

GV-IPCam H.264

User's Manual



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

ICH264TIV114-A



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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>

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Safety Notice

FCC Compliance for GV-CBW120/220

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

UL Certification for GV-MFD120/130/220/320/520

The GV-IPCAM H.264 uses a 3.0V CR2032 Lithium battery as the power supply for its internal real-time clock (RTC). The battery should not be replaced unless required!

If the battery does need replacing, please observe the following:

- Danger of Explosion if battery is incorrectly replaced
- Replace only with the same or equivalent battery, as recommended by the manufacturer
- Dispose of used batteries according to the manufacturer's instructions

Preface

Welcome to the *GV-IPCAM H.264 User's Manual*.

The GV-IPCAM H.264 has a series of models designed to meet different needs. This Manual is designed for the following models and firmware versions:

Note:

1. GV-IPCam H.264 with 128 MB flash memory is only supported in V1.09 or later. To look up your camera's flash memory, see *Appendix I Supported Firmware for Flash Memory*.
 2. To upgrade your camera to firmware V1.09 or later, it is required to use GV IP Device Utility V8.5.3.0.
-

| Model | Model Number | Firmware Version | |
|-------------|--------------|------------------|-------|
| Box Camera | GV-BX110D | Fixed Lens | V1.08 |
| | | Varifocal Lens | |
| | GV-BX120D | Varifocal Lens | V1.14 |
| | GV-BX130D-0 | Varifocal Lens | |
| | GV-BX130D-1 | Fixed Lens | |
| | GV-BX140DW | Varifocal Lens | |
| | GV-BX220D-2 | | |
| | GV-BX220D-3 | | |
| | GV-BX320D-0 | | |
| | GV-BX320D-1 | | |
| GV-BX520D-0 | | | |

| Model | Model Number | | Firmware Version |
|------------------------|--------------|----------------|------------------|
| IR Arctic Box Camera | GV-BX120D-E | Varifocal Lens | V1.14 |
| | GV-BX220D-E | | |
| | GV-BX320D-E | | |
| | GV-BX520D-E | | |
| Mini Fixed Dome | GV-MFD110 | Fixed Lens | V1.08 |
| | GV-MFD120 | | V1.14 |
| | GV-MFD130 | | |
| | GV-MFD220 | | |
| | GV-MFD320 | | |
| | GV-MFD520 | | |
| Mini Fixed Rugged Dome | GV-MDR120 | Fixed Lens | V1.14 |
| | GV-MDR220 | | |
| | GV-MDR320 | | |
| | GV-MDR520 | | |
| Bullet Camera | GV-BL110D | Varifocal Lens | V1.08 |
| | GV-BL120D | Varifocal Lens | V1.14 |
| | GV-BL130D | | |
| | GV-BL220D | | |
| | GV-BL320D | | |
| PTZ Camera | GV-PTZ010D | NTSC | V1.08 |
| | | PAL | |
| PT Camera | GV-PT110D | | V1.08 |
| Fixed IP Dome | GV-FD120D | Varifocal Lens | V1.14 |
| | GV-FD220D | | |
| | GV-FD320D | | |

| Model | Model Number | Firmware Version | |
|----------------------|--|------------------|-------|
| Vandal Proof IP Dome | GV-VD120D (IK10+, Transparent Cover) GV-VD121D (IK10+, Smoked Cover) GV-VD122D (IK7, Transparent Cover) GV-VD123D (IK7, Smoked Cover) | Varifocal Lens | V1.14 |
| | GV-VD220D (IK10+, Transparent Cover) GV-VD221D (IK10+, Smoked Cover) GV-VD222D (IK7, Transparent Cover) GV-VD223D (IK7, Smoked Cover) | | |
| | GV-VD320D (IK10+, Transparent Cover) GV-VD321D (IK10+, Smoked Cover) GV-VD322D (IK7, Transparent Cover) GV-VD323D (IK7, Smoked Cover) | | |

| Model | Model Number | | Firmware Version |
|----------------------|--|------------|------------------|
| Cube Camera | GV-CB120 GV-CB220 GV-CBW120 GV-CBW220 | Fixed Lens | V1.14 |
| Advanced Cube Camera | GV-CA120 GV-CA220 GV-CAW120 GV-CAW220 | Fixed Lens | Upcoming |

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Naming and Definition

| | |
|------------------|--|
| GV-System | GeoVision Analog and Digital Video Recording Software. The GV-System also refers to GV-Multicam System , GV-NVR System , GV-DVR System and GV-Hybrid DVR System at the same time. |
|------------------|--|

Options

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

| Device | Description |
|----------------------|---|
| GV-IR LED | A mountable infrared LED device that improves image performance of Box Cameras under low light conditions. Note that the GV-IR LED is only compatible with GV-BX110D and GV-IR LED T2 is compatible with Box Camera (except GV-BX110D). |
| GV-PA191 PoE Adapter | The GV-PA191 PoE adapter is designed to provide power and network connection to the cameras over a single Ethernet cable. |
| GV-Mount Accessories | The GV-Mount Accessories provide a comprehensive lineup of accessories for installation on ceiling, wall and pole. For details, see <i>GV-Mount Accessories Installation Guide</i> on the software CD. |

Note for Connecting to GV-System

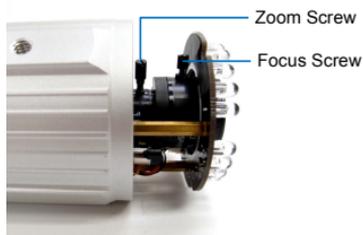
The GV-IPCAM H.264 is designed to work with GV-System, a hybrid or digital video management system. Note the following when GV-IPCAM H.264 is connected to GV-System:

1. By default, the images are recorded to the memory card inserted in the **GV-IP Camera H.264** (except GV-MFD110 and GV-IR Arctic Box Camera). Once the camera is connected to GV-System for video management or the camera's Live View (Figure 12-3) is accessed through the Web browser, the recording to the memory card will be stopped and the recording will be taken control by GV-System. The recording to the memory card will only be resumed when the connection between the camera and GV-System is interrupted. To continue recording when the live view is accessed or when the camera is connected to GV-System, enable the **Record to the local storage when live view is accessed** option on Video Setting's page. See *14.1.1 Video Settings*.
2. Once the camera is connected to the GV-System, the resolution set on the GV-System will override the resolution set on the camera's Web interface. You can only change the resolution settings through the Web interface when the connection to the GV-System is interrupted.

Note for Adjusting Focus and Zoom

When adjusting the Focus and Zoom Screws (on Box Camera, IR Arctic Box Camera, Bullet Camera, Vandal Proof IP Dome and Fixed IP Camera), please do not over tighten the Focus and Zoom screws. The screws only need to be as tight as your finger can do it; don't bother using any tools to get them tighter. Doing so can damage the structure of lens.

For example,



Bullet Camera



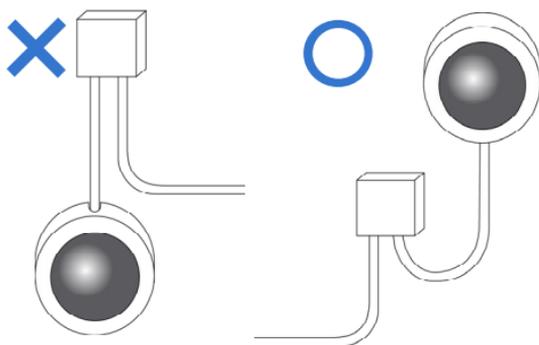
Fixed IP Camera

The maximum torque value for all the zoom and focus screws is 3.9 to 4.9 N.cm

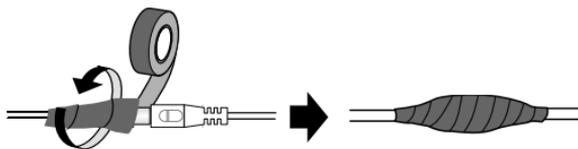
Note for Installing Camera Outdoor

When installing the **IR Arctic Box Camera**, **Bullet Camera**, **Vandal Proof IP Dome** or **Mini Fixed Rugged Dome** outdoor, be sure that:

1. The camera is set up above the junction box to prevent water from entering the camera along the cables.



2. Any PoE, power, audio and I/O cables are waterproofed using waterproof silicon rubber or the like.



3. After opening the camera cover, ensure the screws are tightened and the cover is in place.



4. To prevent the lens from fogging up, ensure to replace the silica gel bag every time you open the camera, and conceal the gel bag in camera within 2 minutes of exposing to open air. The silica gel bag loses its effectiveness when the dry camera is opened.

Chapter 1 Introduction

The GV-IPCAM H.264 series offers a comprehensive range of IP cameras supporting your various needs for IP surveillance in various environmental conditions. For detailed features of each model, refer to the corresponding chapter.

| Model | Model No. | | Description |
|---------------|-------------|----------------|---|
| Box Camera | GV-BX110D | Fixed Lens | 1.3 MP, H.264, D/N, Fixed Iris |
| | | Varifocal Lens | 1.3 MP, H.264, D/N, Auto Iris |
| | GV-BX120D | Varifocal Lens | 1.3 MP, H.264, D/N, Low Lux, D/N, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens |
| | GV-BX130D-0 | Varifocal Lens | 1.3 MP, H.264 D/N, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens |
| | GV-BX130D-1 | Fixed Lens | 1.3 MP, H.264 D/N, Fixed Iris, f: 4 mm, F/1.5, 1/3" CS Lens |
| | GV-BX140DW | Varifocal Lens | 1 MP, H.264 D/N WDR Pro Box IP Cam, Fixed Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens |

| Model | Model No. | Description | |
|----------------------|-------------|----------------|---|
| Box Camera | GV-BX220D-2 | Varifocal Lens | 2 MP, H.264 D/N, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens |
| | GV-BX220D-3 | | 2 MP, H.264 D/N, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens |
| | GV-BX320D-0 | | 3 MP, H.264 D/N, Auto Iris, f: 3.1 ~ 8 mm, F/1.2, 1/3" CS Lens |
| | GV-BX320D-1 | | 3 MP, H.264 D/N, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens |
| | GV-BX520D-0 | | 5 MP, H.264 D/N, Manual Iris, f: 4.5 ~ 10 mm, F/1.6, 1/2" CS Lens |
| IR Arctic Box Camera | GV-BX120D-E | Varifocal Lens | 1.3 MP, H.264, Low Lux, D/N, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens |
| | GV-BX220D-E | | 2 MP, H.264 D/N, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens |

| Model | Model No. | | Description |
|------------------------|-------------|----------------|---|
| IR Arctic Box Camera | GV-BX320D-E | Varifocal Lens | 3 MP, H.264 D/N, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens |
| | GV-BX520D-E | | 5 MP, H.264 D/N, Manual Iris, f: 4.5 ~ 10 mm, F/1.6, 1/3" CS Lens |
| Mini Fixed Dome | GV-MFD110 | Fixed Lens | 1.3 MP, H.264, Color, Fixed Iris |
| | GV-MFD120 | | 1.3 MP Low Lux H.264, Color, Fixed Iris |
| | GV-MFD130 | | 1.3 MP H.264, Color, Fixed Iris |
| | GV-MFD220 | | 2 MP H.264, Color, Fixed Iris |
| | GV-MFD320 | | 3 MP H.264, Color, Fixed Iris |
| | GV-MFD520 | | 5 MP H.264, Color, Fixed Iris |
| Mini Fixed Rugged Dome | GV-MDR120 | Fixed Lens | 1.3 MP Low Lux H.264, Color, Fixed Iris |
| | GV-MDR220 | | 2 MP H.264, Color, Fixed Iris |
| | GV-MDR320 | | 3 MP H.264, Color, Fixed Iris |
| | GV-MDR520 | | 5 MP H.264, Color, Fixed Iris |

| Model | Model No. | | Description |
|----------------------|------------|----------------|--|
| Bullet Camera | GV-BL110D | Varifocal Lens | 1.3 MP, H.264, Auto Iris |
| | GV-BL120D | | 1.3 MP, H.264, Low Lux, Auto Iris |
| | GV-BL130D | | 1.3 MP, H.264, Auto Iris |
| | GV-BL220D | | 2 MP, H.264, Auto Iris |
| | GV-BL320D | | 3 MP, H.264, Auto Iris |
| PTZ Camera | GV-PTZ010D | NTSC | 10x Optical Zoom, D1, H.264, D/N, Fixed Iris |
| | | PAL | |
| PT Camera | GV-PT110D | | 1.3 MP, H.264, Fixed Iris |
| Cube Camera | GV-CB120 | Fixed Lens | 1.3 MP, H.264, Fixed Iris |
| | GV-CB220 | | 2 MP, H.264, Fixed Iris |
| | GV-CBW120 | | 1.3 MP, H.264, Wireless Fixed Iris |
| | GV-CBW220 | | 2 MP, H.264, Wireless Fixed Iris |
| Advanced Cube Camera | GV-CA120 | Fixed Lens | 1.3 MP, H.264, Fixed Iris |
| | GV-CA220 | | 2 MP, H.264, Fixed Iris |
| | GV-CAW120 | | 1.3 MP, H.264, Wireless Fixed Iris |
| | GV-CAW220 | | 2 MP, H.264, Wireless Fixed Iris |

| Model | Model No. | | Description | |
|---------------------------------------|---|----------------|---|--|
| Vandal Proof IP Dome | GV-VD120D (IK10+, Transparent Cover) | Varifocal Lens | 1.3 MP, H.264, Low Lux, Auto Iris | |
| | GV-VD121D (IK10+, Smoked Cover) | | | |
| | GV-VD122D (IK7, Transparent Cover) | | | |
| | GV-VD123D (IK7, Smoked Cover) | | | |
| | GV-VD220D (IK10+, Transparent Cover) | | 2 MP, H.264, Auto Iris | |
| | GV-VD221D (IK10+, Smoked Cover) | | | |
| | GV-VD222D (IK7, Transparent Cover) | | | |
| | GV-VD223D (IK7, Smoked Cover) | | | |
| | GV-VD320D (IK10+, Transparent Cover) | | 3 MP, H.264, Auto Iris | |
| GV-VD321D (IK10+, Smoked Cover) | | | | |
| GV-VD322D (IK7, Transparent Cover) | | | | |
| GV-VD323D (IK7, Smoked Cover) | | | | |
| Fixed IP Dome | GV-FD120D | Varifocal Lens | 1.3 MP, H.264, Low Lux, Auto Iris | |
| | GV-FD220D | | 2 MP, H.264, Auto Iris | |
| | GV-FD320D | | 3 MP, H.264, Auto Iris | |

1.1 System Requirement

To perform the GV-IPCAM H.264 operations through Web browser, ensure your PC is in good network connection, and use one of the following web browsers:

- Microsoft Internet Explorer 7.x or later
- Google Chrome
- Mozilla Firefox
- Safari

Note:

- 1 For the users of **Internet Explorer 8**, additional settings are required. For details, see *Appendix A*.
 - 2 With non-IE browsers,
 - A. Motion Detection, Tampering Alarm, Visual Automation, Text Overlay, two-way audio and GPS map settings are not supported.
 - B. only the Play function is available on the live view window (Figure 12-3)
 - C. RTSP streaming must be kept as enabled. For more detail, see *14.3.8 RTSP*.
-

Chapter 2 Box Camera

The Box Camera series offers fixed focal or varifocal models, ranging from 1.3 to 5 megapixel and is designed with an automatic infrared cut filter for day and night surveillance.

Box Camera

| Model No. | | Specifications | Description |
|-------------|----------------|---|-----------------------------|
| GV-BX110D | Fixed Lens | Megapixel, Fixed Iris, f:4 mm, F/1.5, 1/3" CS Lens | 1.3 MP, H.264, D/N |
| | Varifocal Lens | Megapixel, Auto Iris, f:4 ~ 9 mm, F/1.4, 1/3" CS Lens | 1.3 MP, H.264, D/N |
| GV-BX120D | Varifocal Lens | Megapixel, Auto Iris, f:2.8 ~ 12 mm, F/1.4, 1/3" CS Lens | 1.3 MP, H.264, Low Lux, D/N |
| GV-BX130D-0 | Varifocal Lens | Megapixel, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens | 1.3 MP, H.264, D/N |
| GV-BX130D-1 | Fixed Lens | Megapixel, Fixed Iris, f: 4 mm, F/1.4, 1/3" CS Lens | 1.3 MP, H.264, D/N |

| Model No. | | Specifications | Description |
|-------------|----------------|---|---------------------------------|
| GV-BX140DW | Varifocal Lens | Megapixel, Fixed Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens | 1 MP, H.264, D/N, WDR pro |
| GV-BX220D-2 | | Megapixel, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens | 2 MP, H.264, D/N |
| GV-BX220D-3 | | Megapixel, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens | |
| GV-BX320D-0 | | Megapixel, Auto Iris, f:3.1 ~ 8 mm, F/1.2, 1/3" CS Lens | 3 MP, H.264, D/N |
| GV-BX320D-1 | | Megapixel, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens | |
| GV-BX520D-0 | | Megapixel, Manual Iris, f: 4.5 ~ 10 mm, F/1.6, 1/2" CS Lens | |

2.1 Packing List

- Box Camera
- Terminal Block
- Fixed Focal or Varifocal Megapixel Lens
- Pin Wrench (for GV-BX110D only)
- C-mount Lens Adapter (for GV-BX110D only)
- Six Lens Rings (all models except GV-BX110D)
- One 0.125 mm Lens Ring (for GV-BX140DW only)
- Video Out Wire (all models except GV-BX110D)
- DC 12V Power Adapter
- GV-IPCAM H.264 Software CD
- GV-IPCAM H.264 Quick Start Guide
- GV-NVR Software DVD
- GV-NVR Quick Start Guide

2.2 Features

- 1.3 / 2 / 3 / 5 megapixel progressive scan CMOS
- Dual video streams

For GV-BX110D: Dual streams from H.264, MPEG4 or MJPEG

For Box Camera (except GV-BX110D): Stream 1 from H.264 or MJPEG; Stream 2 from H.264, MPEG4 or MJPEG

- Frame rate:

| Camera Model | Frame Rate |
|-------------------------------|-----------------------------|
| GV-BX110D | Up to 15 fps at 1280 x 1024 |
| GV-BX120D GV-BX130D Series | Up to 30 fps at 1280 x 1024 |
| GV-BX140DW | Up to 30 fps at 1280 x 720 |
| GV-BX220D Series | Up to 30 fps at 1920 x 1080 |
| GV-BX320D Series | Up to 20 fps at 2048 x 1536 |
| GV-BX520D-0 | Up to 10 fps at 2560 x 1920 |

- Day / Night function (with removable IR-cut filter)
- Wide dynamic range (For GV-BX140DW only)
- Two-way audio
- One sensor input and alarm output
- TV-out support
- Micro SD / SDHC memory card slot (GV-BX110D)
- Micro SD / SDHC / SDXC memory card slot (Box Camera except GV-BX110D)
- Motion detection
- Tampering alarm
- Visual automation
- Privacy mask
- Text overlay
- IP address filtering

- Power supply: DC 12V and PoE
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface (for all models except GV-BX110D)

2.2.1 GV-BX140DW with WDR Function

GV-BX140DW is equipped with a wide dynamic range (WDR) sensor. The special sensor can deal with the scenes having a large difference in foreground and background light intensities, and heighten the details visible in the camera view. An example of WDR in action is shown below. The first image shows the image from a camera without the WDR function and the second image shows how it looks with WDR function.

No WDR: underexposure



WDR: perfect exposure



2.3 Overview

2.3.1 GV-BX110D



Figure 2-1

Note: The Zoom Screw and Auto Iris Connector are only available in the varifocal model.

| No. | Name | Description |
|-----|---------------------|--|
| 1 | Audio Out | Connects a speaker for audio output. |
| 2 | Audio In | Connects a microphone for audio input. |
| 3 | Default | Resets all configurations of the GV-IPCAM H.264 to the default factory settings. See <i>16.3 Restoring to Factory Default Settings</i> . |
| 4 | Memory Card Slot | Inserts a micro SD / SDHC card to store recording data. |
| 5 | Video Out | Connects to a portable monitor for setting the focus and angle of Box Camera during initial installation. |
| 6 | I/O Terminal Block | For details, see <i>2.6 I/O Terminal Block</i> . |
| 7 | LAN / PoE | Connects to a 10/100 Ethernet or PoE. |
| 8 | DC 12V Connector | Connects to power. |
| 9 | Status LED | See <i>Status LED</i> later in this chapter. |
| 10 | Zoom Screw | Adjusts the zoom of the camera. This screw is not available for GV-BX110D fixed lens type. |
| 11 | Focus Screw | Adjusts the focus of the camera. |
| 12 | Microphone | Records the sounds. |
| 13 | Auto Iris Connector | If the varifocal lens is in use, plug the iris control cable to the connector. Note that Auto Iris Connector is not functional in fixed focal GV-BX110D. |

Status LED

The status LED is used to reflect the system status of the camera.

| Status LED | Description |
|-------------------------------|--|
| Red Light ON | The system powers on and succeeds to boot up. |
| Flashing Red and Green Lights | The camera is ready for use with network connectivity. |
| Green Light ON | Error occurs on the system. |

2.3.2 GV-BX120D / 130D Series / 140DW / 220D Series / 320D Series / 520D-0



Figure 2-2

Note:

1. The Light Sensor (No.11) is only available in GV-BX140DW. Keep the Light Sensor unobscured for accurate light detection.
 2. The Iris Screw (No.13) is only available for GV-BX520D-0.
 3. The Zoom Screw (No. 15) is not available for GV-BX110D (fixed lens model) and GV-BX130D-1.
-

| No. | Name | Description |
|-----|---------------------|---|
| 1 | Video Out | Connects to a portable monitor for setting the focus and angle of Box Camera during initial installation. |
| 2 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |
| 3 | Audio Out | Connects a speaker for audio output. |
| 4 | Audio In | Connects a microphone for audio input. |
| 5 | I/O Terminal Block | For details, see <i>2.6 I/O Terminal Block</i> . |
| 6 | Power LED | Indicates the power is supplied. |
| 7 | Auto Iris Connector | Plug the iris control cable to the connector. Note that Auto Iris Connector is not functional in GV-BX130D-1, GV-BX140DW and GV-BX520D-0. |
| 8 | DC 12V Port | Connects to power. |
| 9 | LAN / PoE | Connects to a 10/100 Ethernet or PoE. |
| 10 | Default | Resets all configurations of the GV-IPCAM H.264 to the default factory settings. See <i>16.3 Restoring to Factory Default Settings</i> . |
| 11 | Light Sensor | Detects light to switch between day and night mode. |
| 12 | Focus Screw | Adjusts the focus of the camera. |
| 13 | Iris Screw | Adjusts the iris of the camera. |
| 14 | Microphone | Records the sounds. |
| 15 | Zoom Screw | Adjusts the zoom of the camera. |
| 16 | Status LED | Turns on when the unit is ready for use. |

2.4 Connecting the Camera

The Box Camera is designed for indoor use. Please make sure the installing site is shielded from rain and moisture.

2.4.1 GV-BX110D

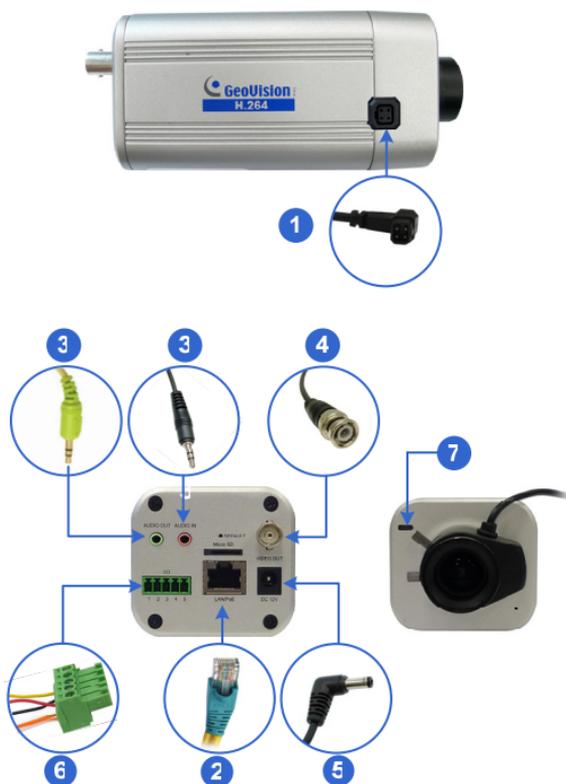


Figure 2-3

1. If you are using the auto iris model, plug the iris control cable to the Auto Iris Connector on the camera.
2. Use a standard network cable to connect the camera to your network.
3. Optionally connect a speaker and an external microphone.
4. Optionally connect a monitor using an RCA video-out wire. Enable this function by selecting your signal format at the **TV Out** field on the Web interface. See *14.1.1 Video Settings*.
5. Connect power using one of the following methods:
 - plugging the supplied power adapter to the DC jack.
 - using the Power over Ethernet (PoE) function and the power will be provided over the network cable.
6. Optionally connect to input / output devices or an infrared illuminator. For details, see *2.5.2 Infrared Illuminator* and *2.6 I/O Terminal Block*.
7. The status LED of the camera will be red.
8. You are ready to access the live view, adjust the image clarity and configure the basics. See *Getting Started, Chapter 12*.

2.4.2 GV-BX120D / 130D Series / 140DW / 220D Series / 320D Series / 520D-0



Figure 2-4

1. If you are using the auto iris model, plug the iris control cable to the Auto Iris Connector on the camera.
2. Use a standard network cable to connect the camera to your network.
3. Optionally connect a speaker and an external microphone.
4. Optionally connect a monitor using a Video Out wire. Enable this function by selecting your signal format at the **TV Out** field on the Web interface. See *14.1.1 Video Settings*.
5. Optionally connect to input / output devices or an infrared illuminator. For details, see *2.5.2 Infrared Illuminator* and *2.6 I/O Terminal Block*.
6. Connect power using one of the following methods:
 - plugging the supplied power adapter to the power port.
 - using the Power over Ethernet (PoE) function and the power will be provided over the network cable.
7. The status LED of the camera will be on.
8. You are ready to access the live view, adjust the image clarity and configure the basics. See *Getting Started, Chapter 12*.

2.5 Accessory Installation

2.5.1 C-Mount Lenses

If you use a C-mount lens, it requires a certain distance from the camera's imaging chip to focus the lens. Mount the supplied C-mount lens adapter / lens ring to the camera, and then attach the lens onto the camera body.

- **GV-BX110D**

Install the supplied C-mount lens adapter to extend focal length of GV-BX110D as illustrated below.



Figure 2-5

- **Box Camera (except GV-BX110D)**

Three types of C-mount lens rings are provided for Box Camera (except GV-BX110D):

- 0.188 mm (transparent color) x 2
- 0.125 mm (black color with a glossy surface) x 2
- 0.254 mm (black color with a matt surface) x 2

For GV-BX140DW, a 0.125 mm is provided.

Note: The C-mount lens rings are specially designed for Box Camera (except GV-BX110D). Besides the supplied C-mount lens rings, each of these models has already included with the necessary lens ring.



Figure 2-6

2.5.2 Infrared Illuminators (Optional)

If you use an infrared (IR) illuminator with I/O function, follow the steps below to install it.

1. Connect the infrared illuminator to the terminal block on the camera.
See *2.6 The I/O Terminal Block*.
2. Access the Web interface of the camera.
3. Select **Video and Motion**, select **Video Settings**, select **Streaming 1** and set the **IR Check Function** option to be **Trigger by Input** or **Trigger IR by D/N**.
4. Click **Apply**.

For the **Trigger by Input** or **Trigger IR by D/N** function and D/N sensitivity settings, see *14.1.1 Video Settings*.

2.6 I/O Terminal Block

The terminal block, located on the back panel of the Box Camera, provides the interface to one input and one output devices. The I/O terminal block can be used for applications such as motion detection, event alerts via E-Mail and FTP, and center monitoring through Center V2 and VSM.

2.6.1 Pin Assignment

The pin assignment for the I/O terminal block:

- **GV-BX110D**

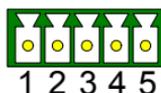


Figure 2-7

| Pin | Function |
|-----|---------------|
| 1 | Input + |
| 2 | Input - |
| 3 | Output Common |
| 4 | Output N/C |
| 5 | Output N/O |

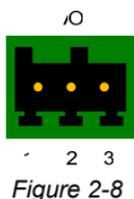
The GV-BX110D only supports the input device of Wet Contact, 7V ~ 30V.

For the output point, please check if your output device meets the following **Absolute Maximum Ratings** before connecting it to the output point.

| | |
|---|------------------|
| Breakdown Voltage | 277V AC, 30V DC |
| Continuous Load Current | 5A (NO), 3A (NC) |
| <p>Note: Absolute Maximum Ratings are those values beyond which damage to the camera may occur. Continuous operation of the camera at the absolute rating level may affect the camera reliability.</p> | |

- **Box Camera (except GV-BX110D)**

The GV-BX120D / 130D Series / 140DW / 220D Series / 320D Series / 520D-0 support one digital input and one digital output of dry contact.



| Pin | Function |
|-----|----------------|
| 1 | Digital Input |
| 2 | GND |
| 3 | Digital Output |

For details on how to enable an installed I/O device, see *14.2 I/O Settings*.

2.6.2 Connecting to GV-Relay V2 (Optional)

The Box Camera (except GV-BX110D) can only drive a maximum load of 200mA 5V DC. Connect the camera to a GV-Relay V2 module (optional product) to expand the maximum voltage load. See a comparison on maximum voltage loads with and without GV-Relay:

| Models | Maximum Voltage Load | |
|--|--|--|
| | Without GV-Relay V2 | With GV-Relay V2 |
| GV-BX110D | 10A 250V AC 10A 125V AC 5A 100V DC | N/A |
| GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 200 mA 5V DC | 10A 250V AC, 10A 125V AC, 5A 100V DC |
| <p>Note: GV-BX110D contains built-in relay. Therefore, it does not require a GV-Relay to maximize its voltage load.</p> | | |

To connect the Box Camera (except GV-BX110D) to GV-Relay V2, refer to the figure and table below.

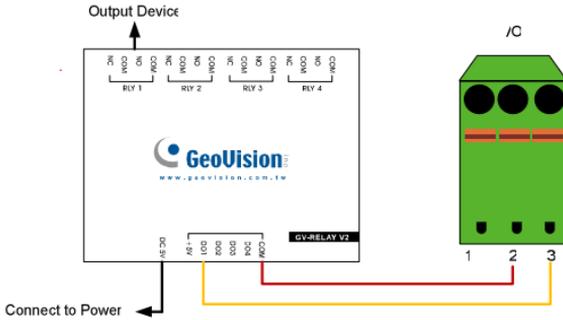


Figure 2-9

| GV-Relay V2 | I/O Terminal Block |
|-------------|------------------------|
| COM | Pin 2 (GND) |
| DO1 | Pin 3 (Digital Output) |

Chapter 3 IR Arctic Box Camera

The IR Arctic Box Camera series is a variant of the Box Camera series. They are outdoor cameras with IP66 rating. They are designed for day and night surveillance in environments with extreme temperatures.

IR Arctic Box Camera

| Model No. | | Specifications | Description |
|-------------|----------------|---|-----------------------------|
| GV-BX120D-E | Varifocal Lens | Megapixel, Auto Iris, f: 2.8 ~ 12 mm, F/1.4, 1/3" CS Lens | 1.3 MP, H.264, Low Lux, D/N |
| GV-BX220D-E | | Megapixel, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens | 2 MP, H.264, D/N |
| GV-BX320D-E | | Megapixel, Auto Iris, f: 2.8 ~ 6 mm, F/1.3, 1/3" CS Lens | 3 MP, H.264, D/N |
| GV-BX520D-E | | Megapixel, Manual Iris, f: 4.5 ~ 10 mm, F/1.6, 1/2" CS Lens | 5 MP, H.264, D/N |

3.1 Packing List

- IR Arctic Box Camera
- Screw Anchor x 4
- Screw x 4
- Washer x 4
- Big Torx Wrench
- Small Torx Wrench
- Silica Gel Bag x 2
- Sticker x 2
- GV-PA481



- GV-PA481 Power Cord
- GV-IPCAM H.264 Software CD
- GV-IPCAM H.264 Quick Start Guide
- GV-NVR Software DVD
- GV-NVR Quick Start Guide

3.2 Features

- 1.3 / 2 / 3 / 5 megapixel progressive scan CMOS
- Stream 1 from H.264 or MJPEG; Stream 2 from H.264, MPEG4 or MJPEG
- Frame rate:

| Camera Model | Frame Rate |
|--------------|-----------------------------|
| GV-BX120D-E | Up to 30 fps at 1280 x 1024 |
| GV-BX220D-E | Up to 30 fps at 1920 x 1080 |
| GV-BX320D-E | Up to 20 fps at 2048 x 1536 |
| GV-BX520D-E | Up to 10 fps at 2560 x 1920 |

- Day / Night function (with removable IR-cut filter)
- IP66 rating
- Built-in heater and fan
- Support for TV-out
- Two-way audio
- Motion detection
- Tampering alarm
- Privacy mask
- Text overlay
- IP address filtering
- Power supplied through PoE (IEEE 802.3at)
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface

3.3 Overview

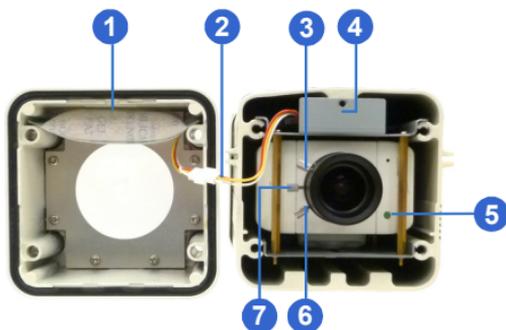


Figure 3-1

Note: The Iris Screw (No. 7) is only available in GV-BX520D-E.

| No. | Name | Description |
|-----|----------------|--|
| 1 | Silica gel bag | Desiccant that keeps the camera housing dry. |
| 2 | IR power plug | Supplies power to the built-in IR LEDs. |
| 3 | Focus Screw | Adjusts the focus of the camera. |
| 4 | Module screw | Holds the module in place. |
| 5 | Status LED | Turns on when the unit is ready for use. |
| 6 | Zoom Screw | Adjusts the zoom of the camera. |
| 7 | Iris Screw | Adjusts the iris of the camera. |

3.4 Installation

The IR Arctic Box Camera is designed for outdoor use.

1. Mark the installation site and drill four holes for screw anchors.
2. Insert the supplied screw anchors.
3. Secure the camera to the wall using the supplied washers and screws.

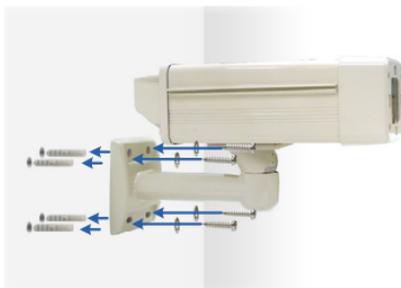


Figure 3-2

4. Connect the camera to the network and supply power via the PoE cable. See 3.5 *Connecting the Camera*.
5. Access the live view. See 11.1 *Accessing the Live View*.
6. Based on the live view, adjust the angle of the camera. Loosen the indicated screw with the supplied big torx wrench and adjust the joint.



Figure 3-3

Tilt Adjustment



Figure 3-4

Pan Adjustment



Figure 3-5

7. Based on the live view, adjust the focus, zoom and iris (in GV-BX520D-E only) of the camera.

Unscrew the cover with the supplied small torx wrench.

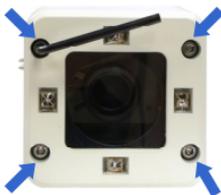


Figure 3-6

Hold the connectors and unplug them.

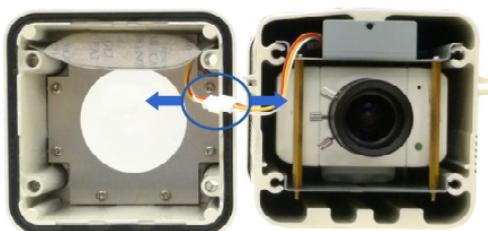


Figure 3-7

Important: Unscrew and remove the cover carefully. Pulling the cover off may cause damages to the inner wiring of the camera.

Adjust the focus, zoom and iris screws.

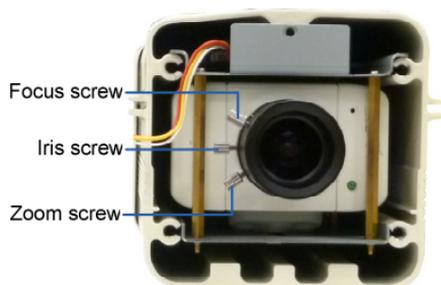


Figure 3-8

8. Replace the silica gel bag. Paste the sticker to the front side of the silica gel bag. Press the sticker several times to make sure it adheres properly. Paste the silica gel bag to the indicated place.



Figure 3-9

Important:

1. Be sure that the new silica gel bag is concealed in the camera housing within 2 minutes of exposing to open air.
 2. To prevent the lens from fogging up, you must replace the silica gel bag every time you open the camera. The gel bag loses its effectiveness when the dry camera is opened.
-

9. Refer to step 7 to plug the connectors and secure the camera cover.

3.5 Connecting the Camera

3.5.1 Wire Definition

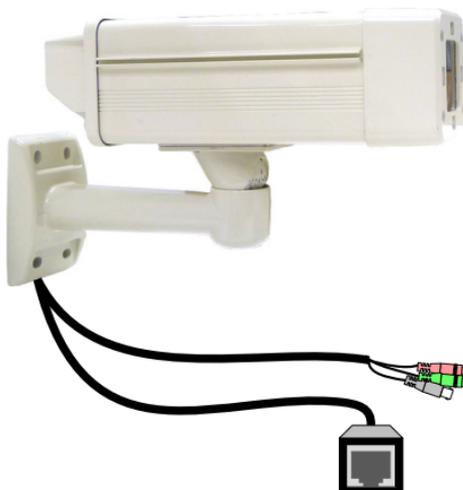


Figure 3-10

| No. | Wire Color | Definition |
|-----|---------------|------------|
| 1 | Black (thick) | PoE |
| 2 | Black BNC | TV out |
| 3 | Green RCA | Audio Out |
| 4 | Pink RCA | Audio In |

1. Optionally connect a speaker (green) and an external microphone (pink).
2. Optionally connect a monitor using a Video Out wire. Enable this function by selecting your signal format at the **TV Out** field on the Web interface. See *13.1.1 Video Settings*.

3. Connect the camera's cable to the GV-PA481 PoE adapter as illustrated below. The power and network will be supplied simultaneously.

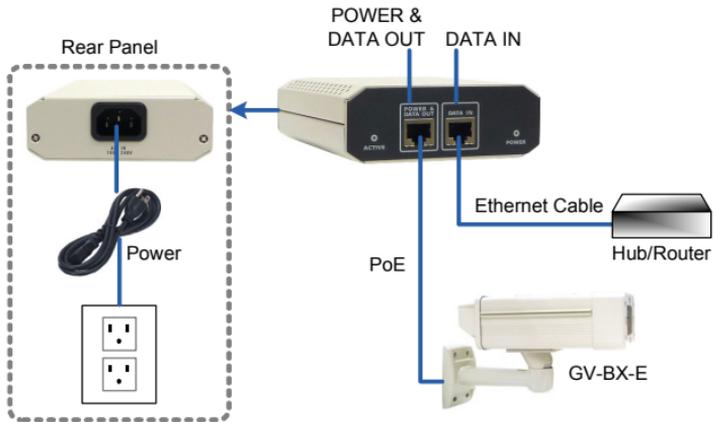


Figure 3-11

4. The status LED of the camera will be on.
5. You are ready to access the live view, adjust the image clarity and configure the basics. See *Getting Started, Chapter 11*.

3.6 Notice for Using the IR Arctic Box Camera

Ensure that you:

- enable IR LED function on the Web interface after loading the default settings.
- disable the status LED to reduce reflection when a green light spot appears on the live view.

3.6.1 Enabling IR LED after Loading Default

Each GV-BX-E series is equipped with 4 IR LEDs to provide infrared illumination at night. The factory loaded setting for the IR LED function is **enabled**. If you have restored the camera to default settings, please follow the steps below to enable the IR LED function.

1. In the left menu of Web interface, select **Video Settings** and then **Streaming 1**.
2. Enable **Trigger IR by D/N** in IR Check Function.

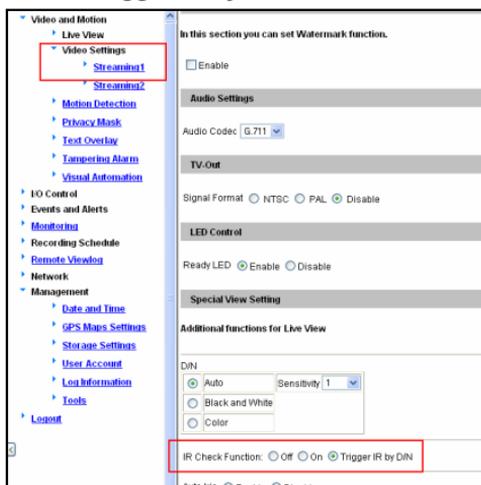


Figure 3-12

3. Click **Apply**.

3.6.2 Disabling Status LED under Low Light Conditions

If you have a green light spot on the live view, this is likely due to insufficient light at the installation site, which causes the status LED to reflect on the camera cover. In this case, it is advisable that you disable the status LED.

1. In the left menu of Web interface, select **Video Settings** and then **Streaming 1**.
2. Select **Disable** in LED Control.

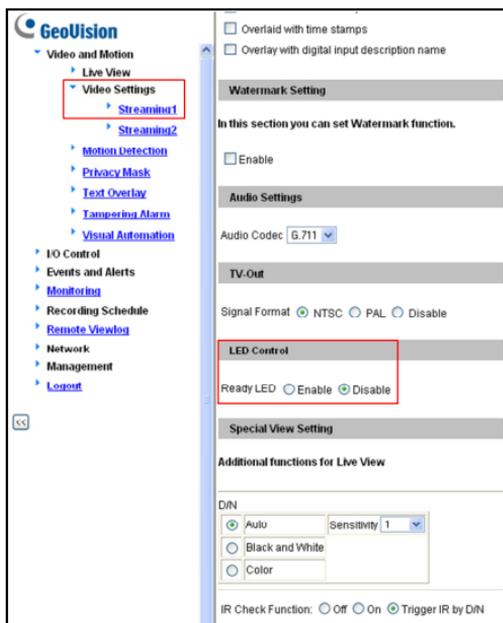


Figure 3-13

3. Click **Apply**.

Chapter 4 Mini Fixed Dome & Mini Fixed Rugged Dome

The Mini Fixed Dome is a fixed, mini-sized ceiling-mount network camera. Two series are available, the Mini Fixed Dome series, which are designed for indoor surveillance and the Mini Fixed Rugged Dome series for outdoor environments. Both series are equipped with built-in microphone and are adjustable in 2-axis (pan and tilt for GV-MFD series) or in 3 axis (pan, tilt and rotate for GV-MDR series).

| Model No. | | Specifications | Description |
|------------------------|------------|---|----------------------------------|
| GV-MFD110 | Fixed Lens | Megapixel, Fixed Iris, f: 3.6 mm, F/1.8, 1/3" M12 Mount | 1.3 MP, H.264, Color |
| GV-MFD120 GV-MDR120 | | Megapixel, Fixed Iris, f: 4.05 mm, F/1.5, 1/3" M12 Mount | 1.3 MP, H.264, Low Lux, Color |
| GV-MFD130 | | Megapixel, Fixed Iris, f: 2.54 mm, F/2.8, 1/2.5" M12 Mount | 1.3 MP, H.264, Color |
| GV-MFD220 GV-MDR220 | | Megapixel, Fixed Iris, f: 2.54 mm, F/2.8, 1/2.5" M12 Mount | 2 MP, H.264, Color |
| GV-MFD320 GV-MDR320 | | | 3 MP, H.264, Color |
| GV-MFD520 GV-MDR520 | | | 5 MP, H.264, Color |

4.1 Packing List

- Mini Fixed Dome or Mini Fixed Rugged Dome
- Torx Wrench
- Self Tapping Screw x 2
- Screw Anchor x 2
- Cable stopper x 1
- Installation sticker (for GV-MDR series only)
- Silica gel bag x 2 (for GV-MDR series only)
- Ferrite core for vehicle installation
- 2-pin / 3-pin terminal block
(for GV-MFD120 / 130 / 220 / 320 / 520 only)
- DC 12V Power Adapter (for GV-MFD120 / 130 / 220 / 320 / 520 only)
- GV-IPCAM H.264 Software CD
- GV-IPCAM H.264 Quick Start Guide
- GV-NVR Software DVD
- GV-NVR Quick Start Guide

4.2 Features

- 1/3" progressive scan CMOS
- Megapixel lens
- Dual video streams

| Camera Model | Frame Rate |
|-------------------------------------|---|
| GV-MFD110 | Dual video streams from two of H.264, MPEG4 or MJPEG |
| GV-MFD series (except GV-MFD110) | Stream 1 from H.264 or MJPEG; Stream 2 from H.264, MPEG4 or MJPEG |
| GV-MDR series | |

- Frame rate:

| Camera Model | Frame Rate |
|--------------|-----------------------------|
| GV-MFD110 | Up to 15 fps at 1280 x 1024 |
| GV-MFD120 | Up to 30 fps at 1280 x 1024 |
| GV-MFD130 | |
| GV-MDR120 | |
| GV-MFD220 | Up to 30 fps at 1920 x 1080 |
| GV-MDR220 | |
| GV-MFD320 | Up to 20 fps at 2048 x 1536 |
| GV-MDR320 | |
| GV-MFD520 | Up to 10 fps at 2560 x 1920 |
| GV-MDR520 | |

- Day and night function (electronic)
- IK7 rating (for GV-MDR series only)
- IP66 rating (for GV-MDR series only)
- Endurable to low environment temperatures (-20°C ~ 50°C / -4°F ~ 122°F) (for GV-MDR series only)
- 2-axis mechanism (GV-MFD series); 3-axis mechanism (GV-MDR series)

| Camera Type | Pan | Tilt | Rotate |
|---------------|-------------|----------|-----------|
| GV-MFD series | -45° ~ +45° | 0° ~ 90° | n/a |
| GV-MDR series | -45° ~ +45° | 0° ~ 90° | 0° ~ 360° |

- Built-in microphone
- Motion detection
- Tampering alarm
- Privacy mask
- Text overlay
- IP address filtering
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface (for all models except GV-MFD110)

4.3 Overview

4.3.1 GV-MFD110



Figure 4-1

| No. | Name | Description |
|-----|--------------------------|---|
| 1 | Default Button | Resets the camera to factory default. See <i>15.3 Restoring to Factory Default Settings</i> . |
| 2 | Lens | Rotates the lens right/left to adjust focus. |
| 3 | Focus Screw | Loosens the screw to adjust the focus. |
| 4 | Tilt Screw | Loosens the screw to adjust the tilt angle. |
| 5 | Built-In Microphone | Provides one-way audio. |
| 6 | Pan Screw | Loosens the screw to pan. |
| 7 | Network / PoE Connection | Connects the Network cable for power and Ethernet connection. |

4.3.2 GV-MFD120 / 130 / 220 / 320 / 520



Figure 4-2

| No. | Name | Description |
|-----|---------------------|---|
| 1 | Default Button | Resets the camera to factory default. See <i>15.3 Restoring to Factory Default Settings</i> . |
| 2 | Lens | Receives image inputs. |
| 3 | Tilt Screw | Loosens the screw to adjust tilt angle. |
| 4 | Built-In Microphone | Provides one-way audio. |
| 5 | Pan Screw | Loosens the screw to pan. |
| 6 | LED Indicators | See <i>LED Indicators</i> below. |
| 7 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |

| LED Name | Description |
|--------------------|---|
| 1. Link | Turns on when the network is connected. |
| 2. ACT | Turns on when data are being transmitted. |
| 3. PWR | Turns on when power is on. |
| 4. SW RDY (Status) | Turns on when the system is ready. |

4.3.3 GV-MDR120 / 220 / 320 / 520



Figure 4-3

| No. | Name | Description |
|-----|----------------|--|
| 1 | Silica gel bag | Absorbs the moisture inside the camera. |
| 2 | Conceal paper | Prevents water or moisture from entering the camera. |
| 3 | Lens | Receives image inputs. |
| 4 | Rotation Disc | Rotates the camera lens. |
| 5 | Pan Disc | Pans the camera lens. |
| 6 | Tilt Screw | Loosens to tilt the camera. |

| No. | Name | Description |
|-----|----------------------|---|
| 7 | Built-In Microphone | Provides one-way audio. |
| 8 | Default Button | Resets the camera to factory default. See <i>15.3 Restoring to Factory Default Settings</i> . |
| 9 | Power and status LED | Turns red when the power is on. Flashes orange light twice when the system is ready. |
| 10 | LAN LED | Turns on when the network is connected. |
| 11 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |

IMPORTANT: In case of damage and possible condensation inside the camera housing, be sure not touch or remove the conceal paper.

4.4 Installation

To install a Mini Fixed Dome, make sure the installing site is shielded from rain and moisture.

4.4.1 GV-MFD Series

1. Unscrew the housing cover using the supplied torx wrench.
2. Put the camera on the desired location and make 2 marks on the ceiling for screw anchors. If you want to run the cables inside the ceiling, make a round mark with a diameter of 2.5 cm.
3. Drill the marks and insert the screw anchors.
4. Secure the Mini Fixed Dome to the ceiling with the self-tapping screws.
5. Connect the camera to network and power. For details, see 4.5 *Connecting the Camera*.
6. Access the live view. For details, see 11.1 *Accessing the Live View*.
7. Adjust the angles based on the live view.

Pan Adjustment



Figure 4-4

Tilt Adjustment



Figure 4-5

8. For GV-MFD110, adjust image clarity using the GV-IP Device Utility program. For details, see *11.2 Adjusting Image Clarity*.
9. Except for GV-MFD110, insert a Micro SD / SDHC / SDXC card into the memory card slot (No. 7, Figure 4-2).
10. Secure the housing cover using the supplied torx wrench.
11. Optionally conceal the cable opening with the supplied cable stopper.



Figure 4-6

4.4.2 GV-MDR Series

1. Paste the installation sticker on the desired location. The arrow should point toward the direction that the camera faces.
2. Drill one hole on each of the two curves for screw anchors. Drill the circle (30 mm in diameter) if you want to run the cable into the ceiling.

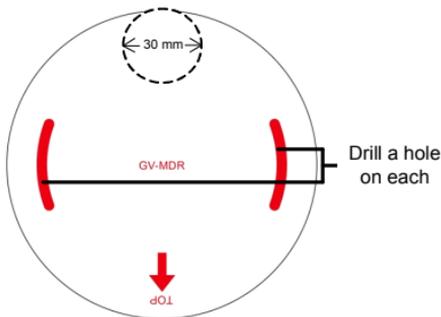


Figure 4-7

3. Insert the screw anchors.
4. Unscrew the housing cover using the supplied torx wrench.
5. Secure the camera body to the ceiling with the self-tapping screws.



Figure 4-8

6. Connect the camera to PoE cable.
7. Access the live view. For details, see *11.1 Accessing the Live View*.
8. Adjust the angles based on the live view.

