

GV-VR360 IR Virtual Reality IP Camera

User's Manual



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

VR360-UM-B



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Note: No memory card slot or local storage function for Argentina.

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Preface

Welcome to the *GV-VR360 IR Virtual Reality IP Camera User's Manual*. The instructions will guide you through the installation and use of the camera.

This *Manual* is designed for the following model:

Model	Model Number
IR Virtual Reality IP Camera	GV-VR360

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Regulatory Notices



FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Class A

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.



CE Notice

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.



RoHS Compliance

The Restriction of Hazardous Substances (RoHS) Directive is to forbid the use of hazardous materials of production. To meet the RoHS Directive requirements, this product is made to be RoHS compliant.

Naming Definition

GV-VMS	GeoVision Video Management System for IP cameras.
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Note for Connecting to GV-VMS

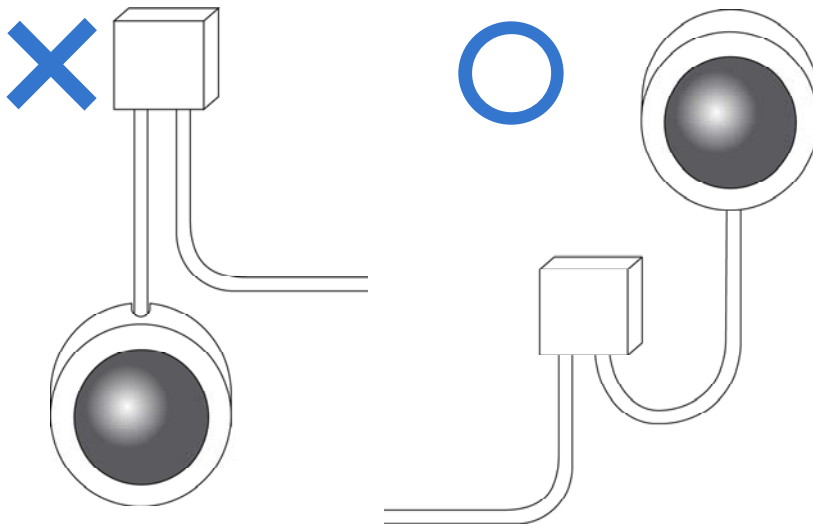
The camera is designed to work with and record on GV-VMS, a video management system.

Once the camera is connected to the GV-VMS, the resolution set on the GV-VMS 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-VMS is interrupted.

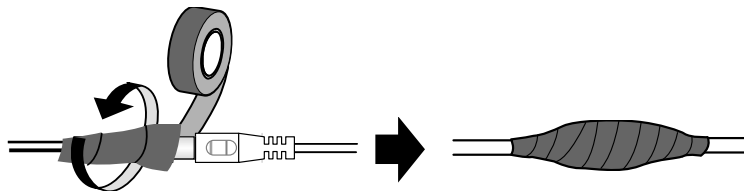
Note for Installing Camera Outdoor

When installing the camera, 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. The screws are tightened and the cover is in place after opening the camera cover.

Optional Accessories

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

Device	Description
GV-PoE Switch	GV-PoE Switch is designed to provide power along with network connection for IP devices. GV-PoE Switch is available in various models with different numbers and types of ports.
GV-Relay V2	GV-Relay V2 is designed to expand the voltage load of GV-IP devices. It provides 4 relay outputs, and each can be set as normally open (NO) or normally closed (NC) independently as per your requirement.
Power Adapter	Contact our sales representatives for the countries and areas supported.

Chapter 1 Introduction

GV-VR360 is a Virtual Reality IP camera made true with two 4 MP fisheye panoramic cameras. The camera provides a live view of the surveillance area with an all-inclusive 720° angle range of view and extended depth of field, enabling a total coverage of wide open areas. When streamed online or viewed through the GV-Eye or YouTube mobile app, users can watch the 720°, VR video from the camera for an immersive experience.

Equipped with IR-cut filter, IR LEDs having an effective distance of up to 10 m (32 ft) and WDR, GV-VR360 is capable of day and night surveillance under contrasting illumination conditions. Utilizing H.265 video codec, the camera allows better compression ratio while maintaining high image quality at reduced network bandwidths. The camera adheres to IK10 and IP67 standards.

Features:

- Dual 4MP fisheye provides 720° panoramic view with no blind spots
- 1/2.9" progressive scan low lux CMOS
- Dual streams from H.265 or H.264
- Up to 30 fps at 3840 x 2160
- Day and night (with removable IR-cut filter)
- Intelligent IR
- 4 IR LEDs
- IR distance up to 10 m (32 ft)
- One-way audio
- Built-in / external microphone
- 1 sensor input and 1 alarm output
- DC 12V / PoE (PoE+, IEEE 802.3at)
- Vandal resistance (IK10 for metal casing)
- Ingress protection (IP67)
- VR Mode for YouTube & GV-Eye
- Smart device APP support
- Live streaming via YouTube
- Defog
- 3 languages on Web interface
- ONVIF (Profile S) conformant

1.1 System Requirements

CPU	Intel® 6 th generation Core™ i3
Memory	4 GB or above
On Board Graphics	Intel® HD Graphics 500 series or above
OS	Windows 7 Service Pack 1 / Windows 10 or above
Web Browser	Internet Explorer 10 / 11 or above

1.1.1 Software Supported

GV-VMS	V18.1
GV-Control Center	V3.6.0.0
GV-Edge Recording Manager (for Windows)	V.1.4.0.0
GV-Recording Server	V1.4.0.0 + Patch for live stream only
GV-Eye	V2.5.2 for IOS and V2.5.1 for Android

1.2 Packing List

- IR Virtual Reality IP Camera



- Screw x 3



- Hex Key

- Silica Gel Bag
- Download Guide
- Warranty Card

- Mount Kit



- Screw Anchor x 3



- Torx Wrench



1.3 Overview

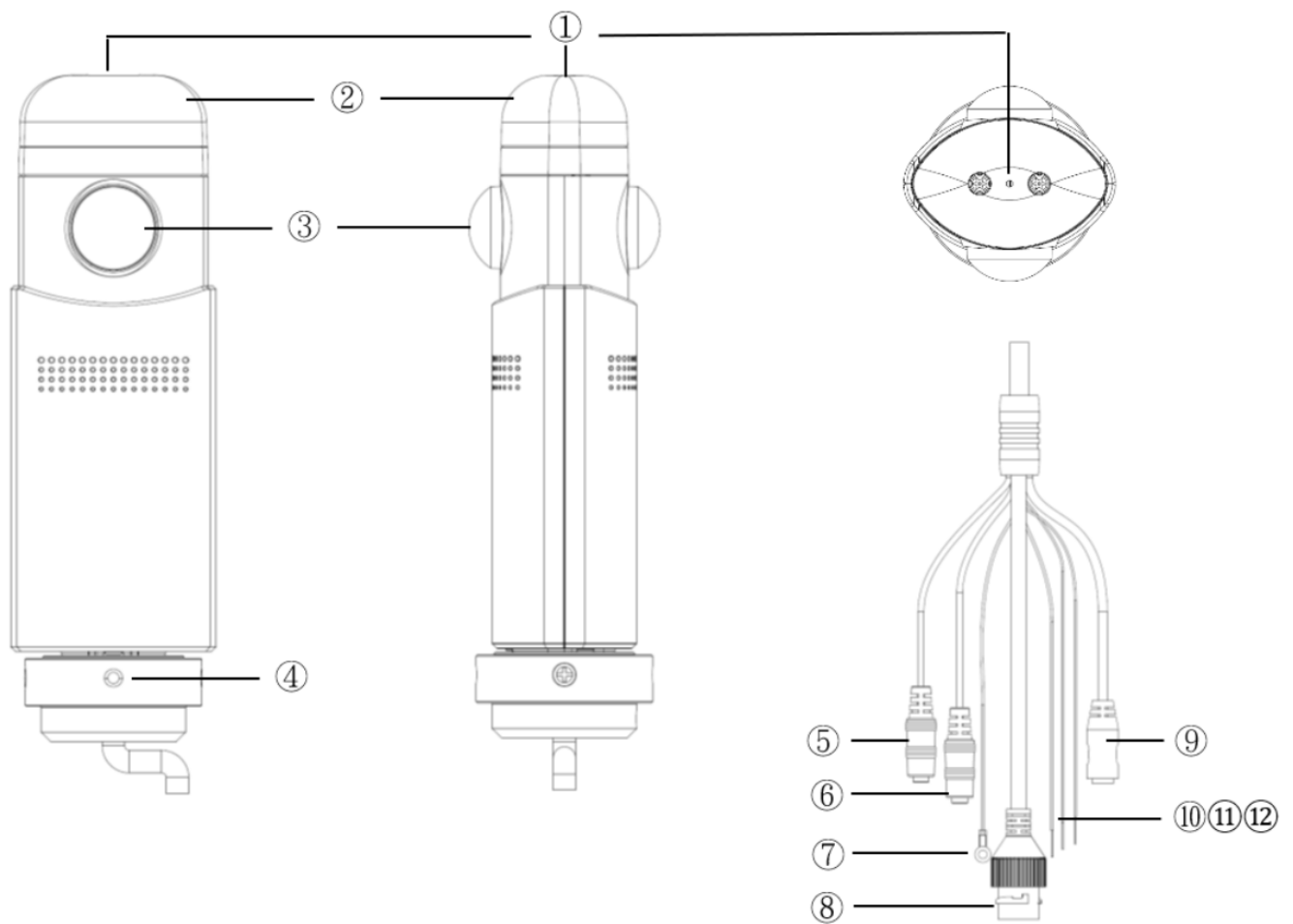


Figure 1-1

No.	Description	No.	Description
1	Built-in microphone	7	Earth ground (M3 terminal)
2	IR LED	8	RJ45 waterproof
3	Fisheye lens	9	DC 12V jack (black)
4	Socket set screw	10	Digital input (white cable)
5	Audio in (pink jack)	11	Digital output (green cable)
6	Audio out (green jack, currently not functional)	12	Ground wire (black cable)

1.4 Installing the Camera

The camera is designed for outdoors. With the standard package, you can install the camera on the ceiling.

