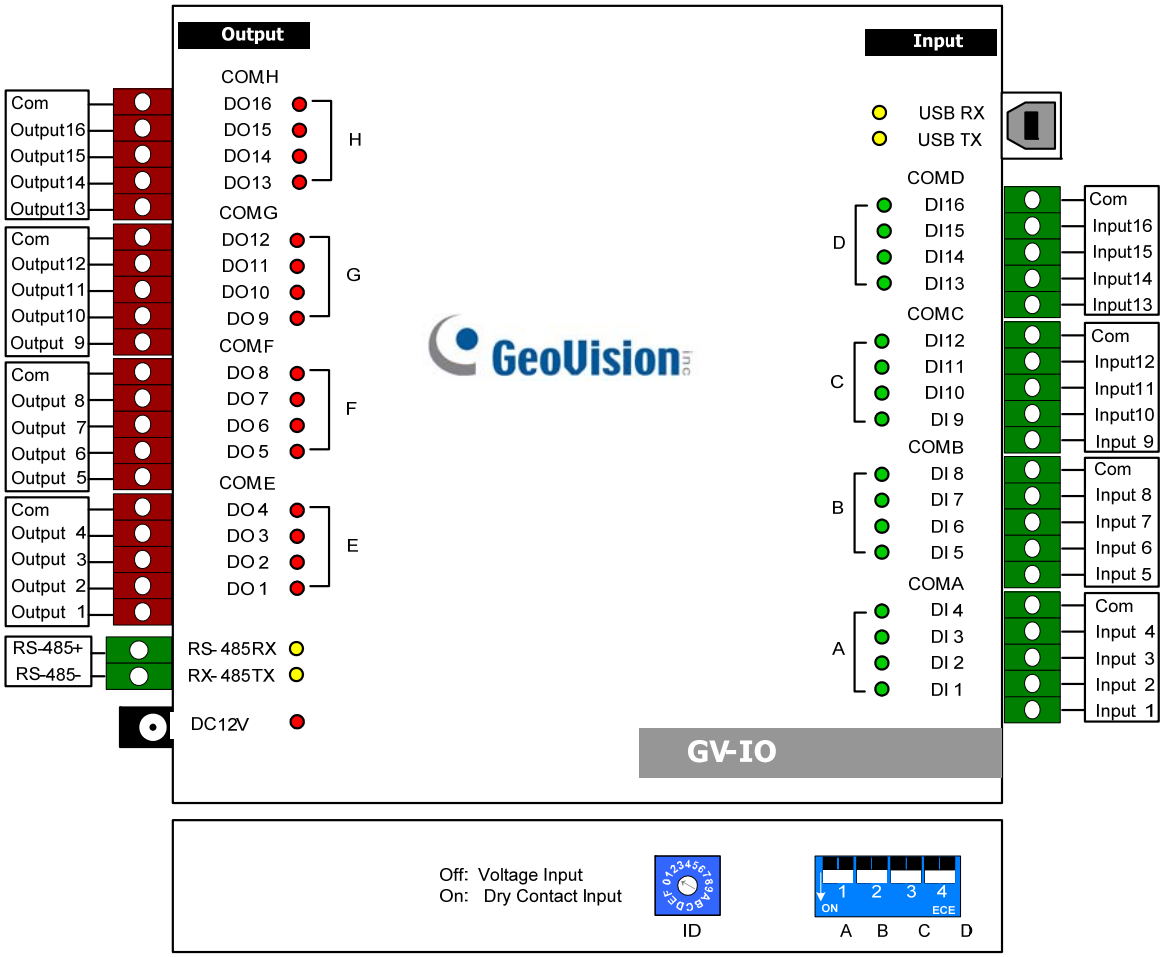


Figure 2-32

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 the GV-I/O USB Box to PC:

- Use the USB cable to connect to the PC, and
- Use the RS-485 connectors to connect to the PC through the option of GV-Hub, GV-COM, GV-NET Card or GV-NET/IO Card.

1. You can connect to PC with the USB cable. (**Allowed for DC Output Voltage only**)

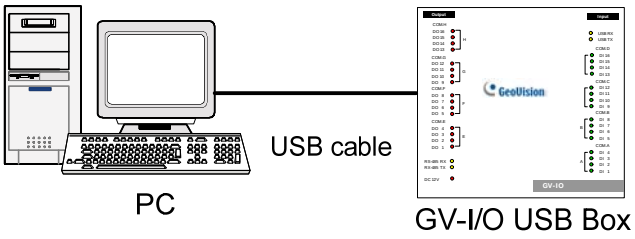


Figure 2-33

Note: It is required to install the USB driver. For details, see *2.24 Installing USB Driver.*

---

2. You can connect to PC with the RS-485 connectors. (**Allowed for AC/DC Output Voltage**)

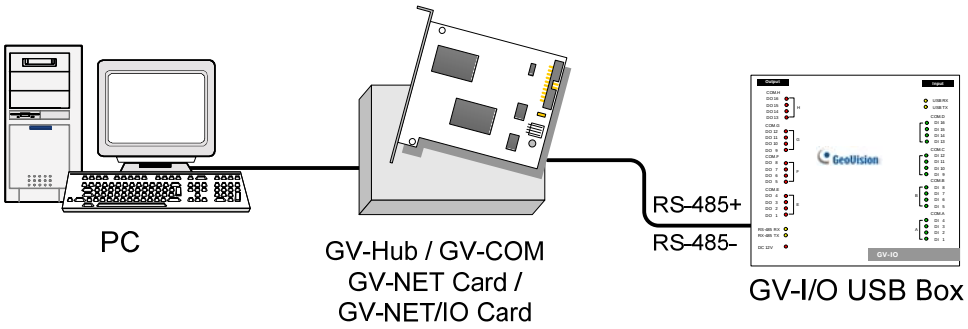


Figure 2-34

Assigning Addresses to GV-I/O USB Boxes

Up to 9 GV-I/O USB Boxes can be chained together to expand the I/O capacity. Use the ID Switch to assign addresses 1~ 9 to the connected GV-I/O USB Boxes.

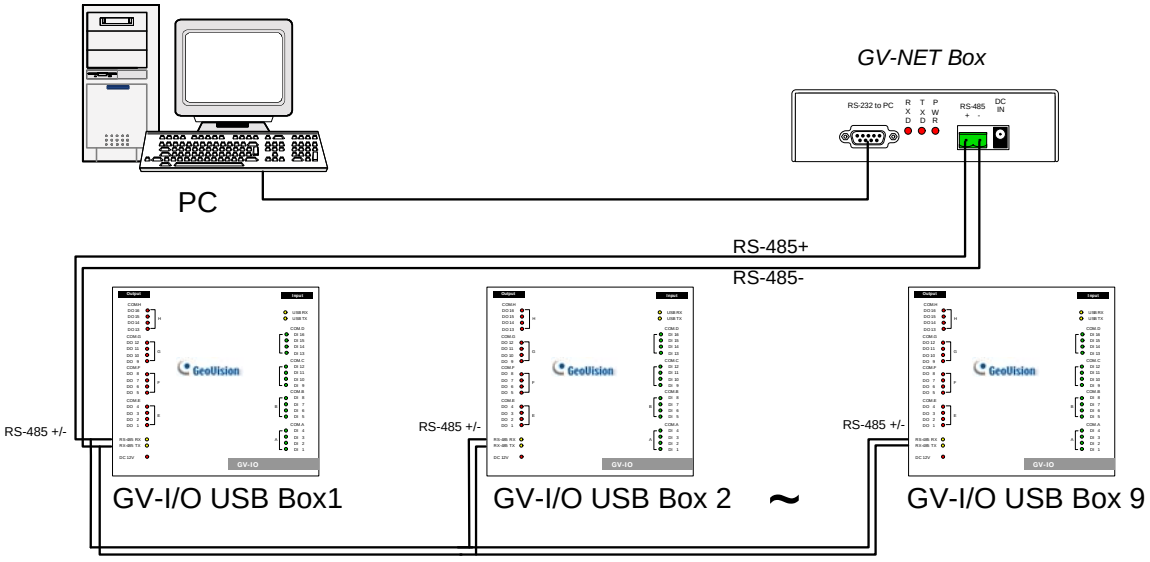


Figure 2-35

Note:

1. Address 0 is NOT functional.
2. When the GV-I/O USB Box is connected with the GV-NET/IO Card:
   - Assign Addresses 1 ~ 4 to the connected GV-NET/IO Cards.
   - Assign Addresses 5 ~ 9 to the connected GV-I/O USB Boxes.
3. If you want to change the assigned address of the connected GV-I/O USB Box, set the switch to the new address, and then re-plug the power adaptor.