Pan Adjustment



Figure 4-9

Tilt Adjustment

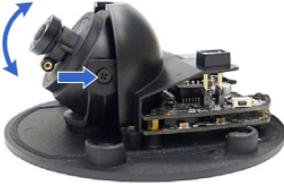


Figure 4-10

Rotational Adjustment



Figure 4-11

9. Insert a Micro SD / SDHC / SDXC card into the memory card slot (No. 9, Figure 4-3).
10. Secure the housing cover using the supplied torx wrench.
11. Optionally conceal the cable opening with the supplied cable stopper.



Figure 4-12

4.5 Connecting the Camera

Refer to the wire definition and illustrations below to connect the power and network.

4.5.1 Wire Definition

GV-MFD120 / 130 / 220 / 320 / 520

The data cable provides connections for power and network access. The wires are illustrated and defined below:



Figure 4-13

| No. | Wire Color | Definition |
|-----|------------|---------------|
| 1 | Yellow | DC 12V+ |
| 2 | Orange | GND |
| 3 | Gray | PoE, Ethernet |

GV-MFD110 and GV-MDR120 / 220 / 320 / 520

Power and network connectivity is provided through a PoE cable.

| Wire Color | Definition |
|------------|---------------|
| Gray | PoE, Ethernet |

4.5.2 Power and Network Connection

For **GV-MFD120 / 130 / 220 / 320 / 520**, there are two ways to supply power to the camera:

- Use a Power over Ethernet (PoE) adapter to connect the camera to the network, and the power will be provided at the same time.
- Use the supplied Terminal Block and power adapter. Follow the steps below to connect the Terminal Block and power adapter.

1. Insert the orange wire of the Mini Fixed Dome (except GV-MFD110) to the left pin and the yellow wire to the right pin of the supplied terminal block.

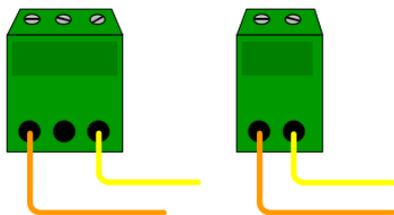


Figure 4-14

2. Connect the DC 12V Power Adaptor to the Terminal Block.



Figure 4-15

3. Connect the camera to network using a network cable.

4.5.3 Vehicle Installation

To install the **Mini Fixed Rugged Dome** on a vehicle, clip the ferrite core to the camera cable. In accordance to EN 50155, the ferrite core is used for reduction of the cable-based and radiated interferences, ensuring stable image quality. The ferrite core must be attached as close as possible to the camera with the maximum distance of 15 cm.

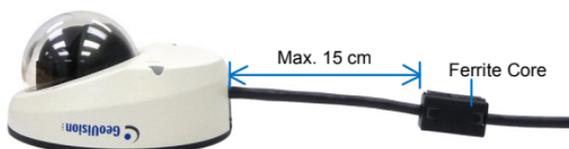


Figure 4-16

Chapter 5 Bullet Camera

The Bullet Cameras is specifically designed for outdoors and is weather-sealed and IP66 rating. The camera also features IR LEDs for infrared illumination in night vision applications. Four models are available:

| Model No. | Specifications | Description |
|-----------|--|---------------------------|
| GV-BL110D | Varifocal Lens Megapixel, Auto Iris, f: 3.6 ~ 9 mm, F/1.3, 1/3" ø 14 mm Lens Mount | 1.3 MP, H.264 |
| GV-BL120D | | 1.3 MP, H.264, Low Lux |
| GV-BL130D | | 1.3 MP, H.264 |
| GV-BL220D | | 2 MP, H.264 |
| GV-BL320D | | 3 MP, H.264 |

5.1 Packing List

- Bullet Camera
- Lens (Megapixel and Built-In 16 IR LEDs)
- Self Tapping Screw x 3
- Plastic Screw Anchor x 3
- Torx Wrench x 2
- Sun-Shield Cover Kit (1 Sun-Shield Cover, 2 Philips Head Screws, 2 Plastic Screw Spacers and 2 Hexagon Screws included)
- Silica Gel Bag x 2
- 2-Pin / 3-Pin Terminal Block
- DC 12V Power Adapter
- GV-IPCAM H.264 Software CD
- GV-IPCAM H.264 Quick Start Guide
- GV-NVR Software DVD
- GV-NVR Quick Start Guide

5.2 Features

- 1/3" progressive scan CMOS for GV-BL110D / 120D
1/2.5" progressive scan CMOS for GV-BL130D / 220D / 320D
- Dual video streams
GV-BL110D: Dual streams from H.264, MPEG4 or MJPEG
GV-BL120D / 220D / 320D: Stream 1 from H.264 or MJPEG; Stream 2 from H.264, MPEG4 or MJPEG
- Up to 30 fps at 1280 x 1024 for GV-BL120D / 130D
Up to 30 fps at 1920 x 1080 for GV-BL220D
Up to 20 fps at 2048 x 1536 for GV-BL320D
- Intelligent IR
- Day and night function (with removable IR-cut filter)
- IP66 rating
- Cable-concealed bracket preventing cable from being cut
- One alarm input and sensor output
- Micro SD / SDHC / SDXC memory card slot
- Two-way audio
- Motion detection
- Tampering alarm
- Visual automation
- Text overlay
- Privacy mask
- IP address filtering
- DC 12V / AC 24V / PoE
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface (for all models except GV-BL110D)

5.3 Overview

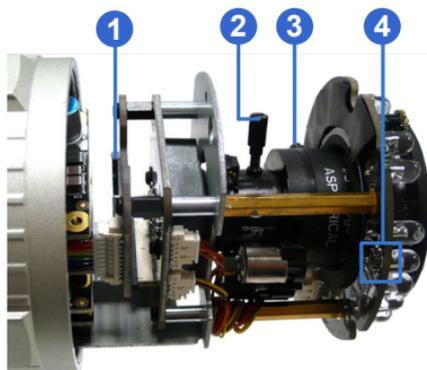


Figure 5-1

| No. | Name | Description |
|-----|------------------|--|
| 1 | Memory Card Slot | Receives a Micro SD / SDHC / SDXC memory card. |
| 2 | Zoom Screw | Holds the zoom lens in place. |
| 3 | Focus Screw | Holds the focus lens in place |
| 4 | Default Button | Resets all configurations to factory default. See 15.3. <i>Restoring to Factory Default Settings</i> . |

5.4 Installation

These instructions describe the basic installation of the Bullet Camera.

1. Slide the cable clamp to the camera base.

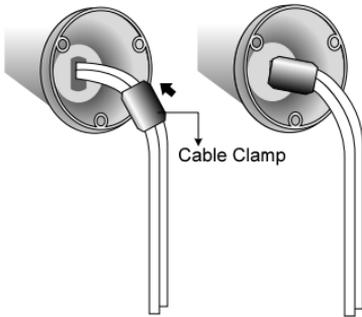


Figure 5-2

2. Install the Bullet Camera to the wall.



Figure 5-3

3. Remove the protection sticker from the camera's cover
4. Connect the power, network and other wires to the Bullet Camera.
See 5.4.1 *Connecting the Camera*.

5. Access the live view. For details, see *11.1. Accessing the Live View*.
6. Adjust angles of the camera body based on the live view. Three shafts can be adjusted. See *5.4.2 Adjusting the Angles*.
7. Loosen the camera's cover, adjust the focus of the camera and optionally insert a micro SD / SDHC / SDXC card into the SD card slot. See *5.4.3 Adjusting Lens and Inserting a Memory Card*.
8. Fasten the camera's cover.
9. Install the sun-shield cover to the Bullet Camera. For details, see *5.4.4 Installing the Sun-Shield Cover*.

5.4.1 Connecting the Camera

Wire Definition

The **7-Pin Data Cable** provides connections for power, ground, 1 sensor input, 1 alarm output, audio input and audio output. The wires are illustrated and defined below:

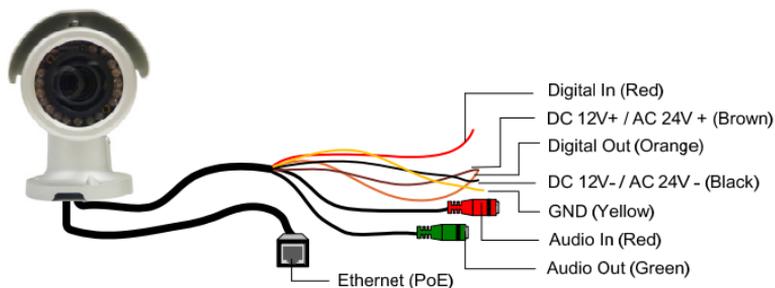


Figure 5-4

| No. | Wire Color | Definition |
|-----|------------|-------------------|
| 1 | Red | Digital In |
| 2 | Brown | DC 12V+ / AC 24V- |
| 3 | Orange | Digital Out |
| 4 | Black | DC 12V- / AC 24V+ |
| 5 | Yellow | Ground |
| 6 | Red RCA | Audio in |
| 7 | Green RCA | Audio out |

Power Connection

There are two ways to supply power to the camera:

- Use a Power over Ethernet (PoE) adapter to connect the camera to the network, and the power will be provided at the same time.
- Use the supplied Terminal Block and power adapter. Follow the steps below to connect the Terminal Block and the power adapter.
 1. Insert the black wire of the Bullet Camera to the left pin and the brown wire to the right pin.

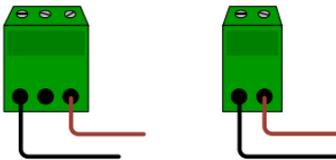


Figure 5-5

2. Connect the DC 12V Power Adapter to the Terminal Block.



Figure 5-6

Note: A DC 12V power adapter is provided in the package, but both AC 24V power adapter and DC 12V power adapters are compatible.

Voltage Load Expansion (Optional)

The camera can only drive a maximum load of 200mA 5V DC. Connect the camera to a GV-Relay V2 module (optional product) to expand the maximum voltage load. See a comparison on maximum voltage loads with and without GV-Relay below:

| Models | Maximum Voltage Load | |
|--|----------------------|--|
| | Without GV-Relay V2 | With GV-Relay V2 |
| GV-BL110D GV-BL120D GV-BL130D GV-BL220D GV-BL320D | 200mA 5V DC | 10A 250V AC, 10A 125V AC, 5A 100V DC |

To connect the GV-Relay V2 module to the Bullet Camera, refer to the figure and table below.

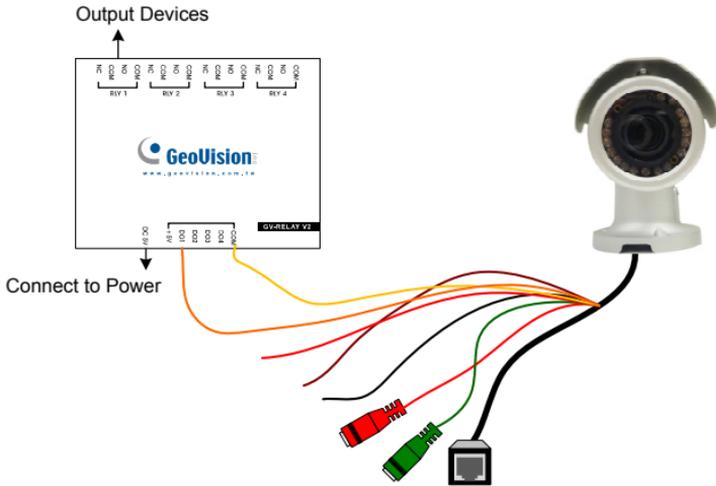


Figure 5-7

| GV-Relay V2 | Bullet Camera |
|-------------|----------------------|
| COM | Ground (Yellow) |
| DO1 | Digital Out (Orange) |

5.4.2 Adjusting the Angles

The Bullet Camera is designed to be adjustable in three shafts for easy and flexible installation.

First Shaft

You can adjust the camera body by 360 degrees to the right or the left.

1. Unscrew the panning lock screw with the torx wrench.

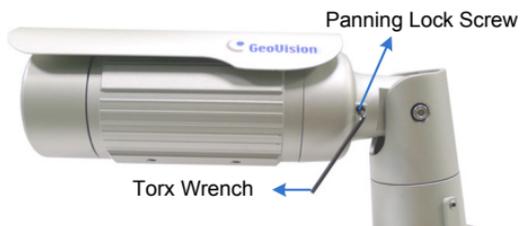


Figure 5-8

2. Adjust the angle of camera body to the right or the left, and fasten the panning lock screw.



Figure 5-9

Second Shaft

You can adjust the camera body up and down by 90, 112.5, 135, 157.5 or 180 degrees by using the gears inside the camera body and the camera base.

1. Unscrew the tilting lock screw with the torx wrench.



Figure 5-10

2. Hold the camera body, and move the camera base to the right to separate the camera gears.

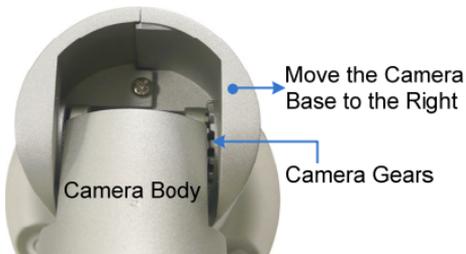


Figure 5-11

- Adjust the angle of camera body to 90, 112.5, 135, 157.5 or 180 degrees. Then move the camera base to the left to combine the gears.



Figure 5-12

- Fasten the tilting lock screw.

Third Shaft

You can adjust the camera base by 360 degrees.

- Unscrew the base fixing screw with the torx wrench.



Figure 5-13

2. Adjust the angle of camera base, and fasten the base fixing screw.



Figure 5-14

5.4.3 Adjusting Lens and Inserting a Memory Card

To adjust the camera's lens to produce a clear image and insert a micro SD / SDHC / SDXC card into the SD card slot, follow the steps below.

1. Loosen the camera's cover.



Figure 5-15

2. Remove the silica gel bag.



Figure 5-16

3. Adjust for image clarity using GV-IP Device Utility. For details, see *11.2 Adjusting Image Clarity*.

4. If you want to insert a micro SD / SDHC / SDXC card, follow the steps below.

- A. Loosen the fixing screw.

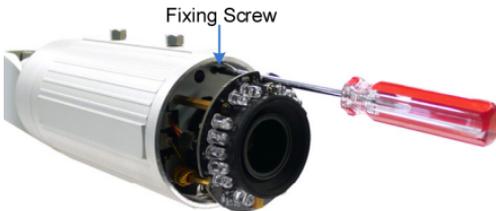


Figure 5-17

- B. Slightly pull out the camera module.
- C. Insert a micro SD / SDHC / SDXC card into the memory card slot.

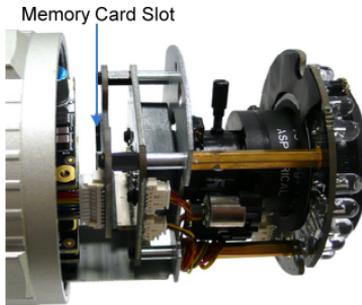


Figure 5-18

- D. Push the camera module back and fasten the fixing screw.
5. Insert a new silica gel bag to the camera module and fasten the camera's cover within 2 minutes of opening the silica gel bag package.

Note: The silica gel loses its effectiveness after you open the dry camera. To prevent the lens from fogging up, it is highly recommended to replace the silica gel bag every time when you open the camera.

5.4.4 Installing the Sun-Shield Cover

After setting up the Bullet Camera, now you can install the sun-shield cover to the camera.

1. Fasten the hexagon screws either on top or below the camera.



Figure 5-19

2. Put the sun-shield cover on top of hexagon screws. Make sure to aim the rear hexagon screw at the edge of the sun-shield cover's aperture for optimal sun-shield performance.



Figure 5-20

3. Fasten the Philips head screws with the plastic screw spacers.

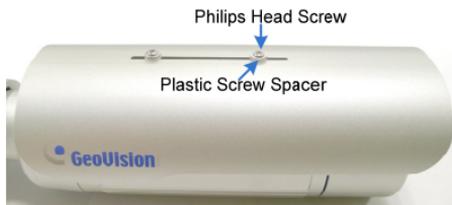


Figure 5-21

Chapter 6 PTZ Camera

The GV-PTZ010D camera is a ceiling-mount device that provides panning, tilting and zooming functions. The camera is designed to monitor a wide area and also to focus on a specific part on the live view when suspicious events occur. There are two models:

| Model | Model No. | Description |
|------------|--------------|--|
| GV-PTZ010D | GV-PTZ010D-N | NTSC, IPCAM, 10x Optical Zoom, D1, H.264, Fixed Iris |
| | GV-PTZ010D-P | PAL, IPCAM, 10x Optical Zoom, D1, H.264, Fixed Iris |

6.1 Packing List

- GV-PTZ010D



- Mounting Cover



- Screw Anchor x 3



- Short Screw x 3



- DC 12V Power Adapter



- GV-PTZ010D Software CD

- GV-NVR Software DVD

- Mounting Base



- Wall Mount Bracket



- Long Screw x 3



- Round Screw x 3



- Washer x 3



- GV-PTZ110D / GV-PTZ010D Quick Start Guide

- GV-NVR Quick Start Guide

6.2 Features

- 1/4" CCD image sensor
- Dual streams from H.264, MPEG4 or MJPEG
- Up to 30 fps at 704 x 480 / Up to 25 fps at 704 x 576
- Day and night function (electronic)
- 10x optical zoom lens
- 10x digital zoom
- Pan and tilt (Pan: $-175^{\circ} \sim 175^{\circ}$; Tilt: $-45^{\circ} \sim 90^{\circ}$)
- Micro SD / SDHC / SDXC memory card slot
- Two-way audio
- One sensor input and alarm output
- Input-triggered Preset points
- Motion detection
- Privacy mask
- IP address filtering
- DC 12 V / AC 24 V / PoE
- Support for iPhone, iPad, Android and 3GPP
- 28 languages on Web interface

6.3 Overview



Figure 6-1

| No. | Name | Description |
|-----|--------------------------------|---|
| 1 | DC 12V / AC 24V Terminal Block | Connects to a DV 12V or AC 24V Power Adapter. |
| 2 | LAN/PoE | Connects to a 10/100 Ethernet or PoE. |
| 3 | I/O Terminal Block | For details, see 6.7 I/O Terminal Block . |
| 4 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |
| 5 | Audio Out | Connects a speaker for audio output. |
| 6 | Audio In | Connects a microphone for audio input. |
| 7 | Status LED | Turns green when the system operates normally and turns off when system error occurs. |

| No. | Name | Description |
|-----|------------|---|
| 8 | Power LED | Turns green when the power is on and turns off when the power is off. |
| 9 | Microphone | Records the sounds. |
| 10 | Default | Resets to system default settings. For details, see <i>15.3 Restoring to Factory Default Settings</i> . |

6.4 Installation

The GV-PTZ010D / GV-PT110D camera is designed for indoor usage. Please make sure that the installing location is shielded from rain and moisture. There are two ways to mount the PTZ / PT Camera: **Ceiling Mount** and **L-Shaped Wall Mount**.

6.4.1 Ceiling Mount

1. Use the mounting base to make 3 marks on the wall for screw anchors.



Figure 6-2

2. Drill the marks and insert 3 screw anchors.
3. Attach the mounting base with the PTZ / PT Camera with 3 short screws.



Figure 6-3

4. Fix the mounting base (now with the PTZ / PT Camera attached) to the wall with 3 long screws.



Figure 6-4

5. Put on the mounting cover. To fit the installation environment, you can cut the parts indicated by arrows to make an opening for wires and cables.

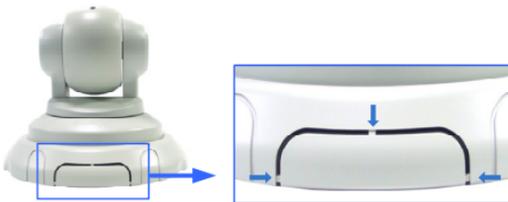


Figure 6-5

6.4.2 L-Shaped Wall Mount

You may wall-mount the GV-PTZ010D / GV-PT110D camera with or without the mounting cover.

1. Take the wall mount bracket and make 2 marks on the wall for screw anchors.



Figure 6-6

2. Drill the marks and insert 2 screw anchors.
3. Insert the long screws and leave enough distance (approximately 2 mm) to hang the wall mount bracket later.

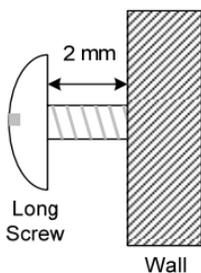


Figure 6-7

4. Hang the wall mount bracket on the screws and push the wall mount bracket downward. Make sure the long screws are tightened.

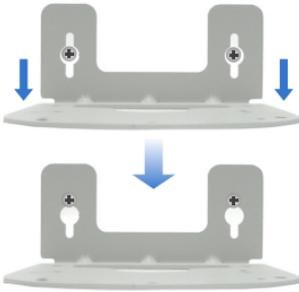


Figure 6-8

5. **Without Mounting Cover**

- Attach the wall mount bracket with the PTZ / PT Camera using 3 washers and 3 round screws.



Figure 6-9

With Mounting Cover

- To install the mounting cover, attach the mounting base to the camera and then put on the mounting cover. See steps 3 and 5 in the *Ceiling Mount* section.
- Attach the wall mount bracket with the PTZ / PT Camera using 3 round screws.



Figure 6-10

6.5 Connecting the Camera

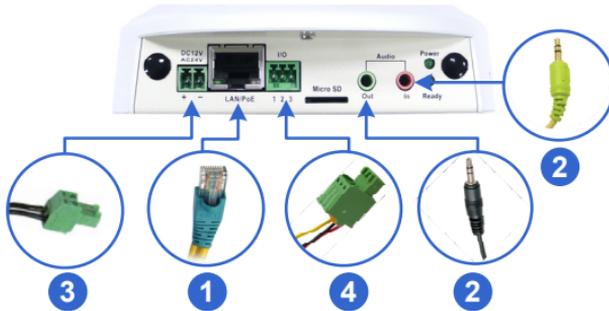


Figure 6-11

1. Use a standard network cable to connect the camera to your network.
2. Optionally connect a speaker and an external microphone.
3. Connect power using one of the following methods:
 - plugging the supplied power adapter to the power port.
 - using the Power over Ethernet (PoE) function to provide power over the network cable.
4. Optionally connect to an input / output device. For details, see 6.7 *I/O Terminal Block*.
5. The status LED of the camera will be on.
6. Access the camera See 11.1. *Accessing the Live View*.

6.6 Focus Adjustment

On initial installation, it is advised that you adjust the focus for image clarity. Print out the diagram of radiating lines included on Software CD and hang up the diagram at the surveillance area. Use the **Zoom In / Out** and **Focus In / Out** buttons on the PTZ control panel from the Web interface (No.4 and 5, Figure 6-15) and adjust the PTZ Camera until it displays clear radiating lines as shown in picture on the left.

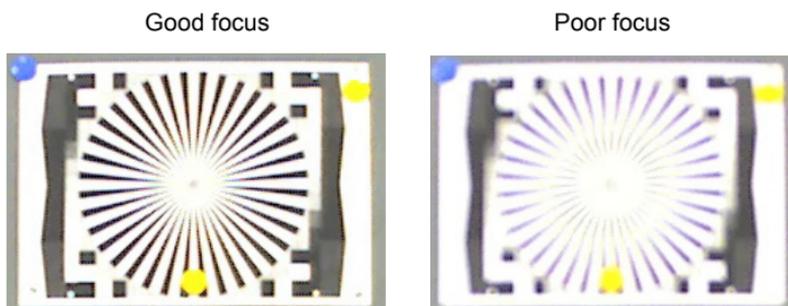


Figure 6-12

To access live view for the first time or to assign an IP address, see [11.1 Accessing the Live View](#).

6.7 I/O Terminal Block

The 3-pin terminal block, located on the back panel of the PTZ Camera, provides the interface to one digital input and one digital output. The I/O terminal block can be used for applications such as motion detection, event alerts via E-Mail and FTP, and center monitoring through Center V2 and VSM.

6.7.1 Pin Assignment

The pin assignment for the terminal block:

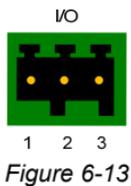


Figure 6-13

| Pin | Function |
|-----|----------|
| 1 | Output |
| 2 | GND |
| 3 | Input |

For details on how to enable an installed I/O device, see *13.2 I/O Settings*.

6.7.2 Voltage Load Expansion (Optional)

The camera can only drive a maximum load of 200mA 5V DC. Connect the camera to a GV-Relay V2 module (optional product) to expand the maximum voltage load. See a comparison on maximum voltage loads with and without GV-Relay below:

| Model | Maximum Voltage Load | |
|-------------------|----------------------|--|
| | Without GV-Relay V2 | With GV-Relay V2 |
| GV-PTZ010D | 200mA 5V DC | 10A 250V AC, 10A 125V AC, 5A 100V DC |

To connect the GV-Relay V2 module to the PTZ Camera, refer to the figure and table below.

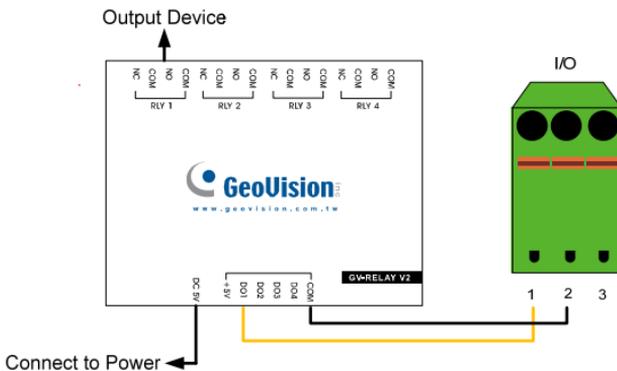


Figure 6-14

| GV-Relay V2 | I/O Wires |
|-------------|----------------|
| COM | Pin 2 (Ground) |
| DO1 | Pin 1 (Output) |

6.8 PTZ Control

After you have installed the PTZ Camera on network and accessed the camera's Web interface you are ready to configure the PTZ Camera.

To see how to install the PTZ Camera on network, see *Getting Started, Chapter 11*. To see how to access to live image, see *12.1 Accessing Your Surveillance Images*.

6.8.1 The PTZ Control Panel

The control panel allows users to adjust focus, image quality and configure camera movements. On the main page, click the **PTZ Control** button  (No. 9, Figure 12-3) and select **PTZ Control Panel**. The PTZ control panel appears.

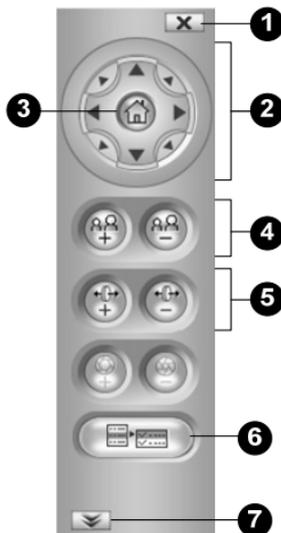


Figure 6-15

Buttons on the PTZ control panel:

| No. | Name | Description |
|-----|--------------------|--|
| 1 | Exit | Closes the PTZ control panel. |
| 2 | Pan / Tilt Control | Moves the PTZ Camera to 8 directions: up, down, left, right, left up, left down, right up and right down. |
| 3 | Home | Brings the camera view back to the home point where the camera faces front at a 90 degree angle to the base of the device. |
| 4 | Zoom In / Out | Shortens (zoom in) or lengthens (zoom out) the apparent distance between the camera and the view. |
| 5 | Focus In / Out | Adjusts the sharpness of the camera view. |
| 6 | Option | Brings up these functions: Auto focus, PTZ speed, maximum number of preset points, image quality, Preset point, Sequence, Auto Pan, digital zoom and default loading. <i>See 6.8.2 Automatic Focus, 6.8.3 PTZ Camera Settings, 6.8.4 Image Settings, 6.8.5 Preset Settings, 6.8.6 Sequence Settings, 6.8.7 Auto Pan Settings, 6.8.8 System Configuration.</i> |
| 7 | Show Preset | Opens and closes the number pad. For details, see <i>6.8.5 Preset Settings</i> . |

6.8.2 Automatic Focus

When the camera view is fuzzy, you may use the auto focus feature to obtain a sharper view. On the PTZ control panel, click the **Option** button (No. 6, Figure 6-15) and select **AF** for automatic focus.

6.8.3 PTZ Camera Settings

Accessing the PTZ Camera Settings

To access PTZ camera settings, click the **Option** button (No. 6, Figure 6-15) on the PTZ control panel and select **Setup**. The setup dialog box appears.

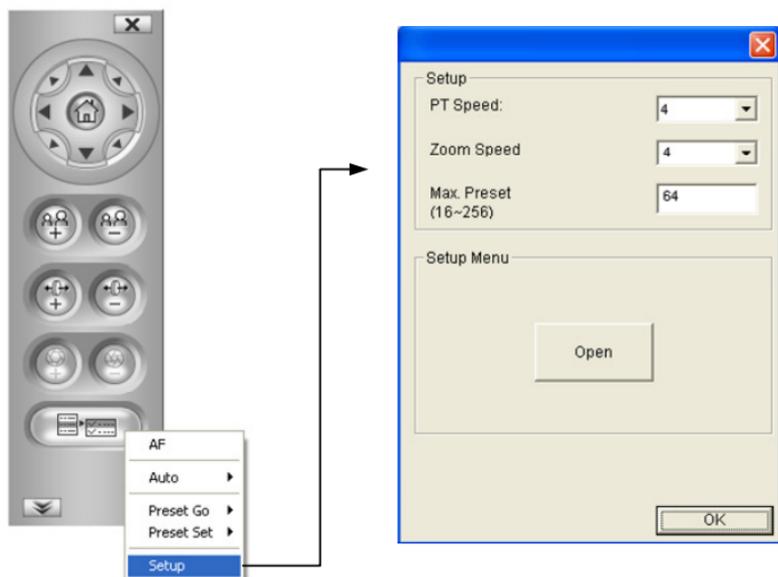


Figure 6-16

- **PT Speed:** Determines the panning (horizontal movement) and tilting (vertical movement) speed when using the **Pan / Tilt Control** buttons on the PTZ control panel. The drop-down list contains 5 speed settings: 1 is the slowest and 5 the fastest.
- **Zoom Speed:** Determines the zooming speed. The drop-down list contains 4 speed settings: 1 is the slowest and 4 the fastest.
- **Max. Preset:** Determines the maximum number of Preset points allowed to be configured and accessed. The number of Preset points ranges from 16 to 256.

Accessing the VISCA OSD Configuration

The VISCA OSD Configuration contains three groups of settings: image settings, PTZ settings and system configuration. To access these settings, click the **Option** button (No.6, Figure 6-15), select **Setup** and click **Open**. The dialog box appears. Alternatively, you can click **Digital I / O and PTZ** on the Web interface and select **PTZ Setting**.

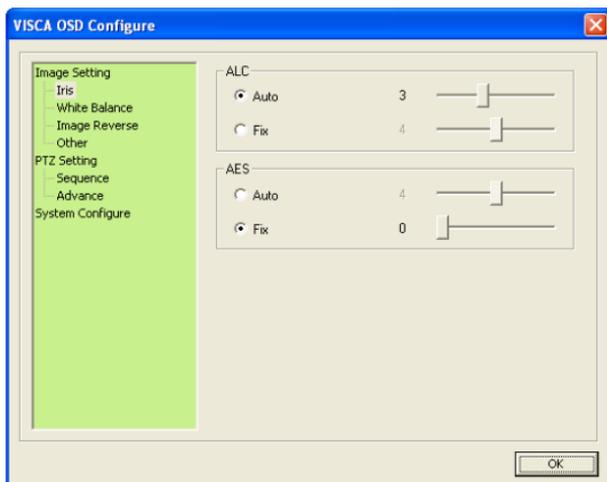


Figure 6-17

6.8.4 Image Settings

Image Setting provides features on iris control, white balance, image orientation and other image processing tools to generate clearer images. To access these features, open the VISCA OSD Configuration dialog box and select **Image Setting**.

[Iris] adjusts the amount of exposure.

- **ALC:** Automatic Light Control (ALC) is used to adjust light levels.
 - **Auto:** The amount of exposure is automatically adjusted. Select **Auto** to enable this option. If the adjusted image is still too dark or bright, move the slider. A higher value makes the image brighter.
 - **Fixed:** The amount of exposure is controlled by different aperture size. Use the slider to select from 0 to 8. A higher value signifies a bigger aperture and therefore makes the image brighter.
- **AES:** Automatic Electronic Shutter (AES) adjusts the amount of exposure by different shutter speeds.
 - **Auto:** The shutter speed is automatically adjusted. To enable this option, select **Auto**. If the adjusted image is still too dim or bright, use the slider to select from 0 to 8. A higher value indicates a slower shutter speed and therefore produces brighter image.
 - **Fixed:** The shutter speed for each level is fixed. Use the slider to select from 0 to 8. A higher value indicates a faster shutter speed and therefore produces a dimmer image.

[White Balance] Adjusts the color intensity to make the images normal to the human eye.

- **ATW:** Auto Tracking White Balance (ATW) automatically adjusts the color intensity for scenes with changing light source. Use the slider to select from 0 to 8. A higher value produces a brighter image and a lower value produces a more yellowish image.

- **AWB:** Automatic White Balance (AWB) automatically compensates for colors under different light levels. AWB is ideal for scenes with a fixed light source. Use the slider to select from 0 to 8. A higher value produces a brighter image and a lower value produces a dimmer image.
- **R Gain:** Adjusts the red element of the live view. Use the slider to select from 0 to 8. A higher value indicates a stronger degree of red.
- **B Gain:** Adjusts the blue element of the live view. Use the slider to select from 0 to 8. A higher value indicates a stronger degree of blue.

[Image Reverse]

- **Positive/Negative:** With the Positive mode, the colors in the live view appear as it is through the eye. With the negative mode, colors in live view are changed to their complementary colors (opposite colors), i.e. black will be changed to white, red to green etc. Use the drop-down list to select between **Positive** and **Negative** mode.
- **H Reverse:** Reverses the view horizontally. Use the drop-down list to select On or Off.
- **V Reverse:** Reverses the view vertically. Use the drop-down list to select On or Off.

[Other]

- **BLC:** Backlight Compensation (BLC) is used to compensate AGC in adjusting color intensity. For scenes with strong light in the background and dim light in the foreground, AGC is not effective because AGC averages the light intensity of a whole frame. BLC compensates for this characteristic by restricting AGC to adjust color intensity of a specific area. To turn on, use the drop-down list, select **On**, and select a level among 0 to 7. A higher value indicates a stronger compensation effect.

■ AGC

- ⊙ **Freeze:** Instantly freezes the live view image when On is selected.
- ⊙ **AGC:** Automatic Gain Control (AGC) utilizes an electronic circuit which amplifies video signal when the signal strength falls below a given value due to lack of the light on the camera. Adjust camera sensitivity to provide clear images. Under strong light intensity, AGC decreases the camera sensitivity to produce dimmer images. Under weak light intensity, AGC increases the camera sensitivity to produce brighter images. To adjust AGC, use the slider to select among 0 to 8. A higher value produces brighter images.
- ⊙ **Sense Up:** Use the slider to select among 0 to 8. A higher value produces brighter images.

■ APC: Aperture Compensation (APC) is used to adjust the sharpness of the image.

- ⊙ **H Gain:** Sharpens the horizontal elements of the image. Use the slider to adjust the horizontal compensation between 0 and 12.
- ⊙ **V Gain:** Sharpens the vertical elements of the image. Use the slider to adjust the vertical compensation between 0 and 12.

■ Gamma: Adjusts the contrast of the image. Use the drop-down list to select between 1 and 2. The “2” option produces stronger contrast.

6.8.5 Preset Settings

For PTZ Camera to automatically move toward a point in live view, establish a Preset. A Preset is a point in live view that can be configured and saved for future use. The PTZ Camera allows up to **256** Preset points. For details on the maximum number of Preset points, see [6.8.3 PTZ Camera Settings](#).

Configuring a Preset Point

To configure a Preset point:

- 1 Use one of the **Pan / Tilt Control** buttons (No. 2, Figure 6-15) to move the camera to a desired point in live view.
- 2 To save this Preset point, click the **Option** button (No. 6, Figure 6-15), select **Preset Set** and select the desired Preset number
- 3 A confirmation message appears. Click **Yes**.
- 4 To configure more Preset points, repeat steps 1 to 3 and select a different Preset number to save.

Renaming a Preset Point

To rename a Preset point:

- 1 Click the **Option** button (No. 6, Figure 6-15), select **Preset Set** and select **Naming**. The dialog box appears.

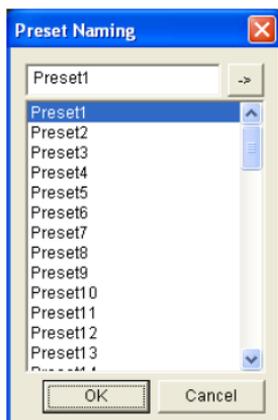


Figure 6-18

- 2 Click the Preset point you wish to rename and type the new name in the blank at the top.
- 3 Click  and click **OK** to save.

Starting and Stopping a Preset Point

To start a Preset movement, click the **Option** button (No. 6, Figure 6-15), select **Preset Go**, and select a **Preset** number which has been set previously.

Alternatively, you may use the number pad on the PTZ control panel to enable a Preset movement:

- 1 Click the **Show Preset** button (No. 7, Figure 6-15) to open the number pad.
- 2 Click the number of Preset point.
- 3 Click  to start.

To stop a Preset movement, click the **Home** button (No. 3, Figure 6-15) or click one of the **Pan / Tilt Control** button (No. 2, Figure 6-15).

6.8.6 Sequence Settings

For PTZ Camera to automatically perform a series of movements, you can configure a Sequence. A Sequence links up more than two Preset points to form a sequence of movements. Up to 8 Sequences can be created.

Configuring a Sequence

- 1 After you have configured the Preset points you wish the camera to follow (for details, see 6.8.5 *Preset Settings*), you are ready to configure a **Sequence**.
- 2 Open the VISCA OSD Configuration dialog box and select **Sequence**.

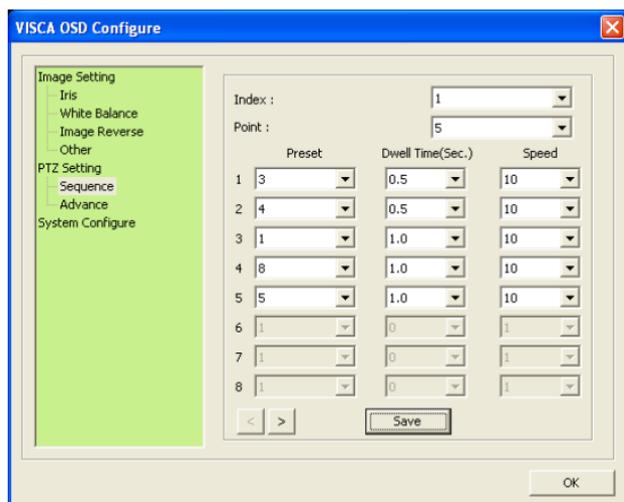


Figure 6-19

- 3 Use the **Index** drop-down list to select the Sequence number you wish to configure. Up to 8 Indexes can be created.
- 4 Use the **Point** drop-down list to select the number of Preset points to be included in the Sequence. A Sequence can contain up to 32 Preset points.

- 5 Use the **Preset** drop-down list to select the Preset points for the Sequence.
- 6 Use the **Dwell Time** drop-down list to select the staying time that the camera stays at the Preset point. The dwell time ranges from 0 to 127 seconds at an interval of 0.5 second.
- 7 Use the **Speed** drop-down list to select the speed at which the camera moves toward the Preset point.
- 8 To configure another Sequence, repeat steps 3 to 8 and select a different Index number.
- 9 Click **Save** to complete the settings.

Starting and Stopping a Sequence

To start a Sequence, click the **Option** button (No. 6, Figure 6-15) select **Auto** and select a **Go Sequence** number which you have set previously.

To stop a Sequence, click on a **Pan / Tilt Control** button (No. 2, Figure 6-15) or the **Home** button (No. 3, Figure 6-15).

6.8.7 Auto Pan Settings

For the PTZ Camera to survey a horizontal view, establish an Auto Pan. Up to 4 sets of Auto Pan can be created.

Configuring an Auto Pan

To configure a horizontal movement:

- 1 Adjust the angle of the camera view using the **Up** and **Down Control** buttons since any vertical movements of the camera will not be recorded by Auto Pan.
- 2 On the control panel, click the **Option** button (No. 6, Figure 6-15), select **Auto** and select a **Set Auto Pan** number.
- 3 Click the **Right** or the **Left Control** buttons on the PTZ control panel to perform the desired movement.
- 4 Click the **Option** button (No. 6, Figure 6-15), select **Auto** and select an **End Auto Pan** number to save this configuration.

Configuring the Speed of Auto Pan

You can configure the speed for each set of Auto Pan differently:

- 1 Open the VISCA OSD Configuration dialog box and select **Advance**.

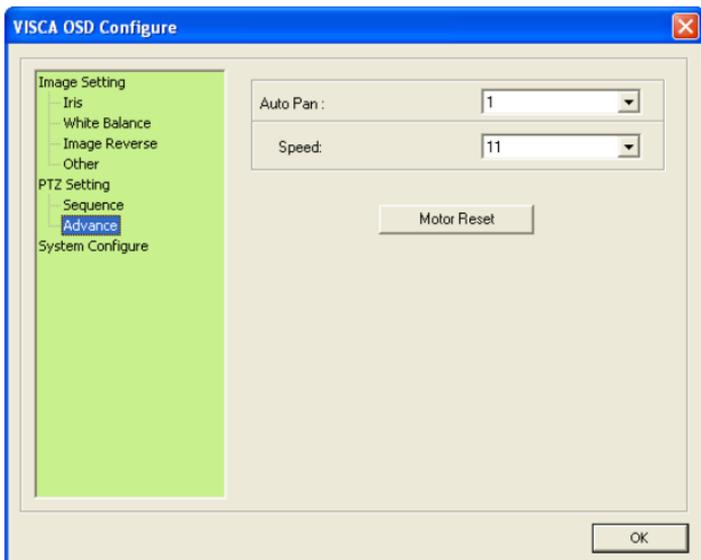


Figure 6-20

- 2 Select the **Auto Pan** number you wish to configure and select the **Speed**.
- 3 To configure the speed of another Auto Pan, repeat step 2.
- 4 Click **OK**.

Starting and Stopping Autopan

To start an Auto Pan, click the **Option** button (No. 6, Figure 6-15), select **Auto** and select a desired **Auto Pan** number. The PTZ Camera will first return to the starting position of the selected Auto Pan and proceeds with the selected Auto Pan movement.

To stop Auto Pan, click the **Option** button (No. 6, Figure 6-15), select **Auto** and select **Autopan Stop**. Alternatively click on a **Pan / Tilt Control** button (No. 2, Figure 6-15) or the **Home** button (No. 3, Figure 6-15).

Rebooting the Camera

When the system crashes and fails to respond to the PTZ control panel, reboot the camera.

- 1 Open the VISCA OSD Configuration dialog box.
- 2 Click the **Motor Reset** button to reboot.
- 3 Wait until the camera has panned and tilted its full range and returned to the home point.

6.8.8 System Configuration

To configure lens settings, open the VISCA OSD Configuration dialog box and select **System Configure**.

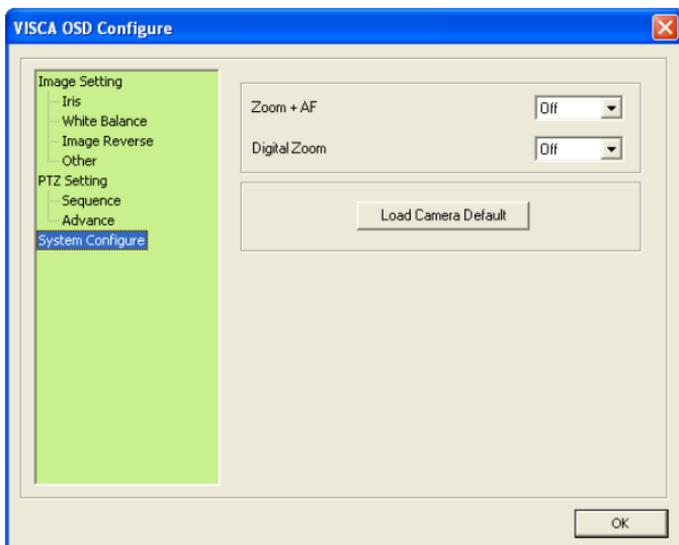


Figure 6-21

- **Zoom + AF:** Automatically focuses after zooming. It is advised to use this feature with a zooming distance of at least 1 meter.
- **Digital Zoom:** Allows up to 10x Digital Zoom. This function is enabled after the Optical Zoom level is fully reached. Use the drop-down list to select among off, 2x, 4x, 6x, 8x and 10x.
- **Load Camera Default:** Loads the factory default setting of Iris, White Balance, Image Reverse and Other in the VISCA OSD Configuration dialog box (Figure 6-17).

Chapter 7 PT Camera

The GV-PT110D camera is a ceiling-mount device that features panning and tilting functions. The GV-PT110D is designed to monitor a wide area and to focus on a selected point on live view when suspicious events occur.

7.1 Packing List

- GV-PT1100D



- Mounting Cover



- Screw Anchor x 3



- Short Screw x 3



- Mounting Base



- Wall Mount Bracket



- Long Screw x 3



- Round Screw x 3



- DC 12V Power Adapter



- GV-PT110D Software CD
- GV-NVR Software DVD

- Washer x 3



- GV-PTZ110D / GV-PTZ010D Quick Start Guide
- GV-NVR Quick Start Guide

7.2 Features

- 1.3 megapixel progressive scan CMOS
- Dual streams from H.264, MPEG4 or MJPEG
- Up to 15 fps at 1280 x 1024
- Day and night function (with removable IR-cut filter)
- Pan and tilt (Pan: -175° ~ 175°; Tilt: -45° ~ 90°)
- Micro SD / SDHC / SDXC memory card slot
- Two-way audio
- One sensor input and alarm output
- Input-triggered Preset points
- Motion detection
- Privacy mask
- IP address filtering
- DC 12 V / AC 24 V / PoE
- Support for iPhone, iPad, Android and 3GPP
- 28 languages on Web interface

7.3 Overview



Figure 7-1

| No. | Name | Description |
|-----|--------------------------------|--|
| 1 | DC 12V / AC 24V Terminal Block | Connects to a DV 12V or AC 24V Power Adapter. |
| 2 | LAN / PoE | Connects to a 10/100 Ethernet or PoE. |
| 3 | I/O Terminal Block | For details, see 7.7 <i>I/O Terminal Block</i> . |
| 4 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |
| 5 | Audio Out | Connects a speaker for audio output. |
| 6 | Audio In | Connects a microphone for audio input. |

| No. | Name | Description |
|-----|------------|--|
| 7 | Status LED | Turns green when the system operates normally and turns off when system error occurs. |
| 8 | Power LED | Turns green when the power is on and turns off when the power is off. |
| 9 | Focus Ring | Manually rotates this ring left or right to adjust focus. |
| 10 | IR | Turns on to automatically illuminate a surveillance area by infrared light to produce clearer images during the night. |
| 11 | Microphone | Records the sounds. |
| 12 | Default | Resets to system default settings. For details, see <i>15.3 Restoring to Factory Default Settings</i> . |

7.4 Installation

For installation procedures of the GV-PT110D, see *6.4 Installation*.

7.5 Connecting the Camera

For procedures of connecting the GV-PT110D, see *6.5 Connecting the Camera*.

7.6 Focus Adjustment

After you have followed *5.5 Connecting the Camera* and connected all the necessary cables and wires, follow the steps below to adjust image clarity.

1. Access the live view. For details, see *11.1 Accessing the Live View*.
2. Adjust image clarity using the GV-IP Device Utility program. For details, see *11.2 Adjusting Image Clarity*.

7.7 I/O Terminal Block

The 3-pin terminal block, located on the back panel of the PT Camera, provides the interface to one digital input and one digital output. The I/O terminal block can be used for applications such as motion detection, event alerts via E-Mail and FTP, and center monitoring through Center V2 and VSM.

7.7.1 Pin Assignment

The pin assignment for the terminal block:

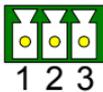


Figure 7-2

| Pin | Function |
|-----|----------|
| 1 | Output |
| 2 | GND |
| 3 | Input |

For details on how to enable an installed I/O device, see [13.2 I/O Settings](#).

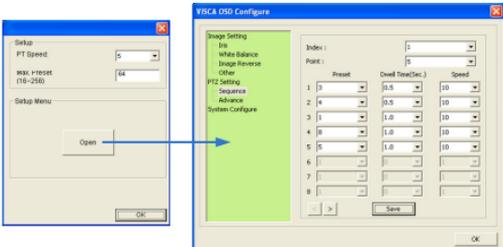
7.7.2 Voltage Load Expansion (Optional)

You can install a GV-Relay V2 to expand the maximum voltage load of your GV-PT110D. For details, see [7.7.2 Voltage Load Expansion](#).

7.8 PT Control

The GV-PT110D shares similar user interfaces and features with the GV-PTZ010D camera. The supported functions are listed in the table below.

| Supported Function | Description |
|--------------------|---|
| PT Control Panel | <p>The following buttons on the PT control panel are available: Exit, Pan / Tilt Control, Home, Option and Show Preset. For details on these functions, see <i>6.8.1 The PTZ Control Panel</i>.</p>  |
| PT Camera Settings | <p>Contains settings on PT speed and the maximum number of preset points. For details, see <i>Accessing the PTZ Camera Settings in 6.8.3 PTZ Camera Settings</i>.</p> |
| Preset point | <p>A Preset point is a point in live view that can be configured and saved for future use. For details, see <i>6.8.5 Preset Settings</i>.</p> |

| Supported Function | Description |
|--------------------|---|
| <p>Sequence</p> | <p>A Sequence consists of a series of Preset points. Configure a Sequence to direct the camera to perform a series of movements. For details, see <i>6.8.6 Sequence Settings</i>.</p>  |
| <p>Auto Pan</p> | <p>The camera can be configured to monitor the surveillance area in a horizontal movement. For details, see <i>6.8.7 Auto Pan Settings</i>.</p> |

Chapter 8 Vandal Proof IP Dome

The Vandal Proof IP Domes are designed for outdoor usage. They are equipped with automatic infrared cut filters for day and night surveillance. Model options range from 1.3. to 3 megapixels:

| Model No. | | Specification | Description |
|---|-------------------|---|---|
| GV-VD120D (IK10+, Transparent Cover) | Varifocal Lens | Megapixel, Auto Iris, f:2.7 ~ 9 mm, F/1.3, 1/3" ø 14 mm lens mount | 1.3 MP, H.264, Low Lux, Vandal Proof IP Dome |
| GV-VD121D (IK10+, Smoked Cover) | | | |
| GV-VD122D (IK7, Transparent Cover) | | | |
| GV-VD123D (IK7, Smoked Cover) | | | |
| | | | |
| GV-VD220D (IK10+, Transparent Cover) | Varifocal Lens | Megapixel, Auto Iris, f:2.7 ~ 9 mm, F/1.3, 1/3" ø 14 mm lens mount | 2 MP, H.264, Vandal Proof IP Dome |
| GV-VD221D (IK10+, Smoked Cover) | | | |
| GV-VD222D (IK7, Transparent Cover) | | | |
| GV-VD223D (IK7, Smoked Cover) | | | |
| | | | |
| GV-VD320D (IK10+, Transparent Cover) | Varifocal Lens | Megapixel, Auto Iris, f:2.7 ~ 9 mm, F/1.3, 1/3" ø 14 mm lens mount | 3 MP, H.264, Vandal Proof IP Dome |
| GV-VD321D (IK10+, Smoked Cover) | | | |
| GV-VD322D (IK7, Transparent Cover) | | | |
| GV-VD323D (IK7, Smoked Cover) | | | |
| | | | |

8.1 Packing List

- Vandal Proof IP Dome
- Screw Anchor x 4



- Ceiling Screw x 4



- T-Cap Screw x 3



- T-Cap x 3



- Focus Adjustment Cap



- 2-Pin / 3-Pin Terminal Block
- GV-IPCam H.264 Quick Start Guide
- GV-NVR Quick Start Guide

- Silica Gel Bag x 2
- Torx Wrench x 1



- Blue Screw x 3



- Small Screw Cap x 3



- Plastic Clip x 3



- DC 12V Power Adapter

- GV-IPCam H.264 Software CD
- GV-NVR Software DVD

Note: Focus Adjustment Cap is only needed and supplied for IK10+ models (GV-VD120D, 121D, 220D, 221D, 320D and 321D).