1. Adjoin the base with the straight tube by turning it clockwise.

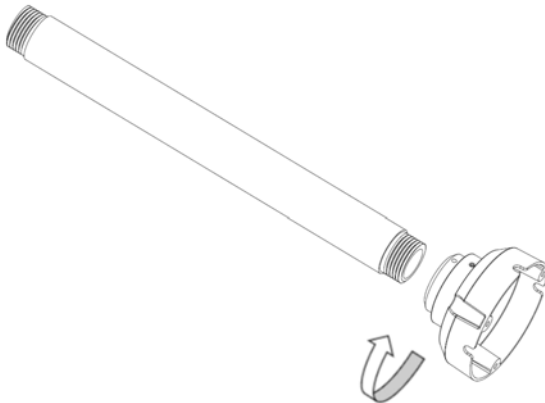


Figure 1-2

2. Thread the cables of the camera to the base end through the opposite end of the straight tube and rotate the straight tube clockwise to attach it to the camera.

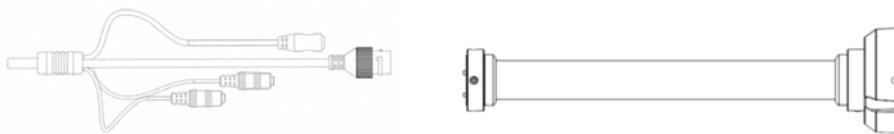


Figure 1-3

3. Mount the camera onto the ceiling using the mounting kit and the supplied screws and screw anchors.

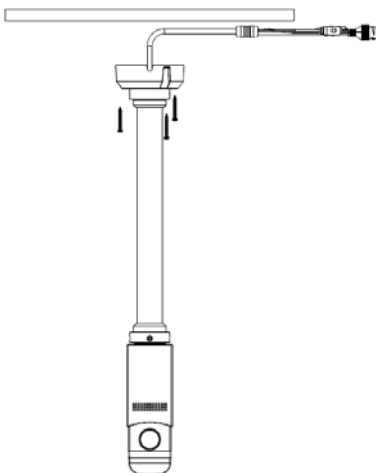


Figure 1-4

4. Connect a network cable to the camera. Optionally waterproof the network cable by disassembling the cap of the network connector and thread the network cable as illustrated below.

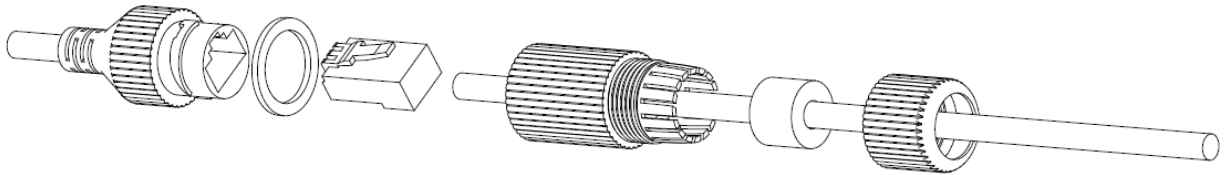


Figure 1-5

5. Rotate the camera to adjust for the desired angle and tighten the screws to fixate its position.

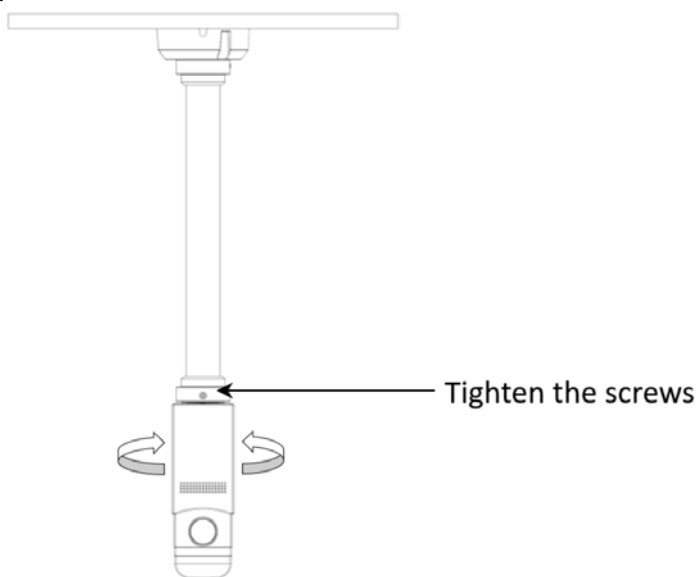


Figure 1-6

Note: Image at a radius of approximately 1.5 m (4.9 ft) away from the camera will be slightly obscured in panoramic view.

Chapter 2 Getting Started

2.1 Looking Up the IP Address

By default, GV-VR360 is assigned with a dynamic IP address when the camera is connected to a network with DHCP server. This IP address remains unchanged unless you unplug or disconnect your camera from the network.

Note: If your router does not support DHCP, the default IP address will be **192.168.0.10**. In this case, it is strongly recommended to modify the IP address to avoid IP address conflict with other GeoVision IP devices under the same LAN. To change the IP address, see [2.1.1 Assigning an IP Address](#).

Follow the steps below to check the GV-VR360's dynamic IP address:

1. Download and install the **GV-IP Device Utility** program (V8.7.1.0 or later) from our [website](#).

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

2. Select **Start** on the PC, point to **Programs** and select **GV-IP Device Utility**. The Utility window appears and automatically searches for the IP devices under the same LAN.

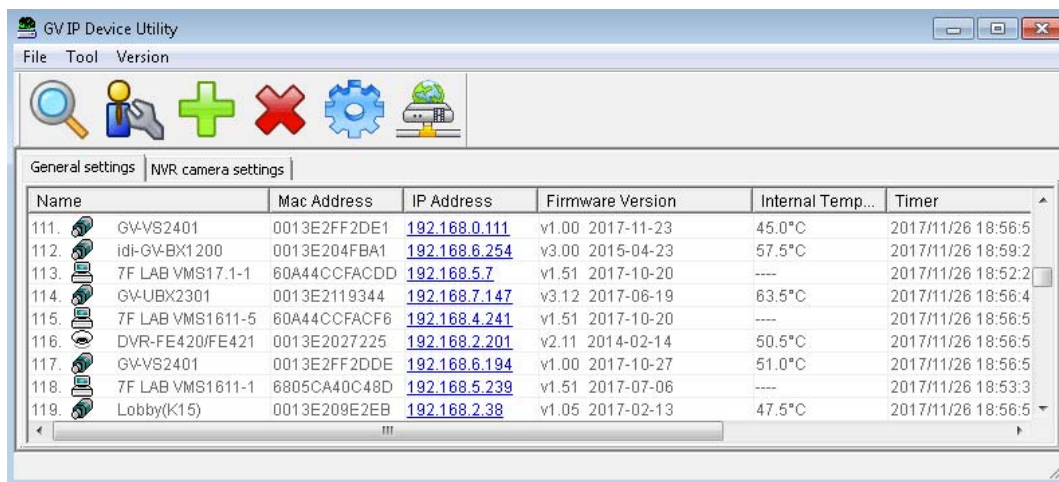


Figure 2-1

3. Click the **Name** or **Mac Address** column to sort.
4. Use the Mac address of the camera to look up its IP address.

2.1.1 Assigning an IP Address

When the DHCP server on your network is unavailable or disabled, the camera can be accessed by the default IP **192.168.0.10**. To modify the static IP address, log on to the Web interface and access the network setting page.

1. Open your Web browser and type the default IP address <http://192.168.0.10>.
2. Type the default account and password **admin** and click **Apply**.
3. Click **System Settings** at the top, select **Network** and click **LAN Configuration**. This page appears.

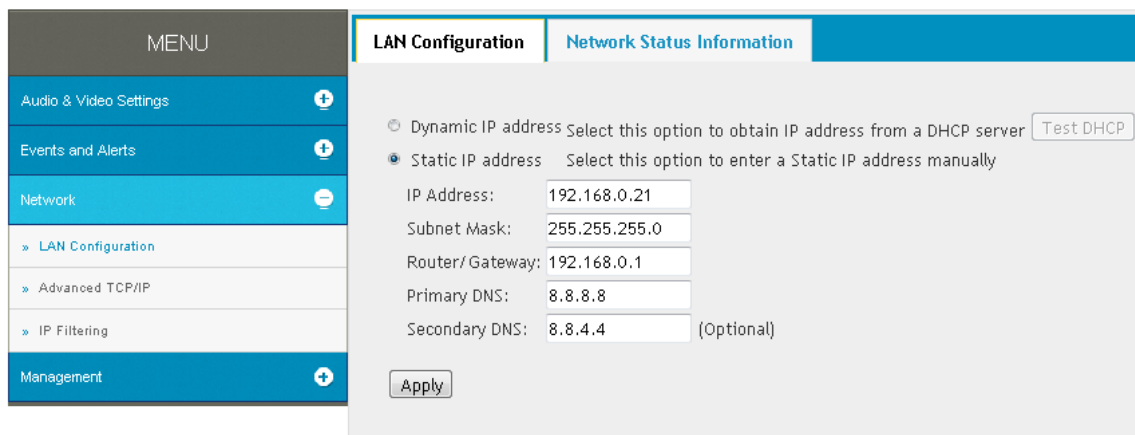


Figure 2-2

4. Select **Static IP address** and type the required network information.
5. Click **Apply**. The camera is now accessible through the assigned IP address.

IMPORTANT:

1. Use the dynamic DNS Service to obtain a domain name linked to the camera's changing IP address before you start using the dynamic IP address. For details on Dynamic IP Address, see 3.3.2 *Advanced TCP/IP* and 3.3.1 *LAN Configuration*.
 2. If **Dynamic IP Address** is enabled and you cannot access the camera, you may have to reset it to its factory default settings and perform the network settings again. To restore to factory settings, see 6.2 *Restoring to Factory Default Settings*.
-

2.2 Accessing the Live View

Two types of users are allowed to log on to the GV-VR360: **Administrator** and **Guest**. The Administrator has full access to all system configurations of the camera, while the Guest can only access its live view and network status.

Once the camera is connected to the network, follow the steps below to access its live view:

1. Open your Web browser and type the IP address or domain name of the camera in the **Location/Address** bar. To look up the IP address, see *2.1 Looking Up the IP Address*.
2. Enter the account and password of the camera.
 - The default account and password for Administrator are **admin**.
 - The default account and password for Guest are **guest**.