Long-Distance Connection

The supplied Terminal Resistor must be used when the connection distance is greater than 200 meters (656.16 feet).

When one GV-I/O USB Box is connected to another GV-I/O USB Box or more, only insert the Terminal Resistors in the RS-485 connectors of the first and the last connected GV-I/O USB Boxes.

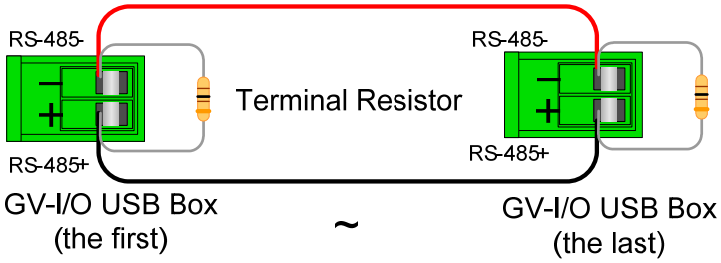


Figure 2-36

When one GV-I/O USB Box is connected to one GV-NET/IO Card, only insert the Terminal Resistor in the GV-I/O USB Box.

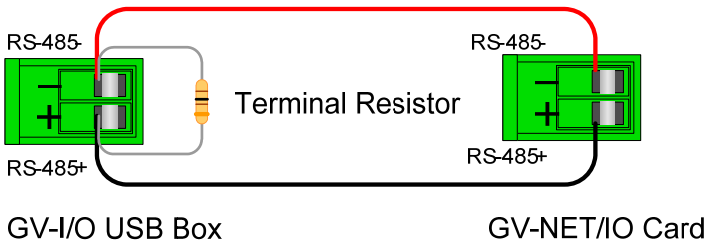


Figure 2-37

DIP Switch

The GV-I/O USB Box 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.

To change the inputs to different kind of contact, push the switch upward (wet contact) or downward (dry contact).

Figure 2-38

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
DC IN	DC 12V, 1A		
Address	1-15		
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 7.20 (in)		

2.12 GV-IO Box (16 Ports)

The GV-IO 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-IO 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-IO Box 16 x 1
2. USB Cable (Type A to B) x 1
3. Terminal Resistor x 1
4. Power Adapter DC 12V x 1
5. Installation Guide x 1

Overview

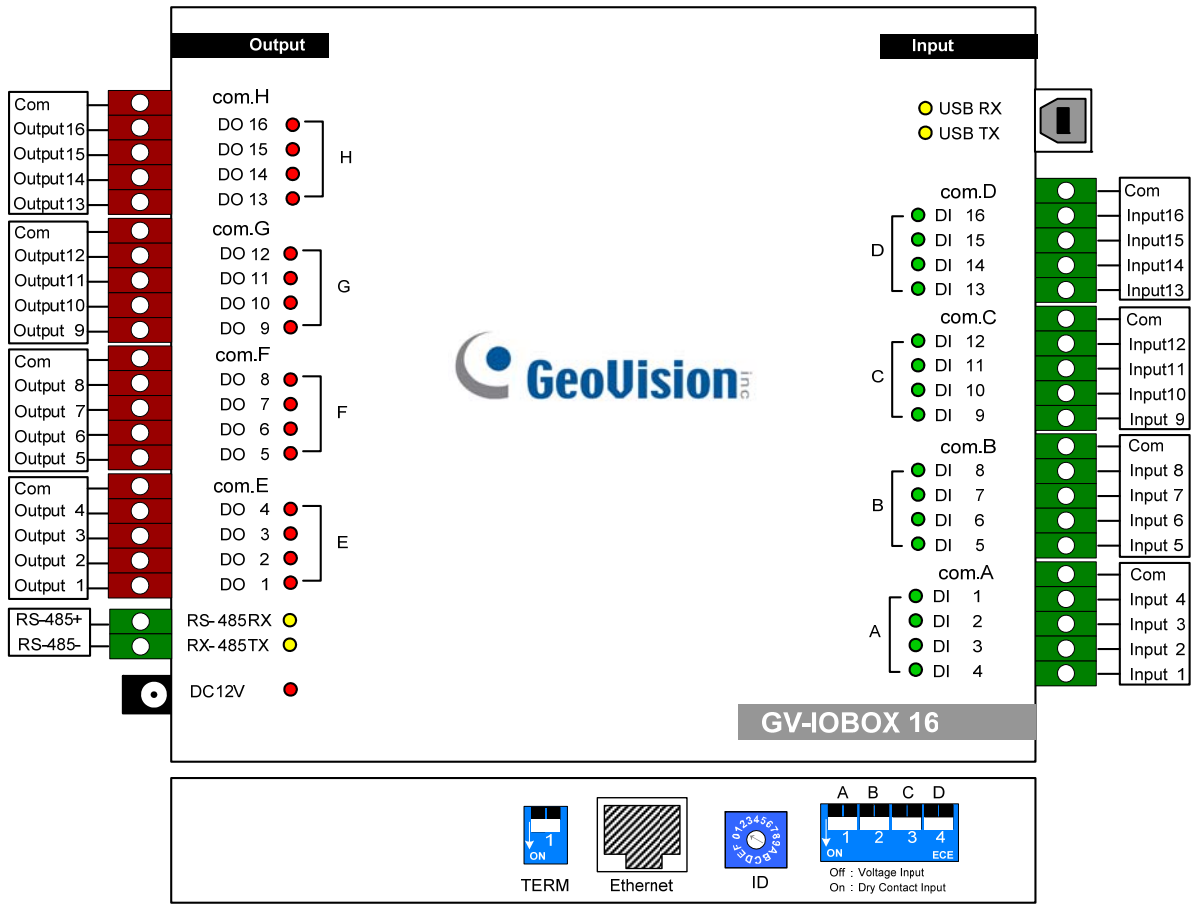
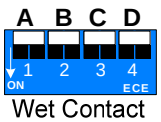


Figure 2-39

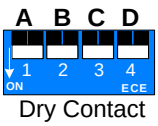
DIP Switch

The GV-IO 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. 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 the GV-IO Box 16 to the PC:

(1) Use the USB cable to connect to the PC, and

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

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

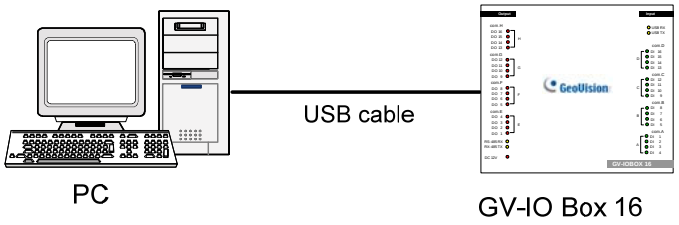


Figure 2-40

Note: It is required to install the USB driver. See *2.24 Installing USB Driver*.

---

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

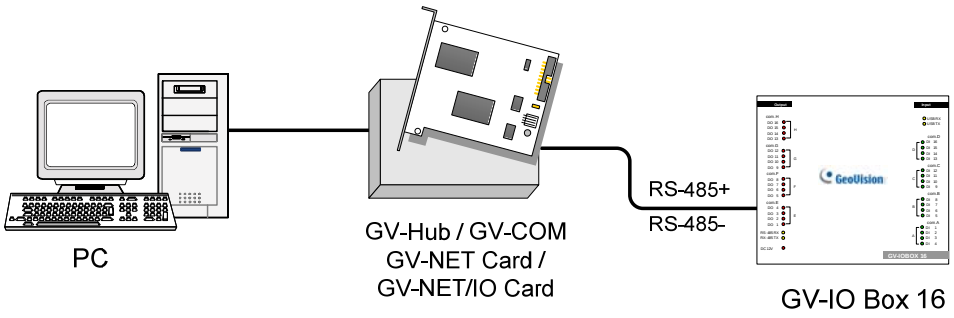


Figure 2-41

Assigning Addresses to GV-IO Box 16

Up to 9 pieces of GV-IO 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-IO Box 16.