8.2 Features

- 1/3" progressive scan CMOS for GV-VD120D
1/2.5" progressive scan CMOS for GV-VD220D / 320D
- Dual video streams. Stream 1 from H.264 or MJPEG; stream 2 from H.264, MPEG4 or MJPEG
- Up to 30 fps at 1280 x 1024 for GV-VD120D
Up to 30 fps at 1920 x 1080 for GV-VD220D
Up to 20 fps at 2048 x 1536 for GV-VD320D
- Day and night function (with removable IR-cut filter)
- Intelligent IR
- IK10+ Vandal Proof (for GV-VD120D / 121D / 220D / 221D / 320D / 321D only)
- IP66 rating
- 3-axis mechanism (pan / tilt / roll)
- Micro SD / SDHC / SDXC memory card slot
- Two-way audio
- One sensor input and alarm output
- TV-out support
- Motion detection
- Tampering alarm
- Visual automation
- Text overlay
- Privacy mask
- IP address filtering
- DC 12V / AC 24V / PoE
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface

8.3 Overview



Figure 8-1

| No. | Name | Description |
|-----|------------------|---|
| 1 | Power LED | Turns on (green) when the power is on and turns off when there is no power supply. |
| 2 | Status LED | Turns on (green) when the system operates normally and turns off when system error occurs. |
| 3 | Default Button | Resets to factory default. For details, see <i>15.3 Restoring to Factory Default Settings</i> . |
| 4 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |
| 5 | Thread Lock | Locks the housing cover to the camera body to prevent the cover from falling. |
| 6 | Pan Disc | Loosens to pan the camera. |
| 7 | Tilt Screw | Loosen the screw to tilt the camera. |
| 8 | Rotational Screw | Loosens to adjust the camera angle. |
| 9 | Zoom Screw | Adjusts the zoom of the camera. |
| 10 | Focus Screw | Adjusts the focus of the camera. |
| 11 | Silica Gel Bag | Absorbs moisture in the camera body. |

8.4 Installation

The Vandal Proof IP Dome is designed for outdoors. With the standard packing, there are two ways to install the Vandal Proof IP Dome: **hard-ceiling mount** and **in-ceiling mount**.

8.4.1 Hard-Ceiling Mount



Figure 8-2

1. Unpack the camera package and take out the camera body.

Unscrew the housing cover



Unscrew thread
lock



Unscrew the inner
housing



Take out the
camera body



2. Mark the position of four screw holes on the desired installation location, and drill holes in the marked locations. Drill the ellipse part if you wish to put the wires through it.



Figure 8-3

3. Insert the screw anchors to the 4 holes on the ceiling.
4. Secure the back cover to the ceiling with 4 ceiling screws.

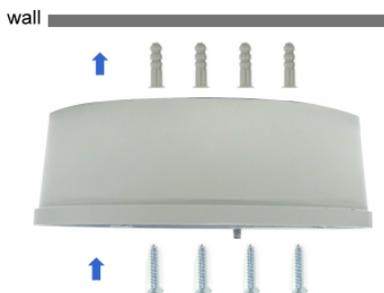


Figure 8-4

5. Refer to step 1 to secure the camera body with inner housing.
6. Thread the cable through the conduit entry at the side of the back cover. Alternatively pass the wires through the ellipse hole at the bottom of the back cover.

7. Connect the network, power and other cables to the camera. See 8.5 *Connecting the Camera*.
8. Access the live view. See 11.1 *Accessing the Live View*.
9. Based on the live view, adjust the camera to a desired angle as illustrated below.

Tip: The 3-axis mechanism offers flexible and easy installation.

Pan Adjustment

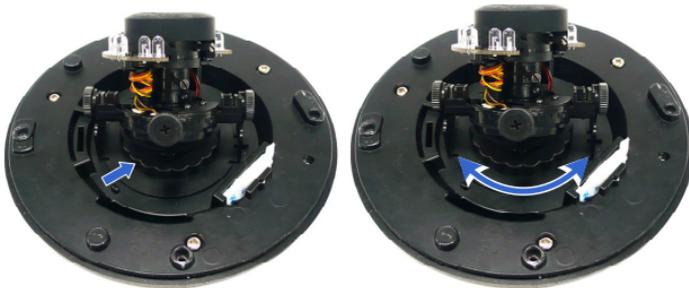


Figure 8-5

Tilt Adjustment



Figure 8-6

Rotational Adjustment



Figure 8-7

10. Adjust image clarity using the GV-IP Device Utility program. For details, see *11.2 Adjusting Image Clarity*.
11. Screw on the thread lock as shown in step 1.
12. Replace the silica gel bag on the camera body within 2 minutes of opening the silica gel bag package.
13. Secure the housing cover to the camera body as shown in step 1.

Note: Adjust the black mask inside the housing cover to make sure the camera view is not obscured.

Important:

1. To prevent the lens from fogging up, you must replace the silica gel bag every time you open the camera. The gel bag loses its effectiveness when the dry camera is opened.
 2. Make sure the housing cover is properly secured to prevent water from entering and damaging the inner housing.
-

8.4.2 In-Ceiling Mount



Figure 8-8

1. Follow step 1 in *8.4.1 Hard-Ceiling Mount* section to remove the housing cover, thread lock and back cover, and take out the camera body.
2. Cut out a circle with a diameter of 142 mm on the ceiling.
3. Insert a blue screw to the indicated holes on the camera body.



Figure 8-9

4. Screw in a plastic clip to the blue screw, hold it with one hand and use a screw driver to rotate the blue screw until the plastic clip moves half way down.

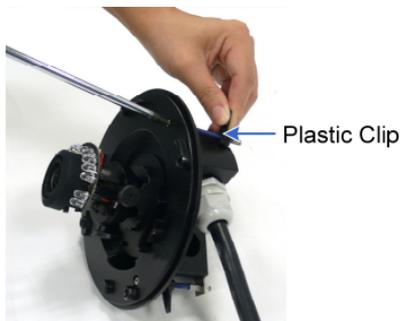


Figure 8-10

5. Secure a T-cap on top of the blue screw with a small screw cap and a T-cap screw. Do not tighten the small screw cap so that the plastic clip can move down freely.

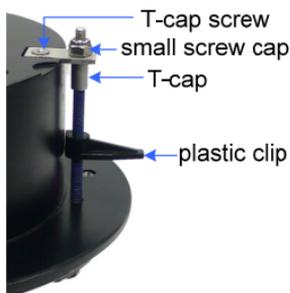


Figure 8-11

6. Repeat steps 4 and 5 for the other two blue screws.

7. Insert the camera to the ceiling with the plastic screws moved inward.



Figure 8-12

8. Move the blue screws out and rotate the blue screw with a screw driver until the plastic clip and the bottom of the camera body clamps the ceiling tightly.



Figure 8-13

9. Connect the network, power and other cables to the camera. See [8.5 Connecting the Camera](#).
10. Access the live view. See [11.1 Accessing the Live View](#).
11. Follow steps 9 to 10 in [8.4.1 Hard-Ceiling Mount](#) section to adjust the angle, focus and zoom of the camera.
12. Follow steps 11 to 13 in [8.4.1 Hard-Ceiling Mount](#) section to secure the thread lock, replace the silica gel bag and secure the housing cover.

8.5 Connecting the Camera

Connect your Vandal Proof IP Dome to power, network and other cables needed.

8.5.1 Wire Definition

The cables of Vandal Proof IP Dome are illustrated and defined below.

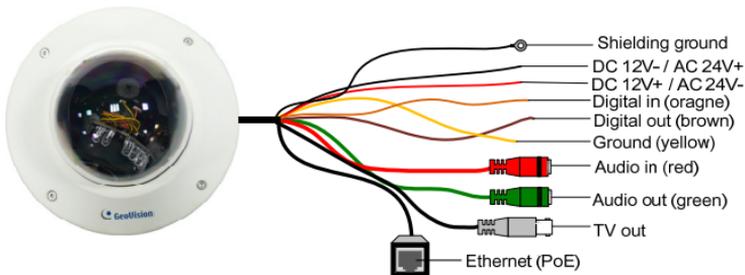


Figure 8-14

| No. | Wire Color | Definition |
|-----|---------------|-------------------|
| 1 | Black (thick) | Shielding Ground |
| 2 | Black (thin) | DC 12V+ / AC 24V+ |
| 3 | Red | DC 12V- / AC 24V- |
| 4 | Orange | Digital In |
| 5 | Brown | Digital out |
| 6 | Yellow | Ground |
| 7 | Red RCA | Audio in |
| 8 | Green RCA | Audio out |
| 9 | Black BNC | TV out |

Note: To use the TV out function, connect the black BNC connector to a monitor and select your signal format (NTSC or PAL) at the TV Out field on the Web interface. For details, see [13.1.1 Video Settings](#).

8.5.2 Power Connection

There are two ways to supply power to the camera:

- Use a Power over Ethernet (PoE) adapter to connect the camera to the network, and the power will be provided at the same time.
- Use the supplied Terminal Block and power adapter. Follow the steps below to connect the Terminal Block and the power adapter.

1. Insert the thin black wire of the Vandal Proof IP Dome to the left pin and the red wire to the right pin.

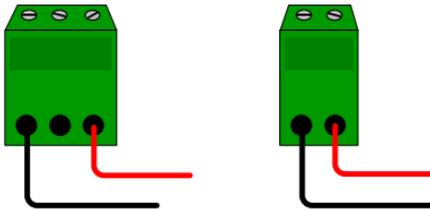


Figure 8-15

2. Connect the DC 12V Power Adapter to the Terminal Block.



Figure 8-16

8.5.3 Voltage Load Expansion (Optional)

The camera can only drive a maximum load of 200mA 5V DC. Connect the camera to a GV-Relay V2 module (optional product) to expand the maximum voltage load. See a comparison on maximum voltage loads with and without GV-Relay:

| Models | Maximum Voltage Load | |
|--------------------------------|----------------------|--|
| | Without GV-Relay V2 | With GV-Relay V2 |
| GV-Vandal Proof IP Dome | 200mA 5V DC | 10A 250V AC, 10A 125V AC, 5A 100V DC |

To connect the GV-Relay V2 module to the Vandal Proof IP Dome, refer to the figure and table below.

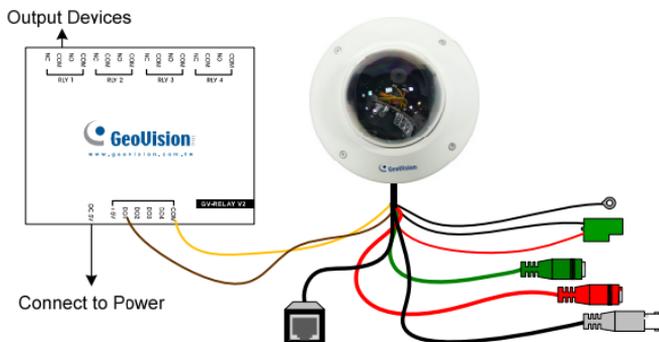


Figure 8-17

| GV-Relay V2 | Bullet Camera |
|-------------|---------------------|
| COM | Ground (Yellow) |
| DO1 | Digital Out (Brown) |

Chapter 9 Fixed IP Dome

The Fixed IP Dome is an indoor device designed with 3-axis mechanism for easy and flexible installation. The Fixed IP Dome also features IR LED for infrared illumination during low light conditions. Three models are available:

| Model No. | | Specification | Description |
|-----------|----------------|--|---------------------------------------|
| GV-FD120D | Varifocal Lens | Megapixel, Auto Iris, f:2.7 ~ 9 mm, F/1.3, 1/3" \varnothing 14 mm lens mount | 1.3 MP, H.264, Low Lux, Fixed IP Dome |
| GV-FD220D | | | 2 MP, H.264, Fixed IP Dome |
| GV-FD320D | | | 3 MP, H.264, Fixed IP Dome |

9.1 Packing List

9.1.1 Packing List for Hard-Ceiling Mount

- Fixed IP Dome



- Torx Wrench x 1



- Mounting Plate x 1



- Short Screw Anchor x 3



- Ceiling Screw x 3



- Plate Screw x 3



- TV-out Wire



- DC 12V Power Adapter

- Sticker

- GV-IPCAM H.264 Quick Start Guide

- GV-IPCam H.264 Software CD

- GV-NVR Quick Start Guide

- GV-NVR Software DVD

9.1.2 Packing List for In-Ceiling Mount

- In-Ceiling Housing Cover



- Mounting Plate x 1



- Mounting Bracket x 3



- Copper Pillar x 3



- Copper Pillar Screw x 6



- Bracket Screw x 3



- Thread Lock Screw x 1



- Housing Cover Thread

- Sticker (In-Ceiling Mount)

9.2 Features

- 1/3" progressive scan CMOS for GV-FD120D
1/2.5" progressive scan CMOS for GV-FD220D / 320D
- Dual video streams. Stream 1 from H.264 or MJPEG; stream 2 from H.264, MPEG4 or MJPEG
- Up to 30 fps at 1280 x 1024 for GV-FD120D
Up to 30 fps at 1920 x 1080 for GV-FD220D
Up to 20 fps at 2048 x 1536 for GV-FD320D
- Day and night function (with removable IR-cut filter)
- 3-axis mechanism (pan / tilt / roll)
- Built-in IR LED
- Micro SD / SDHC / SDXC memory card slot
- Two-way audio
- One sensor input and alarm output
- TV-out support
- Motion detection
- Tampering alarm
- Visual automation
- Text overlay
- Privacy mask
- IP address filtering
- DC 12V / AC 24V / PoE
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface

9.3 Overview

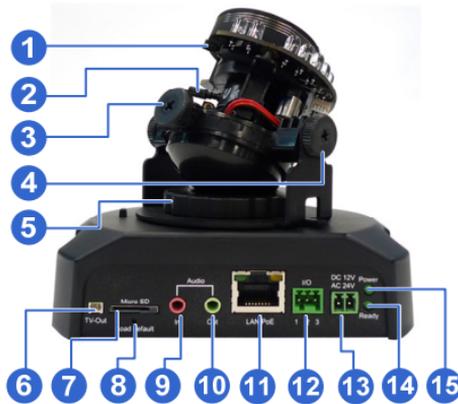


Figure 9-1

| No. | Name | Description |
|-----|------------------|--|
| 1 | Focus Screw | Adjusts the focus of the camera. |
| 2 | Zoom Screw | Adjusts the zoom of the camera. |
| 3 | Rotational Screw | Loosens to adjust the camera angle. |
| 4 | Tilt Screw | Loosens the screw to tilt the camera. |
| 5 | Pan Disc | Loosens to pan the camera. |
| 6 | Video Out | Connects to a portable monitor for setting the focus and angle of Fixed IP Dome during initial installation. |
| 7 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |
| 8 | Default Button | Resets to factory default. For details, see <i>15.3. Restoring to Factory Default Settings</i> . |
| 9 | Audio In | Connects a microphone for audio input. |
| 10 | Audio Out | Connects a speaker for audio output. |
| 11 | LAN / PoE | Connects to a 10/100 Ethernet or PoE. |

| No. | Name | Description |
|-----|--------------------|--|
| 12 | I/O Terminal Block | Connects I/O devices. For details, see 9.6 <i>I/O Terminal Block</i> . |
| 13 | DC 12V Port | Connects to power. |
| 14 | Status LED | Turns on (green) when the system operates normally and turns off when system error occurs. |
| 15 | Power LED | Turns on (green) when the power is on and turns off when there is no power supply. |

9.4 Installation

The Fixed IP Dome is designed for indoors. With the standard packing, there are three ways to install the Fixed IP Dome: **hard-ceiling mount**, **in-ceiling mount** and **wall-surface mount**.

9.4.1 Hard-Ceiling Mount



Figure 9-2

1. Paste the supplied sticker onto a desired location on the ceiling. Drill the three red dots and the ellipse mark only if you wish to run the wires into the ceiling.
2. Unpack the camera package and take out the camera body.

Use the torx wrench to loosen the housing cover at the front and the back



Figure 9-3

Take out the camera body



Figure 9-4

3. Secure the camera body to the mounting plate with three ceiling screws.

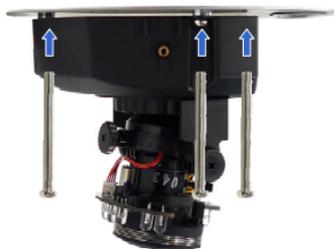


Figure 9-5

4. Connect the network, power and other cables to the camera. See 9.5 *Connecting the Camera*.
5. Access the live view. See 11.1 *Accessing the Live View*.

- Based on the live view, adjust the camera to a desired angle as illustrated below.

Tip: The 3-axis mechanism offers flexible and easy ceiling / wall installation.

Pan Adjustment



Figure 9-6

Tilt Adjustment



Figure 9-7

Rotational Adjustment



Figure 9-8

7. Adjust image clarity using the GV-IP Device Utility program. For details, see *11.2 Adjusting Image Clarity*.
8. Secure the housing cover as shown in step 2. Remove the indicated part when necessary.



Figure 9-9

Note: Adjust the black mask inside the housing cover to make sure the camera view is not obscured.

9.4.2 In-Ceiling Mount



Figure 9-10

1. Follow step 2 in the 9.4.1 *Hard-Ceiling Mount* to remove the housing cover and take out the camera body.
2. Paste the supplied sticker onto a desired location on the ceiling and cut a circle on the ceiling along the edge of the sticker.
3. On the mounting plate, locate the 3 holes labeled as 1 and insert the 3 copper pillars from the back side.



Figure 9-11

4. From the side with the numbering, secure the copper pillars with 3 copper pillar screws.

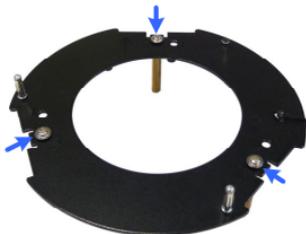


Figure 9-12

5. Place the 3 mounting brackets at the indent next to the copper pillars (labeled as 2 on the mounting plate) and secure them using the 3 bracket screws.



Figure 9-13

- Place the mounting plate on the camera body with the copper pillars inserted in the locations indicated below. The arrow on the mounting plate should be pointing toward the front of the camera.

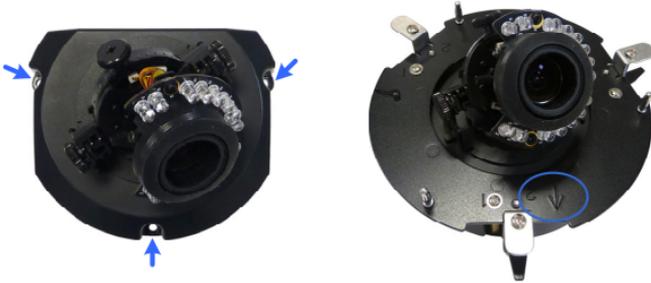


Figure 9-14

- From the bottom of the camera, secure the copper pillars using the 3 copper pillars screws.
- Place the camera into the ceiling opening.
- On the back side, make sure the black plastic clips are slightly above the ceiling board and pointing outward.



Back Side



Front Side

Figure 9-15

- Tighten the bracket screws from the front side of the camera.
- Connect the network, power and other cables to the camera. See 9.5 *Connecting the Camera*.

12. Access the live view. See *11.1 Accessing the Live View*.
13. Follow steps 6 and 7 in *9.4.1 Hard-Ceiling Mount* section to adjust the angle, focus and zoom of the camera.
14. Use the housing cover thread and the thread lock screw to attach the housing cover to the camera body.



Figure 9-16

15. Place the housing cover on the camera body with the GeoVision logo pointing toward the front of the camera.



Figure 9-17

9.4.3 Wall-Surface Mount



Figure 9-18

1. Follow step 2 in 9.4.1 *Hard-Ceiling Mount* section to remove the housing cover and take out the camera body.
2. Paste the supplied sticker onto a desired location on the wall. Drill the three red dots, and the ellipse mark only if you wish to run the wires into the wall.
3. Insert the short screw anchors and secure the camera and the mounting plate with three plate screws.



Figure 9-19

4. Connect the network, power and other cables to the camera. See 9.5 *Connecting the Camera*.

5. Access the live view. See *11.1 Accessing the Live View*.
6. Follow steps 6 and 7 in *9.4.1 Hard-Ceiling Mount* section to adjust the angle, focus and zoom of the camera.
7. Follow step 8 in *9.4.1 Hard-Ceiling Mount* section to secure the housing cover.

9.5 Connecting the Camera



Figure 9-20

1. Use a standard network cable to connect the camera to your network.
2. Optionally connect a speaker and an external microphone.
3. Optionally connect a monitor using a Video Out wire. Enable this function by selecting your signal format at the **TV Out** field on the Web interface. See *13.1.1 Video Settings*.
4. Optionally connect to input / output devices. For details, see *9.6 I/O Terminal Block*.
5. Connect power using one of the following methods:
 - plugging the supplied power adapter to power port.
 - using the Power over Ethernet (PoE) function and the power will be provided over the network cable.
6. The status LED of the camera will be on.

9.6 I/O Terminal Block

The terminal block, located on the back panel of the Fixed IP Dome, provides the interface to one input and one output devices. The I/O terminal block can be used for applications such as motion detection, event alerts via E-Mail and FTP, and center monitoring through Center V2 and VSM.

9.6.1 Pin Assignment

The Fixed IP Dome supports one digital input and one digital output of dry contact.

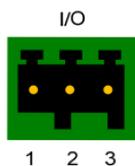


Figure 9-21

| Pin | Function |
|-----|----------------|
| 1 | Digital Output |
| 2 | GND |
| 3 | Digital Input |

9.6.2 Voltage Load Expansion (Optional)

The camera can only drive a maximum load of 200mA 5V DC. Connect the camera to a GV-Relay V2 module (optional product) to expand the maximum voltage load. See a comparison on maximum voltage loads with and without GV-Relay below:

| Models | Maximum Voltage Load | |
|--|----------------------|--|
| | Without GV-Relay V2 | With GV-Relay V2 |
| GV-FD120D GV-FD220D GV-FD320D | 200mA 5V DC | 10A 250V AC, 10A 125V AC, 5A 100V DC |

To connect the GV-Relay V2 module to the Fixed IP Dome, refer to the figure and table below.

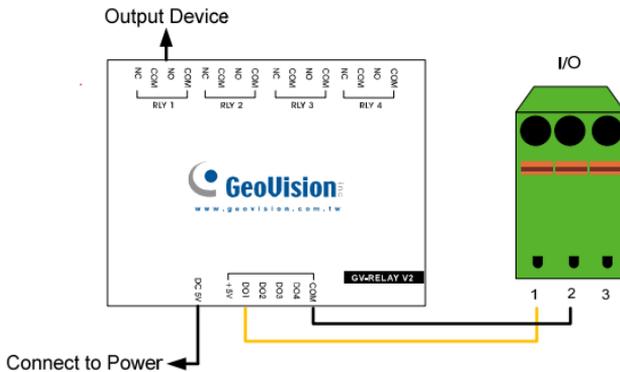


Figure 9-22

| GV-Relay V2 | Bullet Camera |
|-------------|------------------------|
| COM | Pin 2 (GND) |
| DO1 | Pin 1 (Digital Output) |

Chapter 10 Cube Camera

The Cube Camera is a light weighted wired / wireless network camera designed for indoor usage. Its simple design allows for fast and easy installation and fixed-spot surveillance once installed. Four models are available:

| Model No. | | Specification | Description |
|-----------|---------------|---|---|
| GV-CB120 | Fixed Lens | Megapixel, Fixed Iris, f: 3.35 mm, F/2.4, 1/3" M12 mm lens mount | 1.3 MP, H.264, Cube Camera |
| GV-CB220 | | | 2 MP, H.264, Cube Camera |
| GV-CBW120 | | | 1.3 MP, H.264, Wireless Cube Camera |
| GV-CBW220 | | | 2 MP, H.264, Wireless Cube Camera |

10.1 Packing List

- Cube Camera



- Supporting Rack



- Screw x 3



- Screw Anchor x 3



- DC 5V or DC 12V Power Adapter
(for GV-CB120 / 220)

- DC 5V Power Adapter
(for GV-CBW120 / 220)

- GV-IPCAM H.264 Quick Start Guide

- GV-IPCam H.264 Software CD

- GV-NVR Quick Start Guide

- GV-NVR Software DVD

10.2 Features

- 1/2.5" progressive scan CMOS
- Stream 1 from H.264 or MJPEG; stream 2 from H.264, MPEG4 or MJPEG
- Up to 30 fps at 1280 x 1024 for GV-CB120 / CBW120
Up to 30 fps at 1920 x 1080 for GV-CB220 / CBW220
- Day and night function (electronic)
- Wireless connectivity: WiFi 802.11b/g/n (for GV-CBW120 / 220 only)
- Two-way audio
- Micro SD / SDHC / SDXC memory card slot
- Motion detection
- Tampering alarm
- Text overlay
- Privacy mask
- IP address filtering
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface

10.3 Overview

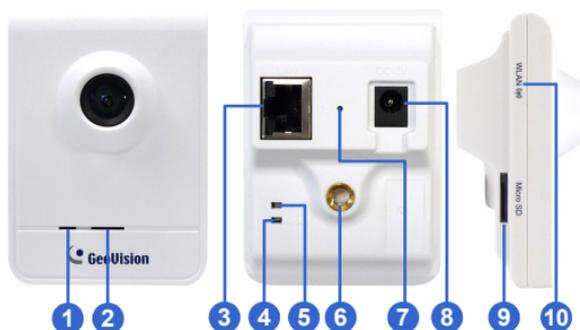


Figure 10-1

| No. | Name | Description |
|-----|-----------------------|---|
| 1 | Microphone | Receives sounds. |
| 2 | Speaker | Plays sounds. |
| 3 | LAN | Connects to a 10/100 Ethernet. |
| 4 | Status LED | Turns red when the system powers on. Turns orange when the system is ready. |
| 5 | LAN LED | Turns green when the camera is connected to the Internet through wires. Turns blue when wireless service is enabled (for GV-CBW120 / 220 only). |
| 6 | Stand screw | Connects to the Supporting Rack. |
| 7 | Default Button | Resets to factory default. For details, see <i>15.3. Restoring to Factory Default Settings</i> . |
| 8 | Power port | Connects to the supplied power adapter. |
| 9 | Memory Card Slot | Inserts a micro SD / SDHC / SDXC card to store recording data. |
| 10. | Wireless LAN Receiver | Indicates that the camera supports wireless connection (for GV-CBW120/220 only). |

10.4 Installation

Follow the steps below to install, connect to and adjust your Cube Camera and Wireless Cube Camera.

1. Put the supporting rack on the desired location and make marks for screw anchors.



Figure 10-2

2. Drill the marks and insert the screw anchors.
3. Secure the supporting rack onto the wall using the supplied screws.
4. Screw the camera onto the supporting rack and fasten the indicated screw.



Figure 10-3

5. Connect the network and power cables to the camera. See *10.5 Connecting the Camera*.
6. Access the live view. See *11.1 Accessing the Live View*.
7. Adjust the angle of the camera based on live view and fasten the indicated screw.



Figure 10-4

8. For GV-CBW120/220, to connect to the Internet through wireless service, follow the steps in *11.1.3 Configuring the Wireless Connection*.

10.5 Connecting the Camera



Figure 10-5

1. Use a standard network cable to connect the camera to your network.
2. Power on using the supplied power adapter.
3. The status LED of the camera will be orange.

Chapter 11 Advanced Cube Camera

The Advanced Cube Camera integrates the passive infrared (PIR) sensor and the alarm LED. It can detect the movement and illuminate the LED within 5 meters. It also offers wireless connection to the network for flexible installation. It is small, light, and easy-to-use for indoor security. We provide four models:

| Model No. | | Specification | Description |
|-----------|------------|--|-------------------------------------|
| GV-CA120 | Fixed Lens | Megapixel, Fixed Iris, f: 3.35 mm, F/2.4, 1/3" M12 mm lens mount | 1.3 MP, H.264, Cube Camera |
| GV-CA220 | | | 2 MP, H.264, Cube Camera |
| GV-CAW120 | | | 1.3 MP, H.264, Wireless Cube Camera |
| GV-CAW220 | | | 2 MP, H.264, Wireless Cube Camera |

11.1 Packing List

- Advanced Cube Camera



- Supporting Rack



- Screw x 3



- Screw Anchor x 3



- DC 5V Power Adapter
- GV-IPCAM H.264 Quick Start Guide
- GV-NVR Quick Start Guide

- GV-IPCam H.264 Software CD
- GV-NVR Software DVD

11.2 Features

- 1/2.5" progressive scan CMOS
- Stream 1 from H.264 or MJPEG; stream 2 from H.264, MPEG4 or MJPEG
- Up to 30 fps at 1280 x 1024 for GV-CA120 / CAW120
Up to 30 fps at 1920 x 1080 for GV-CA220 / CAW220
- Day and night function (electronic)
- Passive infrared (PIR) sensor for detecting movement and activating the alarm LED
- Wireless connectivity: WiFi 802.11b/g/n (for GV-CAW120 / 220 only)
- DV 5V / PoE
- Two-way audio
- Micro SD / SDHC / SDXC memory card slot
- Motion detection
- Tampering alarm
- Text overlay
- Privacy mask
- IP address filtering
- Megapixel lens
- Smart device access
- 31 languages on Web interface

11.3 Overview



Figure 11-1

| No. | Name | Description |
|-----|------------------|--|
| 1 | Speaker | Plays sounds. |
| 2 | PIR sensor | Passive infrared sensor. |
| 3 | Microphone | Receives sounds. |
| 4 | Alarm LED | When the PIR sensor detects the movement, the LED lights up. |
| 5 | Monitoring LED | Reflects monitoring status of the camera. See the below table. |
| 6 | Live View LED | Reflects live view status of the camera. See the below table. |
| 7 | LAN / PoE | Connects to a 10/100 Ethernet or PoE. |
| 8 | Stand screw | Connects to the Supporting Rack. |
| 9 | Power port | Connects to the supplied power adapter. |
| 10 | Ready LED | Reflects system status of the camera. See the below table. |
| 11 | LAN LED | Reflects LAN status of the camera. See the below table. |
| 12 | Memory Card Slot | Inserts a micro SD/SDHC/SDXC card to store recording data. |

| LED | Status | Description |
|---|--|--|
| Live View  |  | Turns on orange light when you see the live view. |
| Monitoring  |  | Turns on red light when you start monitoring. |
| Ready  |  | <ul style="list-style-type: none"> - Turns on green light when the system is ready. - Flashes green light when you load default value. |
| LAN  |   | <ul style="list-style-type: none"> - Turns on green light when you connect the LAN Network. - Turns on blue light when you connect the Wi-Fi Network (for GV-CAW120 / 220 only). |

11.4 Installation

Follow the steps below to install, connect to and adjust your Advanced Cube Camera and Wireless Advanced Cube Camera.

1. Put the supporting rack on the desired location and make marks for screw anchors.



Figure 11-2

2. Drill the marks and insert the screw anchors.
3. Secure the supporting rack onto the wall using the supplied screws.
4. Screw the camera onto the supporting rack and fasten the indicated screw.



Figure 11-3

5. Connect the network and power cables to the camera. See *12.5 Connecting the Camera*.
6. Access the live view. See *13.1 Accessing the Live View*.
7. Adjust the angle of the camera based on live view and fasten the indicated screw.



Figure 11-4

8. For GV-CAW120/220, to connect to the Internet through wireless service, follow the steps in *13.1.3 Configuring the Wireless Connection*.

11.5 Connecting the Camera



Figure 11-5

1. Use a standard network cable to connect the camera to your network.
2. Connect power using one of the following methods:
 - plugging the supplied power adapter to the power port.
 - using the Power over Ethernet (PoE) function and the power will be provided over the network cable.
3. When the ready LED of the camera shines green, the camera is ready.

Note: PoE function is only supported for GV-CA120 and GV-CA220.

Chapter 12 Getting Started

This section provides the initial and basic configurations of the GV-IPCAM H.264.

12.1 Accessing the Live View

Access or configure your camera according to the camera type and its firmware version:

| Camera Type & Firmware Version | Default Connection Type |
|---|---|
| <ul style="list-style-type: none"> GV-IPCAM H.264 with firmware V1.07 or later (except GV-BX110D, BL110D, GV-MFD110, GV-PT110D, GV-PTZ010D) | <p>DHCP</p> <p>An unused IP address is automatically assigned by the DHCP server to the camera when the camera is connected to the network. Refer to 12.1.1 Checking the Dynamic IP Address to look up the IP address.</p> <p>However, if the camera is installed in a LAN without DHCP server, access the camera by its default IP address 192.168.0.10 and see 12.1.2 Configuring the IP Address for more detail.</p> |

| Camera Type & Firmware Version | Default Connection Type |
|---|---|
| <ul style="list-style-type: none">● GV-IPCAM H.264 with firmware V1.06 or earlier● GV-BX110D● GV-BL110D● GV-MFD110● GV-PT110D● GV-PTZ010D | <p>Static</p> <p>The default IP address 192.168.0.10 will be automatically assigned when the camera is connected to the network.</p> <p>To avoid IP conflict with other GeoVision IP devices, it is advisable to re-assign a different IP address. See 12.1.2 <i>Configuring the IP Address</i> for more detail.</p> |

12.1.1 Checking the Dynamic IP Address

Follow the steps below to look up the IP address and access the Web interface.

1. Install the GV-IP Device Utility program included on the *GV-IPCAM H.264 Software CD*.

Note: The PC installed with GV-IP Device Utility must be under the same LAN with the GV-IPCAM H.264 you wish to configure.

2. On the GV-IP Utility window, click the  button to search for the IP devices connected in the same LAN. Click the **Name** or **Mac Address** column to sort.

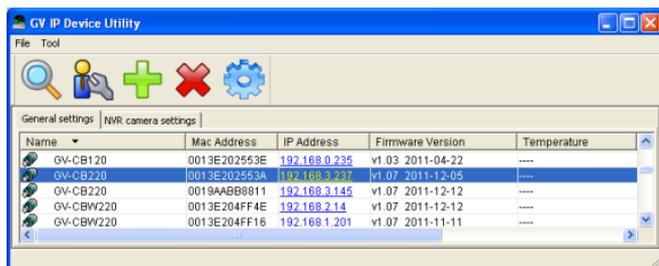


Figure 12-1

- Find the camera with its Mac Address, click on its IP address and select **Web Page**.

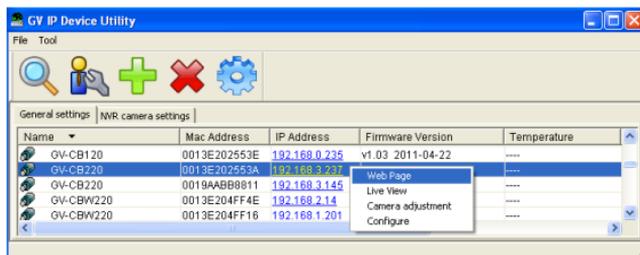


Figure 12-2

- The login page appears.

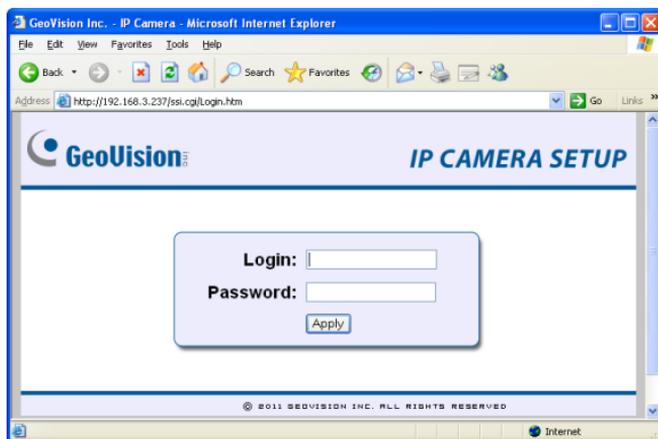


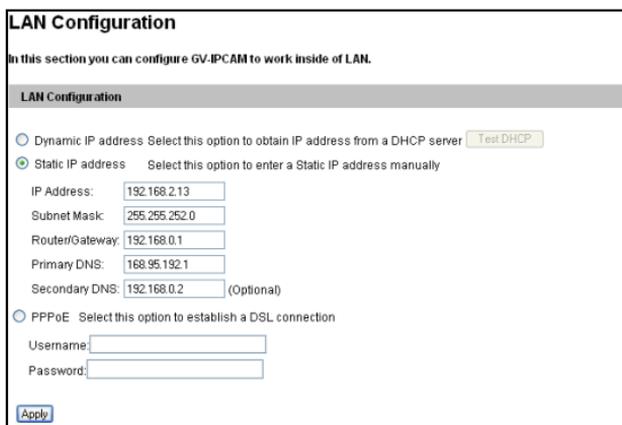
Figure 12-3

- Type the default ID and password **admin** and click **Apply** to log in.

12.1.2 Configuring the IP Address

Follow the steps below to configure the IP address.

1. Open your web browser, and type the default IP address <http://192.168.0.10>.
2. In both Login and Password fields, type the default value **admin**. Click **Apply**.
3. In the left menu, select **Network** and then **LAN** to begin the network settings. This page appears.



LAN Configuration

In this section you can configure GV-IPCAM to work inside of LAN.

LAN Configuration

Dynamic IP address Select this option to obtain IP address from a DHCP server

Static IP address Select this option to enter a Static IP address manually

IP Address:

Subnet Mask:

Router/Gateway:

Primary DNS:

Secondary DNS: (Optional)

PPPoE Select this option to establish a DSL connection

Username:

Password:

Figure 12-4

4. Select **Dynamic IP address**, **Static IP address** or **PPPoE** and type the required network information.
5. Click **Apply**. The camera is now accessible by entering the assigned IP address on the web browser.

Important:

1. If **Dynamic IP Address** or **PPPoE** is enabled, you need to know which IP address the camera will get from DHCP server or ISP to log in. If your camera is installed in the LAN, use the GV-IP Device Utility to look up its current dynamic IP address. See *12.1.1 Checking the Dynamic IP Address*. If your camera uses a public dynamic IP address via PPPoE, use the dynamic DNS Service to obtain a domain name that is linked to the camera's changing IP address first. For details on Dynamic IP Address and PPPoE, see *14.7.1 LAN Configuration* and *14.7.3 Advanced TCP/IP*.
2. If **Dynamic IP Address** or **PPPoE** is enabled and you cannot access the camera, you may have to reset it to the factory default and then perform the network settings again.

To restore the factory settings, see *16.3 Restoring to Factory Default Settings*.

12.1.3 Configuring the Wireless Connection

For GV-CBW120/220 and GV-CAW120/220, you may choose to create wireless connection to the Internet.

- To set up the wireless LAN for the first time, power on and connect a standard network cable to the camera.
- An IP address will be automatically assigned to the camera. Use GV IP Device Utility to search for the device. For details, see *12.1.1 Checking the Dynamic IP Address*.
- Configure the wireless settings.
 - On the Web interface, select **Network**, select **Wireless** and **Client Mode**. This dialog box appears.

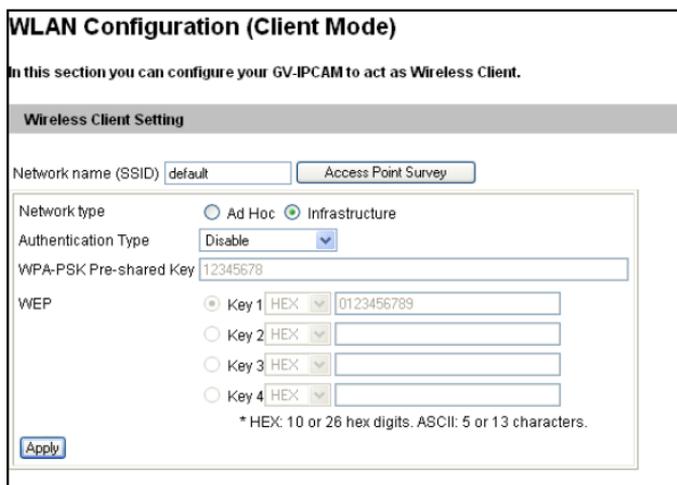


Figure 12-5

- Type the Network Name (SSID) or click the **Access Point Survey** button to search and select for the available Access Points/wireless stations.

- C. Select **Ad-Hoc** or **Infrastructure** for the Network type.
- D. Select the **Authentication Type** using the drop-down list. You can also obtain this information by clicking the **Access Point Survey** button.
- E. Type the **WPA-PSK Pre-shared Key** or **WEP** depending on the encryption setting for the Access Point.
- F. Click **Apply** to save the configuration.

Note:

1. Your encryption settings must match those used by the Access Points or wireless stations with which you want to associate.
 2. When **Ad Hoc** is used, only **WEP** encryption is supported.
 3. When you lose the wireless access, you can still access the unit by connecting it to a LAN and using the GV IP Device Utility to search for the device.
 4. For detailed information on configuring the wireless LAN, see [14.7.2 Wireless Client Mode](#).
-

4. Enable wireless LAN.

- A. On the Web interface, select **Network** and **LAN**. This page appears.

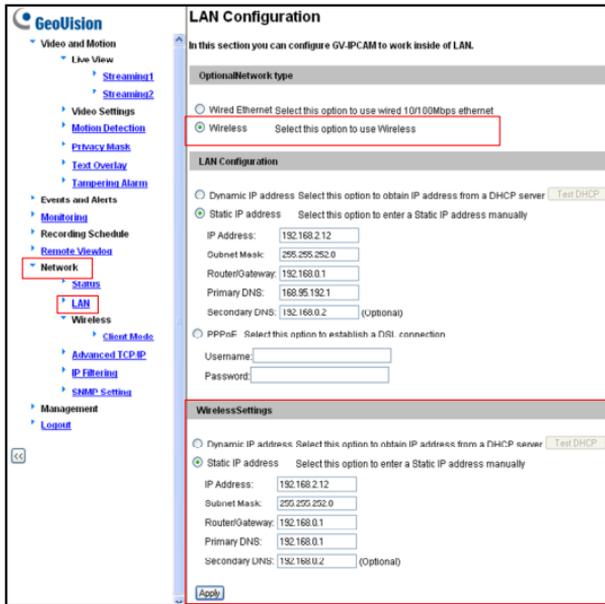


Figure 12-6

- B. Select **Wireless** for Optional Network Type
- C. To use a dynamic IP address assigned by the DHCP server, select **Dynamic IP address**. To use a fixed IP address, select **Static IP address** and type the IP address information.
5. Click **Apply**. The Camera will start creating a wireless connection to the access point. The connection is established when the LAN LED turns blue (No.10, Figure 10-1).
6. Unplug the Ethernet cable.

12.2 Adjusting Image Clarity

Note the procedures described in this section only apply to **Box Camera, IR Arctic Box Camera, GV-MFD110, Bullet Camera, PT Camera, Vandal Proof IP Dome** and **Fixed IP Dome**. To adjust focus of a PTZ camera, refer to *6.6 Focus Adjustment*; for Mini Fixed Rugged Dome, Cube Camera and Advanced Cube Camera, refer to Camera Adjustment in *13.2.2 The Control Panel on the Live View Window*.

After you have connected your GV-IPCAM H.264 to the network, follow the steps below to adjust image clarity.

1. Make sure you have installed the GV-IP Device Utility program included on the GV-IPCAM H.264 Software CD.

Note: The PC installed with GV-IP Device Utility must be under the same LAN with the GV-IPCAM H.264 you wish to configure.

- On the GV-IP Utility window, click the  button to search for the IP devices connected in the same LAN. Click the IP Address of the camera you desire. A drop-down list appears.

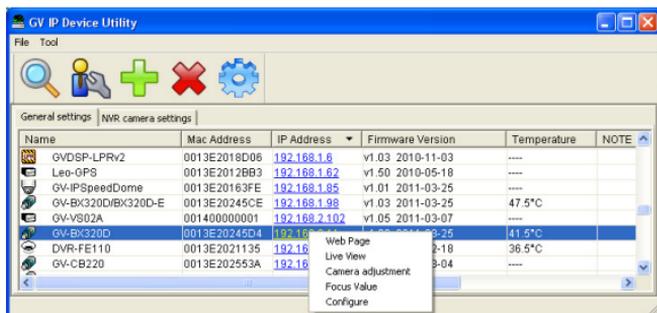


Figure 12-7

- Select Focus Value. The Login dialog box appears.

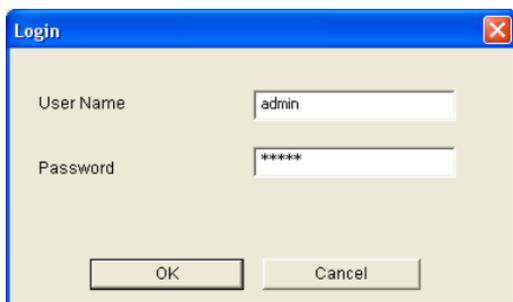


Figure 12-8

4. Type the user name and password of the camera selected. The default is **admin** for both user name and password. This window appears.

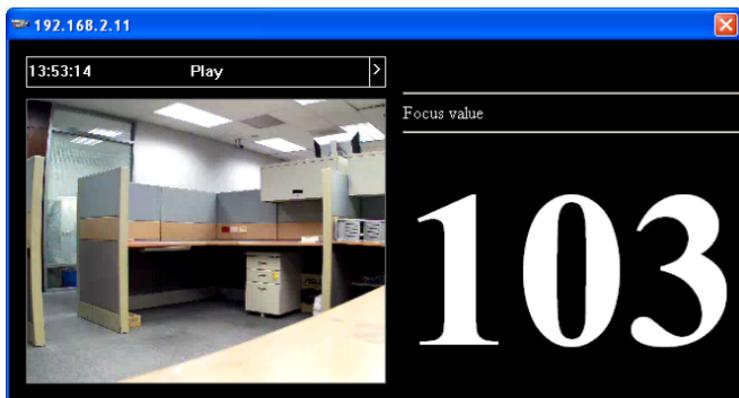


Figure 12-9

5. For **GV-VD120D / 121D, VD-220D / 221D and VD-320D / 321D**, hold the supplied Focus Adjustment Cap over the camera view. For details, see *12.2.1 Using Focus Adjustment Cap* for details.
6. Adjust the Focus Screw and the Zoom Screw of the camera slowly until the focus value reaches the maximum. For example, the maximum focus value in Step 4 is 103. For locations of adjustment screws in each model, see *12.2.2 Locations of Adjustment Screws*.

Note:

1. Do not over tighten the screws. The screws only need to be as tight as your fingers can get them to be. Do not bother using any tool to get them tighter. Doing so can damage the structure of lens.
 2. The maximum focus value may vary when the environment changes.
-

12.2.1 Using Focus Adjustment Cap

There are two types of Focus Adjustment Caps for **GV-VD120D / 121D**, **VD-220D / 221D** and **VD-320D / 321D**. Hold and close the Focus Adjustment Cap to the lens in order to simulate the IK10+ housing cover before installing it.

Focus Adjustment Cap Type I:



Hold the Focus Adjustment Cap on top of the camera view and slightly tilt to one side to adjust the image.

Focus Adjustment Cap Type II :

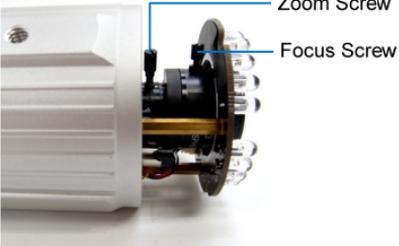


Hold the Focus Adjustment Cap on top of the camera view and keep it close to the camera.



Do not leave a distance between the Focus Adjustment Cap and the camera.

12.2.2 Locations of Adjustment Screws

| Models | Adjustment Screws |
|---------------|---|
| GV-BX110D |  <p>Zoom Screw</p> <p>Focus Screw</p> |
| Box Camera |  <p>Zoom Screw</p> <p>Focus Screw</p> |
| GV-MFD110 |  <p>Focus Fixed Screw</p> <p>Focus Screw</p> |
| Bullet Camera |  <p>Zoom Screw</p> <p>Focus Screw</p> |

| Models | Adjustment Screws |
|----------------------|--|
| PT Camera |  |
| Vandal Proof IP Dome |  |
| Fixed IP Dome |  |

Note: GV-BX110D (fixed lens) and GV-BX130D-1 do not contain a Zoom Screw.

12.3 Configuring the Basics

Once the camera is properly installed, the following important features can be configured using the browser-based configuration page and are discussed in the following sections in this manual:

- **Date and time adjustment:** see *14.8.1 Date & Time Settings*.
- **Login and privileged passwords:** see *14.8.4 User Account*.
- **Network gateway:** see *14.7 Network*.
- **Camera image adjustment:** see *13.2.2 The Control Panel of the Live View Window*.
- **Video format, resolution and frame rate:** see *14.1.1 Video Settings*.

Chapter 13 Accessing the Camera

Two types of users are allowed to log on to the GV-IPCAM H.264:

Administrator and **Guest**. The Administrator has unrestricted access to all system configurations, while the Guest has the access to live view and network status only.

13.1 Accessing Your Surveillance Images

Once installed, your GV-IPCAM H.264 is accessible on a network. Follow these steps to access your surveillance images:

1. Start your web browser.
2. Enter the IP address or the domain name of the camera in the **Location/Address** field of your browser.

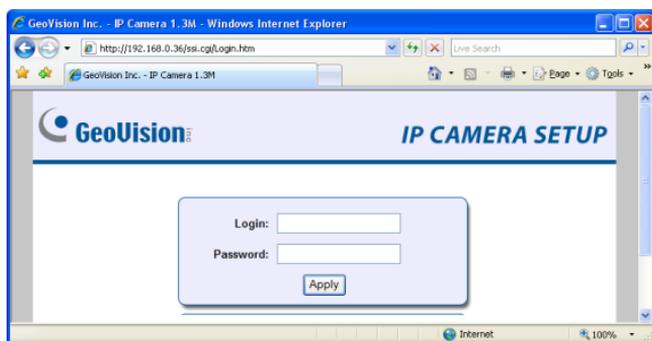


Figure 13-1

3. Enter the login name and password.
 - The default login name and password for Administrator are **admin**.
 - The default login name and password for Guest are **guest**.

4. Click **Apply**. A video image, similar to the example on Figure 13-2, is now displayed in your browser.

Note: To enable the updating of images in Internet Explorer, you must set your browser to allow ActiveX Controls and perform a once-only installation of GeoVision's ActiveX component onto your computer.

13.2 Functions Featured on the Main Page

This section introduces the features of the **Live View** window and **Network Status** on the main page. The two features are accessible by both Administrator and Guest.