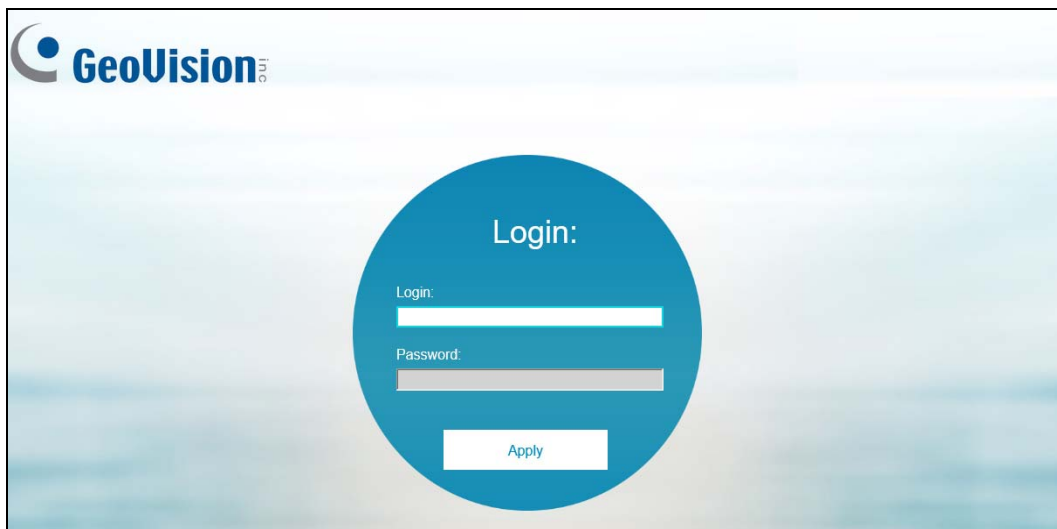


Figure 2-3

3. The live view of GV-VR360 is now displayed on your browser.

Note: Before accessing the camera's live view on Microsoft Internet Explorer, you must allow ActiveX Controls and perform a one-time installation of GeoVision's ActiveX component onto your computer.

2.2.1 The Live View Window



Figure 2-4

No.	Name	Function
1	Play	Plays live video.
2	Stop	Stops playing video.
3	Snapshot	Takes a snapshot of the live video.
4	Full Screen	Switches to full screen view.
5	File Save	Records live video to the local computer.
6	Control Panel	Access and configure the following image settings: Video Attribute, Orientation, Flickerless, D/N, D/N Sensitivity, White Balance, WDR, Defog, IR Light and 360. --- See 2.2.2 The Control Panel of the Live View Window.
7	Pop-up Menu	Right-click on the live view image to have the following options: <ul style="list-style-type: none"> ■ Snapshot: Takes a snapshot of the live video. ■ Full Screen: Switches to full screen view. ■ PIP: Enables an inset window for a close-up view of the live view. See 2.2.3 Picture-in-Picture View. ■ Audio: Receives live audio from the surveillance site. ■ Information: Displays the video codec, resolution, FPS and streaming speed of the live video.

2.2.2 The Control Panel of the Live View Window

Using the control panel on the right side of the Live View window, you can adjust the following image settings. Note these settings are only accessible by the Administrator.

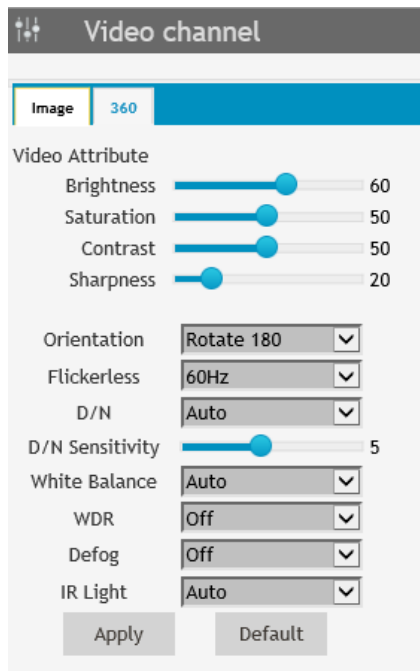


Figure 2-5

[Image]

- **Video Attributes:** Adjusts the Brightness, Saturation, Contrast and Sharpness of the live image.
- **Orientation:** Changes the orientation of the image in live view.
- **Flickerless:** Manually select the frequency of your camera's image, between 50 Hz and 60 Hz, to match the frequency of the light sources of the surveillance site, e.g. fluorescent lighting. If the frequencies don't match, faint light and dark bars may appear in the images. Check the power utility to determine which frequency is used at your area.
- **D/N:** Select **Auto** for the camera to automatically 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.
- **D/N Sensitivity:** Sets the sensitivity of the light sensors used for switching between day and night modes, from 1 to 10. The higher the value, the more sensitive they are to light.
- **White Balance:** The camera automatically adjusts the color to be closest to the image you are viewing. Select from the following: **Auto**, **Outdoor**, **Fluorescent**, and **Incandescent**.

- **WDR (Wide Dynamic Range):** Adjusts for clear images when the scene contains very bright and very dark areas at the same time. Select **Strong** to bring out details of the dark areas of the scene or **Normal** for a balanced effect.
- **Defog:** Select **Auto** to automatically enhance the visibility of images. Select **Off** to disable the function.
- **IR Light:** Select **Auto** to automatically enhance the visibility of images using intelligent IR. Select **Off** to disable the function.

[360]

- **360:** Adjust the Max. and Min. **Stitch** values to set the range of the panoramic view.

Click **Apply** to save the configurations set. The changes take effect only after the configurations have been saved.

2.2.3 Picture-in-Picture View

The Picture-in-Picture (PIP) view allows you to zoom in for a closeup view of the image while navigating on the live view through an inset window.



Figure 2-6

1. Right-click on the live view and select PIP. An inset window appears.
2. Click the inset window. A navigation box appears.
3. Move the navigation box within the inset window to have a closeup view of the area select.
4. Hover the cursor over any one of the navigation box's four corners to adjust its size.
5. To exit the PIP view, right-click on the live view and deselect **PIP**.

Chapter 3 Administrator Mode

The Administrator can access and configure the GV-VR360 over the network. Click **System Settings** at the top of the Web interface to access the following four configuration tabs: **Audio & Video Settings**, **Events and Alerts**, **Network** and **Management**.

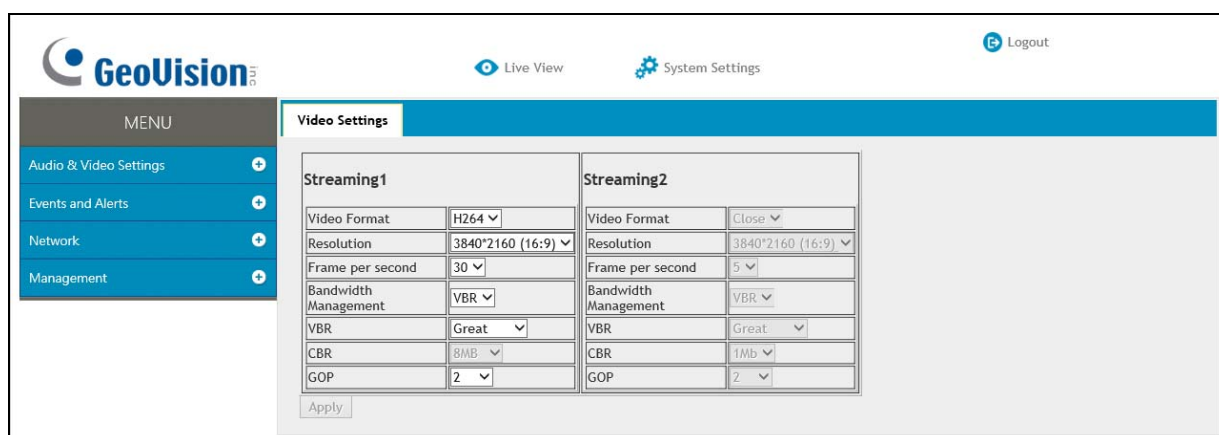


Figure 3-1

List of Configurations

See the table below for the settings available on the Web interface. Find the topic of interest by referring to the section number prefixed to each option.

3.1 Audio & Video Settings	3.1.1 Video Settings
	3.1.2 Audio Settings
	3.1.3 Metering
	3.1.4 RTSP
	3.1.5 Live
3.2 Events and Alerts	3.2.1 I/O Control
	3.2.2 E-mail
3.3 Network	3.3.1 LAN Configuration
	3.3.2 Advanced TCP/IP
	3.3.3 IP Filtering
3.4 Management	3.4.1 Date and Time
	3.4.2 User Account
	3.4.3 Tools
	3.4.4 System Log

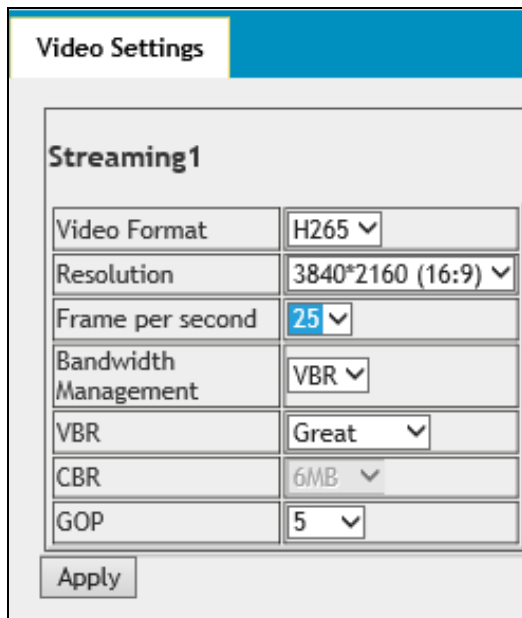
3.1 Audio & Video Settings

The GV-VR360 supports two streams, Streaming 1 and Streaming 2, which allow separate codec and resolution settings through a single video transmission. In a bandwidth-limited network, such as mobile phone surveillance, this dual-stream feature allows you to view live video in a lower resolution and codec (Streaming 2) while recording in a higher resolution and codec (Streaming 1).

Note: When the GV-VR360 is connected to a video management software and/or app, changing its Audio or Video Settings may result in temporary disconnection or image freeze, for about 40 ~ 60 seconds.

3.1.1 Video Settings

In Video Settings, you can configure your video stream settings, such as H.264/H.265 video format, resolutions, and FPS or enable / disable streaming 2.



Video Settings	
Streaming1	
Video Format	H265 ▾
Resolution	3840*2160 (16:9) ▾
Frame per second	25 ▾
Bandwidth Management	VBR ▾
VBR	Great ▾
CBR	6MB ▾
GOP	5 ▾
Apply	

Figure 3-2

Note: Streaming 2 is disabled by default. To enable streaming 2, change the FPS of streaming 1 to 25 or lower.

[Video Format] Select either **H.265** or **H.264** as the codec type.

Note: H.265 video codec is not supported for YouTube streaming.