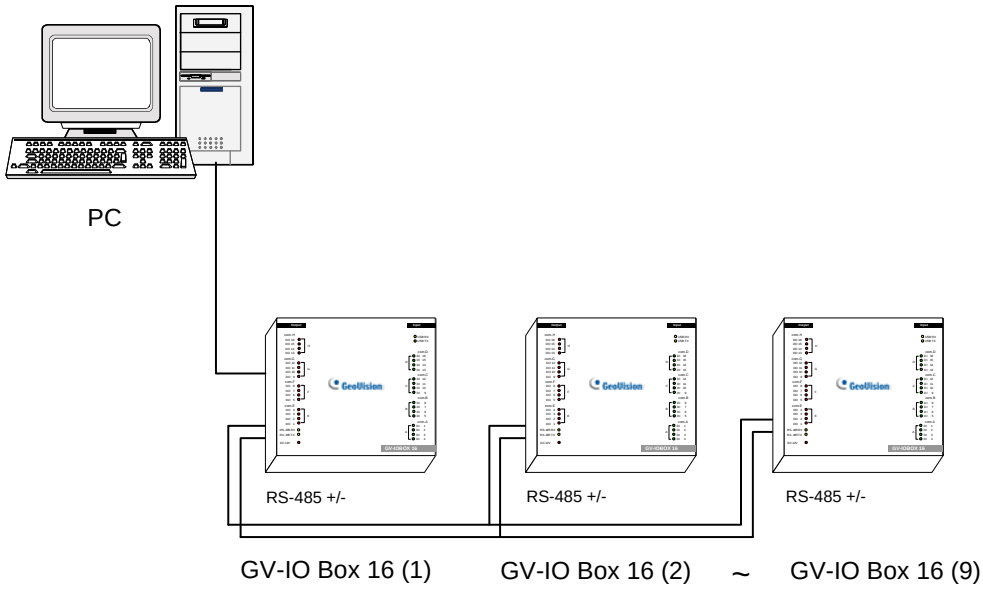
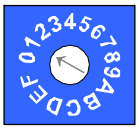


Figure 2-42

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-IO Box 16, set the switch to the new address, and then re-plug the power adaptor.

Long-Distance Connections

It is required to switch on the Terminal Resistance Switches when the connection distance is longer than 200 meters (656.16 feet). Three conditions below illustrate how the Terminal Release Switches should be switched on.

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

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

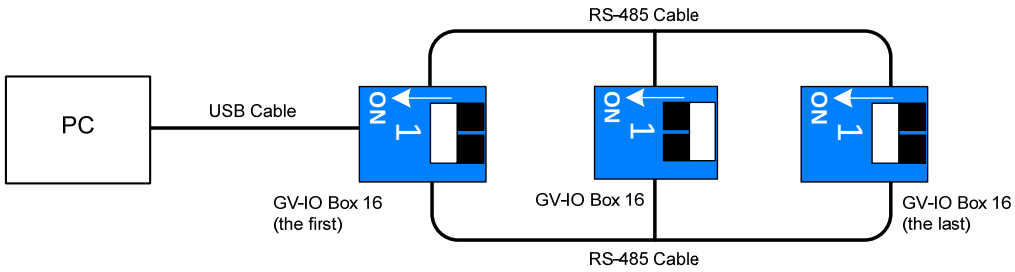


Figure 2-43

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

   After you connect multiple pieces of GV-IO 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-IO Box 16.

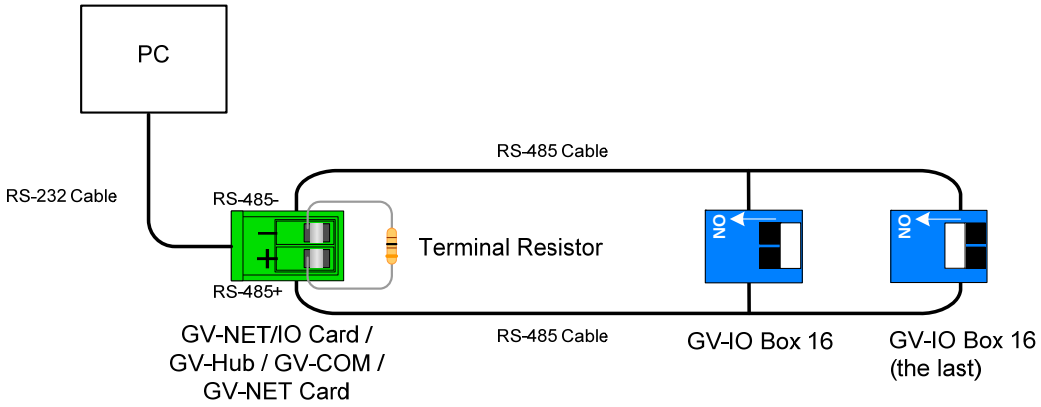


Figure 2-44

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

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

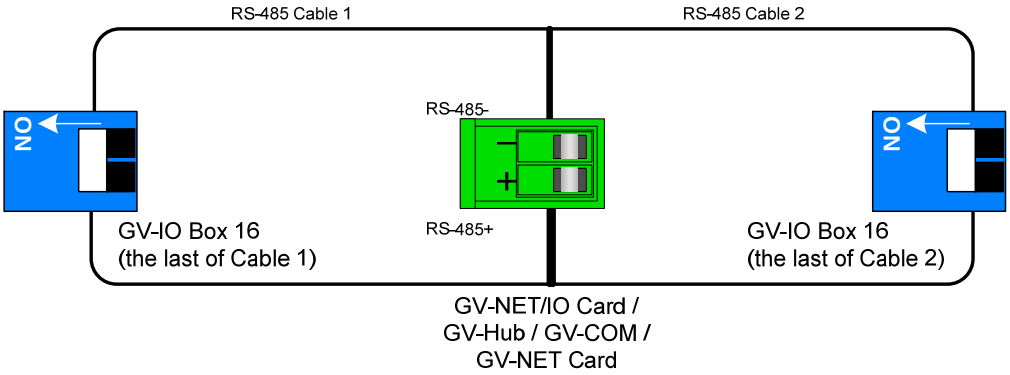
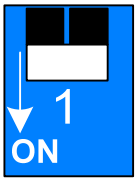


Figure 2-45

Terminal Resistance Switch



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	8	
	Relay Status	Normal Open	
	Relay Capacitance	USB Connection	30V DC, 3A
		RS-232 Connection	125 / 250V AC, 3A 30V DC, 3A
Ethernet	RJ-45, 10/100 Mbps (Reserved)		
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)		

2.13 GV-IO Box (8 Ports)

The GV-IO 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-IO 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-IO Box 8 x 1
2. USB Cable (Type A to B) x 1
3. Terminal Resistor x 1
4. Power Adapter DC 12V x 1
5. Installation Guide x 1

Overview

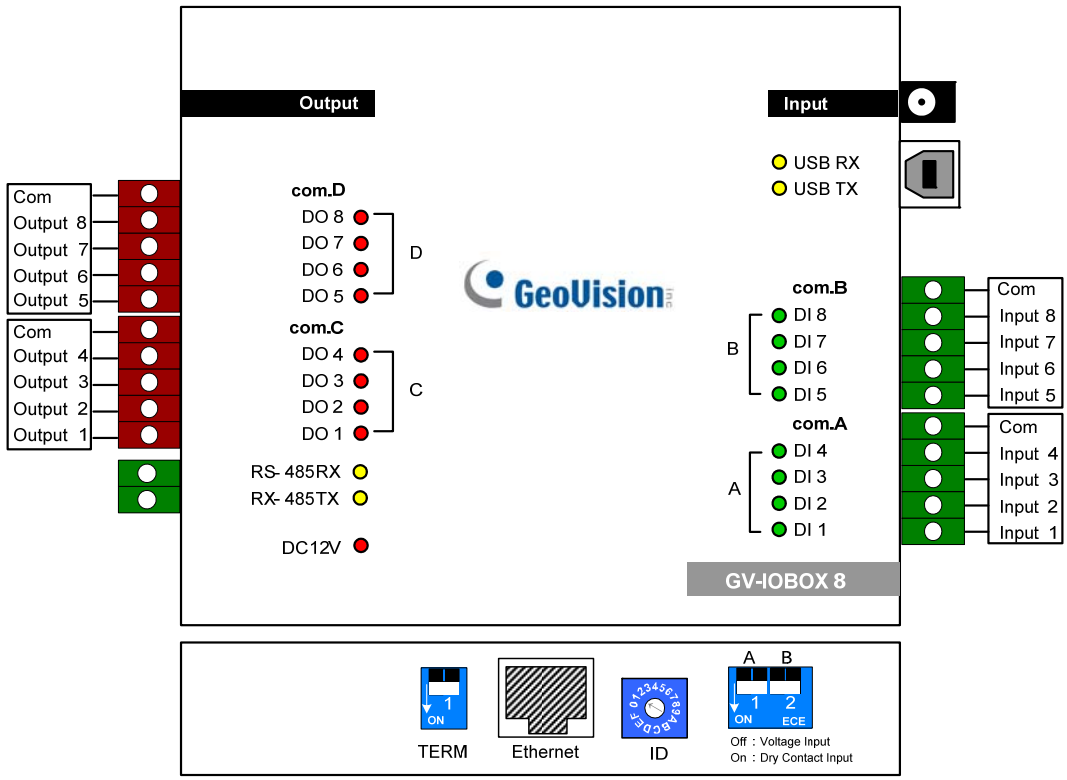


Figure 2-46

DIP Switch

The GV-IO 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. It will not work if you connect RS-485 devices, such as PTZ camera, to the connectors.
2. To add a GV-IO 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 two ways to connect a GV-IO Box 8 to the PC:

(1) Use the USB cable to connect to the PC, and

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

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

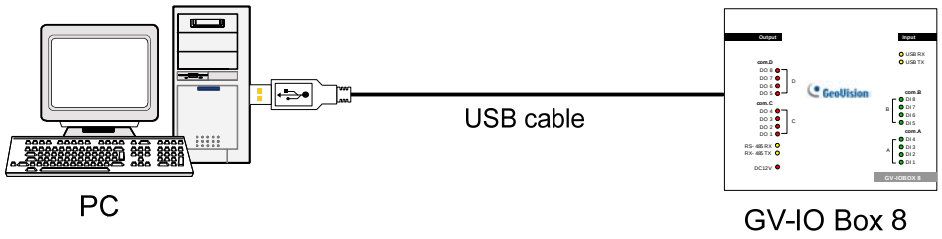


Figure 2-47

Note: It is required to install the USB driver. See *2.24 Installing USB Driver.*

---

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

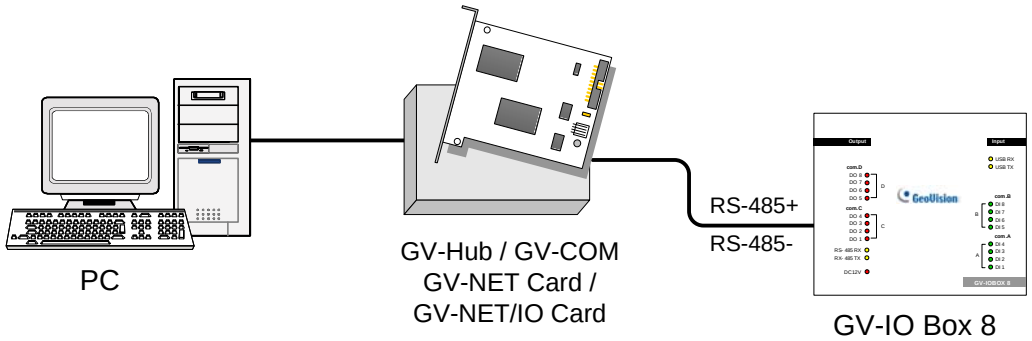


Figure 2-48

Assigning Addresses to GV-IO Box 8

Up to 9 pieces of GV-IO 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-IO Box 8.

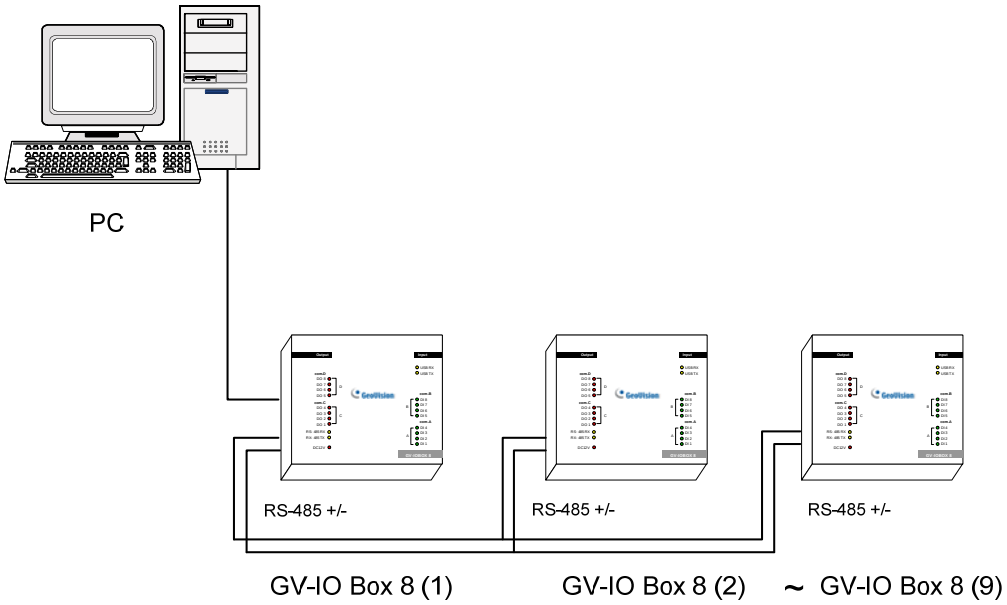


Figure 2-49

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-IO Box 8, set the switch to the new address, and then re-plug the power adaptor.

Long-Distance Connections

It is required to switch on the Terminal Resistance Switches when the connection distance is longer than 200 meters (656.16 feet). Three conditions below illustrate how the Terminal Release Switches should be switched on.

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

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

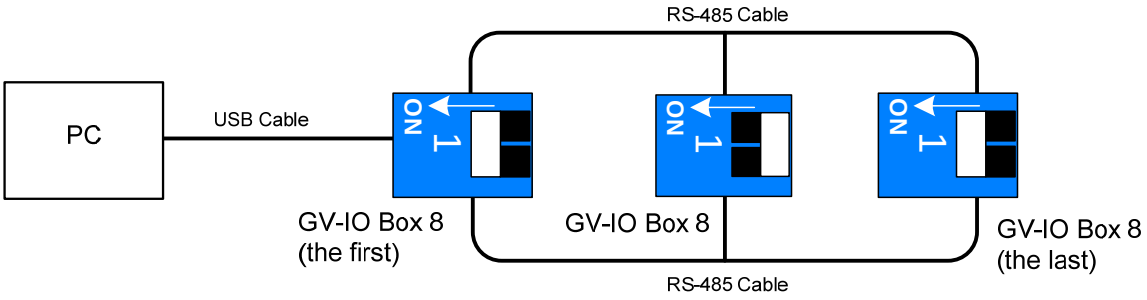


Figure 2-50

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

   After you connect multiple pieces of GV-IO 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-IO Box 8.