Main Page of Guest Mode

- ▼ Video and Motion
 - ▶ Live View
 - ▶ Camera
- ▼ Network
 - ▶ Status

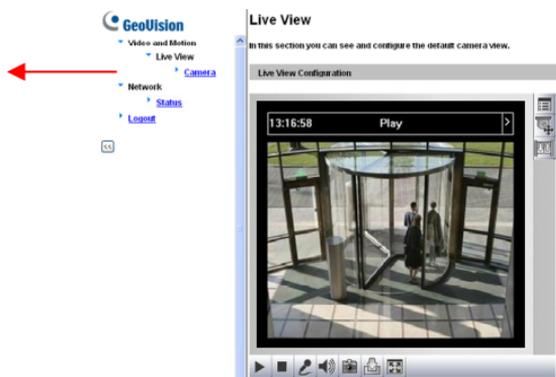


Figure 13-2

The GV-IPCAM H.264 can process one video stream in two different codec and image settings. In the Administrator mode, both streams are available. Click **Streaming 1** or **Streaming 2** in the left menu to access the live view. In the Guest mode, only one stream is available, as shown in *Figure 13-2*.

13.2.1 The Live View Window

Internet Explorer

When accessing the live view using Internet Explorer, the following window appears.



Figure 13-3A



Figure 13-3B

| No. | Name | Function |
|-----|------------|---|
| 1 | Play | Plays live video. |
| 2 | Stop | Stops playing video. |
| 3 | Microphone | Talks to the surveillance area from the local computer. |
| 4 | Speaker | Listens to the audio around the camera. |

| No. | Name | Function |
|-----|-------------------|---|
| 5 | Snapshot | Takes a snapshot of live video. --- See <i>13.2.3 Snapshot of Live Video</i> . |
| 6 | File Save | Records live video to the local computer. --- See <i>13.2.4 Video Recording</i> . |
| 7 | Full Screen | Switches to full screen view. Right-click the image to have these options: Snapshot, Full Screen, Resolution, Zoom In, Zoom Out, Wide Angle Dewarping, PIP, PAP, GPS and Google Maps. --- See <i>13.2.5 Wide Angle Dewarping</i> , <i>13.2.6 Picture-in-Picture and Picture-and-Picture View for PIP and PAP views</i> , <i>13.8.2 GPS Maps Settings</i> . |
| 8 | Show System Menu | Brings up these functions: Alarm Notify, Video and Audio Configuration, Remote Config, Show Camera Name and Image Enhance. --- See <i>13.2.7 Alarm Notification</i> , <i>13.2.8 Video and Audio Configuration</i> , <i>13.2.9 Remote Configuration</i> , <i>13.2.10 Camera Name Display</i> , and <i>13.2.12. Image Enhancement</i> . |
| 9 | PTZ Control Panel | Enables the PTZ Control Panel or the Visual PTZ. --- See <i>5.8.1 The PTZ Control Panel</i> and <i>13.2.12 Visual PTZ</i> Note this function is only available in PTZ Camera and PT Camera. |

| No. | Name | Function |
|-----|-------------|--|
| 10 | I/O Control | <p>Enables the I/O Control Panel or the Visual Automation.</p> <p>--- See 13.2.13 <i>I/O Control</i>.</p> <p>Note this function is not available in Mini Fixed Dome, Mini Fixed Rugged Dome, Cube Camera and Advanced Cube Camera.</p> |
| 11 | LED Control | <p>Click to turn the Alarm LED on and/or adjust the brightness sensitivity.</p> <p>Note this function is only available for Advanced Cube Camera.</p> |
| 12 | Speaker | <p>Click to sound the alarm and/or adjust its volume. To sound the alarm upon motion or tampering events, see 14.3.9 <i>Speaker</i> for setup steps.</p> <p>Note this function is only available for Advanced Cube Camera.</p> |

Non-IE Browsers

When accessing the live view using Google Chrome, Firefox or Safari, this window appears. Note the following functions are not supported on non-IE browsers: Motion Detection, Tampering Alarm, Visual Automation, Text Overlay, Two-Way Audio and GPS Settings.

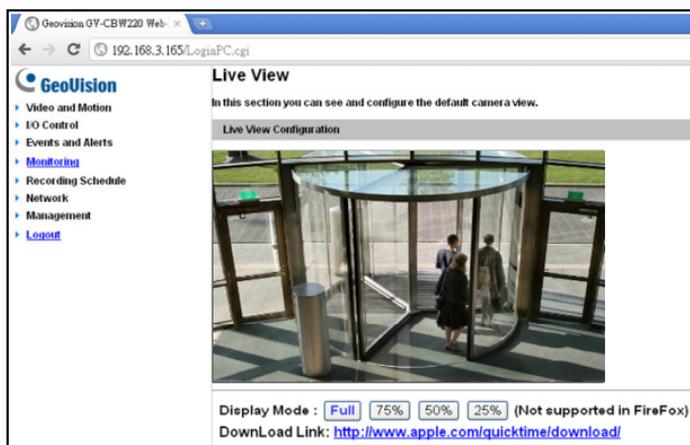


Figure 13-4

13.2.2 The Control Panel of the Live View Window

To open the control panel of the Live View window, click the arrow button on top of the window. You can access the following functions by using the right and left arrow buttons on the control panel.

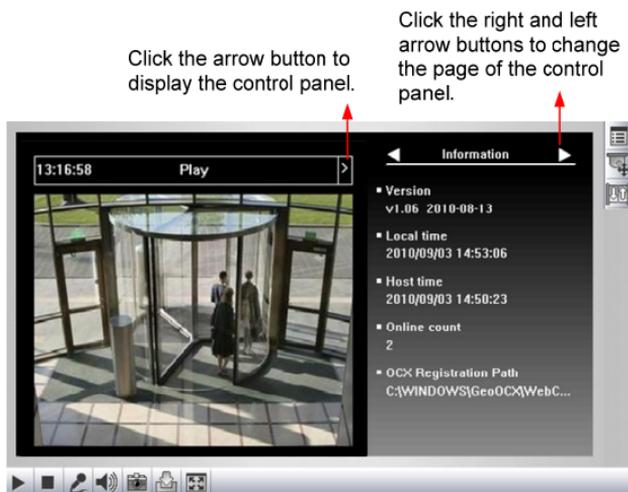
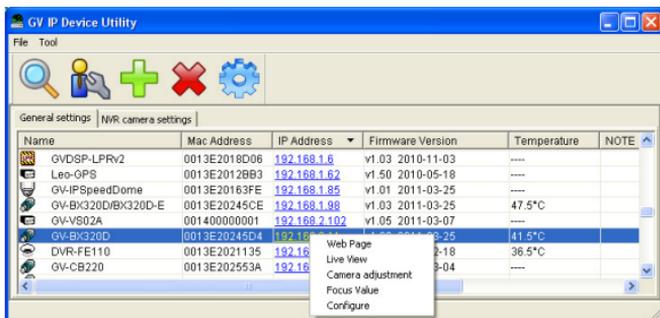


Figure 13-5

Tip: Administrator may also access live view and camera adjustment settings using the GV-IP Device Utility:



[Information] Displays the version of the camera, time of the local computer, time of the camera (host time), the number of users logging in the camera and the OCX registration path.

[Video] Displays the current video codec, resolution and data rate.

[Audio] Displays the audio data rates when the microphone and speaker devices are enabled.

[I/O Control] Note this function is not supported by **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**. Provides a real-time graphic display of the input and output status. You can force the output to be triggered by double-clicking its icon.

[Alarm Notify] Displays the captured images by sensor triggers and motion detection. For this function to work, you have to configure the Alarm Notification settings first. See *13.2.7 Alarm Notification*.

[Camera Adjustment] Allows you to adjust the image quality settings. Click **Save** to store the changes to the settings.



Figure 13-6

- **Brightness:** Adjusts the brightness of the image.
- **Contrast:** Adjusts the relative differences between one pixel and the next.
- **Saturation:** Adjusts the saturation of the image.
- **Sharpness:** Adjusts the sharpness of the image
- **Gamma:** Adjusts the relative proportions of bright and dark areas
- **White balance:** The camera automatically adjusts the color to be closest to the image you are viewing. You can choose one of the four presets: **Auto**, **Outdoor**, **Indoor**, and **Tungsten Lamp / Fluorescent**. You can also choose **Manual** to adjust the white balance manually.
- **Flicker less:** The camera automatically matches the frequency of your camera's image to the frequency of indoor light sources, e.g. fluorescent lighting. You can also select 50 Hz or 60 Hz manually. If these don't match, faint light and dark bars may appear in your images. Check the power utility to determine which frequency is used.
- **Image Orientation:** Changes the image orientation on the Live View window.
- **Slowest Shutter Speed:** Shutter speed controls the amount of the lights enters the image sensor and directly impacts the quality of image presentation. A slow shutter speed allows higher light exposure that creates a brighter overall image by blurring moving objects and bringing out background details, and a faster shutter speed lowers color and image clarity in order to capture motions.

The minimum shutter speed ranges from 1/5 to 1/4000 sec or to 1/8000 sec depending on the camera model. In low light conditions, a fast shutter speed will lower color quality and image clarity. For **GV-BX110D**, **GV-MFD110**, **GV-BL110D** and **GV-PT110D** in such conditions, you can choose one of these presets: **Auto (Low Light, Balanced)** to find a balance between shutter speed and image quality, **Auto (Low Light, Speed)** to have smooth images at the cost of image quality, or **Auto**

(**Low Light, Quality**) to get the image in best quality possible with less smoothness. For other models, select the **Auto** option for automatic shutter control or select **Auto (High Speed Mode)** for a faster automatic shutter control.

| Shutter | Speed | Balanced | Quality |
|------------------|-----------|----------|-----------|
| Image Brightness | Standard | Good | Excellent |
| Image Clarity | Standard | Good | Excellent |
| Image Smoothness | Excellent | Good | Standard |

- **D/N:** Select **Auto** for automatic switch between day mode and night mode depending on the amount of light detected. Select **Black and white** to switch the camera to night mode. Select **Color** to switch the camera to day mode. Sets the light sensor's sensitivity to switch between day mode and night mode. The value 5 is the most light-sensitive. For details, see *D/N, Special View Settings, 14.1.1 Video Settings*.

[GPS] For details, see *14.8.2 GPS Map Settings*.

[Download] Allows you to install the programs from the hard drive.

Note:

1. GV-PTZ010D only contains the **Gamma** feature.
 2. **Saturation** is not available in GV-PTZ010D.
 3. **Tungsten Lamp** is only available in GV-BX110D, GV-MFD110, GV-BL110D and GV-PT110D.
 4. **Slowest Shutter Speed** is not available in GV-BX140DW.
 5. **D/N** is not available in GV-BX110D, GV-MFD110, GV-BL110D, GV-PTZ010D, and GV-PT110D.
 6. **Manual D/N adjustment** is not available for GV-BX140DW.
 7. **Slowest Shutter Speed** is not supported in GV-BX110D, GV-MFD110, GV-BL110D, GV-PTZ010D and GV-PT110D.
-

13.2.3 Snapshot of Live Video

To take a snapshot of live video, follow these steps:

1. Click the **Snapshot** button (No. 5, Figure 13-3). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and select **JPEG** or **BMP** as **Save as Type**. You may also choose whether to display the name and date stamps on the image.
3. Click the **Save** button to save the image in the local computer.

13.2.4 Video Recording

You can record live video for a certain period of time to your local computer.

1. Click the **File Save** button (No. 6, Figure 13-3). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and move the **Time Period** slider to specify the time length of the video clip from 1 to 5 minutes.
3. Click the **Save** button to start recording.
4. To stop recording, click the **Stop** button (No. 2, Figure 13-3).

13.2.5 Wide Angle Dewarpping

The live view can be curved especially near the corners. Use this function to correct the warping of live view. To access this feature:

1. Right-click the live view to display the drop-down list and select **Wide Angle Setting**. The Wide Angle Dewarpping Setting window appears.



Figure 13-7

2. Move the slider at the bottom to correct the degree of warping. The adjusted view is shown on the right. Click **OK** to close this window.
3. To enable this configuration, right-click on the live view and select **Wide Angle Lens Dewarpping**.

13.2.6 Picture-in-Picture and Picture-and-Picture View

The full screen mode provides two types of close-up views: **Picture-in-Picture (PIP)** and **Picture-and Picture (PAP)**. The two views are useful to provide clear and detailed images of the surveillance area.

Picture-in-Picture View

With the Picture in Picture (PIP) view, you can crop the video to get a close-up view or zoom in on the video.



Figure 13-8

1. Right-click the live view and select **PIP**. An inset window appears.
2. Click the insert window. A navigation box appears.
3. Move the navigation box around in the inset window to have a close-up view of the selected area.
4. To adjust the navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
5. To exit the PIP view, right-click the image and click **PIP** again.

Picture-and-Picture View

With the Picture and Picture (PAP) view, you can create a split video effect with multiple close-up views on the image. A total of 7 close-up views can be defined.



Figure 13-9

1. Right-click the live view and select **PAP**. A row of three inset windows appears at the bottom.
2. Draw a navigation box on the image, and this selected area is immediately reflected in one inset window. Up to seven navigation boxes can be drawn on the image.
3. To adjust a navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
4. To move a navigation box to another area on the image, drag it to that area.
5. To add more navigation boxes, to show or hide navigation boxes or to change the frame color of the navigation boxes, right-click the image, select **Mega Pixel Setting** and click one of these options:
 - **Enable Add-Focus-Area Mode:** Allows the user to add more navigation boxes on the image. This option is not available when 7 navigation boxes have been drawn.
 - **Display Focus Area of PAP Mode:** Displays or hides the navigation boxes on the image
 - **Set Color of Focus Area:** Changes the color of the box frames.

6. To delete a navigation box, right-click the desired box, select **Focus Area of PAP Mode** and click **Delete**.
7. To exit the PAP view, right-click the image and click **PAP** again.

13.2.7 Alarm Notification

After input triggers and motion detection, you can be alerted by a pop-up live video and view up to four captured images.



Figure 13-10

To configure this function, click the **Show System Menu** button (No. 8, Figure 13-3), and select **Alarm Notify**. This dialog box appears.

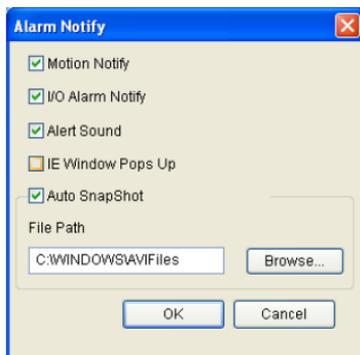


Figure 13-11

- Motion Notify:** Once motion is detected, the captured images are displayed on the control panel of the Live View window.

- **I/O Alarm Notify:** Once the input device is triggered, the captured images are displayed on the control panel of the Live View window. For this function to work, the Administrator needs to install the input device properly. See *14.2.1 Input Setting*.
- **Alert Sound:** Activates the computer alarm on motion and input-triggered detection.
- **IE Window Pops up:** The minimized Live View window pops up on motion and input-triggered detection.
- **Auto Snapshot:** The snapshot of live video is taken every 5 seconds on motion and input-triggered detection.
- **File Path:** Assigns a file path to save the snapshots.

13.2.8 Video and Audio Configuration

You can enable the microphone and speaker for two-way audio communication and adjust the audio volume. To change audio configuration, click the **Show System Menu** button (No. 8, Figure 13-3), and select **Video and Audio Configuration**.

Figure 13-12

- **Camera:** Sets the number of frames to keep in live view buffer. Keeping more frames for live view buffer can ensure a smooth live view, but the live view will be delayed for the number of frames specified.

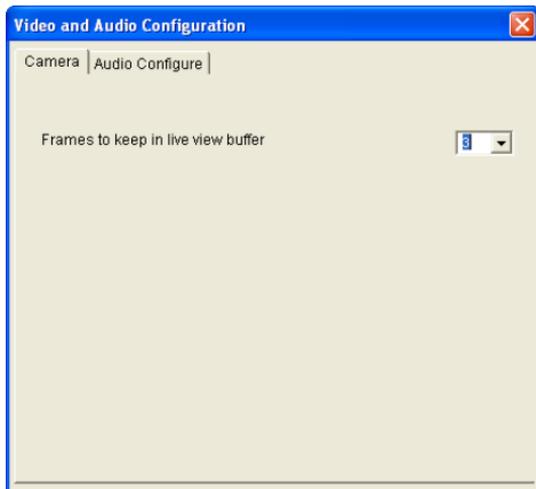


Figure 13-12

- **Audio Configure:** You can enable the microphone and speaker, and adjust the audio volume

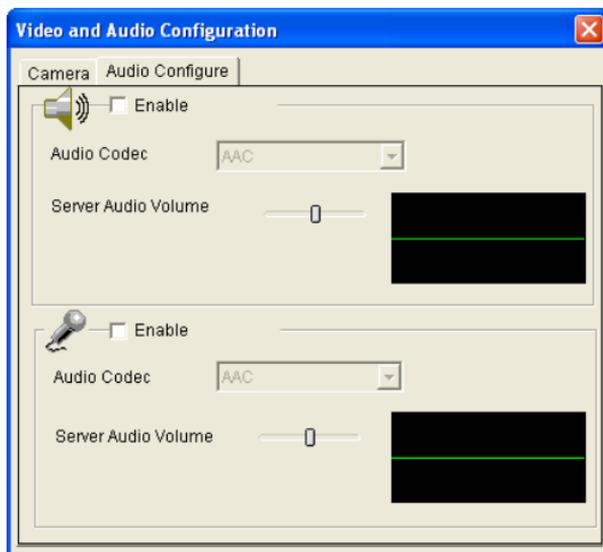


Figure 13-13

13.2.9 Remote Configuration

You can upgrade firmware over the network. Click the **Show System Menu** button (No. 8, Figure 13-3), and select **Remote Config**. The Remote Config dialog box will appear.

[Firmware Upgrade] In this tab, you can upgrade the firmware over the Internet. For details, see *Advanced Applications, Chapter 16*.

13.2.10 Camera Name Display

To display the streaming name on the image, click the **Show System Menu** button (No. 8, Figure 13-3), and select **Show Camera Name**.

13.2.11 Image Enhancement

To enhance the image quality of live video, click the **Show System Menu** button (No. 8, Figure 13-3), and select **Image Enhance**. This dialog box appears.

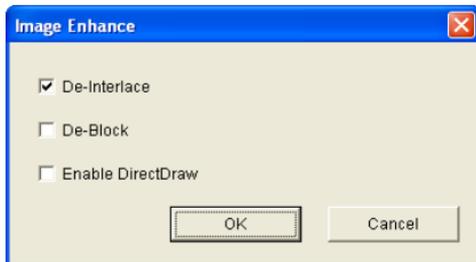


Figure 13-14

- **De-Interlace:** Converts the interlaced video into non-interlaced video.
- **De-Block:** Removes the block-like artifacts from low-quality and highly compressed video.
- **Enable DirectDraw:** Activates the DirectDraw function.

13.2.12 Visual PTZ

Note this feature is only available in **PTZ Camera** and **PT Camera**.

The Visual PTZ provides two types of PTZ control panels on live images for easy and direct PTZ operation.

Activating Visual PTZ

Click the **PTZ Control** button  (No. 9, Figure 13-3) and select **Visual PTZ**. Alternatively right-click anywhere on the live view and select **Visual PTZ**.

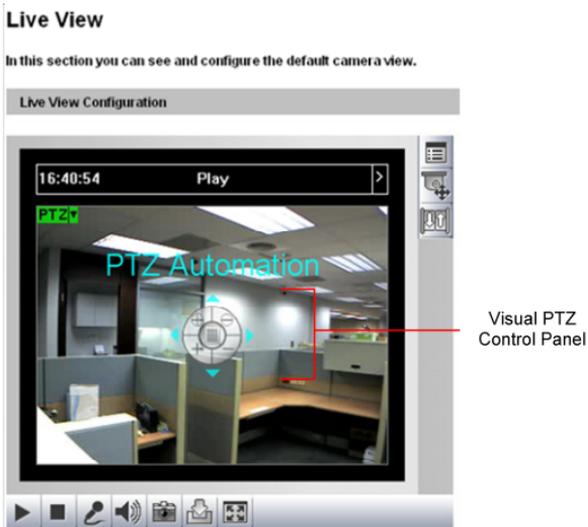


Figure 13-15

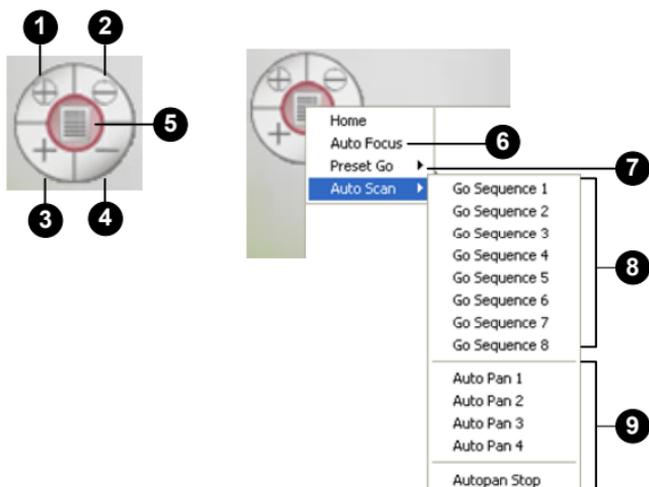


Figure 13-16

The Visual PTZ Panel provides the following features:

| No. | Name | Description |
|-----|-------------|---|
| 1 | Zoom In | Shortens the apparent distance between the camera and the view. |
| 2 | Zoom Out | Lengthens the apparent distance between the camera and the view. |
| 3 | Focus In | Adjusts the sharpness of the camera view. |
| 4 | Focus Out | |
| 5 | Home | Brings the camera to the home point. |
| 6 | Auto Focus | Automatically adjusts the sharpness of the camera view. |
| 7 | Preset Go | Starts a single movement in which the PTZ Camera moves towards a point in live view. |
| 8 | Go Sequence | Starts a series of movements in which the PTZ Camera moves towards at least two Preset points in live view. |
| 9 | Auto Pan | Starts a horizontal movement of the PTZ Camera in live view. |

Setting Visual PTZ Panel

Click the **PTZ** button on the top left corner and select Visual PTZ, the following options will appear.

- **PTZ Control Type:** Two types of visual PTZ control panels are available.
 - ⊙ **Type 1:** Appears only when a movement of the cursor is detected and disappears when it is static. When you place the cursor in one of the eight directions, i.e. up, down, left, right, left up, left down, right up and right down, a 5-level arrow appears. Click and hold onto the required level to move the camera. The speed level is indicated at the top right corner of the live view.
 - ⊙ **Type 2:** Appears with a click on the live view and disappears with the second click. As the cursor points to one of the eight directions, a 5-level arrow head appears. The further the arrow is away from the visual PTZ control panel, the faster the movement and vice versa. The speed level is indicated at the top right corner of the live view.
- **Set Color:** Changes the color of the arrow line and the speed indicated at the top right corner of the live view. Alternatively, you can right-click the live view (with Visual PTZ enabled). Three colors are available: **Red**, **Green** and **Blue**.
- **Transparency:** Changes the transparency level of the Visual PTZ Control Panel. Ten levels range from 10% (fully transparent) to 100% (fully opaque).

13.2.13 I/O Control

Note this function is only available for **Box Camera**, **Bullet Camera**, **Vandal Proof IP Dome** and **Fixed IP Dome**.

The I/O Control window provides a real-time graphic display of camera status, I/O status, and alarm events. Additionally, you can remotely force output to be triggered.

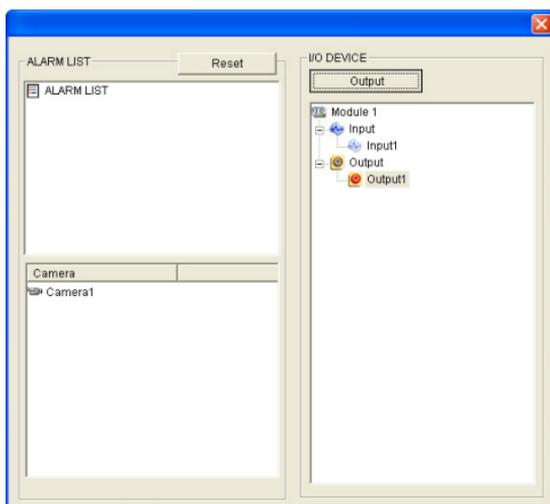


Figure 13-17

- To display the I/O control window, click the **I/O Control** button (No. 10, Figure 13-3) and select **I/O Control**.
- The Alarm List is displayed in three levels. The first level indicates date, the second indicates time, and the third indicates alarm ID. Clicking the **Reset** button will clear the list.
- To trigger an output device, highlight an output and then click the **Output** button.

13.2.14 Visual Automation

Note this function is only available for **Box Camera**, **Bullet Camera**, **Vandal Proof IP Dome** and **Fixed IP Dome**.

The Visual Automation allows you to change the current state of the electronic device by simply clicking on its image, e.g. turning the light ON. This feature is only available when the Visual Automation is set ahead by the Administrator. For details, see *14.1.6 Visual Automation*.



Figure 13-18

- To access this feature, click the **I/O Control** button (No. 10, Figure 13-3) and select **Visual Automation**.
- To change the style of the set areas, click the green **I/O** button on the top left corner. You will have these options:
 - **Show All**: Displays all set areas.
 - **Rect Float**: Embosses all set areas.
 - **Set Color**: Changes the frame color of all set areas

13.2.15 Network Status

To view the network status, in the left menu, click **Network** and select **Status**.

| Network Status Information | |
|---|---------------|
| In this section you can see an overview of GV-IPCAM status. | |
| Current Status Information | |
| interface: | Wired |
| IP Acquirement: | Fixed |
| MAC Address: | 0013E201DA81 |
| IP Address: | 192.168.2.11 |
| Subnet Mask: | 255.255.252.0 |
| Gateway: | 192.168.0.1 |
| Domain Name Server 1: | 168.95.192.1 |
| Domain Name Server 2: | |

Figure 13-19

Chapter 14 Administrator Mode

The Administrator can access the system configuration through the network. Eight categories of configurations are involved in the system configuration: **Video and Motion**, **I/O Control** or **Digital I/O and PTZ**, **Events and Alerts**, **Monitoring**, **Recording Schedule**, **Remote ViewLog**, **Network** and **Management**.

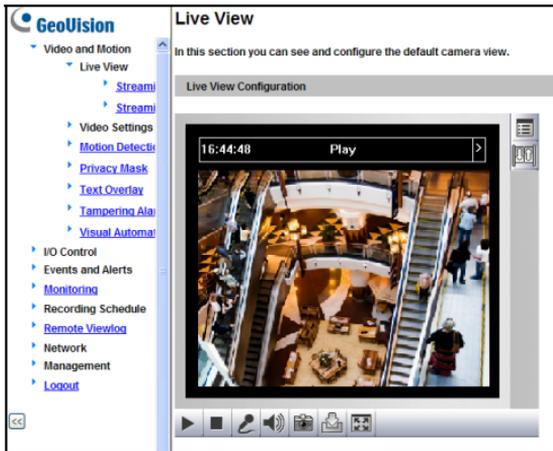


Figure 14-1

List of Menu Options

Find the topic of interest by referring to the section number prefixed to each option. The available options vary among camera models.

| | |
|--------------------------|---|
| 14.1 Video and Motion | <ul style="list-style-type: none"> 14.1.1 Video Settings 14.1.2 Motion Detection 14.1.3 Privacy Mask 14.1.4 Text Overlay 14.1.5 Tampering Alarm 14.1.6 Visual Automation |
| 14.2 Digital I/O and PTZ | <ul style="list-style-type: none"> 14.2.1 Input Settings 14.2.2 Output Settings 14.2.3 PTZ Settings |
| 14.3 Events and Alerts | <ul style="list-style-type: none"> 14.3.1 Email 14.3.2 FTP 14.3.3 Center V2 14.3.4 VSM 14.3.5 Backup Center 14.3.6 Video Gateway/Recording Server 14.3.7 ViewLog Server 14.3.8 RTSP |
| 14.4 Monitoring | |
| 14.5 Recording Schedule | <ul style="list-style-type: none"> 14.5.1 Camera 14.5.2 I/O Monitor |
| 14.6 Remote ViewLog | |
| 14.7 Network | <ul style="list-style-type: none"> 14.7.1 LAN 14.7.2 Wireless-Client Mode 14.7.3 Advanced TCP/IP 14.7.4 IP Filtering 14.7.5 SNMP Settings |
| 14.8 Management | <ul style="list-style-type: none"> 14.8.1 Date and Time Settings 14.8.2 GPS Maps Settings 14.8.3 Storage Settings 14.8.4 User Account 14.8.5 Log Information 14.8.6 System Log 14.8.7 Tools 14.8.8 Language |

14.1 Video and Motion

The GV-IPCAM H.264 can simultaneously process one video source in two different codec and resolutions. The dual-stream design benefits for lower bandwidth environment, allowing Streaming 2 set with lower resolution and codec for live streaming, and Streaming 1 set with highest resolution and codec H.264 for best recording quality. Two setting pages **Streaming 1** and **Streaming 2** are provided for separate setup.

Comparison between Streaming 1 and Streaming 2:

| Video Setting Options | Streaming 1 | Streaming 2 |
|-----------------------------------|---|---|
| Watermark Setting | Yes | No option. But settings in Streaming 1 will be automatically applied to Streaming 2 |
| Audio in Source | | |
| Mechanical Iris Adjustment | | |
| Special View Setting | | |
| Video Resolution | Yes. Different resolutions can be applied to Streaming 1 and Streaming 2. | |
| TV Out | Yes | No |

Note:

- Audio In Source** is only available in GV-BX110D, GV-PTZ010D and GV-PT110D.
- Mechanical Iris Adjustment** is only available in GV-BX110D and GV-BL110D.
- TV Out** is only available for Box Camera, Vandal Proof IP Dome and Fixed IP Dome.

This section includes the video image settings and how the images can be managed through Motion Detection, Privacy Mask, Text Overlay, Tampering Alarm, and Visual Automation.

14.1.1 Video Settings

Video Settings

In this section you can define compression art, broadcasting method and privacy mask.

Camera

Name

Connection template

Video Signal Type

In this section you can configure camera's video signal, also the resolution and frame per second to be transmitted through the network

Video Format

| Resolution | Frame per second |
|--|---------------------------------|
| <input type="text" value="2048*1536 (4:3)"/> | <input type="text" value="20"/> |

Bandwidth Management

In this section you can configure the bit rate used by video stream. When VBR (Variable Bit Rate) is selected, consistent image quality is achieved at the cost of varying bit rate. To set a consistent bit rate at the cost of varying image quality, select CBR (Constant Bit Rate).

VBR Quality Maximal Bit Rate Mbit
 CBR Maximal Bit Rate

GOP Structure and Length

In this section you can configure the composition of the video stream (GOP structure). Using I-Frame only will significantly increase the video quality as well as the bandwidth.

Group of Picture(GOP) Size (seconds)

Record Settings

In this section you can configure pre-alarm and post-alarm settings.

Pre-alarm recording time seconds

Post-alarm recording time seconds with hard disk installed (1-30)

Split interval minutes

Record audio
 Continue recording when accessing live view

Text Overlay Settings

In this section you can set up Text Overlay

Overlay with camera name
 Overlay with date stamps
 Overlay with time stamps
 Overlay with digital input description name

Figure 14-2A

Watermark Setting

In this section you can set Watermark function.

Enable

Audio Settings

Audio Codec: AAC

LED Control

Ready LED: Enable Disable

Special View Setting

Additional functions for Live View

D/N

| | | | |
|----------------------------------|-----------------|---------------|---|
| <input checked="" type="radio"/> | Auto | Sensitivity 5 | ▼ |
| <input type="radio"/> | Black and White | | |
| <input type="radio"/> | Color | | |

Auto Iris: Enable Disable

BLC: Off On

IR Light: Auto Off

Figure 14-2B

[Name] Rename the video stream. To display the name of video stream on the Live View window, see *13.2.10 Camera Name Display*.

[Connection Template] Select the type of your network connection. Unless you select **Customized**, this option will automatically bring up the recommended video resolution, frame rate, bandwidth and GOP size.

[Video Signal Type]

Select the video signal type, resolution and frame rate. The GV-IPCAM H.264 series supports three codec options: **MPEG4**, **H.264** and **MJPEG**. For details on the resolutions and frame rates of each camera model, see *Appendix C*

Note that for all the cameras (except GV-PTZ010D), the resolution options available for sub stream vary with the resolution selected for its main stream. For example, if a 4:3 resolution is selected for the main stream in GV-BX320D-0, two options, 640 x 480 and 320 x 240 will be available for its sub stream.

[Bandwidth Management] When using H.264 or MPEG4 it is possible to control the bitrate, which in turn allows the amount of bandwidth usage to be controlled.

- **VBR (Variable Bitrate):** The quality of the video stream is kept as constant as possible at the cost of a varying bitrate. The bandwidth is much more efficiently used than a comparable CBR.

Set the image quality to one of the 5 standards: **Standard, Fair, Good, Great** and **Excellent**.

Maximal Bit Rate: When the system bitrate exceeds the specified Maximal Bit Rate, the system will automatically lower its bitrate so as not to exceed it. Select one of the bitrates from the drop-down list or select **Auto** if you do not want to enable this function.

- **CBR (Constant Bitrate):** CBR is used to achieve a specific bitrate by varying the quality of the H.264 or MPEG4 stream. Select one of the bitrates from the drop-down list.

[GOP Structure and Length] Set the maximum number of seconds between every key frame.

[Record Settings] The alarm settings allow you to capture images before and/or after the motion or I/O events happen.

Note: This function is not available for GV-MFD110.

- **Pre-alarm recording time:** Activates video recording before an event occurs. Set the recording time to 1 or 2 seconds. The recording is saved in the buffer of the camera.
- **Post-alarm recording time:** Activates video recording onto the inserted memory card after an event occurs. Set the recording time from 1 to 30 seconds.
- **Split-interval:** Sets the time length between each event file from 1 to 5 minutes.
- **Record audio:** Activates audio recording when an event occurs.
- **Continue recording to the local storage when live view is accessed:** Select to record to the memory card when the live view is accessed through the Web interface or other software. This option is disabled by default.

IMPORTANT: To ensure the quality of simultaneous recording and live view access, make sure you connect no more than two connections to the camera using Web interface or any other applications.

[Text Overlay Settings]

- **Overlaid with camera name:** Includes streaming names on live and recorded videos.
- **Overlaid with date stamps:** Includes date stamps on live and recorded videos.
- **Overlaid with time stamps:** Includes time stamps on live and recorded videos.
- **Overlaid with digital input description:** Note this option is not available for **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**. Includes the name of the selected input on live and recorded videos.

[Watermark Setting] Enable this option to watermark all recordings. The watermark allows you to verify whether the video has been tampered while it was recorded. See *16.4 Verifying Watermark*.

[Audio In Source] Note this function is only available in **GV-BX110D**, **GV-PT110D** and **GV-PTZ010D** which contain a built-in microphone and also allow you to install an external microphone.

- **Built-in Microphone:** Enable the built-in microphone to record sounds. By default the option is enabled.
- **External Microphone:** Enable the externally connected microphone to record sounds.

[Audio Settings] Note the configuration of audio compression is not available for **GV-BX110D**, **GV-MFD110**, **GV-BL110D**, **GV-PTZ010D** and **GV-PT110D**. Use the drop-down list to select between **G.711** and **AAC** options.

Note: The **AAC** option is only supported by GV-System version 8.5 or later. For versions including and prior to 8.4, audio output will not be supported if **AAC** is selected.

[TVOut] Note this function is only available for **Box Camera**, **IR Arctic Box Camera**, **Vandal Proof IP Dome** and **Fixed IP Dome**. Select the signal format of the Video Output on the camera as either NTSC or PAL.

Note: For smooth display of **Box Camera**, **IR Arctic Box Camera**, **Fixed IP Dome** and **Vandal Proof IP Dome** on TV monitor, the video resolution must be 1280 x 1024 or lower. If dual streams are enabled, the sub stream must be set as 640 x 480.

[LED Control] Note this function is not available in **GV-BX110D**, **GV-MFD110**, **GV-BL110D**, **GV-PTZ010D** and **GV-PT110D**.

- **Ready LED:** Select **Disable** if you do not wish to use the Status LED.

[Mechanical Iris Adjustment] Note this function is only available in **GV-BX110D** and **GV-BL110D**.

- **Auto adjustment:** Click **Start** to automatically adjust the auto iris lens and bring exposure to optimum.
- **LAN LED, WAN LED, Monitoring LED:** Note this option is only available in **Advanced Cube Camera**. Select **Disable** if you do not wish to use the LEDs. For details on LED status, see *11.3 Overview*.
- **Alarm LED:** Note this option is only available in **Advanced Cube Camera**. This option is enabled by default.
 - ⊙ **Auto:** Select **Auto** for the Alarm LED to turn on when the PIR sensor detects any motion within the field of view.
 - ⊙ **Sensitivity:** Select the detection sensitivity. The higher the value, the more sensitive the PIR sensor is to motion. The default value is 5.
 - ⊙ **The Interval between triggering:** Select the duration for the Alarm LED to shine at full intensity. If a motion persists over the specified period, the Alarm LED will shine less intensely. This option is designed to keep the camera temperature within its pre-cautious range. The default value is **60** seconds.
 - ⊙ **Off:** Select to disable the Alarm LED.

[Special View Setting]

- **D/N:** Sets the sensitivity of day-night mode switch. The higher the sensitivity value, the more sensitive the switch is from day mode to night mode. The default value is 5.
 - ⊙ **Auto:** Select **Auto** for the camera to detect the amount of light present and automatically switch to monochrome in a poorly-lit scene. Move the slider to adjust the sensitivity level from 0 to 10.
 - ⊙ **Black and White:** Select this option for the live view to be in monochrome.
 - ⊙ **Color:** Select this option for the live view to be in color.
- **IR Check Function:** Note this option is only available for **Box Camera**. This function determines whether the surveillance area is illuminated by an externally installed infrared illuminator.
 - ⊙ **Off:** The default setting. The infrared illuminator will be constantly off. It is advisable to enable this option when the color temperature of outdoor lighting is 6000 K or above.
 - ⊙ **On:** The infrared illuminator will be constantly on.
 - ⊙ **Trigger by Input / Trigger IR by D/N:** Select this option for the infrared illuminator to turn on under low light and turn off under sufficient light.

Note:

1. If an infrared illuminator is installed for outdoor surveillance, it is suggested to use the **Trigger by Input** or the **Trigger IR by D/N** function to avoid incorrect judgment of lighting and hence the action of the IR cut filter. See 2.5.2 *Infrared Illuminators*.
 2. If you select **Trigger by Input / Trigger IR by D/N** option, make sure you have set D/N as **Auto** and configured its sensitivity level.
-

- **Auto Iris:** Note this function is only supported in **Box Camera** (except fixed lens **GV-BX110D**, **GV-BX130D-1**, **GV-BX140DW** and **GV-BX520D-0**), **Bullet Camera**, **Vandal Proof IP Dome** and **Fixed IP Dome**. The option is designed for auto iris lens (DC drive). Enable the auto iris function when the scene appears fuzzy and the Flicker Less function does not help to improve the situation.
- **BLC:** Note this function is not supported by **GV-BX110D**, **GV-BX140DW**, **GV-MFD110**, **GV-BL110D**, and **GV-PT110D**. Select **On** to enable Backlight Compensation (BLC). This function is used to adjust the color intensity of scenes with strong light at the background.

Note: To access the BLC function in PTZ camera, see *Other*, 6.8.4 *Image Settings*.

- **IR Light:** Note this function is only available for **Vandal Proof IP Dome** and **Fixed IP Dome**. Select **Auto** for automatic switch between day mode and night mode depending on the amount of light detected. Select **Off** to completely disable IR LEDs.

14.1.2 Motion Detection

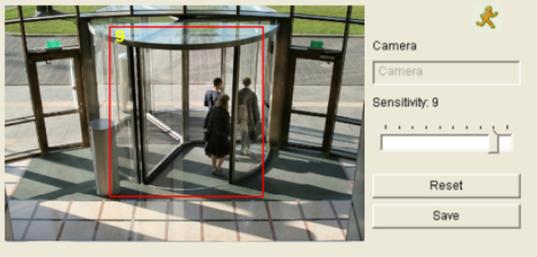
Note for firmware V1.07 or later (except GV-BX110D, GV-MFD110, GV-BL110D, GV-PTZ010D and GV-PT110D), motion detection is disabled by default; for GV-BX110D, GV-MFD110, GV-BL110D, GV-PTZ010D and GV-PT110D, motion detection is enabled by default.

Motion detection is used to generate an alarm whenever movement occurs in the video image. You can configure up to 8 areas with different sensitivity values for motion detection. Set up at least one area to enable this function.

Motion Detection

In this section you can define different region(s) for motion detection.

To trigger digital output relay upon motions, be sure to set up the detection area on the Motion Detection page.



Motion Detection

Use PIR to detect motion

Ignore environmental changes

Noise Tolerance

Advanced Setting

Please advise which action(s) should be taken when motion detection is activated.

Trigger digital output relay Output 1

Figure 14-3

1. Select the desired sensitivity by moving the slider. There are ten values. The higher the value, the more sensitive the camera is to motion.
2. Drag an area on the image. Click **Add** when you are prompted to confirm the setting.
3. To create several areas with different sensitivity values, repeat steps 1 and 2.
4. Click **Save** to save the above settings.
5. Click **Reset** to delete all the selected areas.
6. If you want to ignore environmental changes such as rain or snow, select **Ignore environmental changes**.
7. If you want to ignore video noise when light changes, select **Noise Tolerance**.
8. If you want to trigger the alarm output when motion is detected, select **Output 1** and click the **Apply** button. To activate the output settings, you must also start **Input** monitoring manually or by schedule. For related settings, see *14.4 Monitoring*.

14.1.3 Privacy Mask

The Privacy Mask can block out sensitive areas from view, covering the areas with dark boxes in both live view and recorded clips. This feature is ideal for locations with displays, keyboard sequences (e.g. passwords), and for anywhere else you don't want sensitive information visible.

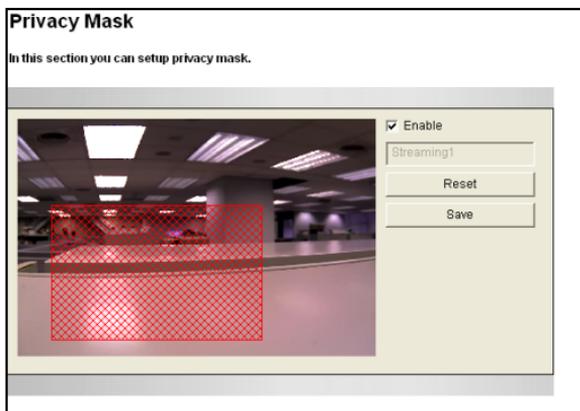


Figure 14-4

1. Select the **Enable** option.
2. Drag the area(s) where you want to block out on the image. Click **Add** when you are prompted to confirm the setting.
3. Click the **Save** button to save all the settings.

14.1.4 Text Overlay

The Text Overlay allows you to overlay any text in any place on the camera view. Up to 16 text messages can be created on one camera view. The overlaid text will be saved in the recordings.

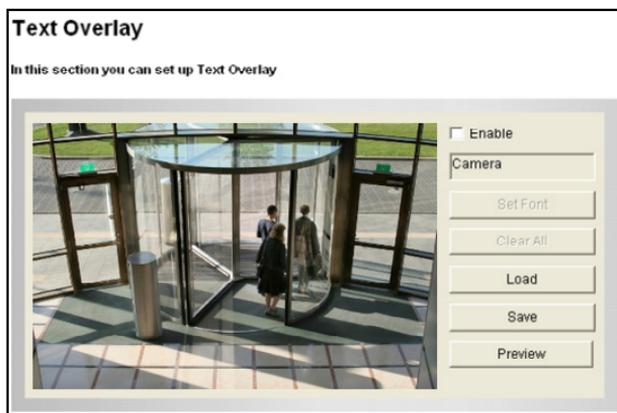


Figure 14-5

1. Select the font, font style and font size in a pop-up window.
2. Select the **Enable** option.
3. Click any place on the image. This dialog box appears.



Figure 14-6

4. Type the desired text, and click **OK**. The text is overlaid on the image.
5. Drag the overlaid text to a desired place on the image.
6. Click **Set Font** to modify the font settings.

7. Click **Save** to apply the settings, or click **Load** (Undo) to revert to the last saved setting.
8. Click **Preview** to see how the text will appear on the image. Click **Close** to end the preview.

14.1.5 Tampering Alarm

Note this function is not available for **PTZ Camera** and **PT Camera**.

The Tampering Alarm is used to detect whether a camera is being physically tampered. An alarm can be generated when the camera is moved, covered up, or out of focus. The alarm approaches include the triggered output device and e-mail alert. To have the tampering alarm, first set up these alarm approaches properly:

- To trigger the output device when a tampering event occurs, enable the output setting and select **Tampering Alarm**. See *14.2.2 Output Settings*.
- To trigger the e-mail alert when a tampering event occurs, enable the e-mail setting and select **Tampering Alarm**. See *14.3.1 E-Mail*.



Figure 14-7

To configure the tampering alarm:

1. Select the **Enable** option.
2. If you want the camera to ignore any movement or scene change in certain areas, click the  button to drag areas on the camera view.
3. Select the desired detection sensitivity by moving the slider. The higher the value, the more sensitive the camera is to scene changes.
4. In the **Tolerance Time of Alarm** field, specify the time length allowed for scene changes before an alarm is generated.
5. In the **Duration of Alarm** field, specify the duration of the alarm after which the triggered output device will be turned off.
6. To trigger an alarm when the scene turns dark, e.g. the lens of camera has been covered, select **Alarm for Dark Images**.
7. Click **Apply** to save all the settings.
8. Start monitoring to enable the function. To have output alarm, it is required to start **Input** monitoring. See *14.4 Monitoring*.

When the camera has been tampered, the output device can be activated. To turn off the output device immediately, return to this setting page, and click **Restart Detection**.

14.1.6 Visual Automation

Note this function is only available for **Box Camera**, **Bullet Camera**, **Vandal Proof IP Dome** and **Fixed IP Dome**.

This intuitive feature helps you automate any electronic device by triggering the connected output device. When you click on the image of the electronic device, you can simply change its current state, e.g. light ON.

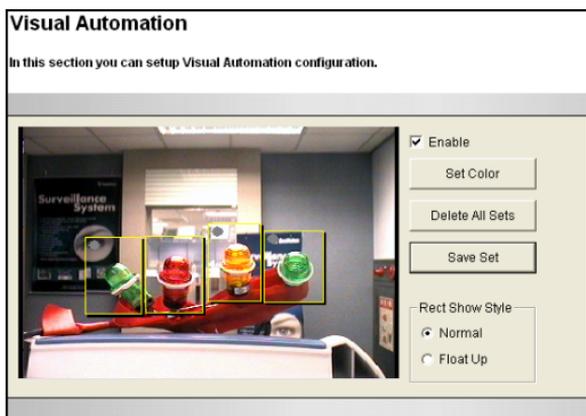


Figure 14-8

1. Select the **Enable** option.
2. Drag an area on the image of the electronic device. This dialog box appears.

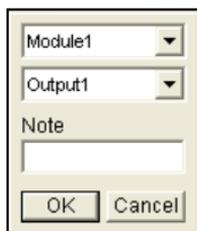


Figure 14-9

3. Assign the connected module and output device. In the Note field, type a note to help you manage the device. Click **OK** to save the settings.
4. To change the frame color of the set area, click the **Set Color** button.
5. To emboss the set area, select **Float Up**; or keep it flat by selecting **Normal**.
6. Click the **Save Set** button to apply the settings.
7. To perform the function, see *13.2.14 Visual Automation*.

14.2 I/O Settings

Note the I/O settings are only available for **Box Camera, Bullet Camera, PTZ Camera, PT Camera, Vandal Proof IP Dome** and **Fixed IP Dome**.

After installing the I/O device, you need to enable the I/O settings on the camera. For how to install the I/O device on the camera, see the following reference sections:

| GV-IPCAM H.264 | Reference section |
|----------------------|-----------------------------|
| Box Camera | 2.6 I/O Terminal Block |
| Bullet Camera | 5.4.1 Connecting the Camera |
| PTZ Camera | 6.7 I/O Terminal Block |
| PT Camera | 7.7 I/O Terminal Block |
| Vandal Proof IP Dome | 8.5 Connecting the Camera |
| Fixed IP Dome | 9.6 I/O Terminal Block |

14.2.1 Input Settings

To activate the sensor input, select **Enable**.

Input Setting

In this section you can configure GV-IPCAM digital input port.

Digital Input 1

Enable

Name

Normal State Open Circuit (N/O) Grounded Circuit (N/C)

Latch Mode Enable

Trigger digital output relay Output 1

Record Camera

Send Video to CenterV2 Camera

PTZ Settings

Set PTZ camera to preset point

Input on

Input off

Duration to set preset after input off seconds

Figure 14-10

- **Normal State:** You can set the input state to trigger actions by selecting **Open Circuit (N/O)** or **Grounded Circuit (N/C)**.
- **Latch Mode:** Enable this option to have a momentary output alarm.
- **Trigger digital output relay:** When this option is enabled, the output will be triggered once the input is activated.
- **Record:** Enable this option to start recording when the input is triggered.
- **Send Video to Center V2:** Enable this option to send the images to Center V2 when the input is triggered.
- **PTZ Settings:** Note this function is only available for **PTZ Camera** and **PT Camera**.
 - **Input On:** Select a preset point to which the camera turns when an input is triggered.
 - **Input Off:** Select a preset point to which the camera returns when the input triggering is off.
 - **Duration to set preset after input off:** Specify the duration that the camera stays at the Input On point before returning to the Input Off point.

Note:

1. Only GV-BX110D supports the wet-contact input device (7V~30V). Other cameras all support dry-contact input device.
 2. The functions “triggering the output”, “starting the recording when the input is triggered” and “sending video to Center V2” only work after you start **Input** monitoring manually or by schedule. To configure the input monitoring, see *14.4 Monitoring*.
-

14.2.2 Output Settings

Select **Enable** to start the output device. Choose the output signal that mostly suits the device you are using: N/O (Open Circuit), N/C (Grounded Circuit), N/O Toggle, N/C Toggle, N/O Pulse or N/C Pulse. For **Toggle** output type, the output continues to be triggered until a new input trigger ends the output. For **Pulse** output type, the output is triggered for the amount of time you specify in the **Trigger Pulse Mode for x Seconds** field.

[Alarm Settings] You can choose to automatically trigger the digital output under these conditions: tampering alarm (not available for **PTZ Camera** and **PT Camera**), disk write error (Rec Error) and full memory card (HD Full).

Output Setting

In this section you can configure GV IP-Camera digital output port.

Digital Output 1 - Normal State

Enable

Name

General Mode Open Circuit (N/O) Grounded Circuit (N/C)

Toggle Mode Open Circuit (N/O) Grounded Circuit (N/C)

Pulse Mode Open Circuit (N/O) Grounded Circuit (N/C)

Trigger Pulse Mode for seconds(1~60)

Digital Output 1 - Alarm Settings

Tampering Alarm

Rec Error

HD Full

Figure 14-11

14.2.3 PTZ Settings

Note this function is only available in **PTZ Camera** and **PT Camera**.

You can change the image settings, configure sequences, and access settings including autopan speed, motor reset, digital zoom and system default loading. For details, see *Accessing the VISCA OSD Configuration* in *6.7.3 PTZ Camera Settings*.



Figure 14-12

14.3 Events and Alerts

For the events of motion detection or I/O trigger, the Administrator can set up two trigger actions:

1. Send a captured still image by E-mail or FTP.
2. Notify Center Monitoring Station, Center V2 or VSM, by video or text alerts.