[Resolution] Select the desired resolution for video streaming from the drop-down list. The resolution of Streaming 2 will always be the same as Streaming 1.

[Frame per Second] Select the desired FPS for video streaming from the drop-down list. The FPS of Streaming 2 is always kept at 5.

[Bandwidth Management]

You can configure the bitrate settings to control your bandwidth usage.

- **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 the CBR. Select one of the 4 standards for the image quality: **Fair**, **Good**, **Great** or **Excellent**.
- **CBR (Constant Bitrate):** CBR is used to achieve a specific bitrate by varying the quality of the video stream. The bitrates available for selection depend on the resolution set.

[GOP]

Set the maximum number of seconds between every key frame. The default is 2 (seconds).

3.1.2 Audio Settings

You can enable the microphone and select the audio quality from **Low** , **Normal** or **YouTube**. Select **Built-in Microphone** or **External Microphone** as the source of audio input.

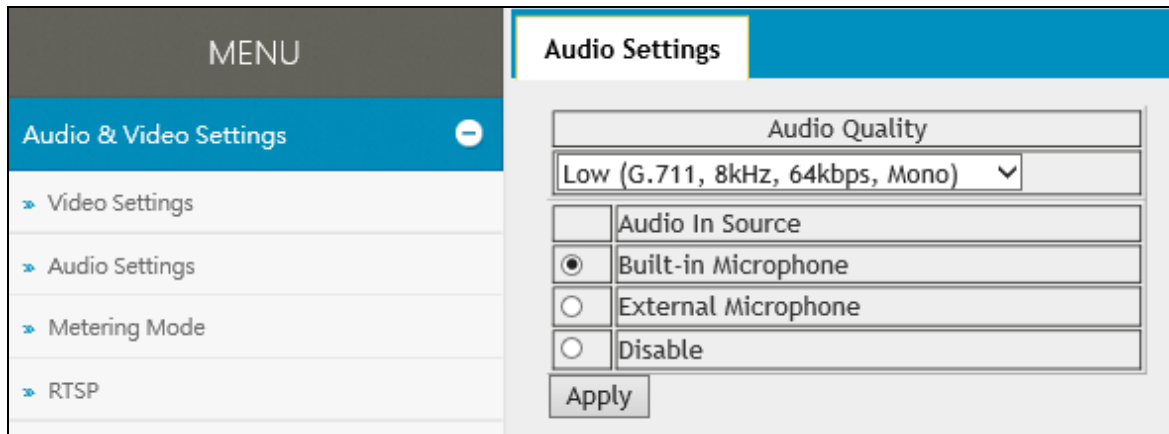


Figure 3-3

Note:

1. Normal audio quality and audio for YouTube streaming require AAC audio codec.
2. When **YouTube** is selected under audio quality, there will be no audio support for the camera's Web interface and all video management software and app connected to the camera.

3.1.3 Metering

Select between **Center-Weighted Metering Mode** and **Evaluative Metering Mode** for the camera to automatically measure the intensity of light. For Evaluative Metering Mode, click on a desired location on the image.



Figure 3-4

3.1.4 RTSP

Enabled by default, you can modify the RTSP protocol settings to match your network environment or enable RTSP authentication for improved security.

RTSP	
Enable Audio	On ▼
Authentication	Off ▼
RTSP/TCP port	8554 (1024 - 65535)
RTP/UDP port	17300 (1024 - 65535)
Max connection	8 (1 - 8)
Apply	

Figure 3-5

[Enable Audio] Turns audio streaming on or off.

[Authentication] The ID and password of the camera are required to access the camera through RTSP connections. This function is disabled by default.

[RTSP / TCP Port] Keep the default value or modify it as needed, from 1024 ~ 65535.

[RTP / UDP Port] Keep the default value or modify it as needed, from 1024 ~ 65335.

[Max Connection] Set the maximum number of RTSP connections to the camera, from 1 ~ 8.

Note:

1. When the GV-VR360 is connected to a video management software and/or app, changing its RTSP settings may result in temporary disconnection or image freeze, for about 40 ~ 60 seconds
 2. For RTSP commands of GV-VR360, see [Appendix A](#).
-

3.1.5 Live

You can enable live streaming of the camera's image through YouTube. For details, see [Chapter 4 YouTube Live Stream](#).

3.2 Events and Alerts

The Administrator can set up triggered actions, of either sending a snapshot by e-mail and/or activate an output device upon input events.

For the abovementioned triggered actions, you must also configure the following settings:

- Input Settings (See 3.2.1.1 *Input Settings*)
- E-mail (See 3.2.2 *E-mail*)

3.2.1 I/O Control

After installing the I/O devices, you need to enable the I/O settings on the camera. For connecting I/O devices to the camera, see 1.3 *Overview*.

3.2.1.1 Input Settings

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

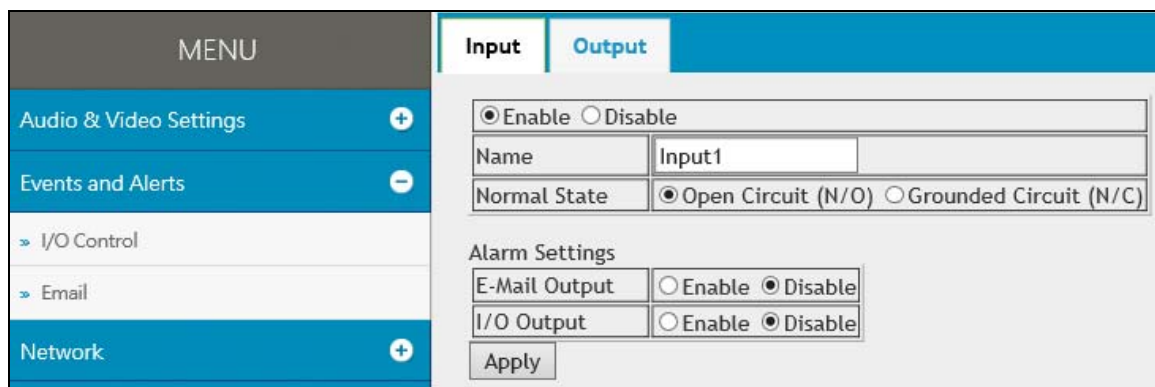


Figure 3-6

- **Name:** Type a desired name for the input.
- **Normal State:** Select the initial state of the sensor input between **Open Circuit (N/O)** / **Grounded Circuit (N/C)**.
- **E-Mail Output:** Enable this option to send alerts to the e-mail address specified upon input events. See 3.2.2 *E-mail* to set up the e-mail server.
- **I/O Output:** Enable this option to trigger the output device upon input events. See 3.2.1.2 *Output Settings* to set up the output device.

3.2.1.2 Output Settings

Select **Enable** to activate the output device.

MENU		Input	Output
Audio & Video Settings +		<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
Events and Alerts -		Name: Output1	
» I/O Control		Normal State: <input checked="" type="radio"/> Open Circuit (N/O) <input type="radio"/> Grounded Circuit (N/C)	
» Email		I/O Output Type: <input checked="" type="radio"/> Normal <input type="radio"/> Pulse	
Network +		Pulse Time (seconds): 0	
		<input type="button" value="Apply"/>	

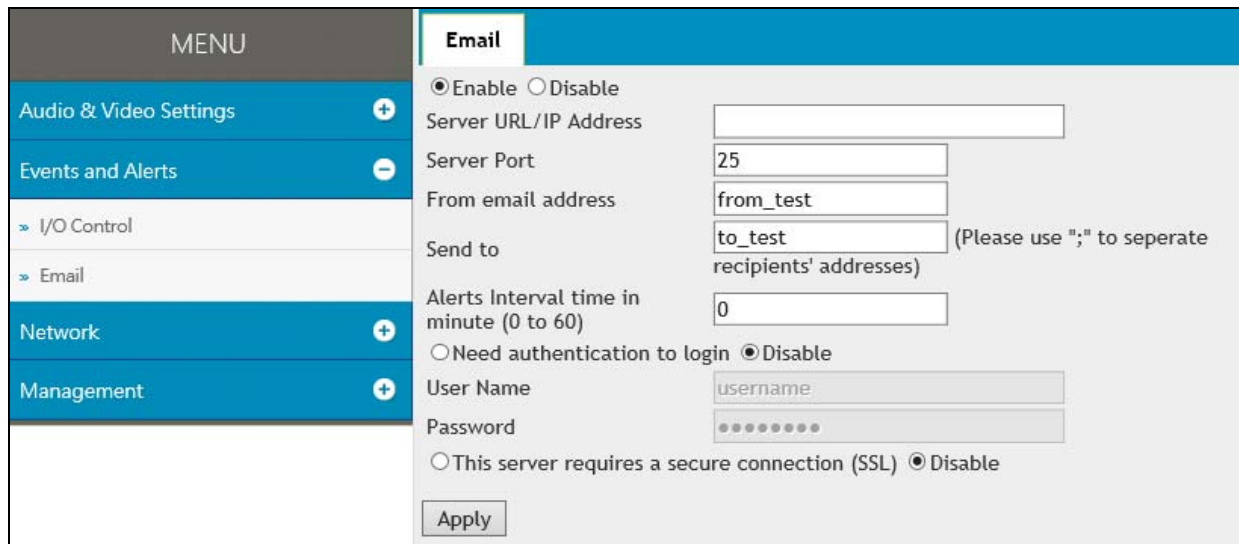
Figure 3-7

- **Name:** Type a desired name for the output.
- **Normal State:** Select the output signal that best suits your device between **Open Circuit (N/O)** / **Grounded Circuit (N/C)**.
- **I/O Output Type:** Select **Normal** for the output to remain in effect until the trigger action stops or select **Pulse** for the output to last only for the amount of time specified in the **Pulse Time (seconds)** field.

3.2.2 E-mail

You can set up e-mail address(es) for receiving e-mail notifications upon input triggers.

Note: To send e-mail alerts upon input events, be sure to configure the input settings. See [3.2.1.1 Input Settings](#).