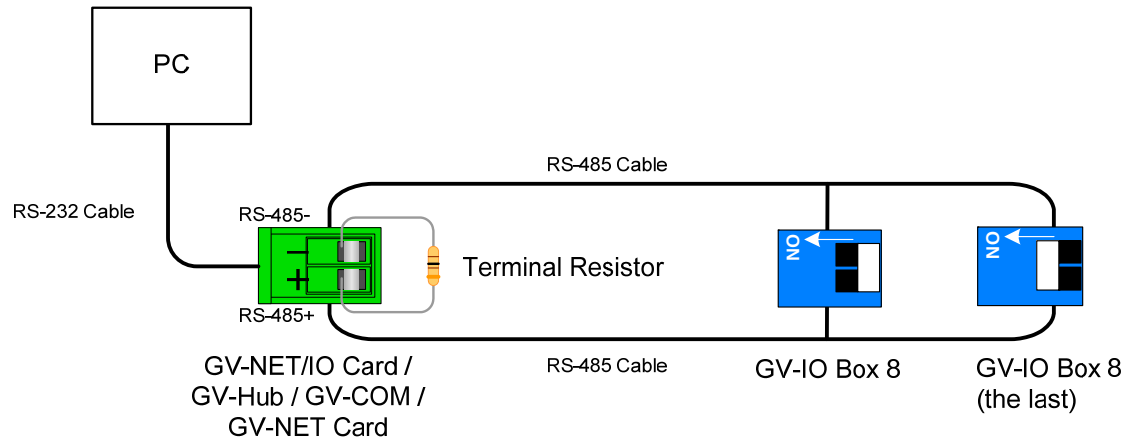


Figure 2-51

3. Multiple pieces of GV-IO Box 8 are connected with the PC through separate RS-485 cables.

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

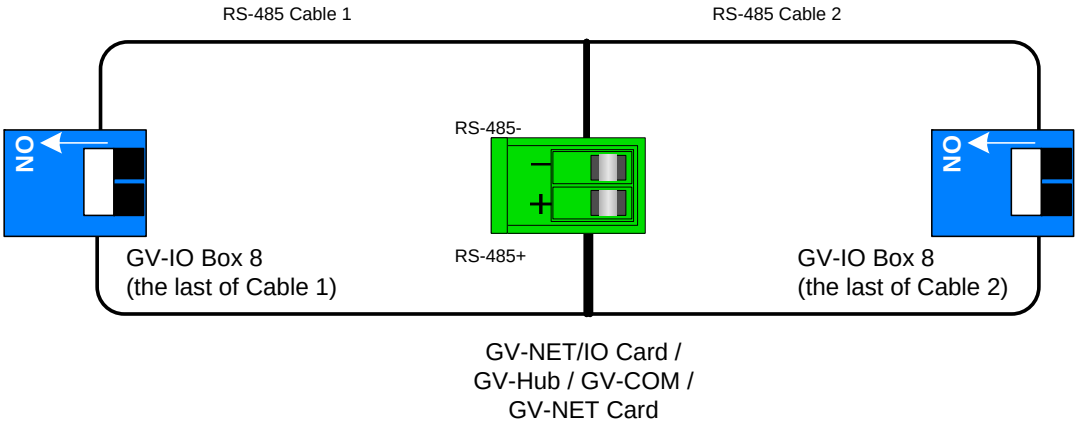
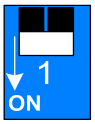


Figure 2-52

Terminal Resistance Switch



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-232 Connection	125 / 250V AC, 3A 30V DC, 3A
Ethernet	RJ-45, 10/100 Mbps (Reserved)		
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)		

2.14 GV-IO Box (4 Ports)

As a small but a capable device, the GV-IO 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-IO 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-IO 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

Overview

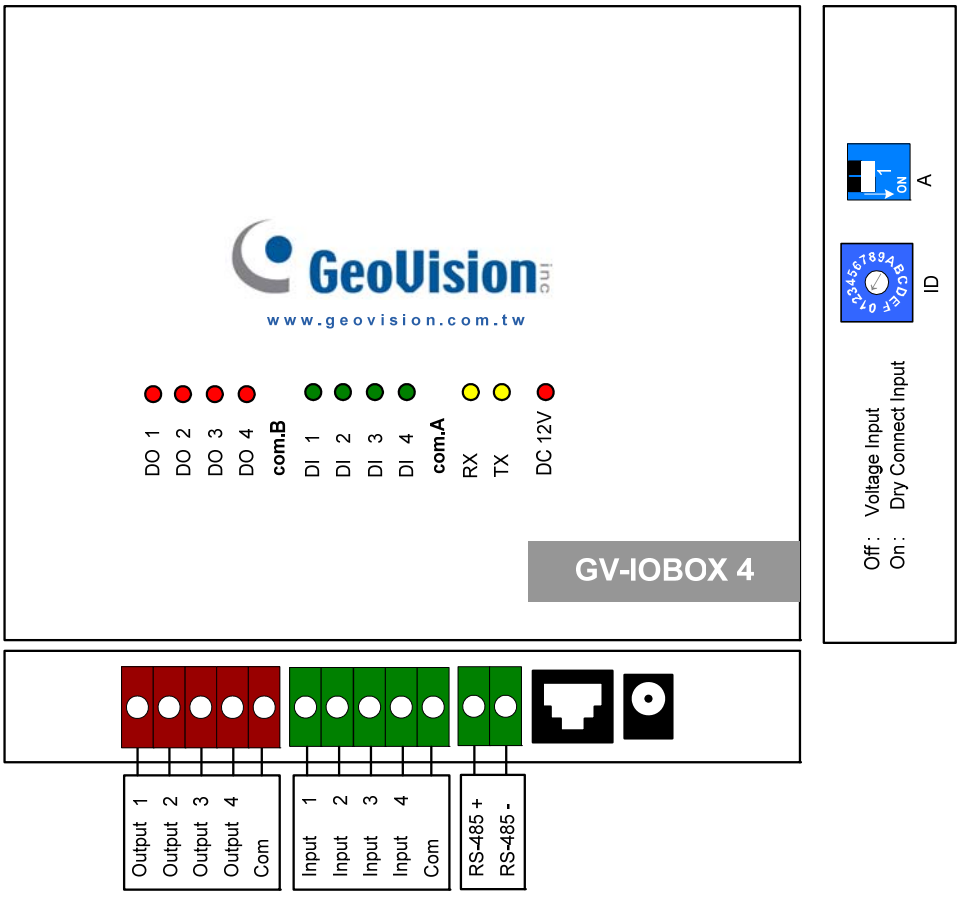
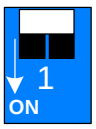


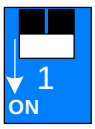
Figure 2-53

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-IO Box 4 to the PC:

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

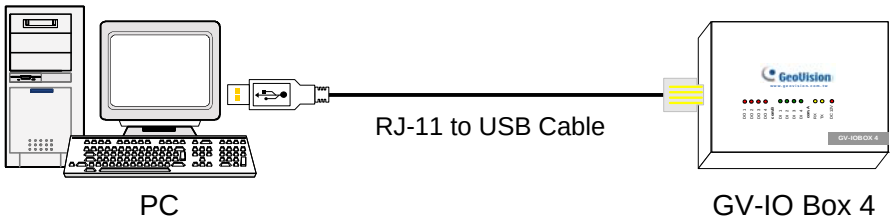


Figure 2-54

Note: It is required to install the USB driver. See *2.24 Installing USB Driver*.

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

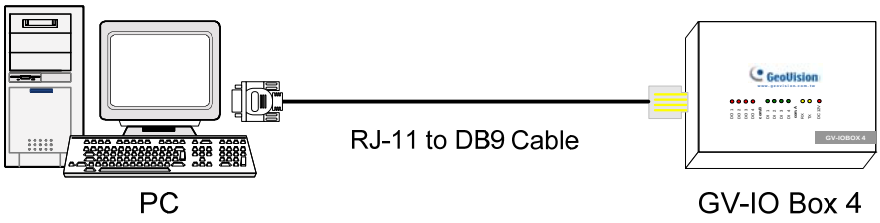


Figure 2-55

Assigning Addresses to GV-IO Box 4

Up to 9 pieces of GV-IO 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-IO Box 4.

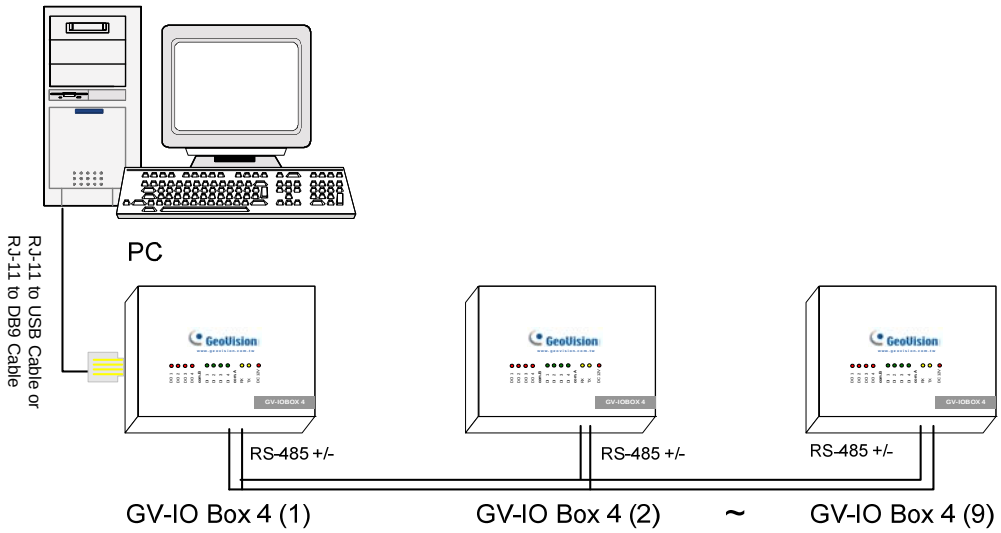


Figure 2-56

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-IO Box 4, set the switch to the new address, and then re-plug the power adaptor.