To have the above trigger actions, you must set the following functions in advance:

- Motion Detection (See *14.1.2 Motion Detection*)
- Input Setting (See *14.2.1 Input Setting*)
- For e-mail and FTP alerts, it is required to start monitoring (See *14.4 Monitoring*).

14.3.1 E-mail

After a trigger event, the camera can send the e-mail to a remote user containing a captured still image.

Email

In this section you can configure mailserver (SMTP) to handle events, videos, and error messages.

Primary mail server

Enable

Server URL/IP Address

Server Port

From email address

Send to (Please use ";" to separate recipient's address)

Alerts Interval time in minute (0 to 60)

Need authentication to login

User Name

Password

This server requires a secure connection (SSL)

Email - Alarm Settings

Tampering Alarm

Rec Error

HD Full

Motion Detection

Digital Input

Figure 14-13

[Enable] Select to enable the e-mail function.

- **Sever URL/IP Address:** Type the URL address or IP address of the SMTP Server.
- **Server Port:** Modify the port number of the SMTP Server. Or keep the default value 25.
- **From email address:** Type the sender's e-mail address.
- **Send to:** Type the e-mail address(s) you want to send alerts to.
- **Alerts Interval Time:** Specify the interval between e-mail alerts. The interval is between 0 and 60 minutes. The option is useful for the frequent event occurrence, by which any event triggers during the interval period will be ignored.

[Need authentication to login] If the SMTP Server needs authentication, enable this option and type a valid username and password to log in the SMTP server.

[E-Mail Alarm Settings] You can choose to automatically send an e-mail alert under these conditions: tampering alarm (not available for **PTZ** and **PT Camera**), disk write error (Rec Error), full memory card (HD Full), motion detection and input trigger (not available for **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**).

IMPORTANT: To send e-mail alerts upon motions, be sure to set up detection area on the Motion Detection's page.

For the related settings to send e-mail alerts, see *14.1.2 Motion Detection*, *14.2.1 Input Setting* and *14.4 Monitoring*.

14.3.2 FTP

You can also send the captured still image to a remote FTP server for alerts.

FTP Client and Server Setting

In this section you can configure a ftp server (File Transfer Protocol) to handle events, videos, and error messages.

Upload to a FTP server

Enable

Server URL/IP Address

Server Port

User Name

Password

Remote Directory

Alerts Interval time in minute (0 to 60)

FTP - Alarm Settings

Motion Detection

Continuously send images upon trigger events(Motion)

Digital Input

Continuously send images upon trigger events(Input)

Act as FTP server

In this section you can enable/disable OV-IPCAM internal ftp server for file transfer.

Enable ftp access to the OV-IPCAM

Use alternative Port

Figure 14-14

[Upload to an FTP Server]

- **Enable:** Select to enable the FTP function.
- **Server URL/IP Address:** Type the URL address or IP address of the FTP Server.
- **Server Port:** Type the port number of the FTP Server. Or keep the default value 21.
- **User Name:** Type a valid username to log into the FTP Server.
- **Password:** Type a valid password to log into the FTP Server.
- **Remote Directory:** Type the name of the storage folder on the FTP Server.

- **Alerts Interval time in minute:** Specify the interval between FTP alerts. The interval can be between 0 and 60 minutes. The option is useful for the frequent event occurrence by which any event triggers during the interval period will be ignored.

[Alarm Settings]

- **Motion Detection:** When a motion is detected on the camera, a still image will be sent to the FTP Server.
 - ⊙ **Continuously send images upon trigger events (motion):** A sequence of snapshots is uploaded to the FTP Server when a motion is detected. This stops as soon as no motion is detected.
- **Digital Input:** Note this function is not available for **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**. Once the input is triggered, a still image will be sent to the FTP Server.
 - ⊙ **Continuously send images upon trigger events (input):** A sequence of snapshots is uploaded to the FTP Server when the input is triggered.

IMPORTANT: To send FTP alerts upon motions, be sure to set up detection area on the Motion Detection's page.

[Act as FTP Server]

- **Enable FTP access to the GV-IP Cam:** The camera acts as an FTP server, enabling users to download AVI files.
- **Use alternative port:** The default port is set to 21.

To access the internal FTP server through a web browser, enter the IP address or the domain name of the camera in your browser like this:

ftp://192.168.0.10

When you are prompted for Username and Password, enter the default value **123456** in both fields. Then you should find the AVI files recorded after trigger events.

To change login information of the internal FTP server, see *14.8.4 User Account*. For related settings to send FTP alerts, see *14.1.2 Motion Detection*, *14.2.1 Input Settings* and *14.4 Monitoring*.

14.3.3 Center V2

After a motion or an I/O triggered event, the central monitoring station Center V2 can be notified by live videos and text alerts. For the live monitoring through Center V2, you must already have a subscriber account on Center V2. A camera can connect to up to 2 Center V2 stations simultaneously.

IMPORTANT: To notify Center V2 server upon motions, be sure to set up detection areas on the Motion Detection's page.

Connection 1
Connection 2

Center V2

In this section you can configure the connection to Center V2 and tasks to perform.

Center V2 server

| | |
|--------------------------------------|---|
| Activate Link | <input checked="" type="checkbox"/> |
| Host name or IP Address: | <input type="text" value="192.168.3.62"/> |
| Port number: | <input type="text" value="5552"/> |
| User Name: | <input type="text" value="1"/> |
| Password: | <input type="password"/> |
| Cease motion detection messages from | <input type="checkbox"/> Camera |
| Cease input trigger message from | <input type="checkbox"/> Input 1 |
| Enable schedule mode | <input type="checkbox"/> |

Select schedule time

| | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|---|---------------------------------|----------------------------------|----------------------------------|----------------------------------|---|---------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|--|--|--|--|
| <input type="checkbox"/> Span 1 | <input type="text" value="00"/> | <input type="text" value=":00"/> | <input type="text" value="~00"/> | <input type="text" value=":00"/> | <input checkbox"="" type="text" value="Next Day</td> </tr> <tr> <td><input type="/> Span 2 | <input type="text" value="00"/> | <input type="text" value=":00"/> | <input type="text" value="~00"/> | <input type="text" value=":00"/> | <input checkbox"="" type="text" value="Next Day</td> </tr> <tr> <td><input type="/> Span 3 | <input type="text" value="00"/> | <input type="text" value=":00"/> | <input type="text" value="~00"/> | <input type="text" value=":00"/> | <input checkbox"="" type="text" value="Next Day</td> </tr> <tr> <td><input type="/> Weekend | <input checked="" type="radio"/> Saturday and Sunday <input type="radio"/> Only Sunday | | | | |
|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|---|---------------------------------|----------------------------------|----------------------------------|----------------------------------|---|---------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|--|--|--|--|

Connection Status

Status: Connected. Connected Time: Mon Sep 20 13:36:50 2010

Figure 14-15

To enable the Center V2 connection:

1. **Activate Link:** Enable the monitoring through Center V2.
2. **Host Name or IP Address:** Type the host name or IP address of Center V2.
3. **Port Number:** Match the port to the Port 2 value on Center V2. Or keep the default value 5551.
4. **User Name:** Type a valid username to log into Center V2.
5. **Password:** Type a valid password to log into Center V2.
6. Click **Apply**. The Connection Status should display “Connected” and connected time.
7. To establish connection to the second Center V2 server, click the **Connection 2** tab and repeat the above steps for setup.

You can also find the following options on this Center V2 setting page:

- **Cease motion detection messages from:** Stops notifying Center V2 of motion-triggered events.
- **Cease input trigger messages from:** Note this function is not available for **Mini Fixed Dome, Mini Fixed Rugged Dome, Cube Camera** and **Advanced Cube Camera**. Stops notifying Center V2 of input-triggered events.
- **Enable schedule mode:** Starts the monitoring through Center V2 based on the schedule you set in the **Select Schedule Time** section. Refer to *14.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through Center V2, see *14.1.2 Motion Detection*, *14.2.1 Input Setting*, and *18.1 Center V2*.

14.3.4 VSM

After a motion or an I/O triggered event, the central monitoring station VSM can get notified by text alerts. For the monitoring through VSM, you must already have a subscriber account on VSM. A camera can connect up to 2 VSM simultaneously.

IMPORTANT: To notify VSM server upon motions, be sure to set up detection areas on the Motion Detection's page,

Connection 1 | Connection 2

Vital Sign Monitor Server Setting

In this section you can configure the connection to VSM Server and tasks to perform.

Vital Sign Monitor Server

Activate Link:

Host name or IP Address:

Port number:

User Name:

Password:

Cease motion detection messages from: Camera

Cease input trigger message from: Input 1

Enable schedule mode:

Select schedule time

Span 1: : : : Next Day

Span 2: : : : Next Day

Span 3: : : : Next Day

Weekend: Saturday and Sunday Only Sunday

Connection Status

Status: Connected. Connected Time: Mon Sep 20 14:08:21 2010

Figure 14-16

To enable the VSM connection:

1. **Activate Link:** Enable the monitoring through VSM.
2. **Host Name or IP Address:** Type the host name or IP address of VSM.
3. **Port Number:** Match the port to the Port 2 value on VSM. Or keep the default value 5609.
4. **User Name:** Type a valid username to log into VSM.
5. **Password:** Type a valid password to log into VSM.
6. Click **Apply**. The Connection Status should display “Connected” and connected time.
7. To establish connection to the second VSM, click the **Connection 2** tab and repeat the above steps for setup.

These options you can also find on this VSM setting page:

- **Cease motion detection messages from:** Stops notifying VSM of motion-triggered events.
- **Cease input trigger messages from:** Note this function is not available for **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**. Stops notifying VSM of input-triggered events.
- **Enable schedule mode:** Starts the monitoring through VSM based on the schedule you set in the **Select Schedule Time** section. Refer to *14.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through VSM, see *14.1.2 Motion Detection* and *14.2.1 Input Settings*, and *18.2 VSM*.

14.3.5 Backup Center

For the supported version of different models, see *Appendix D*.

The connection to the GV-Backup Center allows you to back up another copy of recordings and system log to the GV-Backup Center on an offsite location while the camera is saving these data to the memory card. The GV-Backup Center provides a PC-based storage and backup solution. For details on the GV-Backup Center, see *GV-Backup Center User's Manual*.

Backup Center

In this section you can configure the connection to Backup Center and tasks to perform

Backup Center

Activate Link

Host name or IP Address:

Port number:

User Name:

Password:

Backup Video Select all Streaming1
 Streaming2

Compact Video Select all Streaming1
 Streaming2

Resend all files

Automatic Failover Support

Host name or IP Address:

Port number:

User Name:

Password:

Enable schedule mode

Select schedule time

Span 1 Next Day

Span 2 Next Day

Span 3 Next Day

Weekend Saturday and Sunday Only Sunday

Connection Status

Status: Disconnected

Figure 14-17

To enable connection to GV-Backup Center:

1. **Activate Link:** Enable the connection to the GV-Backup Center.
2. **Host Name or IP Address:** Type the host name or IP address of the GV-Backup Center.
3. **Port Number:** Match the communication port on the GV-Backup Center. Or keep the default value 30000.
4. **User Name:** Type a valid user name to log into the GV-Backup Center.
5. **Password:** Type a valid password to log into the GV-Backup Center.
6. **Backup Video:** Select the streams to back up their recordings to the GV-Backup Center.
7. **Compact Video:** Select the streams to only back up their Key Frames to the GV-Backup Center, instead of full recordings. This option is useful to save the backup time.
8. **Resend all files:** Select this option to send all the recorded files that have received by the Backup Center again.
9. **Enable Schedule Mode:** Enable the GV-Backup Center connection on the schedule you set in the Select Schedule Time section. Refer to *14.5 Recording Schedule* for the same settings.
10. Click **Apply**. The Connection Status should display "Connected" and connected time.

If you have a failover GV-Backup Center server which provides uninterrupted backup services in case the first GV-Backup Center failed, configure the failover GV-Backup Center as below.

1. **Automatic Failover Support:** Enable the automatic connection to the failover GV-Backup Center once the connection between camera and the first GV-Backup Center is interrupted.
2. **Host Name or IP Address:** Type the host name or IP address of the failover GV-Backup Center.
3. **Port Number:** Match the communication port on the failover GV-Backup Center. Or keep the default value 30000.
4. **User Name:** Type a valid user name to log into the failover GV-Backup Center.
5. **Password:** Type a valid password to log into the failover GV-Backup Center.
6. Click **Apply**.

14.3.6 Video Gateway / Recording Server

For the supported version of different models, see *Appendix D*.

The GV-Video Gateway / GV-Recording Server is a video streaming server designed for large-scale video surveillance deployments. The GV-Video Gateway / GV-Recording Server (with recording capability) can receive up to 128 channels from various IP video devices, and distribute up to 300 channels to its clients. With the GV-Video Gateway / GV-Recording Server, the desired frame rate can be ensured while the CPU loading and bandwidth usage of the IP video devices are significantly reduced.

The supported GV-IPCAM H.264 can connect up to two GV-Video Gateway / GV-Recording Server. To send the video images to the GV-Video Gateway or GV-Recording Server, follow the steps below.

Connection1
Connection2

Video Gateway / Recording Server

In this section you can configure the connection to Video Gateway and tasks to perform

Video Gateway server / Recording Server

Activate Link

Host name or IP Address:

Port number:

User Name:

Password:

Cease motion detection messages from Select all Streaming 1 Streaming 2

Cease input trigger message from Select all Input 1

Cease all messages from Select all Streaming 1 Streaming 2

Enable schedule mode

Select schedule time

Span 1 : : : Next Day

Span 2 : : : Next Day

Span 3 : : : Next Day

Weekend Saturday and Sunday Only Sunday

Connection Status

Status: Disconnected

Figure 14-18

1. **Activate Link:** Enable the connection to the GV-Video Gateway / GV-Recording Server.
2. **Host Name or IP Address:** Type the host name or IP address of the GV-Video Gateway / GV-Recording Server.
3. **Port Number:** Match the communication port on the GV-Video Gateway / GV-Recording Server. Or keep the default value 50000.
4. **User Name:** Type a valid user name to log into the GV-Video Gateway / GV-Recording Server.
5. **Password:** Type a valid password to log into the GV-Video Gateway / GV-Recording Server.

6. **Enable Schedule mode:** Enable the GV-Video Gateway / GV-Recording Server on the schedule you set in the **Select Schedule Time** section. Refer to *14.5 Recording Schedule* for the same settings.
7. Click **Apply**. The Connection Status should display “Connected” and the connected time.
8. To establish connection to the second GV-Video Gateway / GV-Recording Server, click the **Connection 2** tab and repeat the above steps for setup.

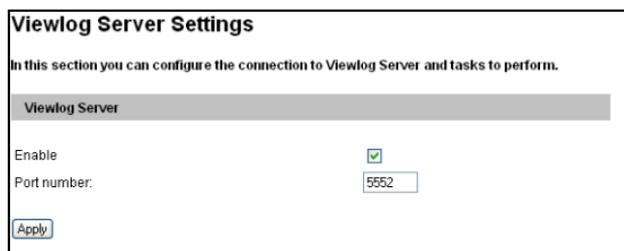
Note: The three functions, **Cease motion detection messages from**, **Cease input trigger message from** and **Cease all messages from**, are not functional.

14.3.7 ViewLog Server

Note this feature is not available for **GV-MFD110**.

The ViewLog Server is designed for remote playback function. This server allows you to remotely access the recorded files saved at the GV-IPCAM H.264 and play back video with the ViewLog player.

Select **Enable** to activate the built-in server. Keep the default port **5552** or modify it if necessary. For details on the remote playback, see *15.2.2 Playback over Network*.



Viewlog Server Settings

In this section you can configure the connection to Viewlog Server and tasks to perform.

Viewlog Server

Enable

Port number:

Figure 14-19

14.3.8 RTSP

The RTSP enables video and audio streaming to your 3G-enabled mobile phone. The RTSP streaming is enabled by default.

Figure 14-20

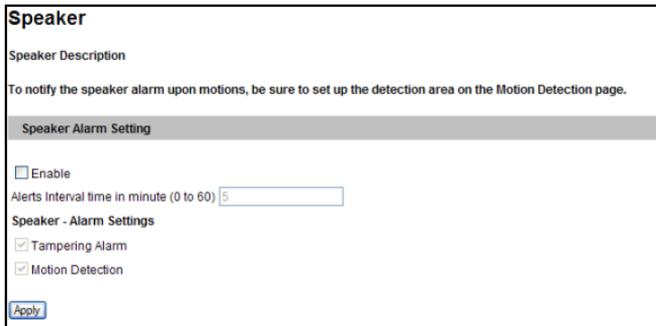
- **Activate Link:** Enable the RTSP service.
- **RTSP/TCP Port:** Keep the default value 8554, or modify it if necessary.
- **RTP/UDP Port:** Keep the default range from 17300 to 17319, or modify it if necessary. The number of ports for use is limited to 20.
- **Max Connection:** Set the maximum number of RTSP and 3GPP connections to the GV-IPCAM H.264. The maximum value is 10.
- **Enable Audio:** Turns audio streaming on or off. For the supported firmware versions, see *Appendix D*.
- **Disable Authentication:** By default, when accessing live view through RTSP command, the ID and password of the camera are required. Select this option to disable the authentication prompt. For the supported firmware versions, see *Appendix D*.

For details on remote monitoring with mobile phones, see *Mobile Phone Connection, Chapter 19*.

For RTSP command, see *Appendix E*.

14.3.9 Speaker

Note this function is only available for **Advanced Cube Camera**. The Advanced Cube camera is equipped with an alarm. You can configure the camera to sound the alarm when it is being tampered or motions are detected. This function is disabled by default.



The screenshot shows a configuration window titled "Speaker". It contains the following elements:

- Speaker Description:** A text area with the instruction: "To notify the speaker alarm upon motions, be sure to set up the detection area on the Motion Detection page."
- Speaker Alarm Setting:** A section header with a grey background.
- Enable:** A checkbox that is currently unchecked.
- Alerts Interval time in minute (0 to 60):** A text input field containing the number "5".
- Speaker - Alarm Settings:** A section header.
- Tampering Alarm:** A checked checkbox.
- Motion Detection:** A checked checkbox.
- Apply:** A button at the bottom left.

Figure 14-21

1. Select **Enable**.
2. Type the duration time in the Alerts Interval time field. The default value is **5** (minutes). When a motion is detected, the alarm will be on for the specified time.
3. Select **Tampering Alarm** and/or **Motion Detection** under Alarm Settings.

To sound the alarm upon motion events, make sure you have enabled motion detection. For details, see *14.1.2 Motion Detection*.

14.4 Monitoring

You can start monitoring manually, by schedule or by input trigger.

Note: See *Note for Connecting to GV-System* at the beginning of the manual.

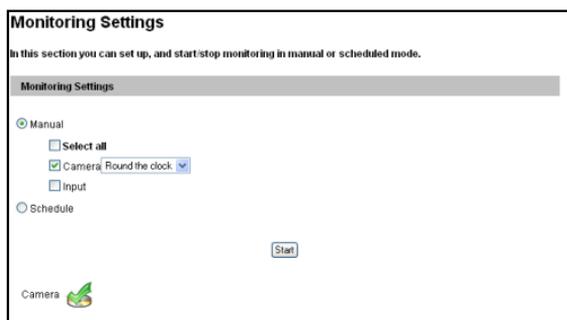


Figure 14-21

[Manual] Manually activates motion detection and I/O monitoring. Select one of the following options and then click the **Start** button.

- **Select all:** Manually starts both motion detection and I/O monitoring.
- **Camera:** Manually starts recording. Select the desired recording mode for recording.
- **Input:** Note this function is not available in **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**. Manually starts I/O monitoring. When the sensor input is triggered, its associated camera and output will be activated for recording and alerting. For this setting, see *14.2.1 Input Setting*.

[Schedule] The system starts motion detection and I/O monitoring according to the schedule you have set. For schedule settings, see *14.5 Recording Schedule*.

[Camera Status Icon]

: On standby



: Enabled for motion detection and input trigger



: Recording is on.

14.5 Recording Schedule

The schedule is provided to activate recording and I/O monitoring on a specific time each day.

14.5.1 Recording Schedule Settings

Note this function is not available for **GV-MFD110**.

You can set the schedule for recording.

Recording Schedule Settings

In this section you can configure schedule time.

Select schedule time

Span 1 Round the clock 00 00 -00 00 Next Day

Span 2 Round the clock 00 00 -00 00 Next Day

Span 3 Round the clock 00 00 -00 00 Next Day

Weekend Round the clock Saturday and Sunday Only Sunday

Special Day Round the clock (MM/DD)

01. 02. 03. 04.

05. 06. 07. 08.

09. 10. 11. 12.

Apply

Figure 14-22

- **Span 1- Span 3:** Set a different recording mode for each time frame during the day. Each day can be divided into 3 time frames, represented by Span 1 to Span 3.
- **Weekend:** Enable this option to start monitoring all day on the weekend and select the recording mode to be used. Define whether your weekend includes **Saturday and Sunday** or **Only Sunday**.
- **Special Day:** Set the recording mode on a specified day.

14.5.2 I/O Monitoring Settings

Note this function is not available for **Mini Fixed Dome**, **Mini Fixed Rugged Dome**, **Cube Camera** and **Advanced Cube Camera**.

You can set the schedule for I/O monitoring to start.

I/O Monitor Settings

In this section you can configure I/O monitor time.

Select monitor time

Span 1 01 :00 ~ 08 :00

Span 2 19 :00 ~ 01 :00 Next Day

Span 3 00 :00 ~ 00 :00 Next Day

Weekend Saturday and Sunday Only Sunday

Special Day (MM/DD)

01. 02. 03. 04.

05. 06. 07. 08.

09. 10. 11. 12.

Figure 14-23

- **Span 1- Span 3:** Set different time frames during the day to enable I/O monitoring. Each day can be divided into 3 time frames, represented by Span 1 to Span 3.
- **Weekend:** Enable this option to start I/O monitoring all day on the weekend and define whether your weekend includes **Saturday and Sunday** or **Only Sunday**.
- **Special Day:** Enable I/O monitoring on a specified day.

Note: In Recording Schedule and I/O Monitoring Schedule, if the settings for Special Day conflict with those for Span 1-3 or Weekend, the Special Day settings will get the priority.

14.6 Remote ViewLog

Note this function is not available for **GV-MFD110**.

With the Remote ViewLog player, you can play back the files recorded at the GV-IPCAM H.264 over TCP/IP network.

For the first-time user, you need to install the Remote ViewLog program from the Software CD. To allow remote access to the camera, the ViewLog Server built in the unit must be enabled. See *14.3.7 ViewLog Server*.

For details on connecting to the camera for playback, see *15.2.2 Playback over Network*.

14.7 Network

The Network section includes some basic but important network configurations that enable the camera to be connected to a TCP/IP network.

14.7.1 LAN Configuration

According to your network environment, select among Static IP, DHCP and PPPoE.

LAN Configuration

In this section you can configure GV-IPCAM to work inside of LAN.

Optional Network type

Wired Ethernet Select this option to use wired 10/100Mbps ethernet
 Wireless Select this option to use Wireless

LAN Configuration

Dynamic IP address Select this option to obtain IP address from a DHCP server Test DHCP
 Static IP address Select this option to enter a Static IP address manually

IP Address:
 Subnet Mask:
 Router/Gateway:
 Primary DNS:
 Secondary DNS: (Optional)

PPPoE Select this option to establish a DSL connection

Username:
 Password:

Wireless Settings

Dynamic IP address Select this option to obtain IP address from a DHCP server Test DHCP
 Static IP address Select this option to enter a Static IP address manually

IP Address:
 Subnet Mask:
 Router/Gateway:
 Primary DNS:
 Secondary DNS: (Optional)

Figure 14-24

[LAN Configuration]

Note the Wireless Settings are only available in **GV-CBW120 / 220** and **GV-CAW120 / 220**. According to the network environment, select **Wired** or **Wireless**. Before enabling the **Wireless** option, follow the steps in 12.1.3 *Configuring the Wireless Connection* to configure the wireless settings first.

[LAN Configuration]

- **Dynamic IP address:** The network environment has a DHCP server which will automatically assign a dynamic IP address to the camera. Click the **Test DHCP** button to see the currently assigned IP address or look up the dynamic IP address using GV-IP Device Utility.
- **Static IP address:** Assign a static IP or fixed IP to the camera. Type the camera's TCP/IP and DNS parameters in the **Configure connection parameters** section.
- **PPPoE:** The network environment is xDSL connection. Type the Username and Password provided by ISP to establish the connection. If you use the xDSL connection with dynamic IP addresses, first use the DDNS function to obtain a domain name linking to the camera's changing IP address.

[Configure connection parameters]

Type the camera's IP address, Subnet Mask, Router/Gateway, Primary DNS server and Secondary DNS server.

| Parameters | Default | |
|----------------------|----------------|----------------|
| | Wired Ethernet | Wireless |
| IP address | 192.168.0.10 | 192.168.100.10 |
| Subnet Mask | 255.255.255.0 | 255.255.255.0 |
| Router/Gateway | 192.168.0.1 | 192.168.0.1 |
| Primary DNS server | 192.168.0.1 | 192.168.0.1 |
| Secondary DNS server | 192.168.0.2 | 192.168.0.2 |

For details on Dynamic DNS Server Settings, see 14.7.3 *Advanced TCP/IP*.

14.7.2 Wireless Client Mode

Note this function is only supported in **GV-CBW120 / 220** and **GV-CAW120 / 220**. Set up the client mode before enabling the wireless function.

WLAN Configuration (Client Mode)

In this section you can configure your GV-IPCAM to act as Wireless Client.

Wireless Client Setting

Network name (SSID)

Network type Ad Hoc Infrastructure

Authentication Type

WPA-PSK Pre-shared Key

WEP

Key 1

Key 2

Key 3

Key 4

* HEX: 10 or 26 hex digits. ASCII: 5 or 13 characters.

Figure 14-25

- **Network type:** Select the network mode **Ad Hoc** or **Infrastructure**.
 - ⊙ **Infrastructure:** Connect to the Internet via the Access Point. This mode further gives wireless access to the Internet or data sharing under a previously wired environment.
 - ⊙ **Ad-Hoc:** A Peer-to-Peer mode. This mode connects to other computer with the WLAN card, and does not need the Access Point to connect to each other.
- **Network name (SSID):** The SSID (Service Set Identify) is a unique name that identifies a particular wireless network. Type SSID of the Wireless LAN group or Access Point you are going to connect to.

- **Access Point Survey:** Click this button to search all the available Access Points (Infrastructure mode) and wireless stations (AD-Hoc mode) within the LAN.
- **Authentication Type:** Select one of these network authentication and data encryption: **Disable**, **WEP**, **WPAPSK-TKIP**, **WPAPSK-AES**, **WPA2PSK-TKIP** or **WPA2PSK-AES**.
 - **Disabled:** No authentication is needed within the wireless network.
 - **WEP (Wired Equivalent Privacy):** A type of data encryption. Type up to four WEP Keys in HEX or ASCII format. Note that if you use HEX format, only digits 0-9 and letters A-F, a-f are valid.
 - **WPAPSK-TKIP and WPA2PSK-TKIP:** Type WPA-PSK (Pre-Shared Key) for data encryption.
 - **WPAPSK-AES and WPA2PSK-AES:** Type WPA-PSK (Pre-Shared Key) for data encryption.

For step-by-step instruction on wireless connection, see *12.2 Configuring the Wireless Connection*.

Note:

1. Your encryption settings must match those used by the Access Points or wireless stations with which you want to associate.
 2. When you lose the wireless access, you can still access the unit by connecting it to a LAN and search for the camera using GV IP Device Utility.
 3. When **Ad Hoc** is used, only **WEP** encryption is supported.
-

14.7.3 Advanced TCP/IP

This section provides the advanced TCP/IP settings, including DDNS Server, HTTP port, HTTPS, streaming port, UPnP, QoS and network connection check.

Advanced TCP/IP

In this section you can set the advanced TCP/IP configuration.

Dynamic DNS Service Settings

In this section you can configure your GV-IPC-AM to obtain a domain name by using a dynamic IP.

Enable

Service Provider: GeoVision DDNS Server or Register GeoVision DDNS Server

Host Name:

User Name:

Password:

Update Time: [Refresh](#)

[Apply](#)

HTTP Port Settings

In this section you can change the default HTTP port number (80) to any port within the range 1024-65535. It is a simple method to increase system security using port mapping. You can configure HTTP connection to an alternative port.

HTTP Port:

[Apply](#)

HTTPS Settings

In this section you can change the default HTTPS port number (443) to any port within the range 1024-65535. It is a simple method to increase system security using port mapping. You can configure HTTPS connection to an alternative port.

Enable

HTTP Port:

External storage is not available. Cannot upload customized certification and private key.

Use customized certification and private key. External storage is necessary.

Certificate File:

Certificate Key File:

Password:

[Apply](#)

GV-IPC-AM Streaming Port Settings

In this section you can configure Streaming connection from a determine port. The default setting is 10000.

VSB Port:

[Apply](#)

UPnP Settings

In this section you can enable or disable UPnP function.

UPnP: Enable Disable

[Apply](#)

QoS Settings

QoS DSCP Settings. The DSCP value can be in decimal or hexadecimal format between 0-63

DSCP Value:

[Apply](#)

Network Connection Check Settings

Enable or disable the network connection check. If the network connection fails to function, the camera will reboot automatically in response.

Enable

[Apply](#)

Figure 14-26

[Dynamic DNS Server Settings] DDNS (Dynamic Domain Name System) provides a convenient way of accessing the camera when using a dynamic IP. DDNS assigns a domain name to the camera, so that the Administrator does not need to go through the trouble of checking if the IP address assigned by DHCP Server or ISP (in xDSL connection) has changed. Before enabling the following DDNS function, the Administrator should have applied for a Host Name from the DDNS service provider's website. There are 2 providers listed in the camera: GeoVision DDNS Server and DynDNS.org.

To enable the DDNS function:

1. **Enable:** Enable the DDNS function.
2. **Service Provider:** Select the DDNS service provider you have registered with.
3. **Host Name:** Type the host name used to link to the camera. For the users of GeoVision DDNS Server, it is unnecessary to fill the field because the host name will be detected and brought up automatically.
4. **User Name:** Type the username used to enable the service from the DDNS.
5. **Password:** Type the password used to enable the service from the DDNS.
6. Click **Apply**.

[HTTP Port Settings] The HTTP port enables connection of the camera to the web. For security integration, the Administrator can hide the server from the general HTTP port by changing the default HTTP port of 80 to a different port number within the range of 1024 through 65535.

[HTTPS Settings] By enabling the Hypertext Transfer Protocol Secure (HTTPS) settings, you can access the camera through a secure protocol. You can use self-generated Certificate and Private Key or the ones verified by the SSL authority. Click **Browse** to locate the Certificate and Private Key files and type the password if the .pem files are protected by password. Click **Apply**. The Web interface will be restarted and you will need to log in again.

Note: The .pem file format is supported by Certificate and Private Key.

[GV-IPCAM Streaming Port Settings] The VSS port enables connecting the camera to the GV-System. The default setting is 10000.

[UPnP Settings] UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among networking equipment, software and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. It means that they are listed in the network devices table for the operating system (such as Windows XP) supported by this function. Enabling this function means you can connect to the camera directly by clicking on the camera listed in the network devices table.

[QoS Settings] The Quality of Service (QoS) is a bandwidth control mechanism that guarantees delay-sensitive data flows such as voice and video streams, obtain a certain amount of bandwidth to keep the streaming smooth.

To apply QoS to GV-IPCAM H.264, all network routers must support QoS and QoS must be enabled on these devices. To enable the QoS on GV-IPCAM H.264, enter a Differentiated Services Code Point (DSCP) value. This value is a field in an IP packet that enables different levels of services

for the network traffic. When the video stream from GV-IPCAM H.264 reaches a router, the DSCP value will tell the router what service level to be applied, e.g. the bandwidth amount. This value ranges from 0 to 63 in decimal format. The default value is 0, meaning QoS is disabled.

[Network Connection Check Settings] The camera checks for Internet connection, and reboots when it is disconnected from the Internet. This function is enabled by default.

Note: If you do not intend to connect the camera to the network, disable this function to prevent automatic reboot.

14.7.4 IP Filter Settings

The Administrator can set IP filtering to restrict access to the camera.

IP Filter Setting

In this section you can allow or deny network connection listed in the table. (Only 4 filter entries are supported.)

IP Filtering

Enable IP Filtering

| No. | IP Address Range in CIDR format | Action | Customize |
|-----|---------------------------------|--------|---------------------------------------|
| 1 | 192.168.2.100 | Allow | <input type="button" value="Remove"/> |

Filtered IP: ex: 192.168.1.2 or 192.168.1.0/24

Action to take:

Figure 14-27

To enable the IP Filter function:

1. **Enable IP Filtering:** Enable the IP Filter function.
2. **Filtered IP:** Type one IP address or a range of IP addresses you want to restrict the access.
3. **Action to take:** Select the action of **Allow** or **Deny** to be taken for the IP address(es) you have specified.
4. Click **Apply**.

14.7.5 SNMP Settings

The Simple Network Management Protocol (SNMP) allows you to monitor the status of the camera through SNMP network management software.

SNMP Setting

In this section you can configure the SNMP settings.

SNMP Configuration

Enable SNMPv1, SNMPv2c

Read/Write community

Read only community

Enable SNMPv3

Read/Write Security name

Authentication Type

Authentication Password

Encryption Password

Read only Security name

Authentication Type

Authentication Password

Encryption Password

Figure 14-28

1. Select **Enable SNMPv1 SNMPv2c** to enable the function.
2. To enable access to **Read/Write community**, type a community string. This will serve as a password to allow read and write access to the camera from the SNMP software.
3. To enable **Read only community**, type a community string to allow read-only access to the camera from the SNMP software.
4. For a more secured connection, select **Enable SNMPv3** to enable SNMP version 3.
5. To enable access to SNMPv3 **Read/Write community**, type a community string.
6. Select an **Authentication Type** to use for SNMP requests.
7. Type the **Authentication Password** and **Encryption Password**. You will need to type these passwords in the SNMP software to be able to access the camera.
8. To enable access to SNMPv3 **Read only community**, follow steps 5 ~ 7.
9. Click **Apply** to save the settings.

14.8 Management

The Management section includes the settings of data and time and user account. You can also view the firmware version and execute certain system operations.

14.8.1 Date & Time Settings

The date and time settings are used for date and time stamps on the image.

Date and Time Settings

In this section you can configure time and date or just synchronize with a NTP server.

Date and Time on GV-IPCAM

Sat Sep 18 15:05:30 2010

Time Zone

[GMT+08:00] China,Hong Kong,Australia Western,Singapore,Taiwan,Russia ▼

Enable Daylight Saving Time

Start (MM/dd/hh/mm)

End (MM/dd/hh/mm)

Synchronized with a Network Time Server

Synchronized with Network Time Server (NTP)

Host name or IP Address:

Update period: 24 hours; Update Time: :

Synchronized with your computer or modify manually

Modify manually

Date (yyyy/mm/dd)

Time (hh:mm:ss)

Synchronized with your computer

Date and time overlay setting

Show date as ▼

(This is a format of date where yyyy stands for year in 4 digits or yy in 2 digits, mm stands for month, and dd stands for day)

Display order Date prior to time (Ex.2007/05/21 17:00:00)

Time prior to date(Ex.17:00:00 2007/05/21)

Figure 14-29

[Date & Time on GV-IP Camera] Displays the current date and time on the camera.

[Time Zone] Sets the time zone for local settings. Select **Enable Daylight Saving Time** to automatically adjust the camera for daylight saving time. Type the Start Time and End Time to enable the daylight saving function. To play back, see *15.2.4 Playback of Daylight Saving Time Events*. To automatically synchronize the Daylight Saving Time with the GV-System, see *17.1.1 Customizing IP Camera Settings*.

[Synchronized with a Network Time Server] By default, the camera uses the timeserver of time.windows.com to automatically update its internal clock every 24 hours. You can change the host name or IP setting to the timeserver of interest, and specify a time for time update.

[Synchronized with your computer or modify manually] Manually changes the camera's date and time. Or, synchronize the camera's date and time with those of the local computer.

[Overlaid Date and Time Settings] Select the display format of date and time stamps on the image. For this function to work, you must also enable the **Overlaid with date stamps** and **Overlaid with time stamps** options in Figure 14-2.

14.8.2 GPS Maps Settings

The Maps Settings allows you to see the location of your GV-IPCAM H.264 on Google maps, without a GPS device.

To see the location of your camera on maps:

1. It is required to sign up for a Google Maps API key before using the Google Maps. Click **Link to the Google Maps API**.

GPS Maps

In this section you can configure the GPS Maps settings.

GPS Maps Settings

Sign up for a Google Maps API key: [Link to the Google Maps API](#)

Google Maps API Key:

Longitude: (Ex: 121.595=E121.595, -10.25=W10.25)

Latitude: (Ex: 25.081=N25.081, -10.25=S10.25)

Location Name:

Figure 14-30

2. Enter the registered Maps API Key, the longitude and latitude of your camera, and location name. Click **Apply** to enable this function.
3. Open the control panel of the Live View window.



Figure 14-31

- Click **Open**. A warning message appears.

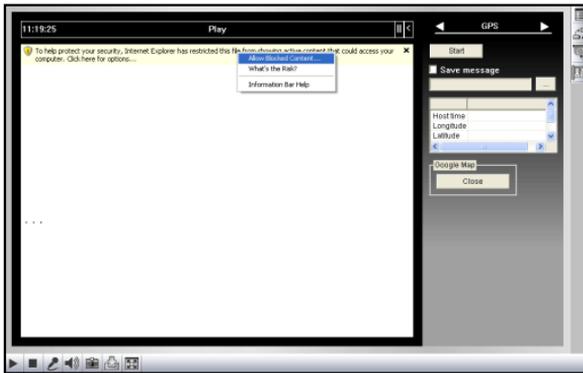


Figure 14-32

- Right-click the warning message and select **Allow Blocked Content**. The map will be displayed. The  icon indicates the location of your camera. At the upper right corner you have options to view different map formats, such as Satellite and Hybrid.



Figure 14-33

14.8.3 Storage Settings

Note this function is not available for **GV-MFD110**.

Based on Linux ext3 file system, the GV-IPCAM H.264 supports memory cards for video and audio recordings. You need to format the memory card by using the following Storage Settings. After being formatted, the memory card will be ready to use by Linux OS of the camera.

Storage Settings

In this section you can configure the disk storage to archive videos and events.

Storage Settings

Enable recycling
 Stop recording or recycle disk when free space of disk is smaller than 256M ▾
 Keep days (1-255) 30
 Apply

Disk Information

| Disk No. | Total Size | Used Size | Free space | Utilization | Remove | Format |
|----------|------------|-----------|------------|-------------|--------|--------|
| Disk11 | 3.910 | 0.070 | 3.840 | 1% | Remove | Format |

Partition Information

| Disk No. | Partition No. | Total Size | Used Size | Free space | Utilization | Format |
|----------|---------------|------------|-----------|------------|-------------|--------|
| Disk11 | 1 | 3.910 | 0.069 | 3.840 | 1% | Format |

(1,Unit: Gigabyte)

Figure 14-34

[Storage Settings]

If **Enable recycling** is selected, when the space of the storage device is lower than the specified space, the system will overwrite the oldest recorded files.

If **Enable recycling** is not selected, the system will stop recording when the specified space is reached.

[Keep days (1-255)] Specify the number of days to keep the files from 1 day to 255 days. When both **Keep days** and **Enable recycling** are selected, the system applies whichever condition comes first. For example, if the specified smallest amount of storage space comes earlier than the designated keep days, then recycle is applied first.

[Disk Information]

This section shows the details of the attached storage device.

[Partition Information]

This section shows the partition details of the attached storage device.

To add a memory card:

1. Insert the memory card to the camera.
2. Click the **Format** button.
3. After the format is complete, the partition information will display. The maximum space for one partition is 200 GB.

To remove a memory card:

1. Click the **Remove** button.
2. When you are prompted to ensure the action, click **Yes**. The page will be refreshed and the partition information will be cleaned.
3. Remove the memory card from the camera.

Note:

1. If **Enable Recycle** is selected, the available space of the storage device must be higher than the space you specified at the **Stop recording or recycle disk when free space of disk is smaller than x** option. Otherwise no video will be recorded.
 2. The recording data may be lost if you remove the USB mass storage device during recording.
 3. If you do not remove the storage device properly, the data cannot be read in another computer. In this case, re-plug the storage device back to the camera. The system will repair the data automatically. When the system is repairing the data, the Remove field will display "Repairing".
-

14.8.4 User Account

You can change the login name and password of Administrator and Guest. The default Administrator login name and password are **admin**; the default Guest login name and password are **guest**. To allow a Guest user log in without entering name and password, select **Disable authentication for guest account**. To prevent automatic logout of an Administrator / Guest account user after reboot, select **Disable auto logout when reboot**.

User Account

In this section you can change the administrator account and password

Administrator Account

Username:

Old Password:

New Password:

Confirm Password:

Guest User Account

Username:

Old Password:

New Password:

Confirm Password:

Disable authentication for guest account

Disable auto logout when reboot

Figure 14-35

14.8.5 Log Information

The log information contains dump data that is used by service personnel for analyzing problems.

Log Information

In this section you can see all system activities.

Startup time log

In this section you can see latest booting time of system.

Debug Messages

In this section will show the debug messages.

```

paca uacme wlvsvack
Feb 14 06:47:47 IPCAM user.debug kernel: On node 0 totalpages: 40960
Feb 14 06:47:47 IPCAM user.debug kernel: DMA zone: 32768 pages,
LIFO batch:7
Feb 14 06:47:47 IPCAM user.debug kernel: DMA32 zone: 8192 pages,
LIFO batch:1
Feb 14 06:47:47 IPCAM user.info kernel: DaVinci DM365 variant 0x8
Feb 14 06:47:47 IPCAM user.info kernel: PLL0: fixedrate : 24000000,
pll_rate: 680000000
Feb 14 06:47:47 IPCAM user.warn kernel: PLL0/SYS4 - commonrate :
170000000 (680000000 / 4=pll_div4)
Feb 14 06:47:47 IPCAM user.warn kernel: PLL0/SYS5 - vpsrate :
340000000 (680000000 / 2=pll_div5)
Feb 14 06:47:47 IPCAM user.info kernel: PLL0/SYS7 - ddrate :
680000000/2=680000000 (1 / 340000000=pll_div7) / 2 = 48571428
Feb 14 06:47:47 IPCAM user.warn kernel: PLL0/SYS8 - mmsdrate:
680000000 (14 / 2=pll_div8)
Feb 14 06:47:47 IPCAM user.info kernel: PLL0/SYS6 - vencrate_HD:
7555555 (680000000 / 9=pll_div6)
Feb 14 06:47:47 IPCAM user.info kernel: PLL1: pll_rate[432000000],
prediv[1], postdiv[1], pll_div2[1], pll_div4[21], pll_div5[16]
Feb 14 06:47:47 IPCAM user.info kernel: PLL1/SYS2 - armrate :
432000000 (432000000 / 1=pll_div2)
Feb 14 06:47:47 IPCAM user.warn kernel: PLL1/SYS4 - voicerate :
58871428 (432000000 / 2=pll_div4)

```

Figure 14-36

14.8.6 System Log

For the supported versions, see *Appendix F*.

The System Log records the events in the four types of logs: **System Event**, **Monitoring Event**, **I/O Event** and **Login/Logout Event**. With the System Log, you can search and obtain the detailed information of an event. To use the System Log, an SD/SDHC card is required to be inserted to the GV-IP Camera H.264.

1. For the first-time user of the System Log, first click **Create** to create a system log database (access file) on the inserted SD/SDHC card.



Figure 14-37

Note: If you have created the system log database on the SD/SDHC card, clicking **Create** again will clean your System Log.

2. Select the log type **System Event**, **Monitoring Event**, **I/O Event** or **Login/Logout Event** from the left menu of the Web interface.
3. Select the filtering criteria. For example, we want to know the login and logout information during a specific period of time.

4. Click **Query**. The filtering results may look like the figure below.

| Monitor Event Query | | | | | |
|--|--|------------|---------------------|---------------------|---------------------|
| Camera | <input type="checkbox"/> Select all GV-BL110D <input checked="" type="checkbox"/> Camera <input checked="" type="checkbox"/> Camera | | Event Type | Select all | |
| DST | Select all | Time | | 2000-01-01 00:00:00 | 2000-01-01 23:59:59 |
| <input type="button" value="Query"/> <input type="button" value="Reset"/> | | | | | |
| The page show record 1-15, total number of records : 16 <input type="button" value="<<"/> <input type="button" value="<"/> <input type="button" value=">"/> <input type="button" value=">>"/> Page <input type="text" value="1"/> total number of pages : 2 | | | | | |
| Query Result List | | | | | |
| Device Name | Camera | Event Type | Time | DST | Video Clip |
| GV-BL110D | Camera | Motion | 2000-01-01 13:27:59 | N | N |
| GV-BL110D | Camera | Motion | 2000-01-01 13:27:54 | N | N |
| GV-BL110D | Camera | Motion | 2000-01-01 13:27:49 | N | N |
| GV-BL110D | Camera | Motion | 2000-01-01 13:27:45 | N | N |

Figure 14-38

14.8.7 Tools

You can execute certain system operations and view the firmware version.

Additional Tools

In this section you can set the additional tools

Host Settings

In this section you can determine a hostname and camera name for identification.

Host Name

Auto Reboot Setup

In this section you can set the system's auto reboot time.

Enable

Day Interval days

RebootTime :

Repair Record Database

In this section you can set the system repair record database.

Repair Database Status

Unknown

Firmware Update

In this section you can see GV-IPCAM firmware version.

System Settings

Restore to factory default settings

Internal Temperature

Internal Temperature Normal Range : 0°C ~ 95°C *(32°F ~ 203°F)

Current internal temperature is °C/ °F

Reboot

Do you wish to reboot now?

Figure 14-39

[Host Settings] Enter a descriptive name for the camera.

[Auto Reboot Setup] Select **Enable** to activate automatic reboot and specify the time for reboot in the sub fields.

- **Day Interval:** Type the day interval between each reboot.
- **Reboot Time:** Use the drop-down lists to specify the time for automatic reboot.

[Repair Record Database] Click **Apply** to repair the database when errors occur while playing back the recordings with the Remote ViewLog player. Problems can occur when there are errors in firmware or damages to the SD card.

[Database Status] Displays the repairing status of database.

[Firmware Update] This field displays the firmware version of the camera.

[System Settings]

- **Load Default:** Clicking the **Load Default** button to restore factory default settings. After applying the default settings configure the camera's network setting again.

[Temperature Status]

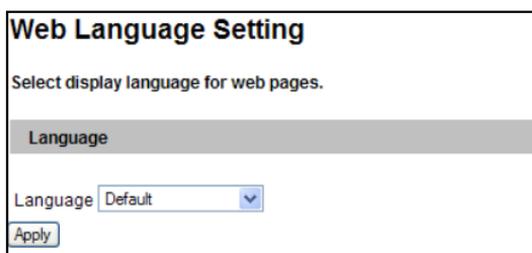
Note this function is not available for **GV-BX110D**, **GV-MFD110** and **Cube Camera** and **Advanced Cube Camera**. Displays the current chipset temperature inside the camera.

[Reboot] Clicking the **Reboot** button will make the camera perform software reset.

14.8.8 Language

Note this function is not available in GV-BX110D, GV-MFD110, GV-BL110D, GV-PTZ010D and GV-PT110D.

You can select the language for the Web interface.



The screenshot shows a web interface titled "Web Language Setting". Below the title is the instruction "Select display language for web pages." There is a section header "Language" in a grey bar. Below this, there is a label "Language" followed by a drop-down menu currently showing "Default". At the bottom left of the form is an "Apply" button.

Figure 14-40

Use the **Language** drop-down list to select a language for the Web interface. By default, the language on the Web interface will be the same with the one used for the operating system.

Chapter 15 Recording and Playback

Note this chapter and the function is not available for **GV-MFD110**

The GV-IPCAM H.264 can record video and audio directly to the memory card. You can play back the recorded files on the GV-System or over the TCP/IP network.

Note: See *Note for Recording* at the beginning of the manual.

15.1 Recording

To enable the recording function:

1. Insert the memory card to the camera. See “To add a memory card”, *14.8.3 Storage Settings*.
2. If you like to set up the pre-recording, post-recording or audio recording, see *14.1.1 Video Settings*.
3. If you like to set up the schedule for video recording or I/O monitoring, see *14.5 Recording Schedule*.
4. If you like to configure the areas and sensitivity values for motion detection, see *14.1.2 Motion Detection*.
5. If you want the recording to be triggered by input device, configure the operation of input device. See *14.2.1 Input Settings*.
6. To start recording and I/O monitoring, see *14.4 Monitoring*.

The camera will start recording in case of motion detection, I/O trigger, or during the scheduled time.

15.2 Playback

These methods are available to play back the video files recorded at the GV-IPCAM H.264:

- Playback by using the memory card by connecting it directly to the GV-System through a memory card reader
- Playback by using the Remote ViewLog function over the TCP/IP network
- Playback by using the recorded files downloaded from built-in FTP Server

15.2.1 Playback Using the Memory Card

You can play back the files recorded at the GV-IPCAM H.264 by connecting the memory card to GV-System through a memory card reader. However, GV-System is run on Windows system while the files recorded at the GV-IPCAM H.264 is of Linux file system. To enable Windows to recognize the files, you need to install **IFS Driver** included on the Software CD.

1. Insert the Software CD, select **IFS Drives** and follow the onscreen instructions for installation.
2. Run **IFS Drives** from Control Panel, and assign the drive name(s) to each available partition in the storage device.

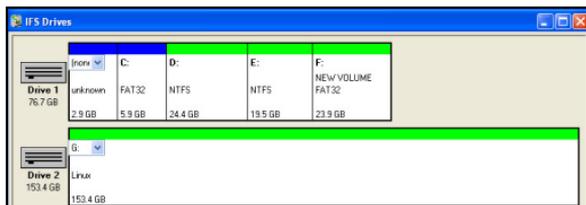


Figure 15-1

3. Run **ViewLog**.
4. Click the **Advanced** button  select **Reload Database** and click **Video Server/Compact DVR**. This dialog box appears.

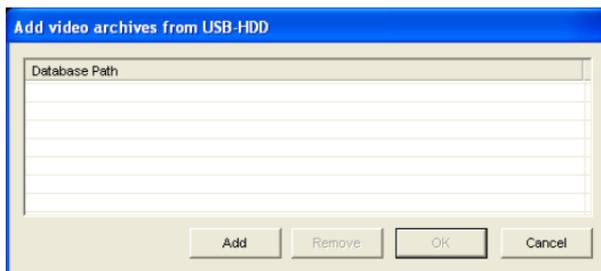


Figure 15-2

5. Click **Add** to assign the hard drive.
6. Click **OK** to load the data to the ViewLog for playback.

Note: IFS Driver supports Windows NT / 2000 / XP / Windows 7. For Windows 7, refer to ftp://geo-demo-japan.dipmap.com/Technote/GV_IP_Devices/Run_IFS_Driver_Win7.pdf to see how to configure the settings.

15.2.2 Playback over Network

With the Remote ViewLog function, you can play back the files recorded at the GV-IPCAM H.264 over TCP/IP network.

1. The camera needs to allow the remote access with **ViewLog Server** activated. See 14.3.7 *ViewLog Server*.
2. For the first-time user, run the **Remote ViewLog** program from the Software CD. Next time whenever you like to use this remote playback function, access this option from the camera's Web interface.
3. When the Remote ViewLog player is open, you will be prompted to select Remote ViewLog Service or Remote Storage System. Select **Remote ViewLog Service**.
4. When this dialog box appears, type the camera's IP address, login ID and password. Keep the default port **5552** or modify it if necessary.