MENU	Email
Audio & Video Settings	<input checked="" type="radio"/> Enable <input type="radio"/> Disable Server URL/IP Address: <input type="text"/> Server Port: <input type="text" value="25"/> From email address: <input type="text" value="from_test"/> Send to: <input type="text" value="to_test"/> (Please use ";" to separate recipients' addresses) Alerts Interval time in minute (0 to 60): <input type="text" value="0"/> <input type="radio"/> Need authentication to login <input checked="" type="radio"/> Disable User Name: <input type="text" value="username"/> Password: <input type="password" value="....."/> <input type="radio"/> This server requires a secure connection (SSL) <input checked="" type="radio"/> Disable <input type="button" value="Apply"/>
Events and Alerts	
➤ I/O Control	
➤ Email	
Network	
Management	

Figure 3-8

To configure the e-mail settings:

1. Select **Enable** to set up e-mail notifications.
2. **Server URL/IP Address:** Type the server's URL or IP address.
3. **Server Port:** Keep the default port value **25** or modify as needed.
4. **From email address:** Type the e-mail address to send the notifications from.
5. **Send to:** Type the e-mail address(s) to send the notifications to.
6. **Alerts interval time in minute:** Specify the time interval between each e-mail alerts, from 0 to 60 minutes. Any trigger events during the interval period will be ignored.
7. If the server needs authentication, select **Need authentication to login** and type a valid **User Name** and **Password** to log in to the server. If the server needs a secure connection (SSL), select **This server requires a secure connection**.
8. Click **Apply** to save the settings.

3.3 Network

The Network settings includes some basic but important network configurations that enable the GV-VR360 to be connected to a TCP/IP network.

3.3.1 LAN Configuration

Select between **Static IP address** and **Dynamic IP address** according to your network environment.

Figure 3-9

[LAN Configuration]

- **Dynamic IP address:** Select if your network environment has a DHCP server that automatically assigns a dynamic IP address to the camera. Click **Test DHCP** to see the IP address assigned or look up the address using GV-IP Device Utility.
- **Static IP address:** Assign a static, or fixed, IP to the camera. Type the camera's IP address, Subnet Mask, Router / Gateway and Primary and Secondary DNS server.

Parameters	Default
IP address	192.168.0.10
Subnet Mask	255.255.248.0
Router / Gateway	192.168.0.1
Primary DNS	8.8.8.8
Secondary DNS	168.95.1.1

For details on Dynamic DNS Server Settings, see 3.3.2 *Advanced TCP/IP*.

[Network Status Information]

In this tab, you can view the network status of the camera.

MENU	LAN Configuration	Network Status Information
Audio & Video Settings +		
Events and Alerts +		
Network -		
» LAN Configuration		
» Advanced TCP/IP		
» IP Filtering		
Management +		
	<p>interface: Wired</p> <p>IP Acquirement: DHCP</p> <p>MAC Address: 00-13-E2-FA-08-42</p> <p>IP Address: 192.168.4.33</p> <p>Subnet Mask: 255.255.248.0</p> <p>Gateway: 192.168.0.1</p> <p>Domain Name Server 1: 8.8.8.8</p> <p>Domain Name Server 2: 168.95.1.1</p>	

Figure 3-10

3.3.2 Advanced TCP/IP

Advanced TCP/IP includes the settings of DDNS Server, HTTP port and HTTPS port.

MENU	DDNS	HTTP	HTTPS
Audio & Video Settings +			
Events and Alerts +			
Network -			
» LAN Configuration			
» Advanced TCP/IP			
» IP Filtering			
Management +			
	<p>Dynamic DNS Server Settings</p> <p><input checked="" type="radio"/> Enable <input type="radio"/> Disable</p> <p>Service Provider: Geovision GVDIP ex: Register Geovision DDNS Server</p> <p>Host Name: username.gvdip.com</p> <p>User Name: admin.gvdip.com</p> <p>Password:</p> <p>Disable DDNS function Refresh</p> <p>Apply</p>		

Figure 3-11

[DDNS]

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 GV-VR360 for connection without the need of checking if the IP address assigned by DHCP Server or ISP (in xDSL connection) has changed.

Before enabling the DDNS function, the Administrator can apply for a Host Name from the DDNS service provider's website. There are 2 providers listed for GV-VR360: GeoVision GVDIP or DynDNS.org.

Note: Before using the DDNS function, make sure port mapping, of HTTP and RTSP ports, is set between the GV-VR360 and your router.

To enable the DDNS function:

1. Select **Enable**.
2. Select the DDNS service provider registered. If you do not have a DDNS provider, you can click **Register GeoVision DDNS Server** to register for the service via **GeoVision DDNS V2** and obtain a host name.

Figure 3-12

3. Type the **Host Name** used to link to the GV-VR360. For users of GeoVision DDNS Server, the system will detect for the host name automatically.
4. Type the **User Name** and **Password** used to enable the service from the DDNS server. Depending on the service provider, you may need to add the domain name (.dipmap.com, .gvdip.com or .org) after your user name, e.g. alice.dipmap.com
5. Click **Apply** to save the settings.

[HTTP]

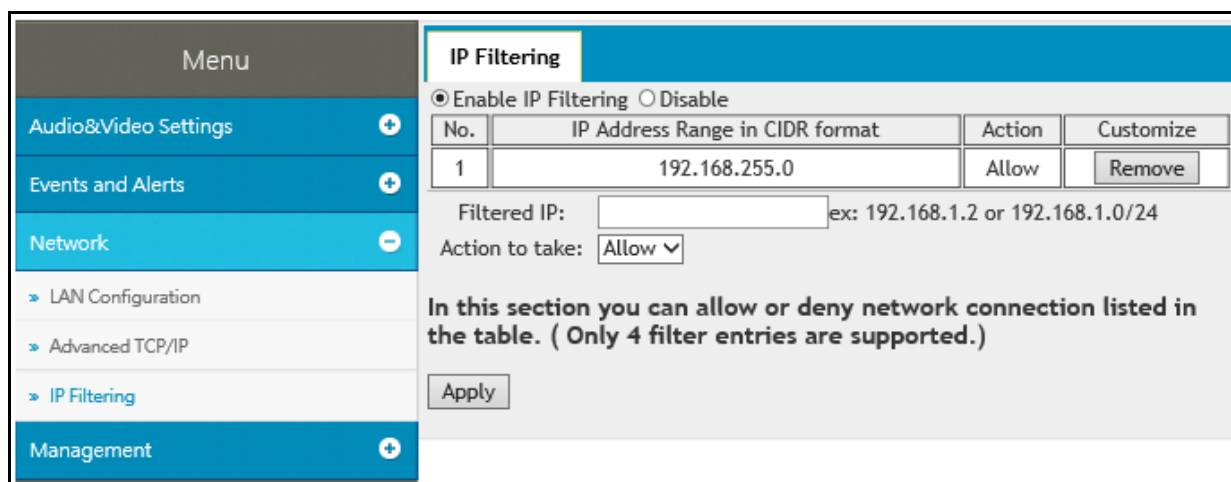
The HTTP port enables the GV-VR360 to be connected to the Web. For security purposes, the Administrator can hide the server from the general HTTP by changing the default port **80** to a different value within the range of 1025 ~ 65535.

[HTTPS]

By enabling the HTTPS (Hypertext Transfer Protocol Secure) settings, you can access the camera through a secure protocol. To do so, select **Enable** and set a desired port value, from 1025 ~ 65535.

3.3.3 IP Filter

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



The screenshot shows the 'IP Filtering' configuration page. On the left is a 'Menu' sidebar with options: Audio&Video Settings, Events and Alerts, Network (selected), LAN Configuration, Advanced TCP/IP, IP Filtering, and Management. The main content area is titled 'IP Filtering' and contains the following elements:

- Radio buttons for 'Enable IP Filtering' (selected) and 'Disable'.
- A table with 4 columns: No., IP Address Range in CIDR format, Action, and Customize.
- Below the table, a 'Filtered IP:' input field with an example 'ex: 192.168.1.2 or 192.168.1.0/24' and an 'Action to take:' dropdown menu set to 'Allow'.
- A text box stating: 'In this section you can allow or deny network connection listed in the table. (Only 4 filter entries are supported.)'
- An 'Apply' button at the bottom.

No.	IP Address Range in CIDR format	Action	Customize
1	192.168.255.0	Allow	Remove

Figure 3-13

To enable the IP Filter function:

1. Select **Enable IP Filtering**.
2. **Filtered IP:** Type the IP address you want to grant or restrict access to.
3. **Action to take:** Select the action of **Allow** or **Deny** to be taken for the IP address specified.
4. Click **Apply** to save the IP address specified.
5. Repeat Step 2 ~ 4 to filter for multiple IP address(es). Up to 4 IP addresses can be filtered for GV-VR360.

3.4 Management

Management section includes settings of the camera, such as date and time, user account and system log. You can also view the firmware version and execute certain system operations.

3.4.1 Date and Time

The date and time settings are used to set the time of the GV-VR360.

MENU

- Audio & Video Settings
- Events and Alerts
- Network
- Management
 - > Date and Time
 - > User Account
 - > Tools
 - > System Log

Date and Time

Date and Time on IP Camera

2019/06/18 02:23:41

Time Zone

(UTC+00:00) UTC

Synchronized with a Network Time Server

☒ Synchronized with Network Time Server (NTP)

Host name or IP Address: tw.pool.ntp.org

☒ Update period: 24 hours; Update Time: 12 : 40

☐ Update period: 10 minutes

Synchronized with your computer or modify manually

☐ Modify manually

Date: 2019/06/18 (yyyy/mm/dd)

Time: 02:23:38 (hh:mm:ss)

☐ Synchronized with your computer

Apply

Figure 3-14

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

[Time Zone] Sets the time zone for the camera.

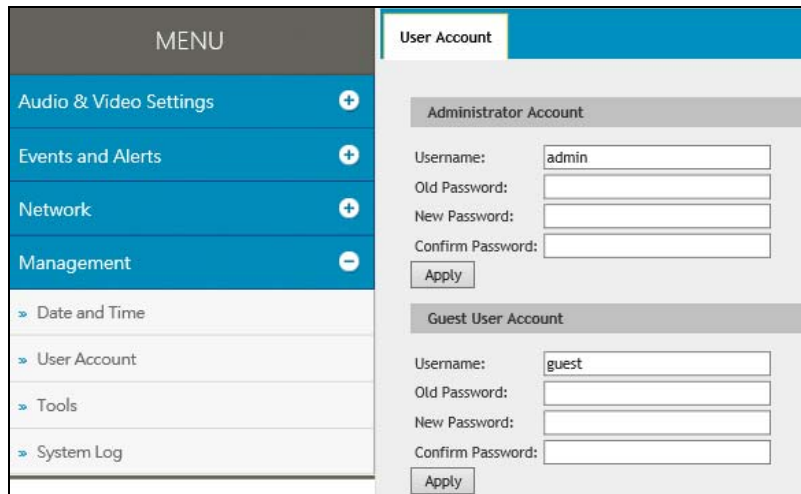
[Synchronized with a Network Time Server] By default, the camera uses the *tw.pool.ntp.org* timeserver to automatically update its internal clock every 24 hours. Modify the **Host name** or **IP Address** to set the timeserver preferred. To change **Update period**, the time in which the camera performs automatic daily updates, use the hour and minute drop-down lists next to it.