Long-Distance Connections

It is required to insert the Terminal Resistors when the connection distance is longer than 200 meters (656.16 feet). Three conditions below illustrate how the Terminal Resistors should be inserted.

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

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

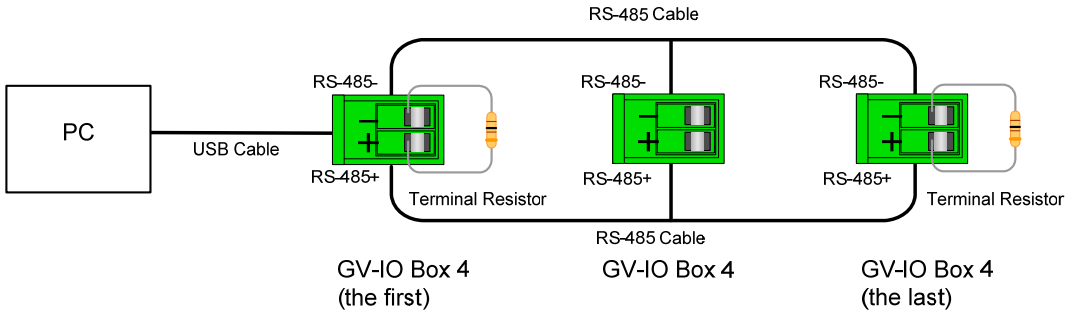


Figure 2-57

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

   After you connect multiple pieces of GV-IO 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-IO Box 4.

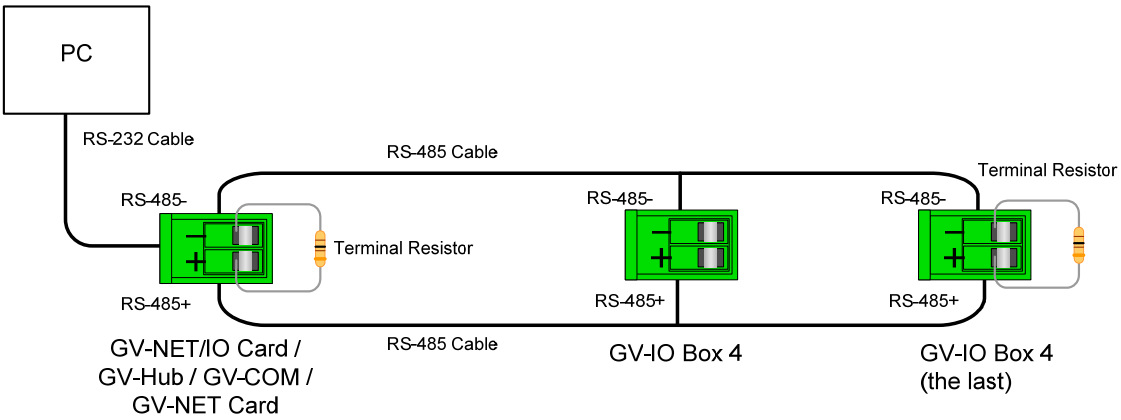


Figure 2-58

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

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

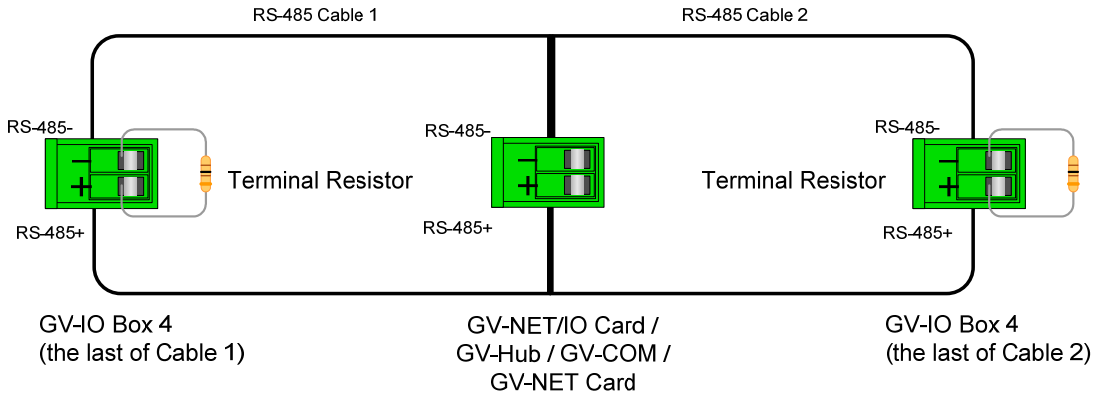


Figure 2-59

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 Connection	125 / 250V AC, 3A 30V DC, 3A
DC IN	DC 12V, 1A		
Address	0-9, A-F		
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 7.20 (in)		

2.15 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.

2.16 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.

2.17 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.

2.18 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.

2.19 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.

2.20 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.

2.21 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.

2.22 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.

2.23 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.

2.24 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.

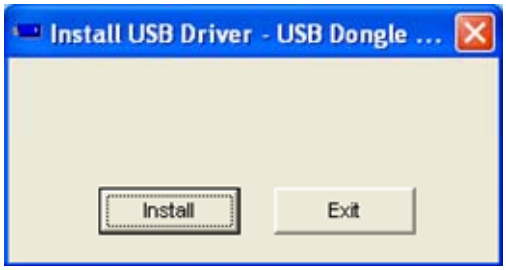


Figure 2-60

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.

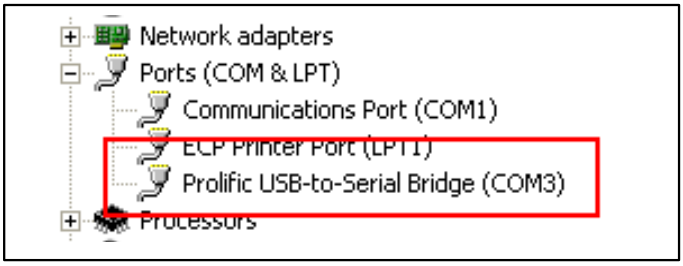


Figure 2-61

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 the system software:

- It is strongly recommended to divide your hard disk into two partitions. One partition is for installing Windows OS and System Software, and the other for storing audio/video files and system logs.
- When formatting hard disk, select **NTFS** as the file system on both logical drives.
- GV-System is a multi-channel video recording system. With normal use of the system, the logical drives 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 drives. It is **not necessary** to regularly perform disk defragmentation. Since the system software and video files are stored on two separated logical drives, the performance of your 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 V8.3.0.0 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

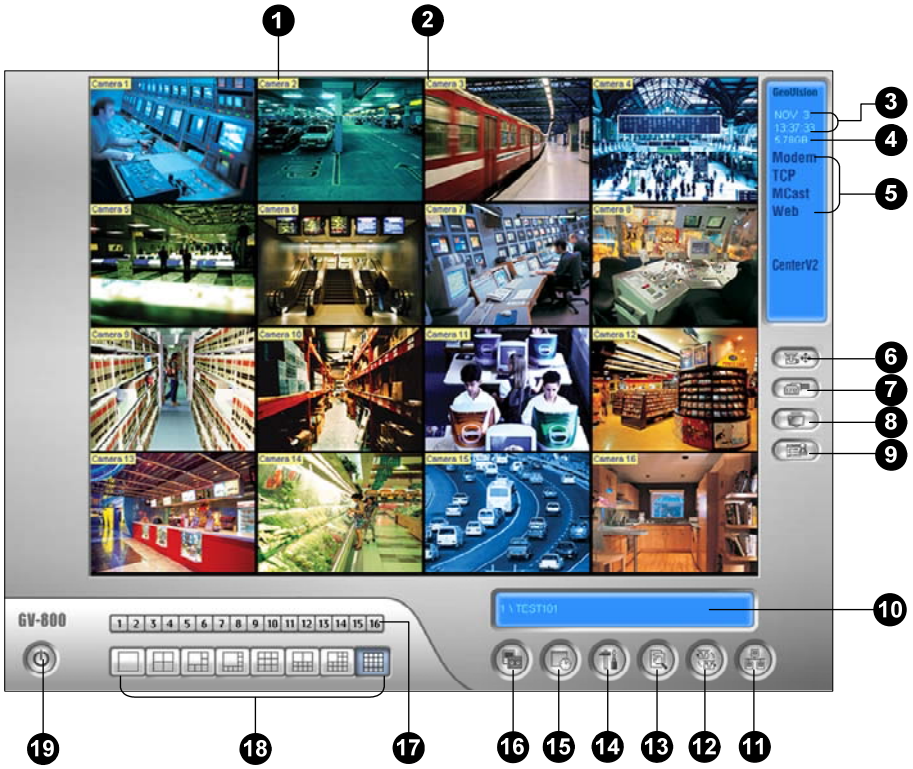
Chapter 4 Screen Overview

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:

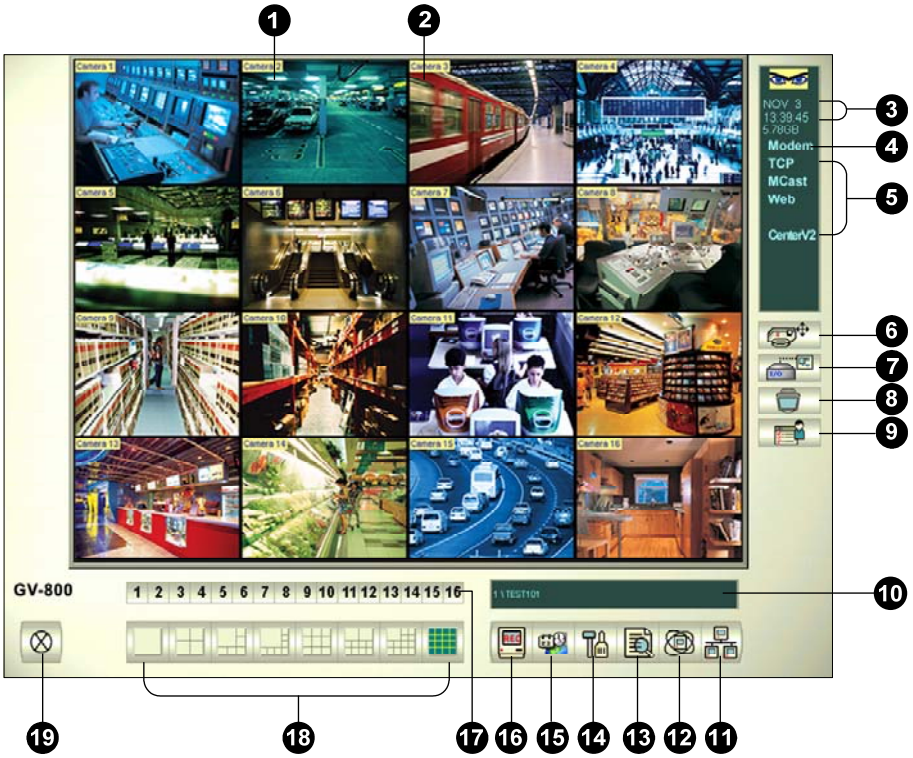
- **Main System**
- **ViewLog**
- **Remote Playback Client**
- **SingleView MPEG4 Encoder Viewer**
- **MultiView MPEG4 Encoder Viewer**
- **Center V2**
- **Control Center**

4.1 Main System

Silver



Conventional

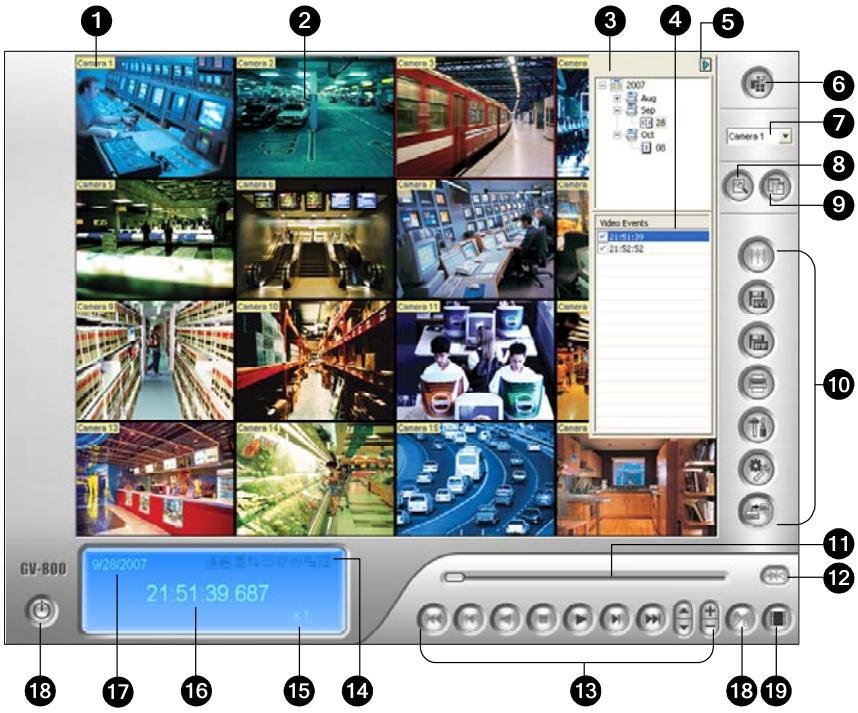


The controls in the main screen:

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

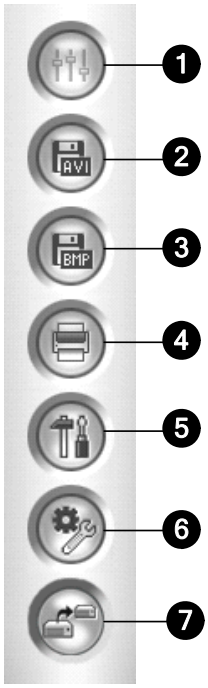


Conventional

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.

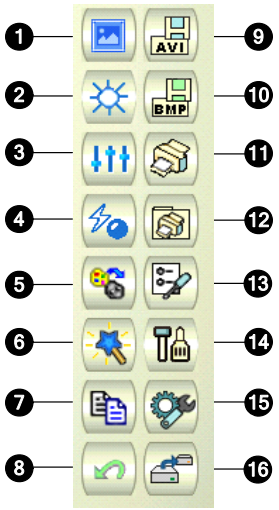
Silver Functional Panel



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

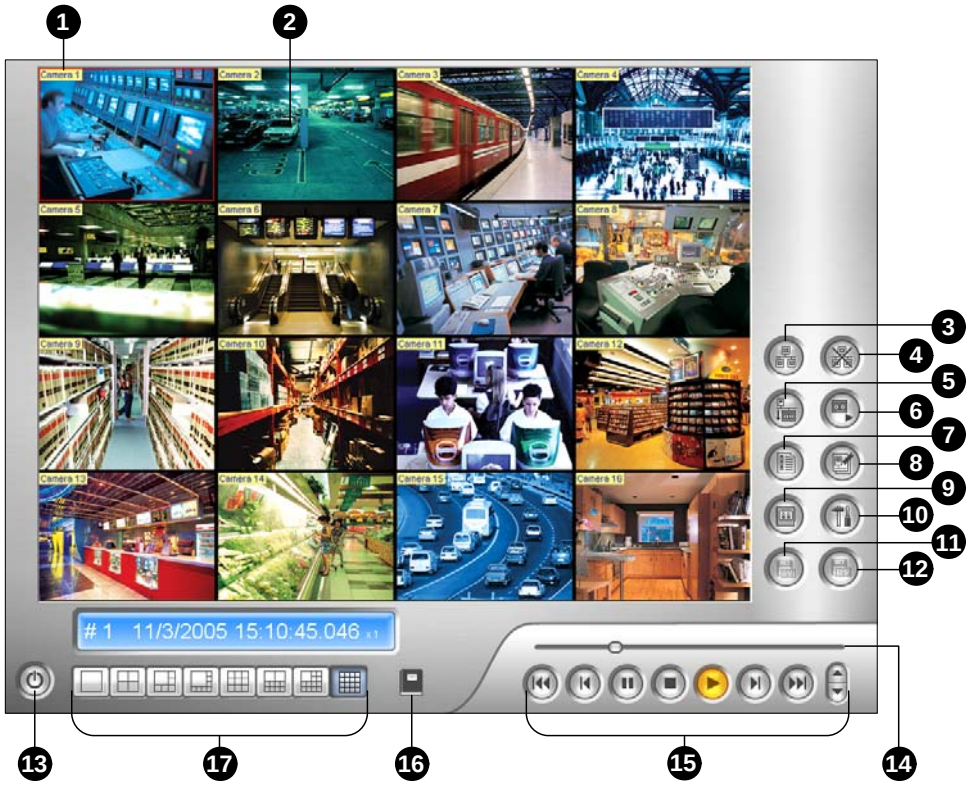


The controls in the Function Panel:

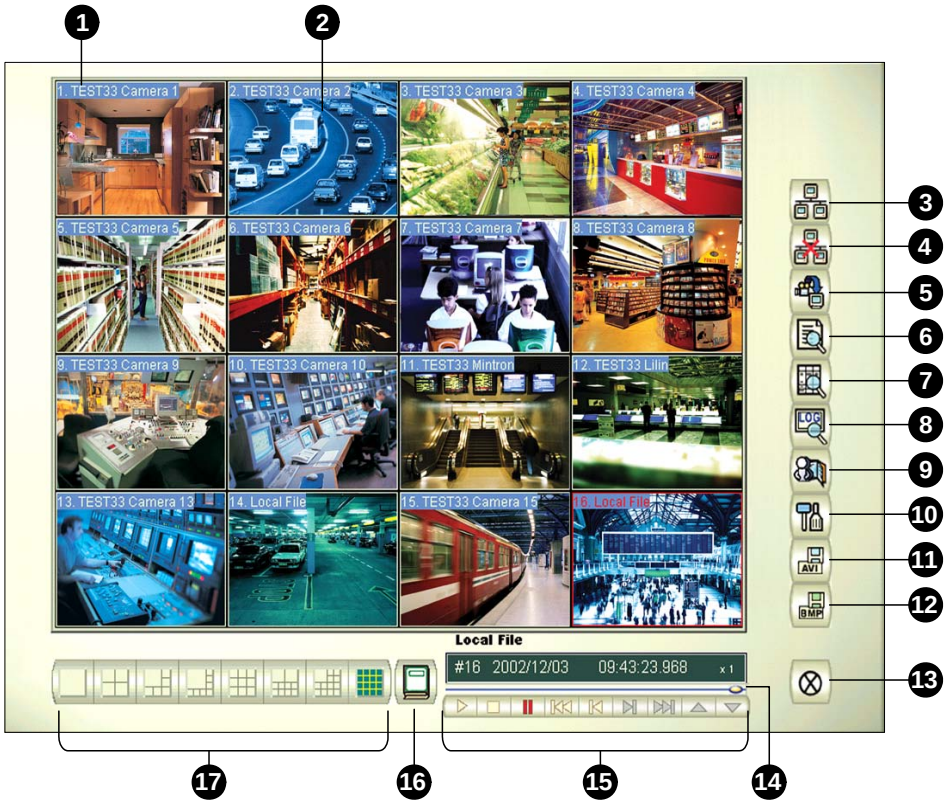
No	Name	Description
1	Sample	Gives the examples of “Before” and “After” effects of contrast, brightness, light enhancement, equalization, sharpness, smoothness and Grayscale.
2	Contrast/Brightness	Modifies color contrast and brightness of the video image.
3	Light Enhancement/ Equalization	Modifies light 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:

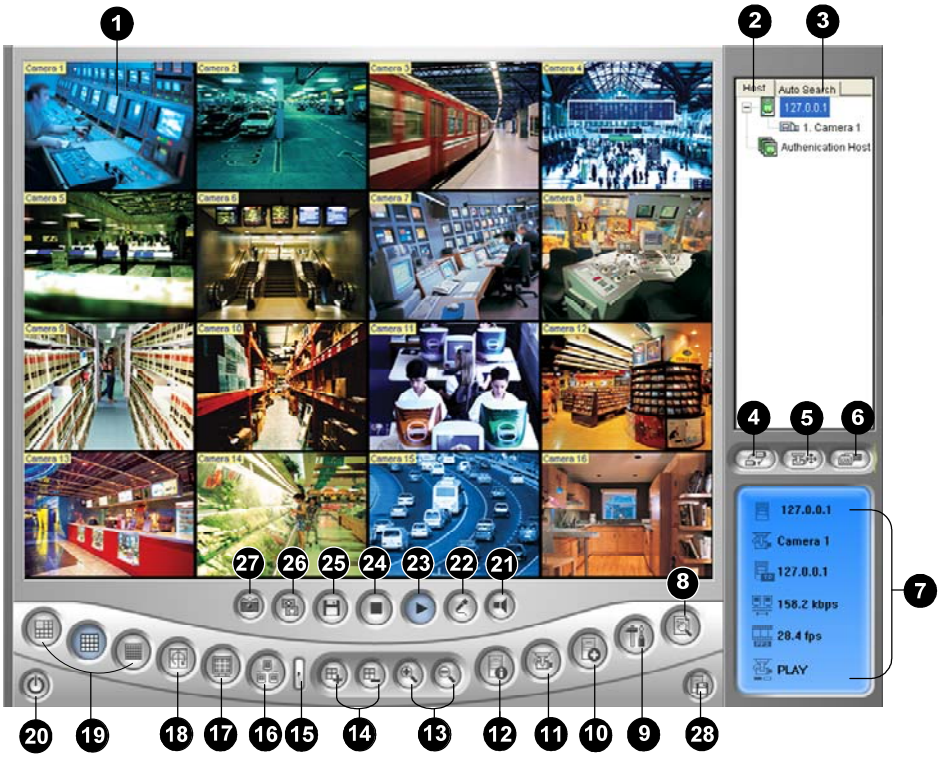
No	Name	Description
1	Camera Name	Indicates the given camera name.
2	Camera View	Displays the playback video.
3	Connect	Sets the connection to the RPB servers.
4	Disconnect	Closes all or selected connections to the RPB servers.
5	Download (Play) Remote Video	Downloads and plays the remote video.
6	Play 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



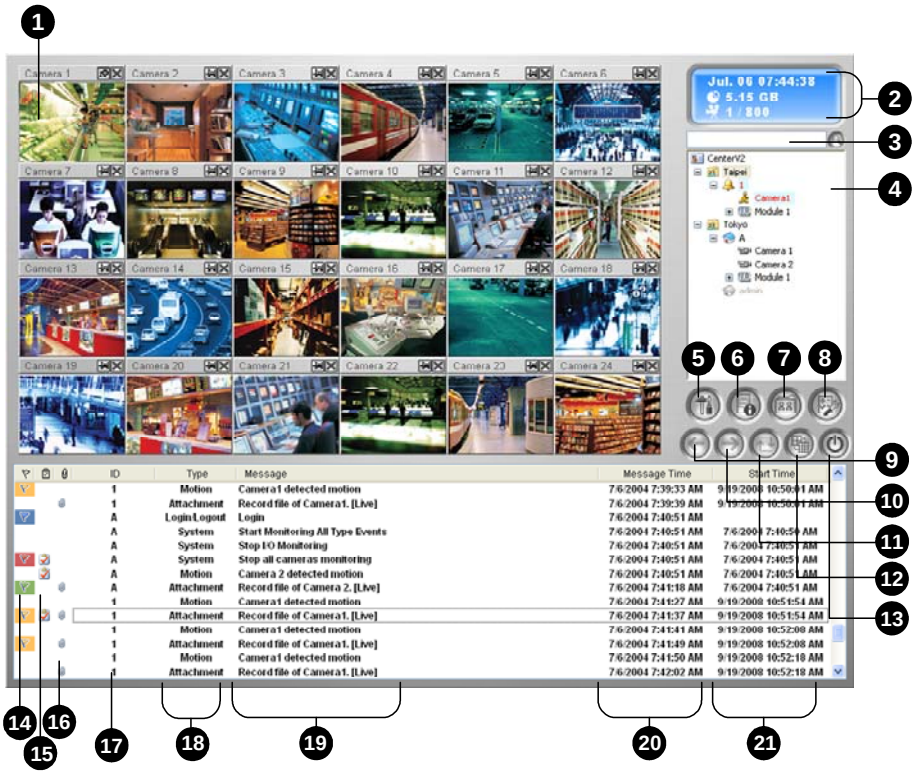
The controls in the MultiView Viewer:

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 Conrol	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

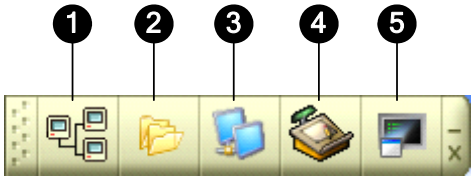
The controls in the Center V2 window:

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 *1.6 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