The screenshot shows a dialog box titled "Connect to Remote Viewlog Service". It contains the following fields and controls:

- IP Address**: A dropdown menu with a question mark icon to its left.
- Port**: A text box containing "5552" and a "Default" button to its right.
- ID**: A text box containing "Guest".
- Password**: An empty text box.
- Save Password**: An unchecked checkbox.
- Host Type**: A dropdown menu containing "GV IP-Device".
- Buttons**: "Connect" and "Cancel" buttons at the bottom.

Figure 15-3

4. In the Host Type field, select **GV-IP Device**.
5. Click **Connect** to access the files of the camera for playback.

15.2.3 Access to the Recorded Files through FTP Server

The built-in FTP Server allows you to download the recorded files saved on the memory card. You can play back the downloaded files of AVI format with Media Player. For details to download files, see [Act as FTP Server], *14.3.2 FTP*.

Note: To play back videos, ensure you have installed Geovision codec on the computer. The codec is available on the software CD. If you have installed the Remote Playback player on the computer, it is not required to install the codec.

15.2.4 Playback of Daylight Saving Time Events

On GV-System, you can retrieve the events recorded during the Daylight Saving Time (DST) period from the GV-IPCAM H.264 for playback. You can also connect the memory card to GV-System for playback.

The following instructions describe how to retrieve the recorded files from the GV-IPCAM H.264 over network. If you like to use the memory card for playback, first follow the instructions in *15.2.1 Playback Using the Memory Card* to load the recorded files to ViewLog, and then follow Steps 4-5 below to play back DST events.

1. The camera must allow the remote access with **ViewLog Server** activated. See *14.3.7 ViewLog Server*.

- To remotely connect to the camera from GV-System, click the **Tools** button and select **Remote ViewLog Service**. The Connect to Remote ViewLog Service dialog box appears.
- Enter the connection information of the camera, and click **Connect**. Once the connection is established, the video events will be displayed on the Video Event list.
- On the Date Tree, select the date of Daylight Saving Time. A separate DST subfolder will be displayed as illustrated below.

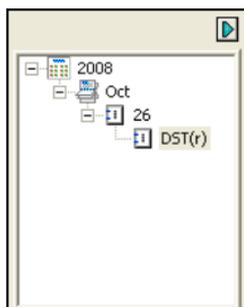


Figure 15-4

- On the Video Event list, select desired events, and click the **Play** button to start.

Note:

- The playback function is only compatible with the GV-System of version 8.3 and later.
 - The AVI file recorded during the DST period is named with the prefix "GvDST", e.g. GvDST20081022xxxxxxxx.avi, to differentiate from the regular AVI file named with the prefix "Event", e.g. Event20081022xxxxxxxx.avi.
-

Chapter 16 Advanced Applications

This chapter introduces more advanced applications.

16.1 Upgrading System Firmware

GeoVision periodically releases updated firmware on the website. Simply download the new firmware into the GV-IPCAM H.264 using the Web interface or IP Device Utility included in the Software CD.

Important Notes before You Start

Before you start updating the firmware, please read these important notes:

1. If you use the IP Device Utility for firmware upgrade, the computer used to upgrade firmware must be under the same network of the camera.
2. Stop monitoring of GV-IPCAM H.264.
3. Stop all the remote connections including Center V2, VSM, ViewLog Server and 3GPP/RTSP.
4. Stop the connection to GV-System.
5. While the firmware is being updated,
 - A) the power supply must not be interrupted, and
 - B) do not unplug the Ethernet cable if the cable is the source of power supply (Power over Ethernet or PoE supported).

WARNING: The interruption of power supply during updating causes not only update failures but also damages to the camera. In this case, please contact your sales representative and send your device back to GeoVision for repair.

6. Do not turn the power off within 10 minutes after the firmware is updated.
7. If firmware upgrade fails, you will need to restore the camera to its default settings. For details, see *16.3 Restoring to Factory Default Settings*.

16.1.1 Using the Web Configuration Interface

1. In the Live View window, click the **Show System Menu** button (No. 8, Figure 13-3) and select **Remote Config**. This dialog box appears.

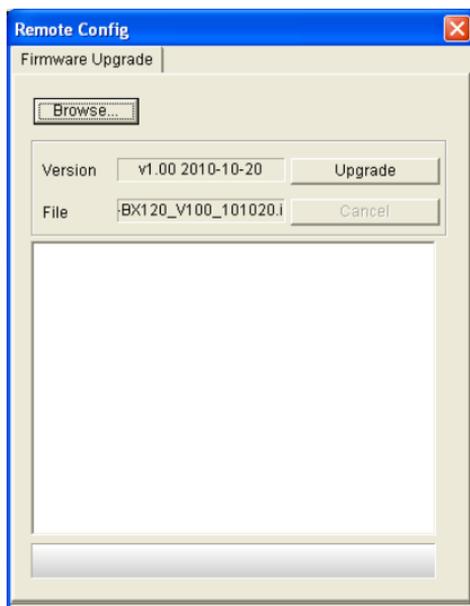


Figure 16-1

2. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
3. Click the **Upgrade** button to start the upgrade.

16.1.2 Using the IP Device Utility

The IP Device Utility provides a direct way to upgrade the firmware to multiple units of GV-IPCAM H.264. Note the computer used to upgrade firmware must be under the same network of the camera.

1. Insert the Software CD, select **IP Device Utility**, and follow the onscreen instructions to install the program.
2. Double-click the **IP Device Utility** icon created on your desktop. This dialog box appears.

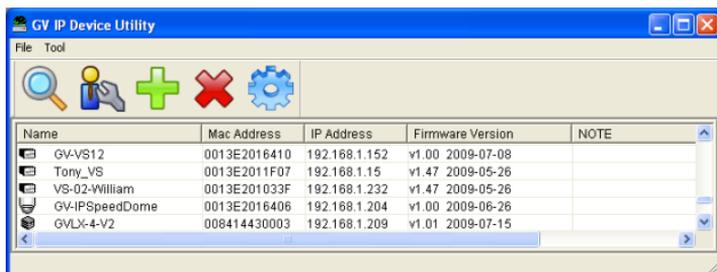


Figure 16-2

3. Click the **Search** button to locate available cameras on the same LAN. Or click the **New** button and assign the IP address to locate the camera over the Internet. Or highlight one camera in the list and click the **Delete** button to remove it.

4. Double-click one camera in the list. This dialog box appears.

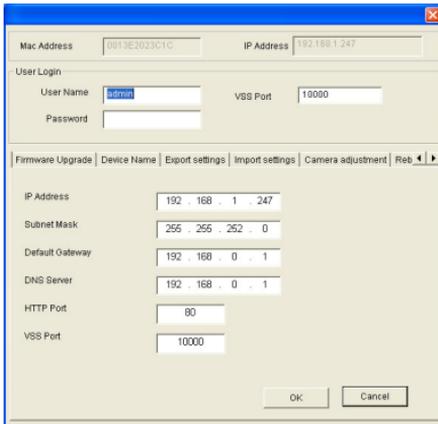


Figure 16-3

5. Click the **Firmware Upgrade** tab. This dialog box appears.

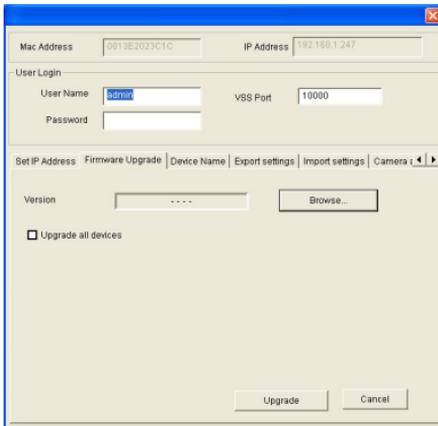


Figure 16-4

6. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
7. If you like to upgrade all the cameras in the list, select **Upgrade all devices**.
8. Type **Password**, and click **Upgrade** to start the upgrade.

16.2 Backing Up and Restoring Settings

With the IP Device Utility included in the Software CD, you can back up the configurations in the GV-IPCAM H.264, and restore the backup data to the current camera or import it to another camera.

To back up the settings:

1. Run **IP Device Utility** and locate the desired camera. See Steps 1-3 in *16.1.2 Using the IP Device Utility*.
2. Double-click the camera in the list. Figure 16-3 appears.
3. Click the **Export Settings** button. This dialog box appears.

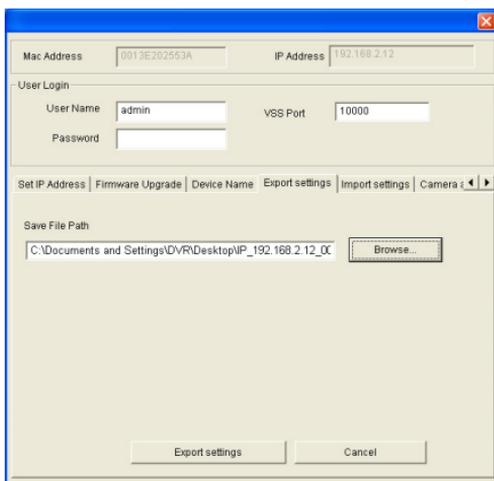


Figure 16-5

4. Click the **Browse** button to assign a file path.
5. Type **Password**, and click the **Export Settings** button to save the backup file.

To restore the settings:

1. In Figure 16-3, click the **Import Settings** tab. This dialog box appears.

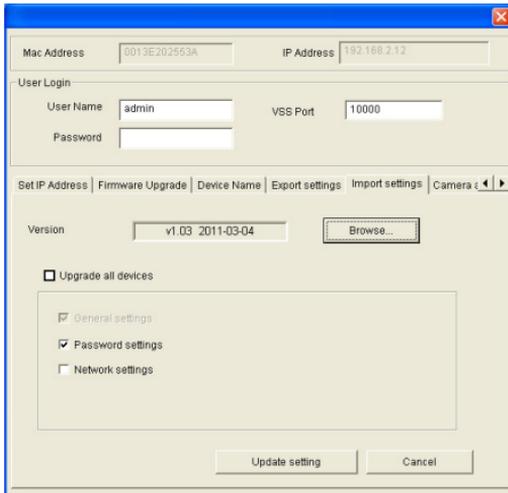


Figure 16-6

2. Click the **Browse** button to locate the backup file (.dat).
3. Select **Upgrade all devices** to import the settings into the same type of device in the same LAN. To import password settings and/or network settings, select **Password Settings** and/or **Network settings**.
4. Click the **Update Settings** button to start restoring.

16.3 Restoring to Factory Default Settings

Please refer to the corresponding section of your camera type and follow the steps to restore factory default settings.

Box Camera

- **GV-BX110D**

1. Unplug the power cable and the network cable to start.
2. Use a pin to press and hold the **Default** button on the back panel of the camera.

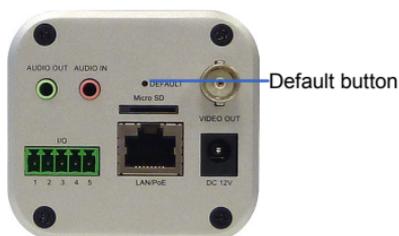


Figure 16-7

3. Power on the camera using the power cable or the PoE cable. The **Status LED** on the front panel of the camera turns red.



Figure 16-8

4. Wait until the **status LED** turns off. This will take about 10 seconds.
5. Soon after the **status LED** turns off, it turns red again and a clicking sound appears. Then you can release the **default** button and the process of loading default values is completed.

- **Box Camera (except GV-BX110D)**

1. Use a pin to press and hold the **default** button on the back panel of the camera.



Figure 16-9

2. Release the **default** button when the **status LED** blinks.



Figure 16-10

3. When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Mini Fixed Dome

- **GV-MFD110**

1. Unplug the network cable to start.
2. Unscrew the camera's cover.
3. Press and hold the **default** button.



Figure 16-11

4. Power on the camera using the network cable. Wait until the **network LED** turns off. This will take about 40 seconds.
 5. Soon after the **network LED** turns off, release the **default** button. The process of loading default values is completed.
- **GV-MFD120 / 130 / 220 / 320 / 520**
 1. Press and hold the **default** button.



Figure 16-12

2. Release the **default** button when the **status LED** blinks.
3. When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Mini Fixed Rugged Dome

1. Press and hold the **default** button.

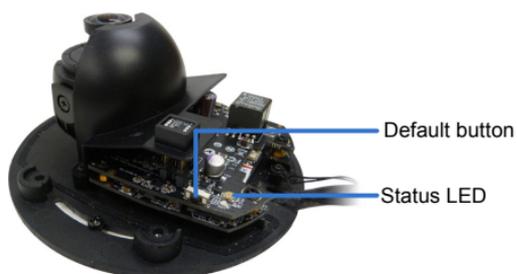


Figure 16-13

2. Release the **default** button when the **status LED** blinks.
3. When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Bullet Camera

- **GV-BL110D**

1. Loosen the camera's cover and remove the **Silica Gel Bag**.
2. Press and hold the **default** button for 50 seconds while plugging the power cable.

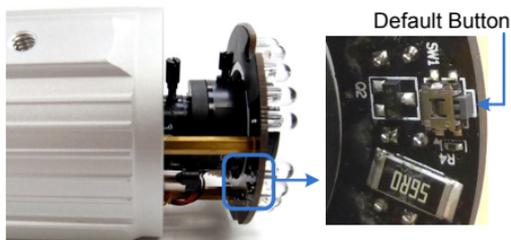


Figure 16-14

3. Release the **default** button and the process of loading default settings is completed.
4. Insert a new **Silica Gel Bag** and fasten the camera's cover immediately.

- **GV-BL120D / 130D / 220D / 320D**

1. Loosen the camera's cover and remove the **Silica Gel Bag**.
2. Press and hold the **default** button for 4 seconds.

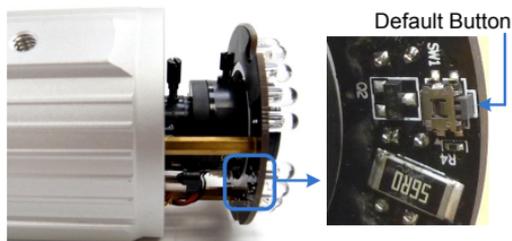


Figure 16-15

3. Release the **default** button. When the process of loading default settings is completed, the camera reboots automatically.
4. Insert a new **Silica Gel Bag** and fasten the camera's cover immediately.

- **PTZ and PT Camera**

There are two types of default settings: **camera default settings** and **system default settings**. Camera default settings include all settings on Iris, White Balance, Image Reverse and Other in the VISCA OSD Configuration dialog box (Figure 16-16). System default settings refer to all the settings of the PTZ / PT camera except the camera settings.

- **To load camera default settings (only available in PTZ camera):**
 1. On the left menu of Web interface, select **Digital I/O and PTZ**, select **PTZ Settings**, and select **System Configure**. The VISCA OSD Configure dialog box appears.
 2. Click the **Load Camera Default** button.

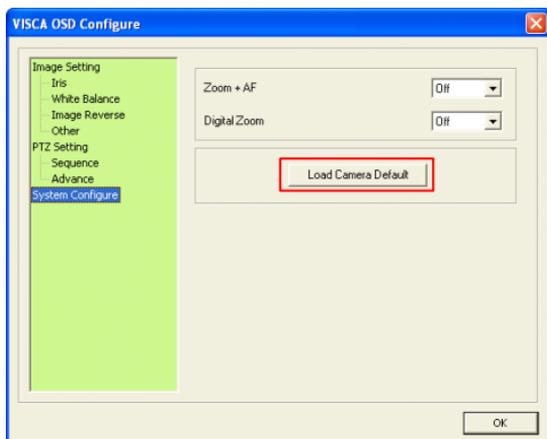


Figure 16-16

- **To load system default settings:**

1. Unplug the power cable or the network cable (if it is also used as the power supply).
2. Press and hold the **default** button (No. 10, Figure 6-1).
3. Power on the camera using the power cable or the PoE cable.
4. Hold the **default** button until the two network LEDs fade. This will take about 25 seconds.

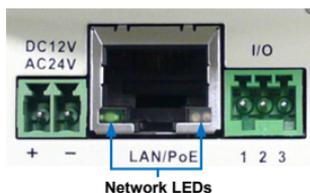


Figure 16-17

5. When default loading is completed, the camera will pan and tilt to its full range and return to the home point.

Vandal Proof IP Dome

1. Use a pin to press and hold the **default** button on the inner housing.



Figure 16-18

2. Release the **default** button when the **status LED** blinks.

- When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Fixed IP Dome

- Use a pin to press and hold the **default** button on the panel.



Figure 16-19

- Release the **default** button when the **status LED** blinks.
- When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Cube Camera

1. Use a pin to press and hold the **default** button on the panel.

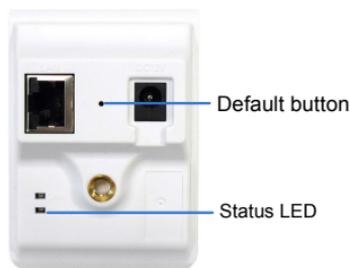


Figure 16-20

2. Release the **default** button when the **status LED** blinks.
3. When the **status LED** turns orange, the process of loading default settings is completed and the camera is ready for use.

Advanced Cube Camera

1. Use a pin to press and hold the **default** button on the panel.

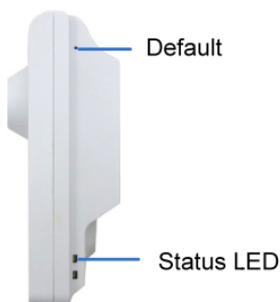


Figure 16-21

2. Release the **default** button when the **status LED** blinks.
3. When the **status LED** turns green, the process of loading default settings is completed and the camera is ready for use.

16.4 Verifying Watermark

The watermark is an encrypted and digital signature embedded in the video stream during the compression stage, protecting the video from the moment of creation. Watermarking ensures that an image is not edited or damaged after it is recorded. To enable the watermark function, see [Watermark Setting], *14.1.1 Video Settings*.

The **Watermark Proof** is a watermark-checking program. It can verify the authenticity of the recording before you present it in court.

16.4.1 Accessing AVI Files

To verify watermark, first you have to access the recorded AVI files by one of these methods:

1. Use the **File Save** function (No.6, Figure 13-3) to start recording on the local computer.
2. Use the **Act as FTP Server** function to download AVI files from the GV-IPCAM H.264. See *14.3.2 FTP*.
3. Use the files recorded on the memory card. Since the files saved on the memory card are of Linux file system, remember to run **IFS Drives** from the Software CD to convert the Linux-based files to Windows-based files. For the instructions, see Steps 1 to 2 in *15.2.1 Playback Using the Memory Card*.

16.4.2 Running Watermark Proof

1. Install **Watermark Proof** from the Software CD. After installation, a **WMPProof** icon is created on your desktop.
2. Double-click the created icon. The Water Mark Proof window appears.
3. Click **File** from the menu bar, select **Open** and locate the recording (.avi). The selected recording is then listed on the window. Alternatively, you can drag the recording directly from the storage folder to the window.
4. If the recording is unmodified, a check mark will appear in the **Pass** column. On the contrary, if the recording is modified or does not contain watermark during recording, a check mark would appear in the **Failed** column. To review the recording, double-click the listed file on the window.

16.4.3 The Watermark Proof Window

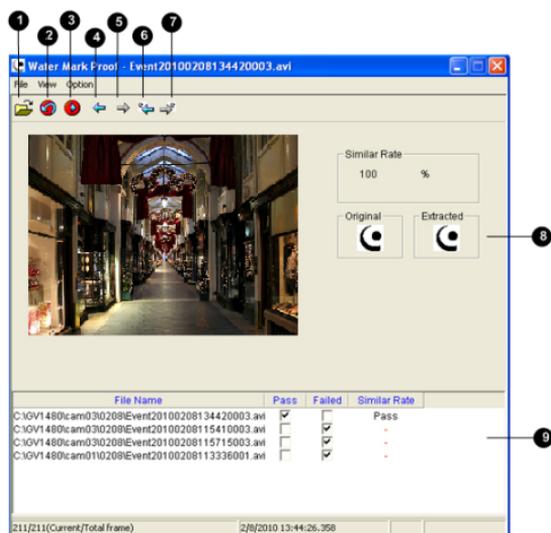


Figure 16-22

The controls in the window:

| No. | Name | Description |
|-----|----------------------------|--|
| 1 | Open File | Opens the recording. |
| 2 | First Frame | Goes to the first frame of the file. |
| 3 | Play | Plays the file. |
| 4 | Previous Frame | Goes to the previous frame of the file. |
| 5 | Next Frame | Goes to the next frame of the file. |
| 6 | Previous Watermarked Frame | Goes to the previous frame that contains watermark. |
| 7 | Next Watermarked Frame | Goes to the next frame that contains watermark. |
| 8 | Original vs. Extracted | The Extracted icon should be identical with the Original icon. If not, it indicates the recording has been tampered. |
| 9 | File List | Displays the proof results. |

16.5 Downloading Videos from the SD Card

When connections of GV-IP Cameras to the GV-System are lost, recordings are automatically saved to the memory cards inserted in the GV-IP Cameras. To automatically synchronize and download recordings from the SD cards to a local folder, install and execute the **GV-SDCardSync Utility** program.

Note: GV-SDSyncCard Utility is only supported in GV-System V8.5.4 or later and in GV-IPCam H.264 V1.11 or later.

16.5.1 Installing the GV-SDCardSync Utility

1. Download the **GV-SD Card Sync Utility** program from http://ftp.geovision.tw/FTP/neo/Utility/GvSDCardSync_Setup.zip

Note: The GV-SD Card Sync Utility must be installed on the computer installed with GV-System V8.5.4 or later.

2. Execute the **GV-SDCard Sync Utility** program. The main window and the Setting window appear. The Setting window pops up automatically upon first execution. Otherwise, click the **Setting** button .

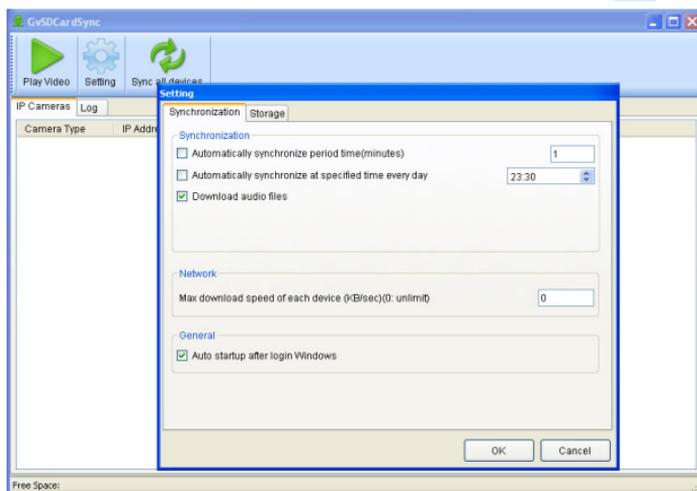


Figure 16-23

3. To configure synchronization, network and startup settings, see the steps below.

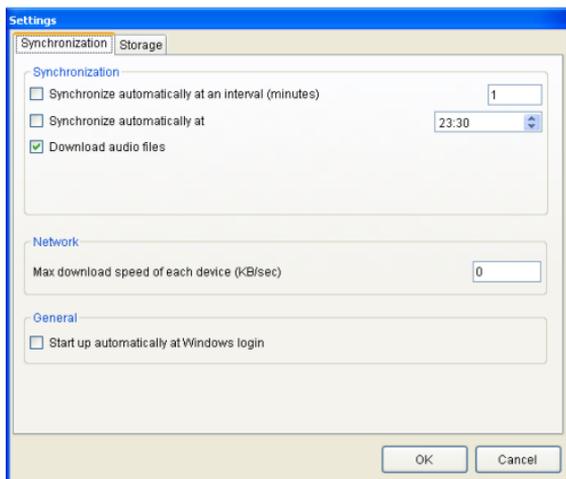


Figure 16-24

[Synchronization]

- **Synchronize automatically at an interval:** Automatically synchronize videos from SD cards to a local folder at the specified interval.
- **Synchronize automatically at:** Automatically synchronize videos from SD cards to a local folder at the specified time.
- **Download Audio Files:** You may choose to download audio files along with the video files. This option is enabled by default.

[Network]

- **Max. download speed of each device (Kb/sec):** To make sure the bandwidth is not completely taken up while downloading files from the memory card, specify a maximum download speed. If you do not want to set a bandwidth limit, type **0**.

[General]

- **Start up automatically at Windows login:** GV-SDSync Utility launches automatically when Windows starts up.
4. By default, downloads are saved to **:\GvSDCardSync** and are not recycled automatically. To configure the storage and recycling settings, select the **Storage** tab on the Setting window. This page appears.

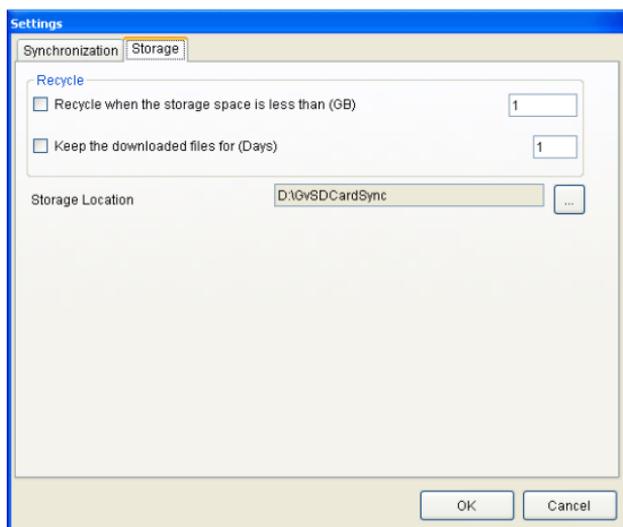


Figure 16-25

[Recycle]

- **Recycle when the storage space is less than (GB):** Specify a minimum free space of your local storage for file recycling.
- **Keep the downloaded files for (Days):** Specify the number of days to keep the download files at the local hard drive.

[Storage Location]

To configure the storage path, click the button next to the location field and specify a storage location.

5. Click **OK** to save the configuration or exit the Setting window.

Note: Keep the GV-SDCardSync Utility running in the background to automatically synchronize and download videos.

16.5.2 The GV-SDCardSync Utility Window

After you have installed the GV-SDCardSync Utility, point to **Start**, select **Programs**, select **GV-SDCardSync** and select  **GvSDCardSync** to launch the program. This window appears.

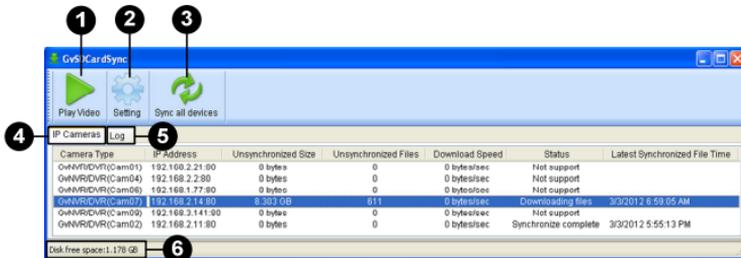


Figure 16-26

| No. | Name | Description |
|-----|------------------|---|
| 1 | Play Video | Plays downloaded recordings of the selected GV-IP Cameras using the ViewLog player. For details, see Chapter 4, <i>DVR User's Manual</i> on Surveillance System Software DVD. |
| 2 | Setting | Contains settings on synchronization, network, storage location and recycling criteria. See step 4 in <i>16.5.1 Installing the GV-SDCardSync Utility</i> . |
| 3 | Sync all devices | Manually synchronizes and downloads the recording files stored at GV-IP Cameras. |
| 4 | IP Camera Tab | Shows information of GV-IP Cameras connected to the GV-System, including channel number, IP address, size and number of unsynchronized files, download speed, status and the last synchronization time. |
| 5 | Log Tab | Displays up to 100 event entries of the GV-SDCardSync Utility. Once the entries are full, recycling will start from the oldest file. |
| 6 | Storage Space | Shows the storage space of the designated hard drive. |

Note:

1. The synchronization time is recorded according to the system time of the GV-IP Camera.
 2. The logs are deleted once the GV-SDCardSync Utility is re-activated.
-

Chapter 17 DVR Configurations

The GV-System provides hybrid solution, integrating the digital videos from IP cameras with other analog videos. For the digital videos, the GV-System provides the complete video management, such as video viewing, recording, playback, alert settings and almost every feature of the system. Following is the integration specifications:

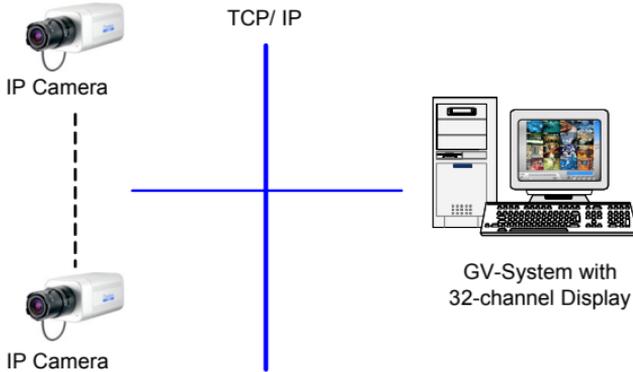


Figure 17-1

- The compatible version of GV-System for each camera model:

| Camera | Models | Compatible version of GV-System |
|------------------------|---|---------------------------------|
| Box Camera | GV-BX110D | V8.3.2 or later |
| | GV-BX120D GV-BX220D Series GV-BX320D Series | V8.4 or later |
| | GV-BX130D Series GV-BX140DW GV-BX520D-0 | V8.5 or later |
| IR Arctic Camera | GV-BX120D-E GV-BX220D-E GV-BX320D-E GV-BX520D-E | V8.4 or later |
| Mini Fixed Dome | GV-MFD110 | V8.3.3 or later |
| | GV-MFD120 GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | V8.5 or later |
| Mini Fixed Rugged Dome | GV-MDR120 GV-MDR220 GV-MDR320 GV-MDR520 | V8.5 or later |

| | | |
|---|-------------------------------------|------------------------------------|
| Bullet Camera | GV-BL120D GV-BL220D GV-BL320D | V8.4 (with patch files) or later |
| | GV-BL130D | V8.5 or later |
| PTZ and PT Camera | | V8.4 or later |
| Vandal Proof IP Dome | | V8.4 (with patch files) or later |
| Fixed IP Dome | | V8.4.3 (with patch files) or later |
| GV-CB120 / 220 | | V8.4.3 (with patch files) or later |
| GV-CBW120 / 220 | | V8.5 or later |
| Advanced Cube Camera | | V8.5.5 or later |
| <p>Note: For users of V8.5 and V8.5.0.1:</p> <ol style="list-style-type: none"> 1. To establish connection to GV-BX140DW, select GV-BX120DW as the device type. 2. For V8.5, to establish connection to GV-MDR120 / 220 / 320 / 520, select the corresponding GV-MFD120 / 220 / 320 / 520 as the device type. 3. To establish connection to GV-CBW120 / 220, select the corresponding GV-CB120 / 220 as the device type. | | |

- The maximum number of streams which the GV-IPCAM H.264 allows varies according to its resolution:

| Resolution | Camera Models | Max. No. of Streams |
|------------|---|---------------------|
| 1.3 M | BX110D, MFD110, BL110D, PTZ010D, PT110D | 7 |
| 1.3 M | BX120D, BX130D Series, BX140DW, BX120D-E, MFD120, MFD130, MDR120, BL120D, BL130D, VD120D, VD121D, VD122D, VD123D, FD120D, CB120, CBW120 CA120, CAW120 | 10 |
| 2 M | BX220D Series, BX220D-E, MFD220, MDR220, BL220D, VD220D, VD221D, VD222D, VD223D, FD220D, CB220, CBW220 CA220, CAW220 | 7 |
| 3 M | BX320D Series, BX320D-E, MFD320, MDR320, BL320D, VD320D, VD321D, VD322D, VD323D, FD320D | 7 |
| 5 M | BX520D-0, BX520D-E, MFD520, MDR520 | 7 |

- When a GV-IPCAM H.264 is connected to IE browser or any other applications, it takes up 1 stream; when a GV-IPCAM H.264 is connected to GV-System, it takes up 2 streams.

Note:

- The above maximum numbers of streams are based on the maximum resolution for each camera and the codec H.264.
 - By default, GV-IPCAM H.264 is in dual stream and will take up 2 streams when connected to GV-System.
-

- The hardware compression and the “Pre-Recording Using RAM” feature cannot work on the videos from GV-IPCAM H.264.

17.1 Setting up an IP Camera

To set up the GV-IPCAM H.264 on the GV-System, follow these steps:

1. On the main screen, click the **Configure** button, select **System Configure**, select **Camera Install** and click **IP Camera Install**. This dialog box appears.

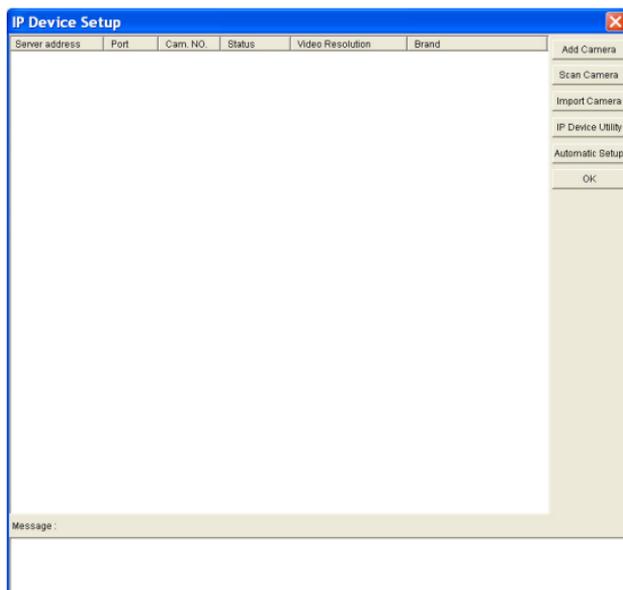


Figure 17-2

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

- Click **Add Camera**. The dialog box appears.



Figure 17-3

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

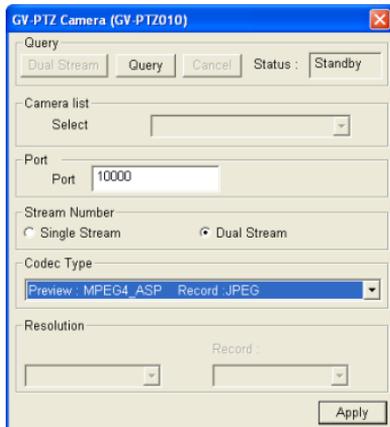


Figure 17-4

- The GV-System will automatically query for the IP camera, and the status will be indicated as “Standby”. If not, modify the HTTP port (Figure 17-3) and streaming port (Figure 17-4) to match those of the IP camera, and click the **Query** button to detect the IP camera again.

5. The options in the setup dialog box may vary depending on the camera model.
 - **Dual Stream:** Click this button to set the codec type to H.264 in the main stream and to MPEG4 in the sub stream, and each stream with a different resolution. For details on supported versions and resolutions in different cameras, see *Appendix G*.
 - **Port:** Video streaming port number.
 - **Stream Number:** You have the option of single streaming only or both single and dual streaming.
 - **Codec type:** You have the option of MPEG4, JPEG, or H.264. If the selected camera supports dual streaming, the preview codec and recording codec can be set differently.
 - **Resolution:** Select resolutions for preview and recording.
6. Click **Apply**. The IP camera is added to the list.
7. Click the listed camera, and select **Display position** to map the IP camera to a channel on the GV-System.

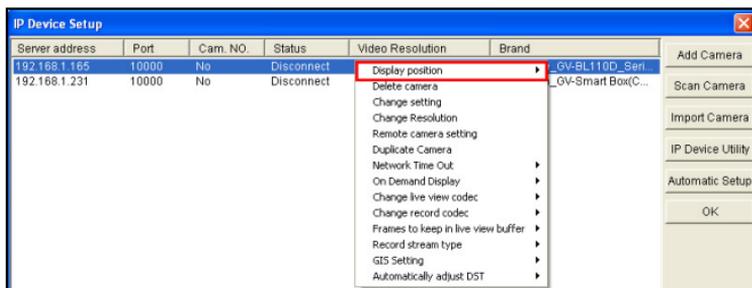


Figure 17-5

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

17.1.1 Customizing IP Camera Settings

After the IP camera is connected and assigned with a display position, you can configure the camera's settings such as frame rate, codec type and resolution. Right-click the desired camera to see the following list of options:

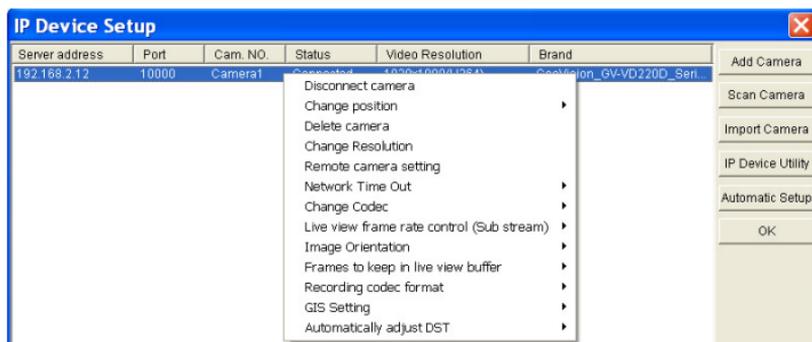


Figure 17-6

- **Change Resolution:** Changes the display ratio, live view resolution and record resolution
- **Network Time Out:** When network disconnection exceeds the specified time period, the camera status will be displayed as Connection Lost.
- **Change Live View Codec:** Changes the live view codec.
- **Change Record Codec:** Changes the recording codec.
- **Live-view frame rate control (Sub stream):** Sets the live view frame rate of the sub stream to help reduce the CPU usage. If you have set the live view codec to be **JPEG**, select the number of frames to allow in a second. If the live view codec selected is **MPEG4** or **H.264**, select one of the following options:
 - ⊙ **Maximum Live-view Frame Rate:** View the video at the maximum frame rate possible.

- ⊙ **Live-view Key Frame only:** You can choose to view the key frames of the videos only instead of all frames on the live view. This option is related to the GOP setting of the IP camera. For example, if the GOP value is set to 30, there is only one key frame among 30 frames.
- **Live-view frame rate control (Main stream):** Sets the live view frame rate of the main stream with higher resolution when On Demand function is enabled. Refer to Live-view frame rate control above to see the options available.
- **Image Orientation:** You can adjust the image orientation by selecting **Normal, Horizontal Mirror, Vertical Flip** or **Rotate 180**.
- **Frames to keep in live view buffer:** Specifies the number of frames to keep in the live view buffer.
- **Recording Codec Format:** Specifies whether to record in standard or GeoVision type of JPEG, MPEG4, H.264 codec.
- **GIS Setting:** Records the video with the GPS data. To record the GPS data, remember to also enable the GIS function of the GV-System (Configure button < Accessories < Enable Local GIS).
- **Automatically Adjust DST:** If enabled, the time on the GV-IP device Web interface will be synchronized with the time of the GV-System when DST period starts or ends on the GV-System.

17.2 Remote Monitoring with Multi View

You can use the Multi View to monitor and manage the GV-IPCAM H.264.

17.2.1 Connecting to the IP Camera

1. On the Multi View window, click the **Edit Host** button. The Edit Host window appears.
2. To create a host, click the **New** button. You need to create a group before creating a host.
3. Select **GV-IP Camera, GV-IP Speed Dome** from the Device drop-down list. Type the host name, IP address, user name and password of the camera. Modify the default VSS port **10000** if necessary.

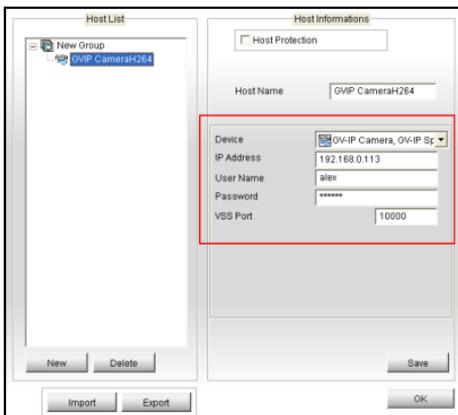


Figure 17-7

4. Click **Save** to establish connection.

For details on the Multi View functions, see “Multi View Viewer”, *Remote Viewing, DVR User’s Manual* on the Surveillance System Software DVD.

17.3 Remote Monitoring with E-Map

You can use the Remote E-Map to monitor and manage the GV-IPCAM H.264.

17.3.1 Creating an E-Map for the IP Camera

With the E-Map Editor, you can create an E-Map for the GV-IPCAM H.264. The E-Map Editor is available in the two applications: Main System and E-Map Server. The following is an example of running the E-Map Editor included in the Main System.

1. Go to Windows **Start** menu, point to **Programs**, select **GV folder** and click **E-Map Editor**.
2. To create an E-Map, click the **Add Map** button on the toolbar. A New Map file appears.
3. Double-click the New Map file, and click the **Load Map** button on the toolbar to import a graphic file
4. To create a host, click the **Add Host** button on the toolbar and select **Add IPCam**.
5. Right-click the created New Host in the Host View, and select **Host Settings**. This dialog box appears.

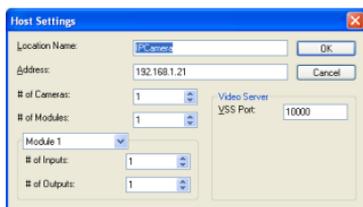


Figure 17-8

6. Give the camera a location name, and type its IP address (or domain name). Modify the default VSS port **10000** if necessary.

7. Click **OK** to save the settings.
8. Expand the created host folder. Drag and drop the icons of camera and I/O devices onto the imported E-Map.
9. Close the E-Map Editor. Click **Yes** when you are promoted to save the file.

For details on creating an E-Map file on the E-Map Server, see “E-Map Server”, *E-Map Application, DVR User’s Manual* on the Surveillance System Software DVD.

17.3.2 Connecting to the IP Camera

Depending on where you save the created E-Map file (DVR, E-Map Server or Control Center), the steps to open the Remote E-Map window for monitoring may vary slightly. The following is the connection example when you store the E-Map file on the DVR.

1. To enable the remote access to the DVR, click the **Network** button, select **WebCam Server** to display the Server Setup dialog box, and click **OK** to start the WebCam server.
2. At the local computer, open the web browser and type the address of the DVR. The Single View page appears.
3. Select **Emap**. A valid user name and password are required for login. For the first-time user, you will be directed to the Download page. Install the E-Map program before you can run it.
4. On the Remote E-Map window, click the **Login** button and select the camera host to access its videos and I/O devices. A valid user name and password are required to log in the camera.

For details on the Remote E-Map functions, see “The Remote E-Map Window”, *E-Map Application, DVR User’s Manual* on the Surveillance System Software DVD.

Chapter 18 CMS Configurations

This section introduces the related settings to enable connecting to the GV-IPCAM H.264 in the central monitoring stations Center V2, VSM and Dispatch Server.

18.1 Center V2

The Center V2 can monitor and manage the camera and I/O devices connected to the GV-IPCAM H.264.

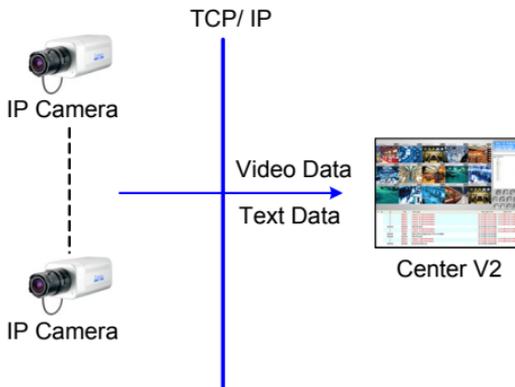


Figure 18-1

- To set the appropriate port for IP camera connection, click the **Preference Settings** button, select **System Configure**, click the **Network** tab, and select **Accept connections from GV-Compact DVR, Video Server & IP Cam**. Keep default port **5551**, or modify it to match the Center V2 port on the IP camera.

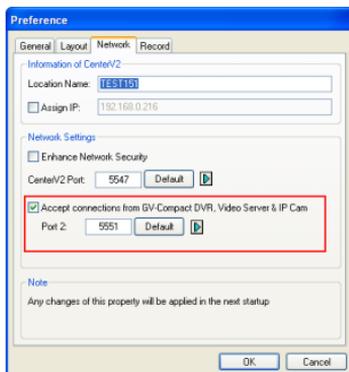


Figure 18-2

- To define how to display the received video on motion detection and input trigger from the IP camera, click the **Preference Settings** button and select **System Configure**. This dialog box appears.

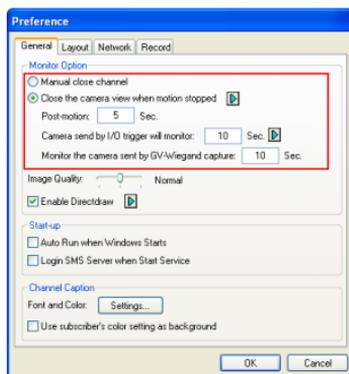


Figure 18-3

- **Manual close channel:** Closes the triggered camera view manually.
- **Close the camera view when motion stopped:** Closes the triggered camera view automatically when motion stops.
- **Post Motion:** Specify the duration of the camera view remaining on the monitoring window after a motion stops.
- **Camera send by I/O trigger will monitor:** Specify the duration of the camera view remaining on the monitoring window when an I/O device is triggered.

To keep the camera view remaining on the monitoring window even after the alarm is finished, click the right-arrow button, and uncheck **Latch Trigger**. Then the camera view will remain on the monitoring window for the specified time. For example, if the alarm is triggered for 5 minutes and you set 10 minutes, the camera view will be displayed for 15 minutes.

For further information on how to manage the video received from the IP camera, see *GV-CMS Series User's manual*.

18.2 VSM

The VSM is designed to monitor and manage the camera and I/O devices connected to the GV-IPCAM H.264 under low bandwidth network.

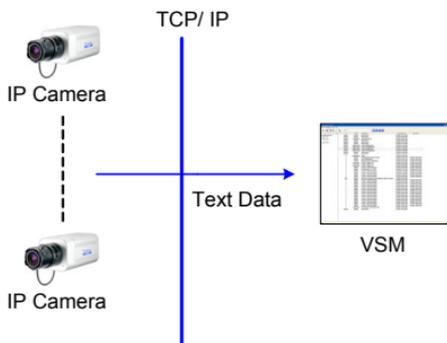


Figure 18-4

- To set the appropriate port connecting to the IP camera, click **Configure** on the window menu, and select **System Configure** to display this dialog box. In the Connective Port field, keep the default port **5609**, or modify it to match the VSM port on the IP camera.



Figure 18-5

For further information on how to manage the video received from the IP camera, see *GV-CMS Series User's manual*.

18.3 Dispatch Server

The Dispatch Server minimizes overloading of Center V2 Servers by re-distributing GV-IPCAM H.264 subscribers to the least busy Center V2 Server.

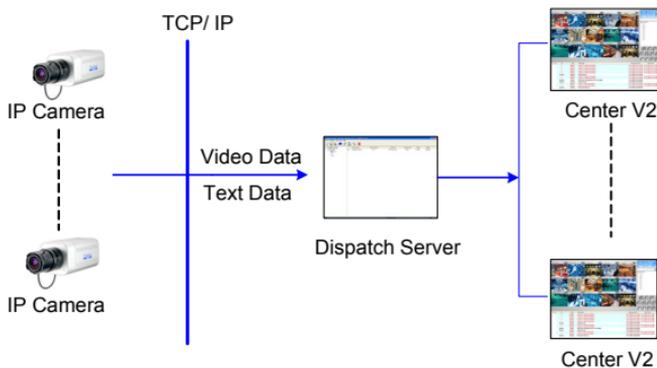


Figure 18-6

- To set the appropriate port connecting to the IP camera, click the **Server Setting** button on the toolbar, and select **Allow GV IP devices to login as subscriber from port**. Keep the default port as **5551**, or modify it to match the Center V2 port on the IP camera.

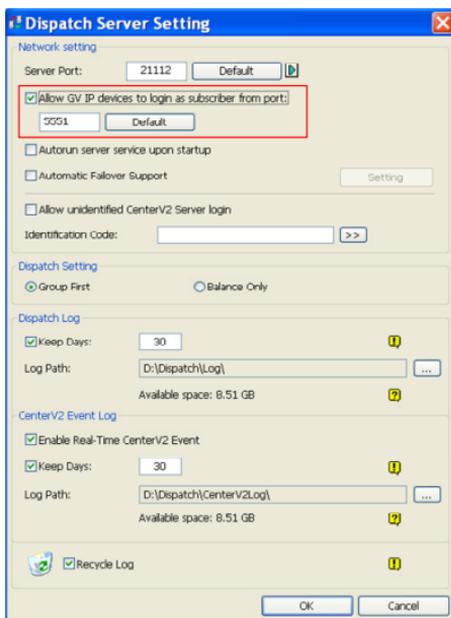


Figure 18-7

For further information on how to manage the video received from the IP camera, see *GV-CMS Series User's manual*.

Chapter 19 Smart Device Connection

You can receive live video streaming from the GV-IPCAM H.264 through smart devices listed in the below chart.

| Handheld Device View | OS Supported | Default Port | Video Settings on GV-IPCAM H.264 |
|----------------------|--|--|--|
| GV-GView V2 | Windows Mobile 5.0 and 2003; Windows Mobile 6.0 / 6.1 Classic and Professional for Windows PDA | Data Port: 8866 RPB Port: 5511 VSS Port: 10000 | 3GPPv7, MSViewV2/V3, SSViewV3 and GViewV2 Supported |
| GV-MSView V2 | Windows Mobile 5.0 and 2003 for Windows Smartphone | Data Port: 8866 RPB Port: 5511 VSS Port: 10000 | 3GPPv7, MSViewV2/V3, SSViewV3 and GViewV2 Supported |
| GV-MSView V3 | Windows Mobile 6.0 / 6.1 Standard and Professional for Windows Smartphone | Data Port: 8866 RPB Port: 5511 VSS Port: 10000 | 3GPPv7, MSViewV2/V3, SSViewV3 and GViewV2 Supported |
| GV-SSView V3 | Nokia S60 2nd Edition and 3rd Edition for Symbian Smartphone | Data Port: 8866 RPB Port: 5511 VSS Port: 10000 | 3GPPv7, MSViewV2/V3, SSViewV3 and GViewV2 Supported |
| 3GPP | Mobile phones with players supporting RTSP | TCP Port: 8554 UDP Port: 17300~17380 | 3GPPv7, MSViewV2/V3, SSViewV3 and GViewV2 Supported |

| | | | |
|--------------------|---|-----------------|-----|
| GV-Eye (HD) | Android smartphone and tablet 2.2 to 4.0.4, iPhone, iPod Touch and iPad OS 4.3.3 to 5.1 | VSS Port: 10000 | N/A |
|--------------------|---|-----------------|-----|

Chart 1

Note:

1. For the 3G-enabled mobile phone, you can receive live video from the camera without installing any GV mobile applications.
2. To receive the live video from the camera, enter the TCP/IP port on your mobile phone. To play video back, enable **ViewLog Server** on the camera and enter the RPB Port on your mobile phone.

| Supported Resolution and Codec | | | | | |
|---|--------------------|-----------------------|------------------|--------------------|---------------------|
| Handheld Device View | GView V2 | MSView V2 / V3 | SSView V3 | 3GPP Viewer | Eye (HD) |
| MPEG4 | 320 x 240 or below | | | 320 x 240 or below | 704 x 480 or below |
| MJPEG | X | X | X | X | 1280 x 960 or below |
| H.264 | X | X | X | X | |
| Note: A "X" mark indicates the mobile phone application does not support the codec. The live view will not be displayed on the mobile phone if you select the unsupported codec. | | | | | |

Chart 2

19.1 PDA

GView V2 is a remote view application for Pocket PC device. It can run on the PDA with Windows Mobile operating system. For the supported operating system version, see *Chart 1*.