[Synchronized with your computer or modify manually] Manually changes the camera's date and time or select **Synchronized with your computer** to synchronize the camera's date and time with those of the local PC.

3.4.2 User Account

You can change the login name and password of the **Administrator** and **Guest** accounts.

- The default Username and Password for the Administrator account are **admin**.
- The default Username and Password for the Guest account are **guest**.

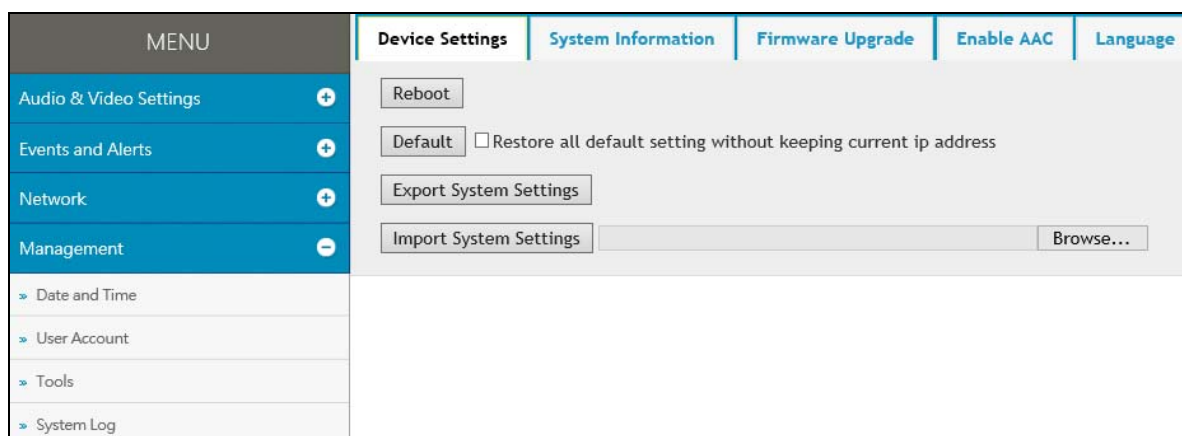


MENU	User Account
Audio & Video Settings +	Administrator Account
Events and Alerts +	Username: <input type="text" value="admin"/>
Network +	Old Password: <input type="text"/>
Management -	New Password: <input type="text"/>
» Date and Time	Confirm Password: <input type="text"/>
» User Account	Apply
» Tools	Guest User Account
» System Log	Username: <input type="text" value="guest"/>
	Old Password: <input type="text"/>
	New Password: <input type="text"/>
	Confirm Password: <input type="text"/>
	Apply

Figure 3-15

3.4.3 Tools

The Tools settings allows you to execute certain system operations, including firmware upgrades, restore default settings, change the language of the Web interface and configure for periodic reboot.



MENU	Device Settings	System Information	Firmware Upgrade	Enable AAC	Language
Audio & Video Settings +	Reboot				
Events and Alerts +	Default <input type="checkbox"/> Restore all default setting without keeping current ip address				
Network +	Export System Settings				
Management -	Import System Settings <input type="text" value="Browse..."/>				
» Date and Time					
» User Account					
» Tools					
» System Log					

Figure 3-16

[Device Settings] You can reboot the GV-VR360, restore it back to its factory default settings or import / export the system settings.

- **Reboot:** Click **Reboot** for the camera to restart.

- **Default:** Click **Default** to restore the camera back to its factory default settings.
- **Export System Settings:** Click to export the configurations of the camera to the local PC.
- **Import System Settings:** Click **Browse** to locate the system file (.config) previously saved on the local PC and click **Import System Settings** to load it to the camera. Log in again after the import is completed.

[System Information] Displays the firmware version and serial number of the camera.

[Firmware Upgrade] Upgrade the firmware of the camera over the Internet. For details, see *6.1 Upgrading System Firmware*.

[Enable AAC] For firmware V1.0 only, type the **Private Key** of the optional ACC audio format and click **Upload Private Key** to active its audio support for the GV-VR360.

[Language] Select the desired language for the Web interface and click **Apply**.

[Periodic Reboot] For firmware V1.02 or later, users can configure for the GV-VR360 to perform periodic reboot every 24 hours.



Figure 3-17

1. Select **Periodic Reboot** to enable.
2. Drag the slider to the desired time of when you want the periodic reboot to be performed every day.
3. Click **Apply**.

3.4.4 System Log

The system log contains dump data required for problem diagnosis by service personnel.

- **Clear:** Click **Clear** to delete all system logs.
- **Download:** Click **Download** to download all system logs to the local computer.

Chapter 4 YouTube Live Stream

GV-VR360 can be streamed online, through YouTube, for a 360° live VR video that can be viewed by the user and/or viewers with granted access.



Figure 4-1

To set up the live stream of GV-VR360 over YouTube, refer to the related settings below:

- **Step 1 Obtaining Stream Name & Server**

To obtain a live stream name and server from YouTube see *4.1 Setting YouTube Live Stream*.

- **Step 2 Configuring Live Stream Settings**

To configure the camera to be readily streamed through YouTube, see *4.2 Configuring Live Stream Settings*.

- **Step 3 Starting Live Stream**

To start live streaming after all the required settings have been set, see *4.3 Starting Live Stream*.

4.1 Setting YouTube Live Stream

Before setting up a live stream, you need to have a YouTube account and complete the required settings to obtain the stream name and RTMP server URL. To do so, log in to your YouTube account and follow the steps below.

1. After logging in to your YouTube account, click your Account icon and select **Creator Studio**.

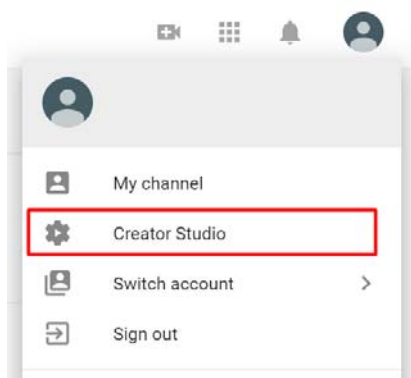


Figure 4-2

2. Under Creator Studio, click LIVE STREAMING, Events and click **New live event**.

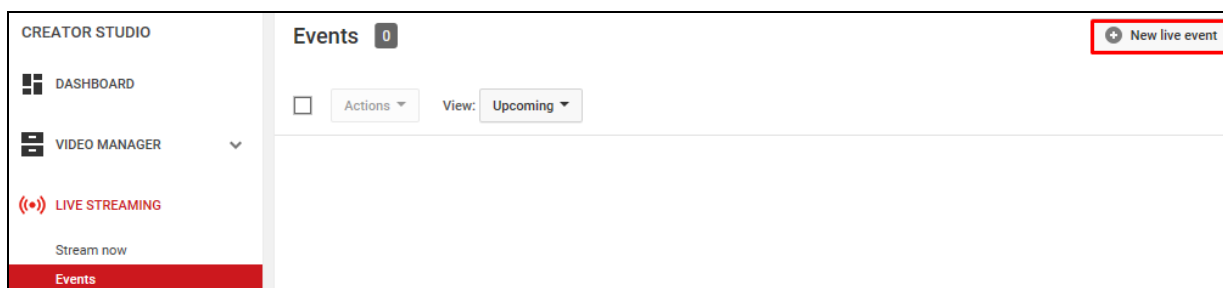


Figure 4-3

3. Type the information of your live stream as needed.

 A screenshot of the YouTube Live Stream setup form. The 'Basic info' tab is selected. The form includes a 'Title' text field, a 'Unlisted' dropdown menu, a 'Type' section with radio buttons for 'Quick (using Google Hangouts On Air)' and 'Custom (more encoding options)' (selected), a 'Description' text area, and a date/time selector showing 'Today' at '8:00 PM' with an 'Add end time' link. The location is set to 'Taiwan (GMT +08:00) Taipei' with an 'Edit' link.

Figure 4-4

- A. Name the live stream.
 - B. Set the start time of your live stream and **Add end time** if necessary.
 - C. In the upper-right drop-down list, select between **Unlisted** and **Public**, for the stream to be viewable only by you or open to the public.
 - D. Select **Custom** under **Type**.
4. Go to the **Advanced settings** tab and select **This live stream is 360°**.

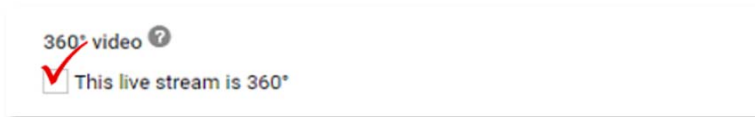


Figure 4-5

5. Go to **Ingestion Settings** and select between **Single-use** and **Reusable stream key**. Reusable stream key is recommended as you do not need to modify the Stream name when using the same stream for future use.

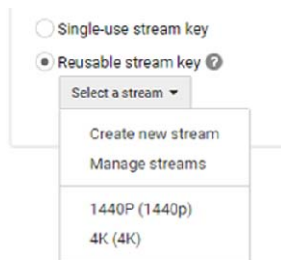


Figure 4-6

6. Click **Save Changes**. The Stream Name and Server URL are now available for use.

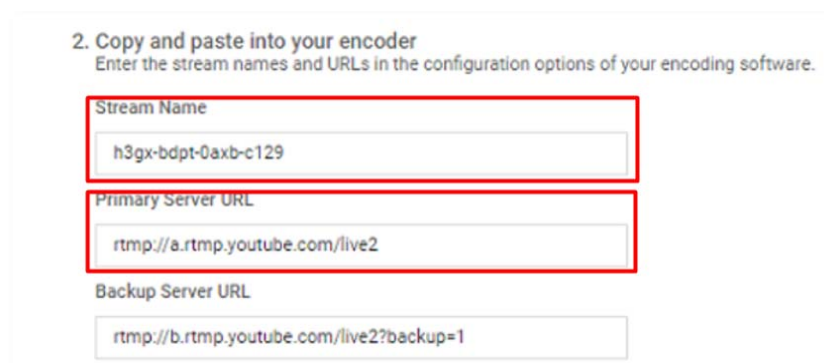


Figure 4-7

4.2 Configuring Live Stream Settings

Once your YouTube live stream event is set, go to the camera's Web interface, click **System Settings**, **Audio & Video Settings** and select **Live** to configure its live stream settings.