When GView V2 detects the big screen panel of the mobile phone, images from the GV-IPCAM H.264 will be horizontally rotated for a better view. Resolution is set to be CIF by default.

19.1.1 Installing GView V2

GView V2 should be installed on a PDA device with Microsoft Windows Mobile operating system.

1. To download GV-GView V2, please go to http://www.geovision.com.tw/english/5_4_gview.asp.
2. Click the **Download** button.
3. Consult your PDA user's manual for how to install a program to the PDA.

19.1.2 Activating the GView Function

To allow remote access to the GV-IPCAM H.264:

1. Select **3GPPv7, MSViewV2/V3, SViewV3 and GViewV2 Supported** in the Connection Template field on the Web interface. For details, see “Connection Template” in *14.1.1 Video Settings*.

Video Settings

In this section you can define compression art, broadcasting method and privacy mask.

Name

Name

Connection template

Figure 19-1

2. Enable RTSP server on the Web interface. For details, see *14.3.8 RTSP / 3GPP*.

19.1.3 Connecting to the IP Camera

Once GView V2 is installed on your PDA, you can use it to monitor your GV-IPCAM H.264. Make sure your PDA has wireless LAN adapter properly in place with access to the Internet.

1. Execute **GView V2** on your PDA.

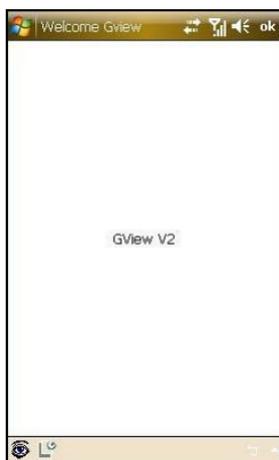


Figure 19-2

- Click the  button located at the lower left corner. The login screen appears.



Figure 19-3

- Enter the IP address of your camera, port value (default value is 10000), a username and a password. Then click **OK**.
- Once the connection is established, the live image will appear.

19.1.4 Playing Back the Recordings from the IP Camera

To play back the recordings from the GV-IPCAM H.264, follow these steps:

1. Enable the **ViewLog Server** on the camera. Keep the connection port to be 5552 or modify it if necessary. See 14.3.7 *ViewLog Server* for details.
2. Execute **GView V2** in your PDA.
3. Click the  button located at the lower left corner Figure 19-2). The login screen appears.



Figure 19-4

4. Enter the IP address of your GV-IP Camra, port value (default value is 5552), a username and a password. Then click **OK** to connect.
5. Select the desired video recording from the event list for playback.

19.1.5 Other Functions

In addition to live view and playback, GView V2 offers these functions: viewing / controlling I/O devices, PTZ control, adjusting image quality, and starting / stopping recording.

On the live view screen, click the buttons on the toolbar to have the desired functions.

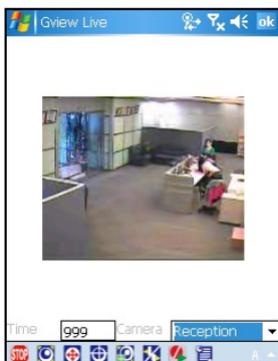


Figure 19-5

| Button | Description |
|---|--|
|  | Click it to stop the connection. |
|  | Click it for Focus-in / Focus-out and Zoom-in / Zoom-out control. This is only available when the camera supports PTZ functions. |
|  | Click it to move the camera to different directions. This is only available when the camera supports PTZ functions. |
|  | Click it to move the camera to the preset positions. This is only available when the camera supports PTZ functions. |
|  | Click it to adjust the image quality. |
|  | Click it to access the connected I/O devices. |

| Button | Description |
|---|---|
|  | Click it to start or stop recording. |
|  | Click it to display the camera status. |
| Time <input type="text" value="999"/> | The supervisor is given the highest priority to control the PTZ camera and is not restrained by the 60-second time limit. When the supervisor logs in, the Timer shows 999. |
| <input type="text" value="Reception"/> | Use this drop-down list to switch cameras. |

Accessing I/O Devices

To access the connected I/O devices, use the drop-down list to select the desired camera and click the  button. The I/O module button appears on the toolbar.



Figure 19-6

The numbers on the toolbar indicate the connected module. Click the desired number to access its I/O devices. The I/O control buttons appear on the toolbar.



Figure 19-7

| Button | Description |
|----------|---|
| I | Click it to view the log of input triggers. |
| O | Click it to display and force the connected output devices. |

Viewing Input-Triggered Events

All input triggers are logged on the Alarm list. Click the “**I**” button to view the list of trigger events.



Figure 19-8

Forcing Outputs

To force any connected output devices, click the “**O**” button to, and click the desired number. The numbers on the toolbar indicate the connected output devices.



Figure 19-9

Controlling PTZ Cameras

To control the PTZ camera, use the drop-down list to select the desired camera, and click the  button on the live view screen (Figure 19-5).

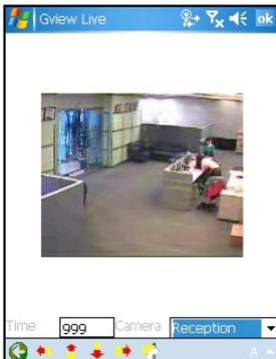


Figure 19-10

| Button | Description |
|---|--|
|  | Click it to return to the previous page. |
|  | Use these buttons to move the PTZ camera to the left, up, down and right |
|  | Click it to return to home. |

Viewing Camera Status

To view the camera status, click the  button on the live view screen (Figure 19-5).

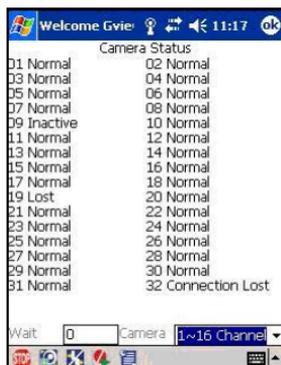


Figure 19-11

This screen displays the status of camera activity. Three messages indicate the current camera status.

| Message | Description |
|------------------|--|
| Normal | The camera is turned on and not recording. |
| Inactive | The camera is turned off. |
| Recording | The camera is recording. |

19.2 Windows Smartphone

With the MSView application, you can monitor your GV-IPCAM H.264 remotely through a Windows-based Smartphone. For the supported operating system version, see *Chart 1*.

19.2.1 Installing MSView V2 / V3

1. To download GV-MSView V2 / V3, please go to http://www.geovision.com.tw/english/5_4_msview.asp.
2. Click the **Download** button.
3. Consult your smartphone user's manual for how to install a program to the smartphone.

19.2.2 Activating the MSView V2 / V3 Function

To allow remote access to the GV-IPCAM H.264:

1. Select **3GPPv7, MSViewV2/V3, SViewV3 and GViewV2 Supported** in the Connection Template field on the Web interface. For details, see “Connection Template” in *14.1.1 Video Settings*.

Video Settings

In this section you can define compression art, broadcasting method and privacy mask.

Name

Name

Connection template

3GPPv7, MSViewV2/V3, SViewV3 and GViewV2 Supported ▼

Figure 19-12

2. Enable RTSP server on the Web interface. For details, see *14.3.8 RTSP / 3GPP*.

19.2.3 Connecting to the IP Camera

The following operations may vary slightly for different modules.

1. Execute **MSViewV2.exe** or **MSViewV3.exe** on your Smartphone.



Figure 19-13

2. Click **Type** and then **Live**.



Figure 19-14

- On the login screen, enter the IP address of your camera, port value (default value is 10000), a username and a password. Then click **Control** and select **Connect**.



Figure 19-15

- Once the connection is established, the live image will appear. You can use the scroll key on your Smartphone to navigate camera channels.



Figure 19-16

19.2.4 Playing Back the Recordings from the IP Camera

To play back the recordings from the GV-IPCAM H.264, follow these steps:

1. Enable **ViewLog Server** on the camera. Keep the connection port to be 5552 or modify it if necessary. See 14.3.7 *ViewLog Server* for details.
2. Execute **MSView V2** or **MSView V3** in your Smartphone.
3. Select **Type** and then **Rpb** (Figure 19-14). The login screen appears. If you want to search the recordings within a specific period of time for playback, select **Rpb with time**.

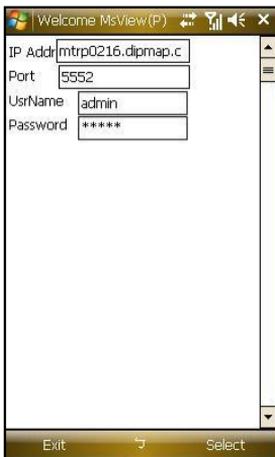


Figure 19-17

4. Enter the IP address of your camera, port value (default value is 5552), a username and a password. Then click **Select** and click **GV Video Server** to start the connection.
5. Select the desired video recording from the event list for playback.

19.2.5 Other Functions

In addition to live view, MSView V2 or MSView V3 offers these functions: zooming in/out a camera view, rotating images and controlling outputs. Select the **Control** option to have these features.

19.3 Symbian Smartphone

With the SSView V3 application, it's also possible to monitor your GV-IPCAM H.264 remotely through a Symbian-based Smartphone. For the supported operating system version, see *Chart 1*.

19.3.1 Installing SSView V3

To install SSView Version 3 for Nokia S60 2nd and 3rd Edition:

1. To download GV-SSView V3, please go to http://www.geovision.com.tw/english/5_4_ssview.asp.
2. Click the **Download** button.
3. Consult your smartphone user's manual for how to install a program to the smartphone.

19.3.2 Activating the SView V3 Function

To allow remote access to the GV-IPCAM H.264:

1. Select **3GPPv7, MSViewV2/V3, SViewV3 and GViewV2 Supported** in the Connection Template field on the Web interface. For details, see “Connection Template” in *14.1.1 Video Settings*.

Video Settings

In this section you can define compression art, broadcasting method and privacy mask.

Name

Name

Connection template

Figure 19-18

2. Enable RTSP server on the Web interface. For details, see *14.3.8 RTSP / 3GPP*.

19.3.3 Connecting to the IP Camera

The following operations may vary slightly for different modules.

1. Execute **SSView** on your Smartphone.
2. When the message **SSView V3** appears, select **Options**, and select **Live Connect**. The login screen appears.



Figure 19-19

3. Enter the IP address of your camera, port value (default value is 10000), a username and a password. Then click **Options** and select **Connect**.
4. Once the connection is established, the live image will appear.

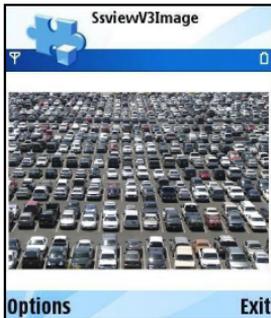


Figure 19-20

19.3.4 Quick Connection

The IP addresses of connected servers can be stored for quick connection in the future. Press the [<] and [>] buttons on the mobile device to select the desired camera for connection.

19.3.5 Playing Back the Recordings from the IP Camera

To play back the recordings from the GV-IPCAM H.264, follow these steps:

1. Enable **ViewLog Server** on the camera. Keep the connection port to be 5552 or modify it if necessary. See 14.3.7 *ViewLog Server* for details.
2. Execute **SSView** on your Smartphone.
3. When the message **SSView V3** appears, click **Options**, and then select **Rpb**. The login screen appears. If you want to search the recordings within a specific period of time for playback, select **Rpb With Time**.



Figure 19-21

4. Enter the IP address of your camera, port value (default value is 5552), a username and a password. Then click **Options** and select **Video Server**.
5. Select the desired video recording from the event list for playback.

19.3.6 Other Functions

In addition to live view, SSView offers these functions: changing camera channels, zooming in a camera view, rotating images and controlling outputs. Select **Options** to have these features.

19.4 3G Mobile Phone

Without installing any GV applications, you can use a 3G mobile phone to access GV-IPCAM H.264 directly.

19.4.1 Activating the 3G Mobile Phone Function

To allow remote access to the GV-IPCAM H.264, follow the steps below:

1. Select **3GPPv7, MSViewV2/V3, SSVIEWV3 and GViewV2 Supported** to be the connection type in the Connection Template field on the Video Setting page.

The screenshot shows the 'Video Settings' page. At the top, it says 'In this section you can define compression art, broadcasting method and privacy mask.' Below this is a 'Name' field with the value 'Streaming1'. Underneath is a 'Connection template' section with a dropdown menu. The dropdown menu is open, showing the selected option: '3GPPv7, MSViewV2/V3, SSVIEWV3 and GViewV2 Supported'. This dropdown menu is highlighted with a red rectangular box.

Figure 19-22

2. Enable the 3GPP Server on the camera. See 14.3.8 RTSP / 3GPP for details.

The screenshot shows the 'RTSP' configuration page. It has a section titled 'RTSP Server'. There are four settings: 'Activate Link' with an unchecked checkbox, 'RTSP/TCP port' with a text box containing '8554', 'RTP/UDP port' with two text boxes containing '17300' and '17319' separated by a tilde '~', and 'Max connection' with a text box containing '10'. At the bottom left of the form is an 'Apply' button.

Figure 19-23

19.4.2 Connecting to the IP Camera

1. Open the Internet browser in the mobile phone, and enter the IP address of your camera, a user name and a password. Then click **Apply** to connect.



Figure 19-24

2. After the connection is established, an image similar to this example appears.

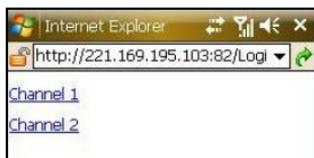


Figure 19-25

3. Select the desired channel. Its live image will appear.



Figure 19-26

Note: Currently the 3GPP application does not support remote playback and I/O control.

19.5 Android Smartphone & Tablet

GV-Eye is a remote view application for Android smartphone and tablet. You can access the GV-IPCAM H.264 using Android smartphone and tablet.

Download GV-Eye from Android Market, and after installing the application, the GV-Eye icon will appear on the desktop.



Figure 19-27

19.5.1 Connecting to the IP Camera

1. Tap the GV-Eye icon  on your mobile phone, and then this page appears.



Figure 19-28

2. Type the IP address, port number (default value is 10000), user name and password of the GV-IP devices you want to access. And then tap the Add button  to save the connection information in the address book.

3. Tap the created link in the address book.

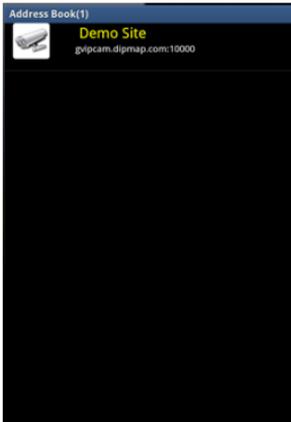


Figure-19-29

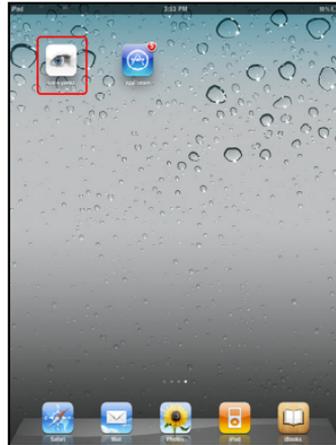
4. Tap the Connection button  to access the GV-IP devices.

19.6 iPhone, iPod Touch and iPad

With GV-Eye (HD), you can connect to GV-IPCAM H.264 from your iPhone, iPod Touch or iPad to remotely watch live view, force output devices to be triggered and take snapshots. GV-Eye is designed for iPhone and iPod Touch, while GV-Eye HD is designed for iPad.

19.6.1 Installing GV-Eye (HD)

You can download GV-Eye (HD) from **App Store** and install the application. The **GV-Eye / GV-EyeHD** icon will appear on the desktop.



GV-Eye icon on iPhone / iPod Touch

GV-EyeHD icon on iPad

Figure 19-30

19.6.2 Connecting to the IP Camera

To connect your iPhone, iPod Touch or iPad to the GV-IPCAM H.264, follow these steps:

1. Click the **GV-Eye** icon  on the desktop of your phone. The welcome page appears.
2. Tap the **Add** button. This page appears.



Figure 19-31

3. Enter the Host name, Domain/IP address, port number, username and password to log in to the GV-IPCAM H.264.

4. Tap the **Save** button. The GV-IPCAM H.264 is now added to the IPCam list and will be available the next time you access GV-Eye. You can tap the **Edit** button and then select an IP camera to edit existing device login information.



Figure 19-32

5. Tap the device name to connect to the live view of the device. You can tap the information button  at the top-right corner to see the connection information.



Figure 19-33

6. The following function buttons are available when the iPhone, iPod Touch or iPad is positioned vertically.

| Button | Name | Function |
|--|-----------------|--|
|  | Screen division | Displays up to four channels on the same page if the GV-IPCAM H.264 supports multiple channels. |
|  | PTZ control | <p>Enables PTZ control. Drag across the camera live view screen to adjust the camera position. The following function buttons are also available:</p> <ul style="list-style-type: none"> : Zooms in and out. : Adjusts the focus. : Moves the camera to a preset location by typing the preset number. |
|  | Snapshot | Saves the current image in the mobile device. |
|  | I/O Device | Forces output device to be triggered. |

Note: The PTZ control and I/O device functions are only accessible on devices with PTZ control and I/O devices.

Specifications: Box Camera

Camera

| | | | |
|----------------------|---|------------------------------|---|
| Image Sensor | GV-BX110D GV-BX120D GV-BX140DW | 1/3" progressive scan CMOS | |
| | GV-BX130D Series GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 1/2.5" progressive scan CMOS | |
| Picture Elements | GV-BX140DW | 1280 (H) x 720 (V) | |
| | GV-BX110D GV-BX120D GV-BX130D Series | 1280 (H) x 1024 (V) | |
| | GV-BX220D Series | 1920 (H) x 1080 (V) | |
| | GV-BX320D Series | 2048 (H) x 1536 (V) | |
| | GV-BX520D-0 | 2560 (H) x 1920 (V) | |
| Minimum Illumination | GV-BX110D | Color | 1 Lux (1/60 sec), 0.1 Lux (1/5 sec), (F/1.4, AGC-On, slow shutter-Off) |
| | | B/W | 0.1 Lux (1/60 sec), 0.05 Lux (1/5 sec), (F/1.4, AGC-On, slow shutter-Off) |
| | | IR ON | 0 Lux (1/60 sec), (F/1.4, AGC-On, slow shutter-Off) |

| | | | |
|-----------------------------|--|------------------|---|
| Minimum Illumination | GV-BX120D | Color | 0.15 Lux (1/30 sec), 0.08 Lux (1/5 sec) |
| | | B/W | 0.08 Lux (1/30 sec), 0.04 Lux (1/5 sec) |
| | | IR ON | 0 Lux |
| | GV-BX130D-0 | Color | 0.5 Lux at F/1.4 |
| | | B/W | 0.1 Lux at F/1.4 |
| | | IR On | 0 Lux |
| | GV-BX130D-1 | Color | 0.5 Lux at F/1.5 |
| | | B/W | 0.1 Lux at F/1.5 |
| | | IR On | 0 Lux |
| | GV-BX140DW | Color | 0.2 Lux at F/1.4 |
| | | B/W | 0.08 Lux at F/1.4 |
| | | IR On | 0 Lux |
| | GV-BX220D Series GV-BX320D Series | Color | 1 Lux (1/30 sec), 0.5 Lux (1/5 sec) |
| | | B/W | 0.2 Lux (1/30 sec), 0.1 Lux (1/5 sec) |
| | | IR ON | 0 Lux |
| GV-BX520D-0 | Color | 0.5 Lux at F/1.6 | |
| | B/W | 0.1 Lux at F/1.6 | |
| | IR On | 0 Lux | |

Specifications: Box Camera

| | | |
|---------------|---|---|
| Shutter Speed | GV-BX110D | Automatic (Balanced, Speed Priority, Quality Priority), Manual (1/5 ~ 1/4000 sec) |
| | GV-BX140DW | Automatic |
| | GV-BX120D GV-BX130D Series GV-BX220D Series GV-BX320D Series GV-BX520D-0 | Automatic, Manual (1/5 ~ 1/8000 sec) |
| | | |
| White Balance | | Automatic, Manual (2800K ~ 8500K) |
| Gain Control | | Automatic |
| S/N Ratio | GV-BX120D | 50 dB |
| | GV-BX130D Series | 45 dB |
| | GV-BX140DW | 50 dB |
| | GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 45 dB |
| | | |
| BLC | GV-BX120D GV-BX130D Series GV-BX220D Series GV-BX320D Series GV-BX520D-0 | Yes |
| | GV-BX110D GV-BX140DW | No |
| WDR | GV-BX140DW | Yes |
| | GV-BX110D GV-BX120D GV-BX130D Series GV-BX220D Series GV-BX320D Series GV-BX520D-0 | No |

Fixed Focal Lens

(GV-BX110D and GV-BX130D-1 only)

| | | |
|---|----------------|-------|
| Megapixel | Yes | |
| Removable IR-cut filter for Day/Night function | Yes | |
| Focal Length | 4.0 mm | |
| Maximum Aperture | F/1.5 | |
| Mount | CS | |
| Image Format | 1/3" | |
| Operation | Focus | Yes |
| | Zoom | No |
| | Iris | Fixed |
| Torque (Focus Screw) | 3.9 ~ 4.9 N.cm | |

Varifocal Lens

| | | |
|---------------------|---|-------------|
| Megapixel | Yes | |
| Day/Night | Yes (with removable IR-cut filter) | |
| Focal Length | GV-BX110D | 4 ~ 9 mm |
| | GV-BX120D GV-BX130D-0 GV-BX140DW GV-BX220D-3 | 2.8 ~ 12 mm |
| | GV-BX320D-0 | 3.1 ~ 8 mm |
| | GV-BX220D-2 GV-BX320D-1 | 2.8 ~ 6 mm |
| | GV-BX520D-0 | 4.5 ~ 10 mm |

Specifications: Box Camera

| | | | | |
|-----------------------------|--|---|----------|--|
| Maximum Aperture | GV-BX110D GV-BX120D GV-BX130D-0 GV-BX140DW GV-BX220D-3 | F/1.4 | | |
| | GV-BX320D-0 | F/1.2 | | |
| | GV-BX220D-2 GV-BX320D-1 | F/1.3 | | |
| | GV-BX520D-0 | F/1.6 | | |
| Mount | | CS | | |
| Image Format | GV-BX120D GV-BX130D-0 GV-BX140DW GV-BX220D-2 GV-BX220D-3 GV-BX320D-0 GV-BX320D-1 | 1/3" | | |
| | GV-BX520D-0 | 1/2" | | |
| Operation | Focus | Manual (w/lock) | | |
| | Zoom | Manual (w/lock) | | |
| | Iris | GV-BX110D GV-BX120D GV-BX130D-0 GV-BX220D Series GV-BX320D Series | DC drive | |
| | | GV-BX140DW | Fixed | |
| GV-BX520D-0 | | Manual | | |
| Torque (Focus/ Zoom Screws) | | 0.049 N.m | | |

Operation

| | | |
|--------------------------|--|--|
| Video Compression | | H.264, MPEG4, MJPEG |
| Video Stream | GV-BX110D | Dual Streams from H.264, MPEG4 or MJPEG |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | Stream 1 from H. 264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| Frame Rate | GV-BX110D | 15 fps at 1280 x 1024, 30 fps at 640 x 512 |
| | GV-BX120D GV-BX130D Series | 30 fps at 1280 x 1024 |
| | GV-BX140DW | 30 fps at 1280 x 720 |
| | GV-BX220D Series | 30 fps at 1920 x 1080 |
| Frame Rate | GV-BX320D Series | 20 fps at 2048 x 1536 30 fps at 1920 x 1080 |
| | GV-BX520D-0 | 10 fps at 2560 x 1920 |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed, D/N Sensitivity, Backlight Compensation |
| Audio Compression | | G.711, AAC (16 kHz / 16 bit) |
| Two-Way Audio | | Yes |

Specifications: Box Camera

| | | |
|--|--|--|
| Sensor Input | GV-BX110D | 1 input (Wet Contact , 7V ~ 30V) |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 1 input (Dry Contact) |
| Alarm Output | GV-BX110D | 1 digital output (10A 250V AC; 10A 125V AC; 5A 100V DC) |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 1 Digital Output (200mA 5V DC) |
| <p>Note:</p> <ol style="list-style-type: none"> 1. The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). 2. D/N sensitivity and backlight compensation are not supported in GV-BX110D and GV-BX140DW. 3. Manual adjustment of shutter speed is not available for GV-BX140DW. 4. AAC is not available for GV-BX110D and is only supported by GV-System V8.5 or later. | | |

Video Resolution

| | | | |
|-----------|-------------|-----|-----------------------------------|
| GV-BX110D | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 5:4 | 640 x 512, 320 x 256 |

| | | | |
|---------------------------------------|--------------------|------|--|
| GV-BX120D GV-BX130D Series | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-BX140DW | Main Stream | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | Sub Stream | 16:9 | 640 x 360, 448 x 252 |
| GV-BX220D Series | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

| | | | |
|-------------------------|--------------------|------|---|
| GV-BX320D Series | Main Stream | 4:3 | 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Specifications: Box Camera

| | | | |
|-------------|-------------|------|---|
| GV-BX520D-0 | Main Stream | 4:3 | 2560 x 1920, 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Network

| | |
|--|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |
| Note: For GV-BX110D, HTTPS, SNMPT and QoS are only supported in V1.08 or later. | |

Mechanical

| | | |
|---------------|--|--------------|
| Lens Mounting | GV-BX110D | C / CS-Mount |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | CS Mount |

| | | | | |
|-----------------------------|------------------|--|---------------------------|--|
| Temperature Detector | | GV-BX110D | No | |
| | | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | Yes | |
| Connectors | Power | GV-BX110D | DC Jack, PoE | |
| | | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 2-pin terminal block, PoE | |
| | Ethernet | RJ-45 | | |
| | Audio | 1 In (Using the built-in microphone or externally connecting a microphone) 1 Out (Stereo phone jack, 3.5 mm / 0.14 in) | | |
| | Auto Iris | GV-BX110D (fixed lens) GV-BX130D-1 GV-BX140DW GV-BX520D-0 | Not functional | |
| | | GV-BX110D (Varifocal) GV-BX120D GV-BX130D-0 GV-BX220D Series GV-BX320D Series | Yes | |

Specifications: Box Camera

| | | | |
|---|--|--|---|
| Connectors | Local Storage | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) | |
| | TV-Out | BNC connector (640 x 480 resolution) | |
| | Digital I/O | GV-BX110D | 5-pin terminal block, pitch 3.5 mm / 0.14 in |
| GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | | 3-pin terminal block, pitch 2.5 mm / 0.1 in | |
| LED Indicator | GV-BX110D | 1 LED with two colors | |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 2 LEDs: Power, Status | |
| Note: <ol style="list-style-type: none"> SDXC memory card is not supported in GV-BX110D. The TV-Out function only works in 640 x 480 resolution. For TV-Out to work properly, you must set the video resolution to 1280 x 1024 or lower. If both streams are enabled, the Sub Stream must be set to 640 x 480. | | | |

General

| | | |
|-----------------------------------|--|--|
| Operating Temperature | 0°C ~ 50°C / 32 °F ~ 122 °F | |
| Humidity | 10% to 90% (no condensation) | |
| Power Source | 12V DC / PoE | |
| Max. Power Consumption | GV-BX110D | 9.2 W |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 7 W |
| Dimensions (L X W X H) | GV-BX110D | 115 x 65 x 60 mm / 4.52 x 2.55 x 2.36 in |
| | GV-BX120D GV-BX130D Series GV-140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 75.5 x 75 x 54 mm / 2.97 x 2.95 x 2.13 in (without lens) |
| Weight | GV-BX110D | 450 g / 0.99 lb |
| | GV-BX120D GV-BX130D Series GV-BX140DW GV-BX220D Series GV-BX320D Series GV-BX520D-0 | 321 g / 0.71 lb |
| Regulatory | CE, FCC, C-Tick, RoHS compliant | |

Specifications: Box Camera

Power over Ethernet

| | |
|--|---|
| PoE Standard | IEEE 802.3af Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | Per Port 48V DC, 350mA. Max. 15.4 watts |
| Note: An STP cable can only work with a one-port PoE adapter. | |

Web Interface

| | |
|---|--|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Visual Automation, Tampering Alarm, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| Note: <ol style="list-style-type: none">1. For GV-BX110D, the Wide Angle Lens Dewarping and Text Overlay are only supported in V1.08 or later.2. Arabic, Finnish and Swedish are not supported in GV-BX110D. | |

Application

| | |
|--|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , GV-MultiView |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |
| Note: For GV-BX110D, the GV-Backup Center and GV-Recording Server are only supported in V1.08 or later. | |

All specifications are subject to change without notice.

Specifications: IR Arctic Box Camera

Camera

| | | | | |
|----------------------|---|--------------------------------------|---------------------|--|
| Image Sensor | GV-BX120D-E | 1/3" progressive scan CMOS | | |
| | GV-BX220D-E GV-BX320D-E GV-BX520D-E | 1/2.5" progressive scan CMOS | | |
| | Picture Elements | GV-BX120D-E | 1280 (H) x 1024 (V) | |
| | | GV-BX220D-E | 1920 (H) x 1080 (V) | |
| GV-BX320D-E | | 2048 (H) x 1536 (V) | | |
| GV-BX520D-E | | 2560 (H) x 1920 (V) | | |
| Minimum Illumination | GV-BX120D-E | Color | 0.08 Lux at F/1.4 | |
| | | B/W | 0.04 Lux at F/1.4 | |
| | | IR ON | 0 Lux | |
| | GV-BX220D-E GV-BX320D-E | Color | 0.5 Lux at F/1.3 | |
| | | B/W | 0.1 Lux at F/1.3 | |
| | | IR ON | 0 Lux | |
| | GV-BX520D-E | Color | 0.5 Lux at F/1.6 | |
| | | B/W | 0.1 Lux at F/1.6 | |
| | | IR On | 0 Lux | |
| Shutter Speed | | Automatic, Manual (1/5 ~ 1/8000 sec) | | |
| White Balance | | Automatic, Manual (2800K ~ 8500K) | | |
| Gain Control | | Automatic | | |

| | | |
|------------------|--------------------|-------|
| S/N Ratio | GV-BX120D-E | 50 dB |
| | GV-BX220D-E | 45 dB |
| | GV-BX320D-E | |
| | GV-BX520D-E | |
| BLC | | Yes |

Lens

| | | | | |
|---------------------|--|--|----------|--|
| Megapixel | | Yes | | |
| Day/Night | | Yes (with removable IR-cut filter) | | |
| Lens Type | | Varifocal | | |
| Focal Length | GV-BX120D-E | 2.8 ~ 12 mm | | |
| | GV-BX220D-E GV-BX320D-E | 2.8 ~ 6 mm | | |
| | GV-BX520D-E | 4.5 ~ 10 mm | | |
| | Maximum Aperture | GV-BX120D-E | F/1.4 | |
| | GV-BX220D-E GV-BX320D-E | F/1.3 | | |
| | GV-BX520D-E | F/1.6 | | |
| Mount | | CS | | |
| Image Format | GV-BX120D-E GV-BX220D-E GV-BX320D-E | 1/3" | | |
| | GV-BX520D-E | 1/2" | | |
| Operation | Focus | Manual (w/lock) | | |
| | Zoom | Manual (w/lock) | | |
| | Iris | GV-BX120D-E GV-BX220D-E GV-BX320D-E | DC drive | |
| | | GV-BX520D-E | Manual | |

Specifications: IR Arctic Box Camera

| | |
|---------------------------------------|----------------------|
| IR Quantity | 4 |
| IR Distance | 15 m / 50 ft. (Max.) |
| Torque (Focus/Zoom screws) | 0.049 N.m |

Operation

| | | |
|---|-----------------------|--|
| Video Compression | | H.264, MPEG4, MJPEG |
| Video Stream | | Stream 1 from H. 264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| Frame Rate | GV-BX120D-E | 30 fps at 1280 x 1024 |
| | GV-BX220D-E | 30 fps at 1920 x 1080 |
| | GV-BX320D-E | 20 fps at 2048 x 1536 |
| | | 30 fps at 1920 x 1080 |
| GV-BX520D-E | 10 fps at 2560 x 1920 | |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed, D/N Sensitivity, Backlight Compensation |
| Audio Compression | | G.711, AAC (16 kHz / 16 bit) |
| Two-Way Audio | | Yes |
| Note: The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). | | |

Video Resolution

| | | | |
|--------------------|--------------------|------|---|
| GV-BX120D-E | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-BX220D-E | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-BX320D-E | Main Stream | 4:3 | 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Specifications: IR Arctic Box Camera

| | | | |
|-------------|-------------|--------|---|
| GV-BX520D-E | Main Stream | 4 : 3 | 2560 x 1920, 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16 : 9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5 : 4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4 : 3 | 640 x 480, 320 x 240 |
| | | 16 : 9 | 640 x 360, 448 x 252 |
| | | 5 : 4 | 640 x 512, 320 x 256 |

Network

| | |
|-----------|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |

Mechanical

| | | |
|-------------------------|----------|--|
| Lens Mounting | | CS Mount |
| Camera Angle Adjustment | Pan | 0° ~ 330° |
| | Tilt | 0° ~ 90° |
| Temperature Detector | | Yes |
| Connectors | Power | PoE |
| | Ethernet | RJ-45 |
| | Audio | 1 In (externally connecting a microphone) 1 Out (Stereo phone jack, 3.5 mm / 0.14 in) |
| | TV-Out | BNC connector (640 x 480 resolution) |

| | |
|--|-----------------------|
| LED Indicator | 2 LEDs: Power, Status |
| Note: The TV-Out function only works in 640 x 480 resolution. For TV-Out to work properly, you must set the video resolution to 1280 x 1024 or lower. If both streams are enabled, the Sub Stream must be set to 640 x 480. | |

General

| | |
|----------------------------------|--|
| Operating Temperature | -40°C ~ 50°C / -40 °F ~ 122 °F |
| Humidity | 10% to 90% (no condensation) |
| Power Source | PoE (IEEE 802.3at) |
| Max. Power Consumption | 24 W |
| Dimensions | 100.5 x 100.5 x 317.5 mm / 3.96 x 3.96 x 12.5 in |
| Weight | 3.2 Kg / 7.11 lb |
| Regulatory | CE, FCC, C-Tick, RoHS compliant |
| Protection Classification | IP66 |

Power over Ethernet

| | |
|------------------------------|--|
| PoE Standard | IEEE 802.3at Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | DC 48V, 600mA (34.2W Max.) |

Specifications: IR Arctic Box Camera

Web Interface

| | |
|--------------------------------|--|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Visual Automation, Tampering Alarm, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |

Application

| | |
|----------------------------|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , GV-MultiView |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |

Specifications: GV-PA481

| | |
|--------------------------------------|---|
| PoE Standard | IEEE 802.3at Power over Ethernet / PSE |
| PoE Power Output (10/100 Out) | DC 48V, 1A (48W Max.) |
| Ethernet Cable Length | Max 100 m / 328 ft from GV-PA481 to IP device, CAT5 |
| Power Input | DC 48V, 1A |
| Operation Temperature | -0°C ~ 40°C / 32°F ~ 104°F |
| Dimensions (L x W x H) | 138 x 104 x 38 mm / 5.43 x 4.09 x 1.5 in |
| Weight | 610 g / 13.42 lbs |

All specifications are subject to change without notice.

Specifications: Mini Fixed & Rugged Dome

Camera

| | | | |
|-----------------|-------------------------------------|------------------------------|---------------------|
| | GV-MFD110 GV-MFD120 GV-MFD130 | 1/3" progressive scan CMOS | |
| | GV-MDR120 | | |
| | GV-MFD220 GV-MFD320 GV-MFD520 | 1/2.5" progressive scan CMOS | |
| | GV-MDR220 GV-MDR320 GV-MDR520 | | |
| Image Sensor | GV-MFD110 GV-MFD120 GV-MFD130 | | 1280 (H) x 1024 (V) |
| | GV-MDR120 | | |
| | GV-MFD220 GV-MDR220 | 1920 (H) x 1080 (V) | |
| | GV-MDR320 | | |
| | GV-MFD320 GV-MDR320 | 2048 (H) x 1536 (V) | |
| | GV-MFD520 GV-MDR520 | | |
| | Picture Elements | GV-MFD520 GV-MDR520 | 2560 (H) x 1920 (V) |

| | | | |
|-------------------------------------|--|--------------------------------------|--|
| Minimum Illumination | GV-MFD110 | Color | 1.5 Lux (1/60 sec), 0.2 Lux (1/5 sec), (F/1.8, AGC-On, slow shutter-Off) |
| | GV-MFD120 GV-MDR120 | Color B/W | 0.08 Lux at F/1.5 |
| | GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | Color B/W | 0.5 Lux at F/2.8 |
| | GV-MDR220 GV-MDR320 GV-MDR520 | | |
| | Shutter Speed | GV-MFD110 | Automatic (Balanced, Speed Priority, Quality Priority), Manual (1/5 ~ 1/4000 sec), |
| GV-MFD (except GV-MFD110) | | Automatic, Manual (1/5 ~ 1/8000 sec) | |
| GV-MDR | | | |
| White Balance | | Automatic, Manual (2800K ~ 8500K) | |
| Gain Control | | Automatic | |

Specifications: Mini Fixed & Rugged Dome

| | | |
|------------------|---|-------|
| S/N Ratio | GV-MFD120 GV-MDR120 | 50 dB |
| | GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 GV-MDR220 GV-MDR320 GV-MDR520 | 45 dB |
| BLC | GV-MFD110 | No |
| | GV-MFD (except GV-MFD110) | Yes |
| | GV-MDR | |

Lens

| | | |
|---------------------|--|------------------|
| Megapixel | | Yes |
| Day/Night | GV-MFD110 | No |
| | GV-MFD (except GV-MFD110) GV-MDR | Yes (electronic) |
| Iris | | Fixed |
| Focal Length | GV-MFD110 | 3.6 mm |
| | GV-MFD120 | 4.05 mm |
| | GV-MDR120 | |
| | GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | 2.54 mm |

| | | |
|-------------------------|--|-------------------|
| Focal Length | GV-MDR220 GV-MDR320 GV-MDR520 | 2.54 mm |
| Maximum Aperture | GV-MFD110 | F/1.8 |
| | GV-MFD120 | F/1.5 |
| | GV-MDR120 | |
| | GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | F/2.8 |
| | GV-MDR220 GV-MDR320 GV-MDR520 | |
| | | |
| Mount | | M12, Pitch 0.5 mm |
| Image Format | GV-MFD110 GV-MFD120 | 1/3" |
| | GV-MDR120 | |
| | GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | 1/2.5" |
| | GV-MDR220 GV-MDR320 GV-MDR520 | |
| | | |

Specifications: Mini Fixed & Rugged Dome

| | | | |
|--|---------------|------------------|-----|
| Operation | Focus | GV-MFD110 | Yes |
| | | GV-MFD120 | No |
| | | GV-MFD130 | |
| | | GV-MFD220 | |
| | | GV-MFD320 | |
| | | GV-MFD520 | |
| | GV-MDR | | |
| | Zoom | No | |
| | Iris | Fixed | |
| <p>Note: For GV-MFD (except GV-MFD110), the day/night function is only supported by V1.07 or later.</p> | | | |

Operation

| | | |
|--------------------------|------------------|---|
| Video Compression | | H.264, MJPEG, MPEG4 |
| Video Stream | GV-MFD110 | Dual Streams from two of H.264, MPEG4 or MJPEG |
| | GV-MFD120 | Stream 1 from H.264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| | GV-MFD130 | |
| | GV-MFD220 | |
| | GV-MFD320 | |
| | GV-MFD520 | |
| | GV-MDR120 | |
| GV-MDR220 | | |
| GV-MDR320 | | |
| GV-MDR520 | | |
| Frame Rate | GV-MFD110 | 15 fps at 1280 x 1024 30 fps at 640 x 512 |
| | GV-MFD120 | 30 fps at 1280 x 1024 |
| | GV-MFD130 | |
| | GV-MDR120 | |
| Frame Rate | GV-MFD220 | 30 fps at 1920 x 1080 |
| | GV-MDR220 | |
| | GV-MFD320 | 20 fps at 2048 x 1536 |
| | GV-MDR320 | |
| | GV-MFD520 | 10 fps at 2560 x 1920 |
| | GV-MDR520 | |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less 50/60 Hz, Image Orientation, Shutter Speed, Backlight Compensation, D/N sensitivity |

Specifications: Mini Fixed & Rugged Dome

| | | |
|--|------------------|------------------------------|
| Audio Compression | GV-MFD110 | G.711 |
| | GV-MFD120 | G.711, AAC (16 kHz / 16 bit) |
| | GV-MFD130 | |
| | GV-MFD220 | |
| | GV-MFD320 | |
| | GV-MFD520 | |
| GV-MDR120 | | |
| GV-MDR220 | | |
| GV-MDR320 | | |
| GV-MDR520 | | |
| Sensor Input | | No |
| Alarm Output | | No |
| Note: <ol style="list-style-type: none"> The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). AAC is not available for GV-MFD110 and is only supported by GV-System V8.5 or later. Backlight Compensation is not supported in GV-MFD110. | | |

Video Resolution

| | | | |
|------------------|--------------------|-----|-----------------------------------|
| GV-MFD110 | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 5:4 | 640 x 512, 320 x 256 |

| | | | |
|--|--------------------|------|--|
| GV-MFD120 GV-MFD130 GV-MDR120 | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-MFD220 GV-MDR220 | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-MFD320 GV-MDR320 | Main Stream | 4:3 | 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Specifications: Mini Fixed & Rugged Dome

| | | | |
|------------------------|-------------|------|---|
| GV-MFD520 GV-MDR520 | Main Stream | 4:3 | 2560 x 1920, 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Network

| | |
|---|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |
| Note: For GV-MFD110, HTTPS, SNMP and QoS are only supported in V1.08 or later. | |

Mechanical

| | | | |
|-------------------------|--------|-------------------|-------------|
| Lens Mounting | | M12, Pitch 0.5 mm | |
| Camera Angle Adjustment | GV-MFD | Pan | -45° ~ +45° |
| | | Tilt | 0° ~ 90° |
| | GV-MDR | Pan | -45° ~ +45° |
| | | Tilt | 0° ~ 90° |
| | | Rotate | 0° ~ 360° |

| | | | | |
|-----------------------------|--|--|---|-----|
| Temperature Detector | GV-MFD110 | No | | |
| | GV-MFD120 GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | Yes | | |
| | GV-MDR | | | |
| | Connectors | Power | GV-MFD110 | PoE |
| | | | GV-MDR | |
| Ethernet | | GV-MFD120 GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | PoE, 3-pin terminal block | |
| | | Audio | RJ-45 | |
| | | Local Storage | Built-in microphone | |
| LED Indicator | GV-MFD110 | None | | |
| | | GV-MFD120 GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) | |
| | GV-MDR | None | | |
| | GV-MFD120 GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | 4 LEDs: Link, ACT, Power, Status | | |
| | | GV-MDR | | |

Specifications: Mini Fixed & Rugged Dome

General

| | | |
|-------------------------------|--|-----------------------------|
| Operating Temperature | GV-MFD | 0°C ~ 50°C / 32°F ~ 122°F |
| | GV-MDR | -20°C ~ 50°C / -4°F ~ 122°F |
| Humidity | | 10% - 90% (no condensation) |
| Power Source | GV-MFD110 GV-MDR | PoE |
| | GV-MFD (all except GV-MFD110) | PoE, DC 12V |
| Max. Power Consumption | GV-MFD110 | 5.8 W |
| | GV-MFD120 | 4.5 W |
| | GV-MFD130 GV-MFD220 GV-MFD320 | 5.5 W |
| | GV-MFD520 | 6 W |
| | GV-MDR120 | 3 W |
| | GV-MDR220 GV-MDR320 | 3.4 W |
| | GV-MDR520 | 3.6 W |

| | | | |
|--|--|--|-----------------------------------|
| Dimensions | GV-MFD | Camera Body | ø 106 x 55.6 mm 4.2 x 2.2 in |
| | | Cable Length | 1 m / 3.28 ft |
| | | Cable Diameter | ø 8 mm / 0.31 in |
| | | Max. Connector Diameter | ø 28.5 mm ø 1.12 in |
| | GV-MDR | Camera Body | ø 115 x 59.2 mm ø 4.5 x 2.3 in |
| | | Cable Length | 1.054 m / 41.5 in |
| | | Cable Diameter | ø 6.2 mm / 0.24 in |
| | | Connector Diameter | ø 30 mm / 1.18 in |
| Weight | GV-MFD110 | 212 g / 0.47 lb | |
| | GV-MFD120 | 275 g / 0.61 lb | |
| | GV-MFD130 GV-MFD220 GV-MFD320 GV-MFD520 | 280 g / 0.62 lb | |
| | GV-MDR | 568 g / 1.3 lb | |
| | Protection Classification | GV-MDR | IP66 |
| Vandal Resistance (GV-MDR only) | | IK7 | |
| Regulatory | GV-MFD | CE, FCC, C-Tick, RoHS compliant | |
| | GV-MDR | CE, FCC, C-Tick, EN50155, RoHS compliant | |

Specifications: Mini Fixed & Rugged Dome

Power over Ethernet

| | |
|------------------------------|--|
| PoE Standard | IEEE 802.3af Power over Ethernet |
| PoE Power Supply Type | End-Span and Mid-Span |
| PoE Power Output | Per Port 48V DC, 350 mA. Max. 15.4 watts |

Web Interface

| | |
|---|--|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, zoom in/out, bandwidth control, image snapshot, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| Note: <ol style="list-style-type: none">1. For GV-MFD110, Wide Angle Lens Dewarping and Text Overlay are only supported in V1.08 or later.2. Arabic, Finnish and Swedish are not supported in GV-MFD110. | |

Applications

| | |
|--|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |
| Note: For GV-MFD110, GV-Backup Center and GV-Recording Server are only supported in V1.08 or later. | |

All specifications are subject to change without notice.

Specifications: Bullet Camera

Camera

| | | | |
|----------------------|--------------|--|--|
| Image Sensor | | GV-BL110D GV-BL120D | 1/3" progressive scan CMOS |
| | | GV-BL130D | 1/2.5" progressive scan CMOS |
| | | GV-BL220D GV-BL320D | |
| | | | |
| Picture Elements | | GV-BL110D GV-BL120D GV-BL130D | 1280 (H) x 1024 (V) |
| | | GV-BL220D | 1920 (H) x 1080 (V) |
| | | GV-BL320D | 2048 (H) x 1536 (V) |
| | | | |
| Minimum Illumination | Color | GV-BL110D | 1 Lux (1/60 sec), 0.1 Lux (1/5 sec), (F/1.3, AGC-On, slow shutter-Off) |
| | | GV-BL120D | 0.15 Lux (1/30 sec), 0.08 Lux (1/5 sec) |
| | | GV-BL130D GV-BL220D GV-BL320D | 1 Lux (1/30 sec), 0.5 Lux (1/5 sec) |
| | B/W IR ON | GV-BL110D | 0 Lux (1/60 sec), (F/1.4, AGC-On, slow shutter-Off) |
| | | GV-BL120D GV-BL130D GV-BL220D GV-BL320D | 0 Lux |
| | | | |

| | | |
|----------------------|--|--|
| Shutter Speed | GV-BL110D | Automatic (Balanced, Speed Priority, Quality Priority), Manual (1/5 ~ 1/4000 sec), |
| | GV-BL120D GV-BL130D GV-BL220D GV-BL320D | Automatic, Manual (1/5 ~ 1/8000 sec) |
| White Balance | Automatic, Manual (2800K ~ 8500K) | |
| Gain Control | Automatic | |
| S/N Ratio | GV-BL120D | 50 dB |
| | GV-BL220D GV-BL320D GV-BL520D | 45 dB |
| | | |
| | | |

Lens

| | | |
|-------------------------------------|------------------------------------|-----------------|
| Megapixel | Yes | |
| Day / Night | Yes (with removable IR-cut filter) | |
| Lens Type | Varifocal | |
| Focal Length | 3.6 ~ 9 mm | |
| Maximum Aperture | F/1.3 | |
| Mount | ø 14 mm | |
| Image Format | 1/3" | |
| Operation | Focus | Manual (w/lock) |
| | Zoom | Manual (w/lock) |
| | Iris | DC drive |
| IR LED Quantity | 16 IR LEDs | |
| IR Distance | 15 m / 50 ft (Max.) | |
| Torque (Zoom / Focus Screws) | 3.9 ~ 4.9 N.cm | |

Specifications: Bullet Camera

Operation

| | | |
|--|--|--|
| Video Compression | | H.264, MPEG4, MJPEG |
| Video Stream | GV-BL110D | Dual streams from H.264, MPEG4, or MJPEG |
| | GV-BL120D GV-BL130D GV-BL220D GV-BL320D | Stream 1 from H.264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| | GV-BL110D | 15 fps at 1280 x 1024 30 fps at 640 x 512 |
| | GV-BL120D GV-BL130D | 30 fps at 1280 x 1024 |
| | GV-BL220D GV-BL320D | 30 fps at 1920 x 1080 20 fps at 2048 x 1536 |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed, D/N Sensitivity, Backlight Compensation |
| Audio Compression | | G.711, AAC (16 kHz / 16 bit) |
| Two-Way Audio | | Yes |
| Sensor Input | | 1 Input (Dry Contact) |
| Alarm Output | | 1 Output (200mA 5V DC) |
| Note: <ol style="list-style-type: none">1. The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes).2. Backlight Compensation and D/N Sensitivity are not supported in GV-BL110D.3. AAC is not available for GV-BL110D and is only supported by GV-System V8.5 or later. | | |

Video Resolution

| | | | |
|--------------------------------|--------------------|--------------------|--|
| GV-BL110D | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-BL120D GV-BL130D | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-BL220D GV-BL220D | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | Main Stream | 4:3 |
| GV-BL320D | Main Stream | 4:3 | 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Specifications: Bullet Camera

Network

| | |
|---|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |
| Note: For GV-BL110D, HTTPS, SNMP and QoS are only supported in V1.08 or later. | |

Mechanical

| | | |
|--------------------------------|----------------------|--|
| Lens Mounting | | ø 14 mm |
| Camera Angle Adjustment | Pan | 0° ~ 360° |
| | Tilt | 90° ~ 180° |
| | Rotate | 0° ~ 360° |
| Temperature Detector | | Yes |
| Connectors | Power | 3-pin terminal block, PoE |
| | Ethernet | RJ-45 |
| | Audio | 1 In (RCA female for microphone) 1 Out (RCA female for speaker) |
| | Digital I/O | I/O Wire |
| | Auto Iris | DC Drive |
| | Local Storage | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) |
| | TV-Out | No |

General

| | | |
|----------------------------------|--------------------------------|--|
| Operating Temperature | | -20°C ~ 50°C / -4 °F ~ 122 °F |
| Humidity | | 10% to 90% (no condensation) |
| Power Source | | 12V DC / 24V AC / PoE |
| Max. Power Consumption | | 12 W |
| Dimensions | Camera Body | 277.5 x 87.75 x 148.95 mm 10.9 x 3.45 x 5.86 in |
| | Cable Length | 1 m / 3.28 ft |
| | Max. Cable Diameter | ø 7.1 mm / 0.28 in |
| | Max. Connector Diameter | ø 25.2 mm / 0.99 in |
| Weight | | 1.35 kg / 2.98 lb |
| Protection Classification | | IP66 |
| Regulatory | | CE, FCC, C-Tick, RoHS compliant |

Power over Ethernet

| | |
|------------------------------|---|
| PoE Standard | IEEE 802.3af Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | Per Port 48V DC, 350mA. Max. 15.4 watts |

Specifications: Bullet Camera

Web Interface

| | |
|--|---|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Visual Automation, Tampering Alarm, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian /Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| Note: <ol style="list-style-type: none">1. For GV-BL110D, Wide Angle Lens Dewarping and Text Overlay are only supported in V1.08 or later.2. Arabic, Finnish and Swedish are not supported in GV-BL110D. | |

Application

| | |
|--|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |
| Note: For GV-BL110D, GV-Backup Center and GV-Recording Server are only supported in V1.08 or later. | |

All specifications are subject to change without prior notice.

Specifications: PTZ Camera

Camera

| | | | |
|-----------------------------|--------------|---|---|
| Model Name | | GV-PTZ010D-N | GV-PTZ010D-P |
| Image Sensor | | 1/4" CCD image sensor | |
| Picture Elements | | 704 (H) x 480 (V) | 704 (H) x 576 (V) |
| Minimum Illumination | Color | 2.5 Lux at F/1.8 | |
| | B/W | 0.07 Lux at F/1.8 | |
| Shutter Speed | | Automatic, Manual (1/60 ~ 1/120,000 sec) | Automatic, Manual (1/50 ~ 1/120,000 sec) |
| White Balance | | Manual (3200K ~ 9600K) | |
| Gain Control | | Automatic | |

Lens

| | | |
|-------------------------|--------------|---------------------------------|
| Day/Night | | Yes (electronic) |
| Focal Length | | 4.2 ~ 42 mm |
| Maximum Aperture | | F/1.8 ~ F/2.9 |
| Image Format | | 1/4" |
| Operation | Focus | Auto Focus |
| | Zoom | 100x (10x Optical, 10x Digital) |
| | Iris | Fixed |

Operation

| Model Name | | GV-PTZ010D-N | GV-PTZ010D-P |
|---|-------------|---|-------------------------------------|
| Video Format | | NTSC | PAL |
| Video Compression | | H.264, MPEG4, MJPEG | |
| Video Stream | | Dual Streams from two of H.264, MPEG4 or MJPEG | |
| Video Resolution | Main Stream | 704 x 480 704 x 240 352 x 240 | 704 x 576 704 x 288 352 x 288 |
| | Sub Stream | 704 x 480 704 x 240 352 x 240 | 704 x 576 704 x 288 352 x 288 |
| Frame Rate | | 30 fps | 25 fps |
| Image Setting | | Exposure Control, White Balance, Image Orientation, Backlight Compensation, Gamma | |
| Audio Compression | | G.711 | |
| Two-Way Audio | | Yes | |
| Sensor Input | | 1 Input (Dry Contact) | |
| Alarm Output | | 1 Output (200mA 5V DC) | |
| Note: The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). | | | |

Network

| | |
|--|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |
| Note: HTTPS, SNMP and QoS are only supported in V1.08 or later. | |

Specifications: PTZ Camera

Mechanical

| | | |
|--------------------------------|----------------------|--|
| Camera Angle Adjustment | Pan | -175° ~ 175° |
| | Tilt | -45° ~ 90° |
| Temperature Detector | | Yes |
| Connectors | Power | 2-pin terminal block, PoE |
| | Ethernet | RJ-45 |
| | Audio | 1 In (Using a built-in or an externally connected microphone) 1 Out (Stereo phone jack, 3.5 mm / 0.14 in) |
| | Digital I/O | 3-pin terminal block (pitch 2.5 mm / 0.1 in) |
| | Local Storage | Micro SD / SDHC memory card slot (for Class 6 card or above) |
| LED Indicator | | 2 LEDs: Power and Status |

General

| | | |
|-------------------------------|--|--|
| Operating Temperature | | -10°C ~ 50°C / 14 °F ~ 122 °F |
| Humidity | | 10% to 90% (no condensation) |
| Power Source | | 12V DC / 24V AC / PoE |
| Max. Power Consumption | | 12 W |
| Dimensions (L x W x H) | With mounting base and cover | 167.75 x 166.78 x 135.2 mm / 6.6 x 6.57 x 5.32 in |
| | Without mounting base and cover | 124.55 x 122.73 x 133.3 mm / 4.9 x 4.83 x 5.25 in |
| Weight | | 490 g / 1.08 lb |
| Regulatory | | CE, FCC, C-Tick, RoHS compliant |

Power over Ethernet

| | |
|------------------------------|---|
| PoE Standard | IEEE 802.3af Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | Per Port 48V DC, 350mA. Max. 15.4 watts |

Web Interface

| | |
|---|---|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Text Overlay |
| Language | Bulgarian / Czech / Danish / Dutch / English / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Thai / Traditional Chinese / Turkish |
| Note: Wide Angle Lens Dewarping and Text Overlay are only supported in V1.08 or later. | |

Application

| | |
|---|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Center V2, GV-VSM, GV-Control Center |
| Note: GV-Backup Center and GV-Recording Server are only supported in V1.08 or later. | |

All specifications are subject to change without notice.

Specifications: PT Camera

Camera

| | | |
|-----------------------------|--------------|---|
| Image Sensor | | 1/3" progressive scan CMOS |
| Picture Elements | | 1280 (H) x 1024 (V) |
| Minimum Illumination | Color | 1.5 Lux (1/60 sec) 0.2 Lux (1/5 sec) (F1.5, AGC-On, slow shutter-Off) |
| | B/W | 0 Lux (1/60 sec) (F/1.5, AGC-On, slow shutter-Off) |
| | IR ON | 0 Lux (1/60 sec) (F/1.5, AGC-On, slow shutter-Off) |
| Shutter Speed | | Automatic (Balanced, Speed Priority, Quality Priority), Manual (1/5 ~ 1/4000 sec) |
| White Balance | | Automatic, Manual (2800K ~ 8500K) |
| Gain Control | | Automatic |

Lens

| | | |
|-------------------------|--------------|------------------------------------|
| Megapixel | | Yes |
| Day/Night | | Yes (with removable IR-cut filter) |
| Iris | | Fixed |
| Focal Length | | 4.0 mm |
| Maximum Aperture | | F/1.5 |
| Lens Mounting | | M12, Pitch 0.5 mm |
| Image Format | | 1/3" |
| Operation | Focus | Manual (w/lock) |
| | Zoom | No |
| | Iris | Fixed |

Specifications: PT Camera

| | |
|------------------------|---------------------|
| IR LED Quantity | 14 IR LEDs |
| IR Distance | 15 m / 50 ft (Max.) |

Operation

| | | | |
|---|--------------------|------------|---|
| Video Compression | | | H.264, MPEG4, MJPEG |
| Video Stream | | | Dual Streams from two of H.264, MPEG4 or MJPEG |
| Video Resolution | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320x 240 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320x 240 |
| | | 5:4 | 640 x 512, 320 x 256 |
| Frame Rate | | | 15 fps at 1280 x 1024 30 fps at 640 x 480 |
| Image Settings | | | Brightness, Contrast, Sharpness, Saturation, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed |
| Audio Compression | | | G.711 |
| Two-Way Audio | | | Yes |
| Sensor Input | | | 1 Input (Dry Contact) |
| Alarm Output | | | 1 Output (200mA 5V DC) |
| Note: The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). | | | |

Network

| | |
|--|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |
| Note: HTTPS, SNMP and QoS are only supported in V1.08 or later. | |

Mechanical

| | | |
|--------------------------------|--|---|
| Lens Mounting | | M12, Pitch 0.5 mm |
| Camera Angle Adjustment | Pan | -175° ~ 175° |
| | Tilt | -45° ~ 90° |
| Temperature Detector | | Yes |
| Connectors | Power | 2-pin terminal block, PoE |
| | Ethernet | RJ-45 |
| | Audio | 1 In (Using a built-in or an externally connected microphone) |
| | | 1 Out (Stereo phone jack, 3.5 mm / 0.14 in) |
| | Local Storage | Micro SD / SDHC memory card slot (for Class 6 card or above) |
| Digital I/O | 3-pin terminal block (pitch 2.5 mm / 0.1 in) | |
| LED Indicator | | 2 LEDs: Power and Status |

Specifications: PT Camera

General

| | | |
|-----------------------------------|--|--|
| Operating Temperature | -10°C ~ 50°C / 14°F ~ 122°F | |
| Humidity | 10% to 90% (no condensation) | |
| Power Source | 12V DC / 24V AC / PoE | |
| Max. Power Consumption | 12 W | |
| Dimensions (L x W x H) | With mounting base and cover | 167.75 x 166.78 x 135.2 mm / 6.6 x 6.57 x 5.32 in |
| | Without mounting base and cover | 124.55 x 122.73 x 133.3 mm / 4.9 x 4.83 x 5.25 in |
| Weight | 440 g / 0.97 lb | |
| Regulatory | CE, FCC, C-Tick, RoHS compliant | |

Power over Ethernet

| | |
|------------------------------|--|
| PoE Standard | IEEE 802.3af Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | Per Port 48V DC, 350mA. Max. 15.4 watts |

Web Interface

| | |
|--------------------------------|---|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Text Overlay |

| | |
|---|---|
| Language | Bulgarian / Czech / Danish / Dutch / English / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Thai / Traditional Chinese / Turkish |
| Note: Wide Angle Lens Dewarping and Text Overlay are only supported in V1.08 or later. | |

Application

| | |
|---|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Center V2, GV-VSM, GV-Control Center |
| Note: GV-Backup Center and GV-Recording Server are only supported in V1.08 or later. | |

All specifications are subject to change without notice.

Specifications: Vandal Proof IP Dome

Camera

| | | |
|------------------|-----------|------------------------------|
| Image Sensor | GV-VD120D | 1/3" progressive scan CMOS |
| | GV-VD121D | |
| | GV-VD122D | |
| | GV-VD123D | |
| | GV-VD220D | 1/2.5" progressive scan CMOS |
| | GV-VD221D | |
| | GV-VD222D | |
| | GV-VD223D | |
| GV-VD320D | | |
| GV-VD321D | | |
| GV-VD322D | | |
| GV-VD323D | | |
| Picture Elements | GV-VD120D | 1280 (H) x 1024 (V) |
| | GV-VD121D | |
| | GV-VD122D | |
| | GV-VD123D | |
| | GV-VD220D | 1920 (H) x 1080 (V) |
| | GV-VD221D | |
| GV-VD222D | | |
| GV-VD223D | | |

| | | | | |
|--|--|--|--|--|
| Picture Elements | GV-VD320D GV-VD321D GV-VD322D GV-VD323D | 2048 (H) x 1536 (V) | | |
| Minimum Illumination | GV-VD120D GV-VD121D | Color | 0.15 Lux (1/30 sec), 0.08 Lux (1/5 sec) | |
| | GV-VD122D GV-VD123D | B/W IR ON | 0 Lux | |
| | GV-VD220D GV-VD221D GV-VD222D GV-VD223D | Color | 1 Lux (1/30 sec), 0.5 Lux (1/5 sec) | |
| | GV-VD320D GV-VD321D GV-VD322D GV-VD323D | B/W IR ON | 0 Lux | |
| | Shutter Speed | | Automatic, Manual (1/5 ~ 1/8000 sec) | |
| | White Balance | | Automatic, Manual (2800K ~ 8500K) | |
| | Gain Control | | Automatic | |
| | S/N Ratio | GV-VD120D GV-VD121D GV-VD122D GV-VD123D | 50 dB | |
| GV-VD220D GV-VD221D GV-VD222D GV-VD223D GV-VD320D GV-VD321D GV-VD322D GV-VD323D | | 45 dB | | |

Specifications: Vandal Proof IP Dome

Lens

| | | |
|-------------------------------------|------------------------------------|-----------------|
| Megapixel | Yes | |
| Day/Night | Yes (with removable IR-cut filter) | |
| Lens Type | Varifocal | |
| Focal Length | 2.7 ~ 9 mm | |
| Maximum Aperture | F/1.3 | |
| Mount | ø 14 mm | |
| Operation | Focus | Manual (w/lock) |
| | Zoom | Manual (w/lock) |
| | Iris | DC drive |
| IR LED Quantity | 15 IR LEDs | |
| IR Distance | 15 m / 50 ft (Max.) | |
| Torque (Focus / Zoom Screws) | 3.9 ~ 4.9 N.cm | |

Operation

| | | |
|--------------------------|--|-----------------------|
| Video Compression | H.264, MPEG4, MJPEG | |
| Video Stream | Stream 1 from H.264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG | |
| Frame Rate | GV-VD120D GV-VD121D GV-VD122D GV-VD123D | 30 fps at 1280 x 1024 |

| | | |
|---|--|-----------------------|
| | GV-VD220D GV-VD221D GV-VD222D GV-VD223D | 30 fps at 1920 x 1080 |
| | GV-VD320D GV-VD321D GV-VD322D GV-VD323D | 20 fps at 2048 x 1536 |
| Image Setting | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Backlight Compensation, D/N Sensitivity, Shutter Speed | |
| Audio Compression | G.711, AAC (16 kHz / 16 bit) | |
| Two-Way Audio | Yes | |
| Sensor Input | 1 Input (Dry Contact) | |
| Alarm Output | 1 Output (200mA 5V DC) | |
| Note: <ol style="list-style-type: none"> The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). AAC is only supported by GV-System V8.5 and later. | | |

Specifications: Vandal Proof IP Dome

Video Resolution

| | | | |
|--|-------------|------|--|
| GV-VD120D GV-VD121D GV-VD122D GV-VD123D | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-VD220D GV-VD221D GV-VD222D GV-VD223D | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-VD320D GV-VD321D GV-VD322D GV-VD323D | Main Stream | 4:3 | 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Network

| | |
|------------------|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |

Mechanical

| | | |
|---|----------------------|---|
| Lens Mounting | | ø 14 mm |
| Camera Angle Adjustment | Pan | 0° ~ 350° |
| | Tilt | 10° ~ 90° |
| | Rotate | 0° ~ 340° |
| Temperature Detector | | Yes |
| Connectors | Power | 3-pin terminal block, PoE |
| | Ethernet | RJ-45 |
| | Audio | 1 In (RCA female for microphone) 1 Out (RCA female for speaker) |
| | Digital I/O | I/O Wires |
| | Auto Iris | DC Drive |
| | Local Storage | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) |
| | TV-Out | BNC connector (640 x 480 resolution) |
| LED Indicator | | 2 LEDs: Power, Status |
| <p>Note: The TV-Out function only works in 640 x 480 resolution. For TV-Out to work properly, you must set the video resolution to 1280 x 1024 or lower. If both streams are enabled, the Sub Stream must be set to 640 x 480.</p> | | |

General

| | |
|-------------------------------|-------------------------------|
| Operating Temperature | -20°C ~ 50°C / -4 °F ~ 122 °F |
| Humidity | 10% to 90% (no condensation) |
| Power Source | 12V DC / 24V AC / PoE |
| Max. Power Consumption | 12 W |

Specifications: Vandal Proof IP Dome

| | | |
|----------------------------------|--|---------------------------------|
| Dimensions | Camera Body | ø 165 x 125 mm / 6.49 x 4.92 in |
| | Cable Length | 1 m / 3.28 ft |
| | Cable Diameter | ø 16.7 mm / 0.66 in |
| | Max. Connector Diameter | ø 16.7 mm / 0.66 in |
| Weight | | 1.7 kg / 3.75 lb |
| Protection Classification | | IP66 |
| Vandal Resistance | GV-VD120D GV-VD121D GV-VD220D GV-VD221D GV-VD320D GV-VD321D | IK10+ |
| | GV-VD122D GV-VD123D GV-VD222D GV-VD223D GV-VD322D GV-VD323D | IK7 |
| Regulatory | | CE, FCC, C-Tick, RoHS compliant |

Power over Ethernet

| | |
|------------------------------|---|
| PoE Standard | IEEE 802.3af Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | Per Port 48V DC, 350mA. Max. 15.4 watts |

Web Interface

| | |
|---|--|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Visual Automation, Tampering Alarm, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| Note: The text overlay function is only supported in V1.05 or later. | |

Application

| | |
|--|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |
| Note: GV-Backup Center, GV-Video Gateway and GV-Recording Server are only supported for V1.03 or later. | |

All specifications are subject to change without prior notice.

Specifications: Fixed IP Dome

Camera

| | | | |
|----------------------|------------------------|--------------------------------------|---|
| Image Sensor | GV-FD120D | 1/3" progressive scan CMOS | |
| | GV-FD220D | 1/2.5" progressive scan CMOS | |
| | GV-FD320D | | |
| Picture Elements | GV-FD120D | 1280 (H) x 1024 (V) | |
| | GV-FD220D | 1920 (H) x 1080 (V) | |
| | GV-FD320D | 2048 (H) x 1536 (V) | |
| Minimum Illumination | GV-FD120D | Color | 0.15 Lux (1/30 sec), 0.08 Lux (1/5 sec) |
| | | B/W IR ON | 0 Lux |
| | GV-FD220D GV-FD320D | Color | 1 Lux (1/30 sec), 0.5 Lux (1/5 sec) |
| | | B/W IR ON | 0 Lux |
| Shutter Speed | | Automatic, Manual (1/5 ~ 1/8000 sec) | |
| White Balance | | Automatic, Manual (2800K ~ 8500K) | |
| Gain Control | | Automatic | |
| S/N Ratio | GV-FD120D | 50 dB | |
| | GV-FD220D | 45 dB | |
| | GV-FD320D | | |

Lens

| | | |
|-------------------------------------|------------------------------------|-----------------|
| Megapixel | Yes | |
| Day/Night | Yes (with removable IR-cut filter) | |
| Lens Type | Varifocal | |
| Focal Length | 2.7 ~ 9 mm | |
| Maximum Aperture | F/1.3 ± 5% | |
| Mount | ø 14 mm | |
| Image Format | 1/3" | |
| Operation | Focus | Manual (w/lock) |
| | Zoom | Manual (w/lock) |
| | Iris | DC drive |
| IR LED Quantity | 15 IR LEDs | |
| IR Distance | 15 m / 50 ft (Max.) | |
| Torque (Focus / Zoom Screws) | 3.9 ~ 4.9 N.cm | |

Specifications: Fixed IP Dome

Operation

| | | |
|--|------------------|--|
| Video Compression | | H.264, MPEG4, MJPEG |
| Video Stream | | Stream 1 from H.264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| Frame Rate | GV-FD120D | 30 fps at 1280 x 1024 |
| | GV-FD220D | 30 fps at 1920 x 1080 |
| | GV-FD320D | 20 fps at 2048 x 1536 |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed, Backlight Compensation, D/N Sensitivity |
| Audio Compression | | G.711, AAC (16 k / 16 bit) |
| Two-Way Audio | | Yes |
| Sensor Input | | 1 Input (Dry Contact) |
| Alarm Output | | 1 Output (200mA 5V DC) |
| Note: <ol style="list-style-type: none">1. The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes).2. AAC is only supported by GV-System V8.5 or later. | | |

Video Resolution

| | | | |
|------------------|--------------------|------|--|
| GV-FD120D | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-FD220D | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-FD320D | Main Stream | 4:3 | 2048 x 1536, 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Specifications: Fixed IP Dome

Network

| | |
|------------------|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |

Mechanical

| | | |
|--|--------------------------------------|---|
| Lens Mounting | \varnothing 14 mm | |
| Camera Angle Adjustment | Pan | 0° ~ 350° |
| | Tilt | 10° ~ 90° |
| | Rotate | 0° ~ 340° |
| Temperature Detector | Yes | |
| Connectors | Power | 2-pin terminal block, PoE |
| | Ethernet | Ethernet (10/100 Base-T), RJ-45 |
| | Audio | 1 In (microphone phone jack, 3.5 mm / 0.14 in) |
| | | 1 Out (Stereo phone jack, 3.5 mm / 0.14 in) |
| | Digital I/O | 3-pin terminal block, pitch 2.5 mm / 0.1 in |
| | Auto Iris | DC Drive |
| | Local Storage | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) |
| TV-Out | BNC connector (640 x 480 resolution) | |
| LED Indicator | 2 LEDs: Power, Status | |
| Note: The TV-Out function only works in 640 x 480 resolution. For TV-Out to work properly, you must set the video resolution to 1280 x 1024 or lower. If both streams are enabled, the Sub Stream must be set to 640 x 480. | | |

General

| | |
|-------------------------------|---------------------------------|
| Operating Temperature | 0°C ~ 50°C / 32 °F ~ 122 °F |
| Humidity | 10% to 90% (no condensation) |
| Power Source | 12V DC / 24V AC / PoE |
| Max. Power Consumption | 12 W |
| Dimensions (L X W X H) | 155 x 110 mm / 6.1 x 4.33 in |
| Weight | 580 g / 1.28 lb |
| Regulatory | CE, FCC, C-Tick, RoHS compliant |

Power over Ethernet

| | |
|------------------------------|---|
| PoE Standard | IEEE 802.3af Power over Ethernet / PSE |
| PoE Power Supply Type | End-Span |
| PoE Power Output | Per Port 48V DC, 350mA. Max. 15.4 watts |

Web Interface

| | |
|--------------------------------|--|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Visual Automation, Tampering Alarm, Text Overlay |

Specifications: Fixed IP Dome

| | |
|---|--|
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| Note: The text overlay function is only supported in V1.05 or later. | |

Application

| | |
|---|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |
| Note: For the GV-Backup Center and GV-Recording Server supported firmware versions, please see <i>Appendix D</i> . | |

All specifications are subject to change without prior notice.

Specifications: Cube Camera

Camera

| | | |
|-----------------------------|-------------------------------------|--------------------------------------|
| Image Sensor | | 1/2.5" progressive scan CMOS |
| Picture Elements | GV-CB120 GV-CBW120 | 1280 (H) x 1024 (V) |
| | GV-CB220 GV-CBW220 | 1920 (H) x 1080 (V) |
| Minimum Illumination | Color | 1 Lux (1/30 sec), 0.5 Lux (1/5 sec) |
| Shutter Speed | | Automatic, Manual (1/5 ~ 1/8000 sec) |
| White Balance | | Automatic, Manual (2800 ~ 8500K) |
| Gain Control | | Automatic |
| S/N Ratio | GV-CB120 | 45 dB |
| | GV-CB220 | |
| | GV-CBW120 | |
| | GV-CBW220 | |

Lens

| | |
|-------------------------|------------------|
| Megapixel | Yes |
| Day/Night | Yes (electronic) |
| Lens Type | Fixed |
| Focal Length | 3.35 mm |
| Maximum Aperture | F/2.4 |
| Mount | M12 mm |
| Image Format | 1/3" |

Specifications: Cube Camera

Operation

| | | |
|---|-------------------------------------|--|
| Video Compression | | H.264, MPEG4, MJPEG |
| Video Stream | | Stream 1 from H.264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| Frame Rate | GV-CB120 GV-CBW120 | 30 fps at 1280 x 1024 |
| | GV-CB220 GV-CBW220 | 30 fps at 1920 x 1080 |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed, Backlight Compensation |
| Audio Compression | | G.711, AAC (16 kHz / 16 bit) |
| Two-Way Audio | | Yes |
| Note: 1. The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). 2. AAC is only supported by GV-System V8.5 or later. | | |

Video Resolution

| | | | |
|-------------------------------------|--------------------|------|---|
| GV-CB120 GV-CBW120 | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-CB220 GV-CBW220 | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Network

| | |
|------------------|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |

Network (for GV-CBW120 / 220 only)

| | |
|---|---|
| Wireless LAN | IEEE 802.11 b/g/n |
| Antenna Type | Built-in |
| Security | WEP, WPA-PSK(TKIP), WPA-PSK(AES), WPA2-PSK(TKIP), WPA2-PSK(AES) |
| Note: The signal range and data throughput may vary depending on the network conditions and environmental factors. | |

Specifications: Cube Camera

Mechanical

| | | |
|-----------------------------|----------------------|---|
| Lens Mounting | M12 mm | |
| Temperature Detector | Yes | |
| Connectors | Power | DC Jack |
| | Ethernet | Ethernet (10/100 Base-T), RJ-45 |
| | Audio | Built-in speaker & microphone |
| | Local Storage | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) |
| LED Indicator | 2 LEDs: Status, LAN | |

General

| | | |
|-------------------------------|--------------------------------------|---|
| Operating Temperature | GV-CB120 GV-CB220 | 0°C ~ 50°C / 32°F ~ 122°F |
| | GV-CBW120 GV-CBW220 | 0°C ~ 40°C / 32°F ~ 104°F |
| Humidity | | 10% to 90% (no condensation) |
| Power Source | GV-CB120 GV-CB220 | 5V DC or 12V DC |
| | GV-CBW120 GV-CBW220 | 5V DC |
| Max. Power Consumption | GV-CB120 GV-CB220 | 3.2 W (for 5V DC) 4 W (for 12V DC) |
| | GV-CBW120 GV-CBW220 | 3.2 W |
| Dimensions (L X W X H) | | 60 x 84.8 x 39 mm / 2.36 x 3.34 x 1.54 in |
| Weight | GV-CB120 GV-CB220 | 80 g / 0.18 lb |
| | GV-CBW120 GV-CBW220 | 70 g / 0.15 lb |
| Regulatory | | CE, FCC, C-Tick, RoHS compliant |

Web Interface

| | |
|---|---|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, , audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Tampering Alarm, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian /Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| Note: The text overlay function is only supported in V1.05 or later. | |

Application

| | |
|--|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE , Mobile Phone |
| CMS Server support | GV-Control Center, GV-Center V2, GV-VSM |
| Note: GV-Backup Center, GV-Video Gateway and GV-Recording Server are only supported for V1.03 or later. | |

All specifications are subject to change without prior notice.

Specifications: Advanced Cube Camera

Camera

| | | |
|-----------------------------|-------------------------------|--------------------------------------|
| Image Sensor | | 1/2.5" progressive scan CMOS |
| Picture Elements | GV-CA120 GV-CAW120 | 1280 (H) x 1024 (V) |
| | GV-CA220 GV-CAW220 | 1920 (H) x 1080 (V) |
| Minimum Illumination | Color | 1 Lux at F/2.4 |
| | B/W | 0.5 Lux at F/2.4 |
| | LED on | 0.1 Lux at F/2.4 |
| Shutter Speed | | Automatic, Manual (1/5 ~ 1/8000 sec) |
| White Balance | | Automatic, Manual (2800 ~ 8500K) |
| Gain Control | | Automatic |
| S/N Ratio | | 45 db |

Lens

| | |
|-------------------------|------------------|
| Megapixel | Yes |
| Day/Night | Yes (electronic) |
| Lens Type | Fixed |
| Focal Length | 3.35 mm |
| Maximum Aperture | F/2.4 |
| Mount | M12 mm |
| Image Format | 1/3" |

Operation

| | | |
|--|-------------------------------------|--|
| Video Compression | | H.264, MPEG4, MJPEG |
| Video Stream | | Stream 1 from H.264 or MJPEG Stream 2 from H.264, MPEG4 or MJPEG |
| Frame Rate | GV-CA120 GV-CAW120 | 30 fps at 1280 x 1024 |
| | GV-CA220 GV-CAW220 | 30 fps at 1920 x 1080 |
| Image Setting | | Brightness, Contrast, Saturation, Sharpness, Gamma, White Balance, Flicker-less, Image Orientation, Shutter Speed, Backlight Compensation |
| Audio Compression | | G.711, AAC (16 kHz / 16 bit) |
| Two-Way Audio | | Yes |
| Note: <ol style="list-style-type: none"> The frame rate and performance may vary depending on the number of connections and data bitrates (different scenes). AAC is only supported by GV-System V8.5 or later. | | |

Specifications: Advanced Cube Camera

Video Resolution

| | | | |
|-----------------------|-------------|------|---|
| GV-CA120 GV-CAW120 | Main Stream | 4:3 | 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |
| GV-CA220 GV-CAW220 | Main Stream | 4:3 | 1600 x 1200, 1280 x 960, 640 x 480, 320 x 240 |
| | | 16:9 | 1920 x 1080, 1280 x 720, 640 x 360, 448 x 252 |
| | | 5:4 | 1280 x 1024, 640 x 512, 320 x 256 |
| | Sub Stream | 4:3 | 640 x 480, 320 x 240 |
| | | 16:9 | 640 x 360, 448 x 252 |
| | | 5:4 | 640 x 512, 320 x 256 |

Network

| | |
|-----------|--|
| Interface | 10/100 Ethernet |
| Protocol | HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP) |

Network (for GV-CAW120 / 220 only)

| | |
|---|---|
| Wireless LAN | IEEE 802.11 b/g/n |
| Antenna Type | Built-in |
| Security | WEP, WPA-PSK(TKIP), WPA-PSK(AES), WPA2-PSK(TKIP), WPA2-PSK(AES) |
| Note: The signal range and data throughput may vary depending on the network conditions and environmental factors. | |

Mechanical

| | | |
|--|----------------------|---|
| Lens Mounting | | M12 mm |
| Temperature Detector | | No |
| Connectors | Power | DC Jack / PoE (only for CA120/CA220) |
| | Ethernet | Ethernet (10/100 Base-T), RJ-45 |
| | Audio | Built-in speaker & microphone |
| | Local Storage | Micro SD / SDHC / SDXC memory card slot (for Class 6 card or above) |
| LED Indicator | | 4 LEDs: Status x 3, LAN / Wi-Fi |
| PIR Sensor | | Built-in |
| White Illumination LED | | Yes |
| White Illumination LED Distance | | 5 m / 16.4 ft (Max.) |

General

| | | |
|-------------------------------|--------------------------------|---|
| Operating Temperature | | 0°C ~ 50°C / 32°F ~ 122°F |
| Humidity | | 10% to 90% (no condensation) |
| Power Source | GV-CA120 GV-CA220 | 5V DC, PoE |
| | GV-CAW120 GV-CAW220 | 5V DC |
| Max. Power Consumption | | - |
| Dimensions (L X W X H) | | 65.8 x 99.8 x 39 mm / 2.59 x 3.92 x 1.54 in |
| Weight | | 100 g / 0.2 lb |
| Regulatory | | CE, FCC, C-Tick, RoHS compliant |

Specifications: Advanced Cube Camera

Web Interface

| | |
|--------------------------------|---|
| Installation Management | Web-based configuration |
| Maintenance | Firmware upgrade through Web Browser or Utility |
| Access from Web Browser | Camera live view, video recording, change video quality, bandwidth control, image snapshot, , audio, Wide Angle Lens Dewarping, Picture in Picture, Picture and Picture, Privacy Mask, Tampering Alarm, Text Overlay |
| Language | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian /Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |

Application

| | |
|----------------------------|---|
| Network Storage | GV-NVR, GV-System, GV-Backup Center, GV-Recording Server |
| Smart Device Access | - GV-Eye for Android smartphone, tablet, iPhone, and iPod Touch - GV-Eye HD for iPad |
| Live Viewing | IE ,GV-MultiView |
| CMS Server Support | GV-Control Center, GV-Center V2, GV-VSM |

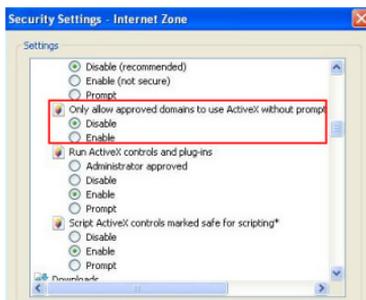
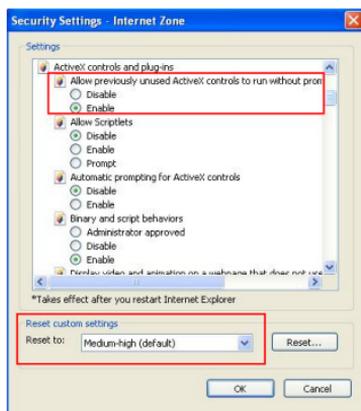
All specifications are subject to change without prior notice.

Appendix

A. Settings for Internet Explorer 8

If you use Internet Explorer 8, it is required to complete the following setting.

1. Set the Security to **Medium-high (default)**.
2. Enable **Allow previously unused ActiveX controls to run without prompt**.
3. Disable **Only allow approved domains to use ActiveX without prompt**.



B. Supported Lenses for Box Camera

| Provider | Model No. |
|-----------------------|--------------|
| Fujian Forecam Optics | RV0409D.IR |
| | RV0515D.IR |
| | RV0820D.IR |
| EVETAR | EVD03618F-IR |
| | EVD04218F-IR |
| | EVD06018F-IR |
| | EVD08018F-IR |
| | EVD12018F-IR |
| | EVD16018F-IR |
| Pentax | TS3VP213ED-M |

C. Resolution and Frame Rate

Note that the frame rate and the performance may vary depending on the number of connections and data bitrates (different scenes).

| GV-IP Camera | Stream | Ratio | Resolution | Max. Frame Rate | |
|---|------------------------|-------|--------------------------------------|------------------------|---------------------------------------|
| GV-BX110D GV-MFD110 GV-BL110D | Main | 4:3 | 1280 x 960 | 15 fps | |
| | | | 640 x 480 320 x 240 | 30 fps | |
| | | 5:4 | 1280 x 1024 | 15 fps | |
| | 640 x 512 320 x 256 | | 30 fps | | |
| | Sub | 4:3 | | 640 x 480 320 x 240 | |
| | | 5:4 | | 640 x 512 320 x 256 | |
| GV-BX120D GV-BX130D Series GV-BX120D-E GV-BL120D GV-BL130D GV-MFD120 GV-MFD130 GV-MDR120 GV-VD120D GV-VD121D GV-VD122D GV-VD123D GV-FD120D GV-CB120 GV-CBW120 GV-CA120 GV-CAW120 | Main | 4:3 | 1280 x 960 640 x 480 320 x 240 | 30 fps | |
| | | | 16:9 | | 1280 x 720 640 x 360 448 x 252 |
| | | 5:4 | | | 1280 x 1024 640 x 512 320 x 256 |
| | | | Sub | | 4:3 |
| | | 16:9 | | | |
| | | | | | 5:4 |

| GV-IP Camera | Stream | Ratio | Resolution | Max. Frame Rate |
|---|--------|-------|---|-----------------|
| GV-BX140DW | Main | 16:9 | 1280 x 720 640 x 360 448 x 252 | 30 fps |
| | Sub | 16:9 | 640 x 360 448 x 252 | |
| GV-BX220D Series GV-BX220D-E GV-MFD220 GV-MDR220 GV-BL220D GV-VD220D GV-VD221D GV-VD222D GV-VD223D GV-FD220D GV-CB220 GV-CBW220 GV-CA220 GV-CAW220 | Main | 4:3 | 1600 x 1200 1280 x 960 640 x 480 320 x 240 | 30 fps |
| | | 16:9 | 1920 x 1080 1280 x 720 640 x 360 448 x 252 | |
| | | | 5:4 | |
| | Sub | 4:3 | 640 x 480 320 x 240 | |
| | | 16:9 | 640 x 360 448 x 252 | |
| | | 5:4 | 640 x 512 320 x 256 | |

| GV-IP Camera | Stream | Ratio | Resolution | Max. Frame Rate | |
|---|---|------------|---|-----------------|---------------------------------------|
| GV-BX320D Series GV-BX320D-E GV-MFD320 GV-MDR320 GV-BL320D GV-VD320D GV-VD321D GV-VD322D GV-VD323D GV-FD320D | Main | 4:3 | 2048 x 1536 | 20 fps | |
| | | | 1600 x 1200 1280 x 960 640 x 480 320 x 240 | 30fps | |
| | | 16:9 | 1920 x 1080 1280 x 720 640 x 360 448 x 252 | | |
| | | | 5:4 | | 1280 x 1024 640 x 512 320 x 256 |
| | | Sub | 4:3 | | 640 x 480 320 x 240 |
| | | | 16:9 | | 640 x 360 448 x 252 |
| | 5:4 | | 640 x 512 320 x 256 | | |
| | Note: For GV-BX320D Series, GV-BX320D-E, GV-BL320D, GV-VD320D / 321D / 322D / 323D and GV-FD320D, the maximum frame rate for sub stream is 15 fps when the main stream resolution is set as 2048 x 1536. | | | | |

| GV-IP Camera | Stream | Ratio | Resolution | Max. Frame Rate |
|--|-------------|---------------------------------------|---|-----------------|
| GV-BX520D-0 GV-BX520D-E GV-MFD520 GV-MDR520 | Main | 4:3 | 2560 x 1920 | 10 fps |
| | | | 2048 x 1536 | 20 fps |
| | | 16:9 | 1600 x 1200 1280 x 960 640 x 480 320 x 240 | 30 fps |
| | | | 1920 x 1080 1280 x 720 640 x 360 448 x 252 | |
| | 5:4 | 1280 x 1024 640 x 512 320 x 256 | | |
| | Sub | 4 : 3 | 640 x 480 320 x 240 | |
| | | 16 : 9 | 640 x 360 448 x 252 | |
| | | 5 : 4 | 640 x 512 320 x 256 | |
| Note: For GV-BX520D-0, GV-BX520D-E, GV-MFD520 and GV-MDR520, the maximum frame rate for sub stream is 10 fps when the main stream resolution is set as 2560 x 1920. | | | | |

| GV-IP Camera | Stream | Ratio | Resolution | | Max. Frame Rate |
|--------------|------------------------|-------|------------------------|-------------------------------------|-----------------|
| GV-PTZ010D | Main | n/a | NTSC | 704 x 480 704 x 240 352 x 240 | 30 fps |
| | | | PAL | 704 x 576 704 x 288 352 x 288 | 25 fps |
| | Sub | n/a | NTSC | 704 x 480 704 x 240 352 x 240 | 30 fps |
| | | | PAL | 704 x 576 704 x 288 352 x 288 | 25 fps |
| GV-PT110D | Main | 4:3 | 1280 x 960 | | 15 fps |
| | | | 640 x 480 320 x 240 | | 30 fps |
| | | 5:4 | 1280 x 1024 | | 15 fps |
| | 640 x 512 320 x 256 | | 30 fps | | |
| | Sub | 4: 3 | | 640 x 480 320 x 240 | |
| | | 5: 4 | | 640 x 512 320 x 256 | |

D. Support Lists

- Support List for GV-Backup Center, GV-Video Gateway and GV-Recording Server

| GV-IP Camera | Model | Supported Version |
|------------------------|--|-------------------|
| Box Camera | GV-BX110D | V1.08 or later |
| | GV-BX120D GV-BX220D Series GV-BX320D Series | V1.03 or later |
| | GV-BX130D Series | V1.04 or later |
| | GV-BX520D-0 | V1.05 or later |
| IR Arctic Box Camera | GV-BX120D-E GV-BX220D-E GV-BX320D-E GV-BX520D-E | V1.07 or later |
| Mini Fixed Dome | GV-MFD110 | V1.08 or later |
| | GV-MFD130 | V1.04 or later |
| | GV-MFD120 GV-MFD220 GV-MFD320 GV-MFD520 | V1.05 or later |
| Mini Fixed Rugged Dome | GV-MDR120 GV-MDR220 GV-MDR320 GV-MDR520 | V1.07 or later |

| GV-IP Camera | Model | Supported Version |
|-----------------------------|--|--------------------------|
| Bullet Camera | GV-BL110D | V1.08 or later |
| | GV-BL120D GV-BL220D GV-BL320D | V1.03 or later |
| | GV-BL130D | V1.04 or later |
| | | |
| PT and PTZ Camera | GV-PTZ010D GV-PT110D | V1.08 or later |
| Vandal Proof IP Dome | GV-VD120D Series | V1.03 or later |
| | GV-VD220D Series | |
| | GV-VD320D Series | |
| Fixed IP Dome | GV-FD120D GV-FD220D GV-FD320D | V1.03 or later |
| Cube Camera | GV-CB120 GV-CB220 | V1.03 or later |
| | GV-CBW120 GV-CBW220 | V1.07 or later |
| Advanced Cube Camera | GV-CA120 GV-CA220 GV-CAW120 GV-CAW220 | Upcoming |

- Support List for Transmit Audio

| GV-IP Camera | Model | Supported Version |
|-----------------------------|--|-------------------|
| Box Camera | GV-BX110D | V1.08 or later |
| | GV-BX120D GV-BX220D Series GV-BX320D Series | V1.05 or later |
| | GV-BX130D Series | V1.04 or later |
| | GV-BX520D-0 | V1.05 or later |
| IR Arctic Box Camera | GV-BX120D-E GV-BX220D-E GV-BX320D-E GV-BX520D-E | V1.07 or later |
| Mini Fixed Dome | GV-MFD110 | V1.08 or later |
| | GV-MFD130 | V1.04 or later |
| | GV-MFD120 GV-MFD220 GV-MFD320 GV-MFD520 | V1.05 or later |
| | GV-MDR120 GV-MDR220 GV-MDR320 GV-MDR520 | V1.07 or later |

| GV-IP Camera | Model | Supported Version |
|-----------------------------|--|--------------------------|
| Bullet Camera | GV-BL110D | V1.08 or later |
| | GV-BL120D GV-BL220D GV-BL320D | V1.05 or later |
| | GV-BL130D | V1.04 or later |
| | | |
| PTZ Camera | GV-PTZ010D | V1.08 or later |
| PT Camera | GV-PT110D | V1.08 or later |
| Vandal Proof IP Dome | GV-VD120D Series | V1.05 or later |
| | GV-VD220D Series | |
| | GV-VD320D Series | |
| Fixed IP Dome | GV-FD120D GV-FD220D GV-FD320D | V1.05 or later |
| | | |
| | | |
| Cube Camera | GV-CB120 GV-CB220 | V1.03 or later |
| | GV-CBW120 GV-CBW220 | V1.07 or later |
| Advanced Cube Camera | GV-CA120 GV-CA220 GV-CAW120 GV-CAW220 | Upcoming |
| | | |
| | | |
| | | |

- Support List for System Log

| GV-IP Camera | Model | Supported Version |
|------------------------|---|-------------------|
| Box Camera | GV-BX110D | V1.08 or later |
| | GV-BX120D GV-BX220D Series GV-BX320D Series | V1.11 or later |
| | GV-BX130D Series | |
| | GV-BX520D-0 | |
| IR Arctic Box Camera | GV-BX120D-E GV-BX220D-E GV-BX320D-E GV-BX520D-E | V1.11 or later |
| Mini Fixed Dome | GV-MFD110 | V1.08 or later |
| | GV-MFD130 GV-MFD120 GV-MFD220 GV-MFD320 GV-MFD520 | V1.11 or later |
| | | |
| | | |
| | | |
| Mini Fixed Rugged Dome | GV-MDR120 GV-MDR220 GV-MDR320 GV-MDR520 | V1.11 or later |

| GV-IP Camera | Model | Supported Version |
|-----------------------------|--|--------------------------|
| Bullet Camera | GV-BL110D | V1.08 or later |
| | GV-BL120D | V1.11 or later |
| | GV-BL130D | |
| | GV-BL220D | |
| | GV-BL320D | |
| PT and PTZ Camera | GV-PTZ010D GV-PT110D | V1.08 or later |
| Vandal Proof IP Dome | GV-VD120D Series | V1.11 or later |
| | GV-VD220D Series | |
| | GV-VD320D Series | |
| Fixed IP Dome | GV-FD120D GV-FD220D GV-FD320D | V1.11 or later |
| Cube Camera | GV-CB120 GV-CB220 GV-CBW120 GV-CBW220 | V1.11 or later |
| Advanced Cube Camera | GV-CA120 GV-CA220 GV-CAW120 GV-CAW220 | Upcoming |

E. RTSP Protocol Command

The GV-IPCAM H.264 can support RTSP protocol for both audio and video streaming.

- If you use the QuickTime player, enter:

rtsp://<IP of the GV-IPCAM H.264:8554/<CH No.>.sdp

For example, rtsp://192.168.3.111:8554/CH001.sdp

- If you use the VLC, and if authentication is required, enter:

rtsp://username:password@<IP of the GV-IPCAM H.264:8554/<CH No.>.sdp

For example, rtsp://admin:admin@192.168.3.111:8554/CH001.sdp

- If you use the VLC, and if authentication is *not* required, enter:

rtsp://@<IP of the GV-IPCAM H.264:8554/<CH No.>.sdp

For example, rtsp://@192.168.3.111:8554/CH001.sdp

Note:

1. The RTSP streaming is supported over HTTP, UTP and TCP port.
 2. The RTSP server must be enabled on the Web interface. See Figure 14-20.
 3. Only VLC and QuickTime players are supported for streaming video via RTSP protocol.
 4. For GV-PTZ010D, the RTSP streaming provides source video images of 352 x 240 / 352 x 288 only.
-

F. The CGI Command

Please note the supported version of the CGI command in different models:

| GV-IP Camera | Supported Version |
|---|--------------------------|
| GV-BX110D GV-MFD110 GV-BL110D | V1.04 or later |
| GV-BX120D GV-BX220D-2 / 223D-3 GV-BX320D-0 / 320D-1 | V1.0 or later |
| GV-BL120D / 220D / 320D GV-VD120D / 121D / 122D / 123D GV-VD220D / 221D / 222D / 223D GV-VD320D / 321D / 322D / 323D | V1.02 or later |
| GV-PT110D GV-PTZ010D | V1.07 or later |
| GV-FD120D / 220D / 320D | V1.03 or later |
| GV-CB120 / 220 | V1.03 or later |
| GV-BX120D-E GV-BX220D-E GV-BX320D-E GV-BX520D-E GV-MDR120 / 220 / 320 / 520 GV-CBW120 / 220 | V1.07 or later |
| GV-BX130D Series GV-MFD130 GV-BL130D | V1.04 or later |
| GV-BX140DW | V1.10 or later |
| GV-BX520D-0 GV-MFD120 / 220 / 320 / 520 | V1.05 or later |

| GV-IP Camera | Supported Version |
|-----------------------------------|-------------------|
| GV-CA120 / 220 GV-CAW120 / 220 | Upcoming |

You can use the CGI command to obtain a snapshot of the live view or access the User Account Web interface. For a GV-IPCAM H.264 with the following details:

IP address: 192.168.2.11

Username: admin

Password: admin

Desired stream: 1

- To obtain a snapshot of the live view, type the following into your web browser:

<http://192.168.2.11/PictureCatch.cgi?username=admin&password=admin&channel=1>

- To access the User Account Web interface, type the following into your web browser:

<http://192.168.2.11/ConfigPage.cgi?username=admin&password=admin&page=UserSetting>

G. Dual Stream Support List

The table lists the firmware versions of GV-IP Cameras that support dual stream and the default resolutions after the camera is added to GV-System.

| GV-IP Camera | Supported Firmware Version | Resolution | |
|--------------------|----------------------------|---------------------|--------------------|
| | | Main Stream (H.264) | Sub Stream (MPEG4) |
| GV-BX110D | V1.00 to V1.06 | 1280 x 1024 | 320 x 240 |
| GV-MFD110 | | | |
| GV-BL110D | V1.07 or later | 1280 x 1024 | 320 x 256 |
| GV-BX120D | V1.00 or later | 1280 x 1024 | 320 x 256 |
| GV-MFD120 | V1.05 or later | | |
| GV-BX120D-E | V1.07 or later | | |
| GV-CBW120 | | | |
| GV-MDR120 | | | |
| GV-BL120D | V1.02 or later | | |
| GV-VD120D | | | |
| GV-VD121D | | | |
| GV-VD122D | | | |
| GV-VD123D | | | |
| GV-FD120D | V1.03 or later | | |
| GV-CB120 | | | |

| GV-IP Camera | Supported Firmware Version | Resolution | |
|---|----------------------------|---------------------|--------------------|
| | | Main Stream (H.264) | Sub Stream (MPEG4) |
| GV-BX130D Series GV-MFD130 GV-BL130D | V1.04 or later | 1280 x 1024 | 320 x 256 |
| GV-BX140DW | V1.10 or later | 1280 x 720 | 640 x 360 |
| GV-BX220D Series | V1.00 or later | 1920 x 1080 | 448 x 252 |
| GV-MFD220 | V1.05 or later | | |
| GV-BX220D-E GV-CBW220 GV-MDR220 | V1.07 or later | | |
| GV-BL220D GV-VD220D GV-VD221D GV-VD222D GV-VD223D | V1.02 or later | | |
| GV-FD220D GV-CB220 | V1.03 or later | | |
| GV-CA220 GV-CAW220 | Upcoming | | |

| GV-IP Camera | Supported Firmware Version | Resolution | |
|--|----------------------------|---------------------|--------------------|
| | | Main Stream (H.264) | Sub Stream (MPEG4) |
| GV-BX320D Series | V1.00 or later | 2048 x 1536 | 320 x 240 |
| GV-MFD320 | V1.05 or later | | |
| GV-BX320D-E GV-MDR320 | V1.07 or later | | |
| GV-BL320D GV-VD320D GV-VD321D GV-VD322D GV-VD323D | V1.02 or later | | |
| GV-FD320D | V1.03 or later | | |
| GV-BX520D-0 GV-MFD520 | V1.05 or later | 2560 x 1920 | 320 x 240 |
| GV-BX520D-E GV-MDR520 | V1.07 or later | | |
| GV-PT110D | V1.07 or later | 1280 x 1024 | 320 x 256 |
| GV-PTZ010D-N | V1.07 or later | 704 x 480 | 352 x 240 |
| GV-PTZ010D-P | V1.07 or later | 704 x 576 | 325 x 288 |

H. Power Supply Support List

The supported power type is indicated with a tick (✓) and the unsupported power type with a cross (✗).

| GV-IP Camera | | DC Power | AC Power | PoE |
|------------------------|------------------------|----------|----------|-----|
| Box Camera | | ✓ | ✗ | ✓ |
| IR Arctic Box Camera | | ✗ | ✗ | ✓ |
| Mini Fixed Dome | GV-MFD110 | ✗ | ✗ | ✓ |
| | GV-MFD120 | | | |
| | GV-MFD130 | | | |
| | GV-MFD220 | ✓ | ✗ | ✓ |
| | GV-MFD320 GV-MFD520 | | | |
| Mini Fixed Rugged Dome | | ✗ | ✗ | ✓ |
| Bullet Camera | | ✓ | ✓ | ✓ |
| PTZ Camera | | ✓ | ✓ | ✓ |
| PT Camera | | ✓ | ✓ | ✓ |
| Vandal Proof IP Dome | | ✓ | ✓ | ✓ |
| Fixed IP Dome | | ✓ | ✓ | ✓ |
| Cube Camera | | ✓ | ✗ | ✗ |
| Advanced Cube Camera | | ✓ | ✗ | ✓ |

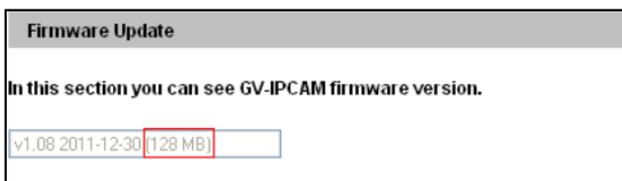
I. Supported Firmware for Flash Memory

The 128 MB flash memory is supported in **V1.09 or later** in all models of GV-IPCam H.264 Series except GV-BX110D, GV-MFD110, GV-BL110D, GV-PTZ010D, GV-PT110D,

To look up if the camera contains a 128 MB type flash memory, access the web interface or the GV IP Device Utility:

- **Web Interface**

Click **Management** and click **Tools**. The “128 MB” should be noted after the firmware version.



- **GV IP Device Utility**

The “128 M” should appear under the NOTE column.