Youtube Live	
Select	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Stream Name	2224-c4w7-3141-2jyk
Main Server Address	rtmp://a.rtmp.youtube
Video Format	H.264
Audio In Source	Built-in Microphone
Audio Quality	AAC
<input type="button" value="Apply"/>	

Stream Name	2224-c4w7-3141-2jyk
Primary Server URL	rtmp://a.rtmp.youtube.com/live2
Backup Server URL	rtmp://b.rtmp.youtube.com/live2?backup=1

Figure 4-8

- **Stream Name:** Copy the Stream name obtained from YouTube (Figure 4-7).
- **Main Server Address:** Copy the server URL obtained from YouTube (Figure 4-7).
- **Video Format:** Displays the current video codec of the camera's live stream. Only H.264 video codec is supported for YouTube streaming. To change the video codec, see 3.1.1 *Video Settings*.
- **Audio In Source & Audio Quality:** Displays the current audio source and the audio codec setting of the camera. Only AAC audio codec is supported for YouTube streaming. To modify the audio settings, see 3.1.2 *Audio Settings*.

Click **Apply** to save the settings.

4.3 Starting Live Stream

After the required settings are set, go back to the YouTube website and select Live control room.

Click **Preview** and click **Start Streaming**.

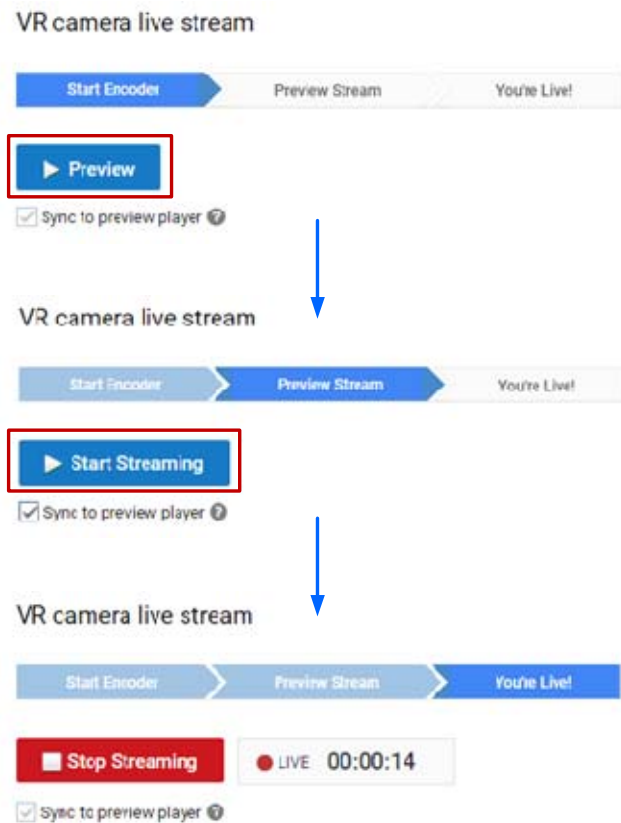


Figure 4-9

The live video stream of GV-VR360 is now viewable on YouTube.

Chapter 5 Smart Device Connection

You can access the live video stream of GV-VR360 and view it in VR mode through mobile devices using the mobile application GV-Eye. YouTube mobile app is also supported.

Download GV-Eye from Google Play or Apple Store.

GV-Eye on Google Play	GV-Eye on Apple Store
	

For details on system requirements, installation and setup, please refer to [GV-Eye Installation Guide](#). To view the live stream in VR mode, **enable 360 View** in *System Settings*.



Figure 5-1

Chapter 6 Advanced Applications

This chapter introduces advanced applications.

6.1 Upgrading System Firmware

GeoVision periodically updates the latest firmware to the [company website](#). You can update the camera's firmware through the Web interface or GV-IP Device Utility.

6.1.1 Using the Web Interface

1. Go to **System Settings**, click **Tools** Under **Management** and select **Firmware Upgrade**.

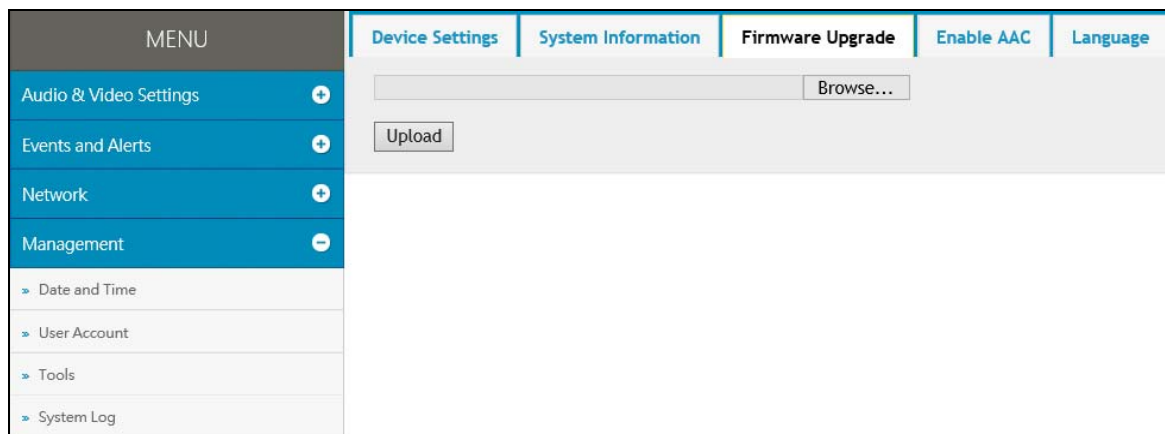


Figure 6-1

2. Click the **Browse** button to locate the firmware file (.zip) saved at your local computer.
3. Click the **Upload** button to start upgrading.

6.1.2 Using the GV-IP Device Utility

The IP Device Utility provides another way to upgrade the firmware. Note the computer used to upgrade firmware must be under the same network as the camera.

1. Download and install the **GV-IP Device Utility** from our [website](#).
2. Double-click the **GV-IP Device Utility** icon created on your desktop. The Utility window appears and automatically searches for the IP devices under the same LAN.
3. If the camera cannot be found by auto search, click the **New** button and assign the IP address to locate the camera on the Internet.
4. Double-click the camera in the list, and click the **Firmware Upgrade** tab on the popup dialog box.

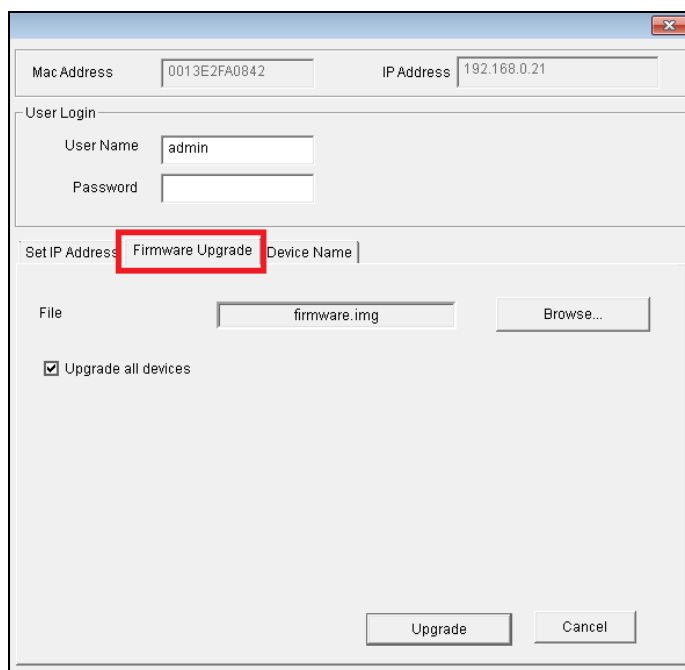


Figure 6-2

5. Click the **Browse** button to locate the firmware file (.zip) saved at your local computer.
6. Type the **Password** and click **Upgrade** to start updating.

6.2 Restoring to Factory Default Settings

If for any reason the camera is not responding correctly, you can reset it to its factory default setting by using the camera's Web interface or by operating directly on the camera.

6.2.1 Using the Web Interface

1. On the Web interface, go to **System Settings**.
2. In the left menu of Web interface, select **Management** and click **Tools**.
3. Under the **Device Settings** tab, click **Default** to restore the camera to its factory default settings, and the current IP address of the camera will be kept.
4. To restore the camera and its IP address to factory default settings, select **Restore all default setting without keeping current IP address** and click **Default**.

6.2.2 Directly on the Camera

1. Loosen the 3 screws at the rear end of the camera with the supplied torx wrench to reveal the camera cover. Then loosen the 3 screws on the camera cover to access the default button.

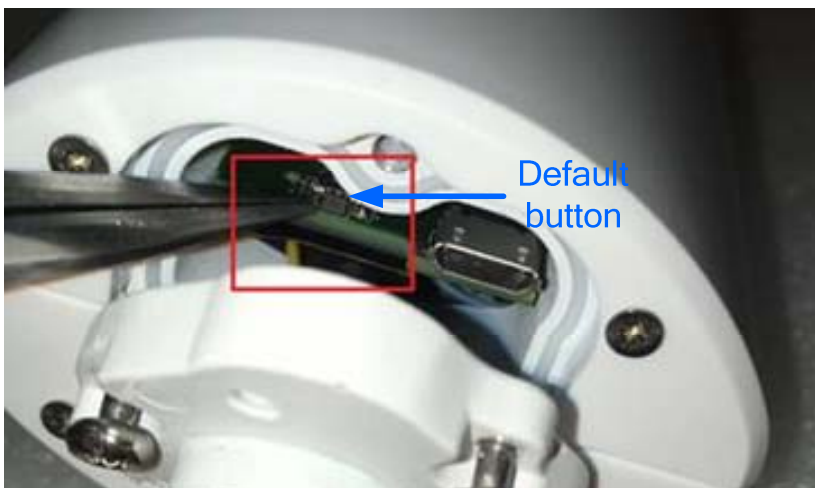
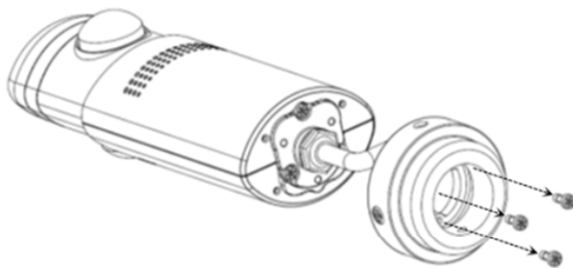


Figure 6-5

2. Keep the power and network cables (or PoE) connected to the camera.
3. Press and hold the **Default** button on the camera body. This shall take about 5 seconds.
4. Release the **Default** button. The camera reboots automatically once the process of loading default settings is completed.
5. Before closing the camera cover, insert the supplied silica gel bag as indicated and push it in toward the front end of the camera.

Insert silica gel bag here

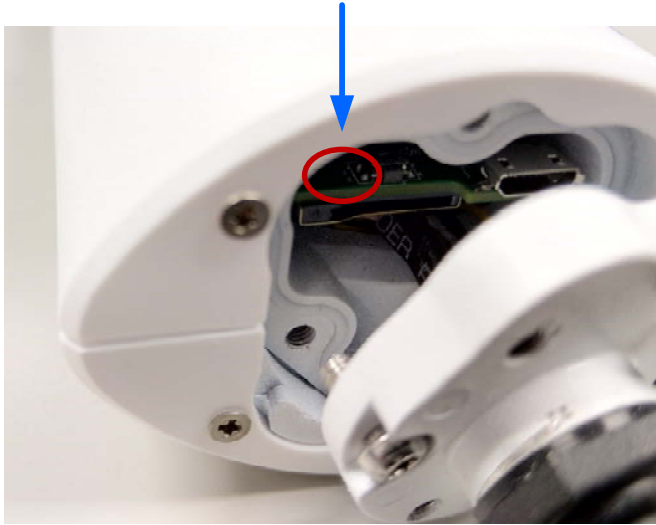


Figure 6-6

Chapter 7 VMS Configurations

The GV-VMS provide a full range of video management functions and features, such as video viewing, recording, playback, alert settings and more. The following are the integration specifications:

- GV-VMS **version 18.1** or later is required.
- GV-VR360 supports up to 8 streams of connection (including RTSP connection).
- When a GV-VR360 is connected to IE browser or GeoVision CMS applications, it takes up 1 stream; when it is connected to GV-VMS, it takes up 1 to 2 streams.

Note:

1. By default, GV-VR360 is in single stream and will take up 1 stream when connected to GV-VMS.
 2. To view the dewarped image of GV-VR360 on GV-VMS, the graphic card must support DirectX 10.1 or above.
 3. Up to 2 GV-VR360 can be connected to a GV-VMS with a total frame rate of 24 fps.
-

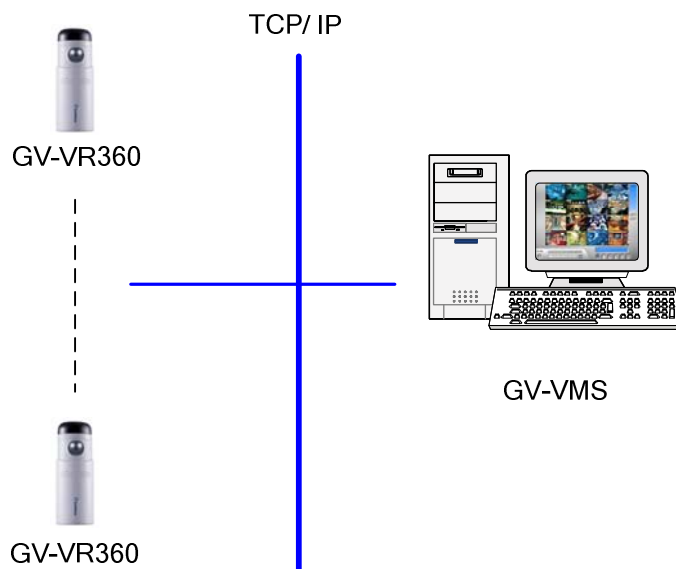





Figure 7-1

7.1 Setting Up IP Cameras on GV-VMS

Follow the steps and conform the integration specification below to manually connect your GV-VR360 to GV-VMS.

Note: The following instructions are based on V17.1 software and user interfaces.

1. To access the IP Device Setup page, click **Home** , select **Toolbar** , click **Configure**  and select **Camera Install**.

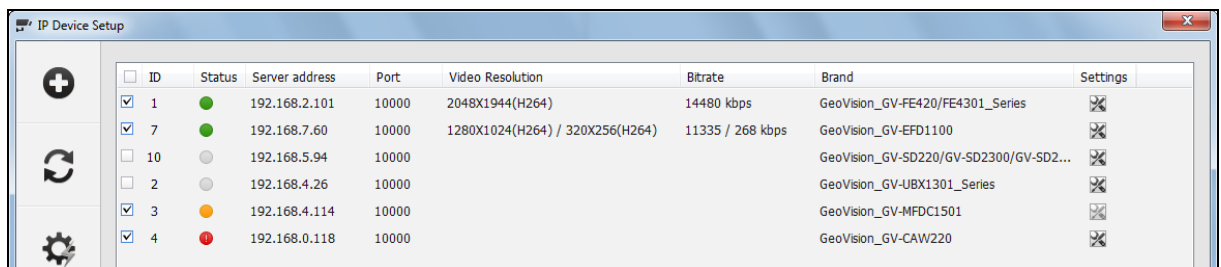


Figure 7-2

2. Click **Automatic Setup**.
3. Double-click GV-VR360 and type the **User name** and **Password** of the camera.

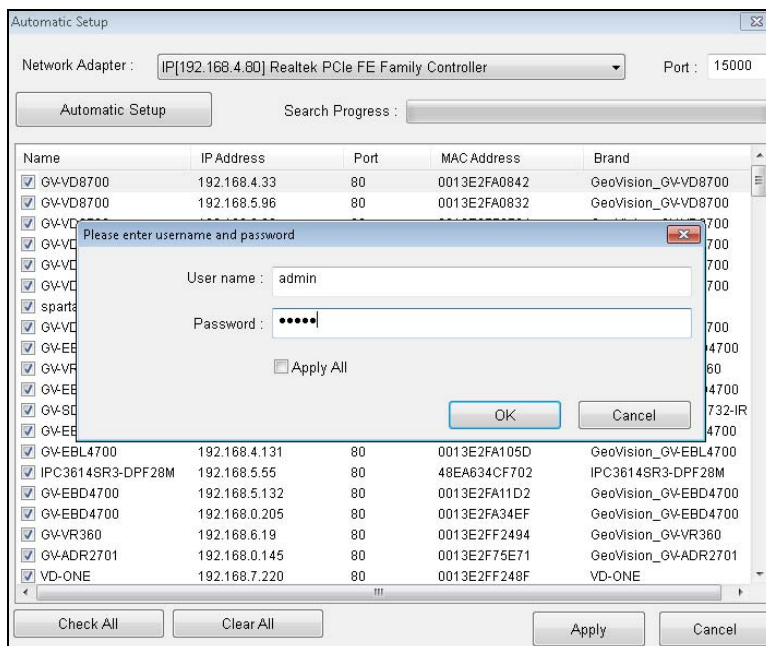


Figure 7-3

4. Click **OK**. This dialog box appears.

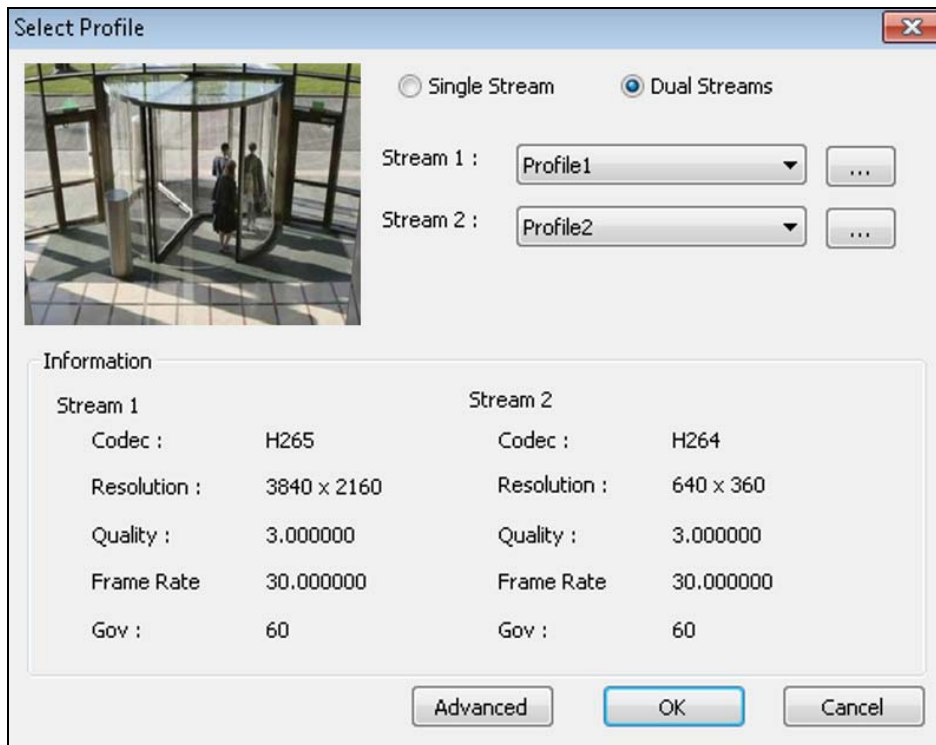


Figure 7-4

5. Click **OK** to add the camera to the list.
6. To connect the added camera, click the box besides the **ID** column. Upon successful connection, the **Status** icon shows green, with the video resolution and bit rate being displayed in the correspondent columns.

<input checked="" type="checkbox"/>	ID	Status	Server address	Port	Video Resolution	Bitrate	Brand	Settings
<input checked="" type="checkbox"/>	1		192.168.6.42	80	3840X2160(H264) / 640X352(H264)	8953 / 1005 kbps	GeoVision_GV-VD8700(ONVIF)	

Figure 7-5

Appendix

RTSP Protocol Support

The GV-VR360 supports RTSP protocol for both video and audio streaming. For RTSP command, enter:

rtsp://<IP of the GV-VR360>:8554/<CH No.>.sdp

For example, rtsp://192.168.3.111:8554/CH001.sdp

If RTSP authentication is used, enter:

rtsp://<username>:<password>@<IP of the GV-VR360>:<RTSP port>/<CH No.>.sdp

For example, rtsp://admin.admin@192.168.0.200:8554/CH001.sdp

Note: Only VLC and QuickTime players are supported for streaming video via RTSP protocol.
