GeoVision inc
The Vision of Security

GV-Cloud IP Camera

User's Manual

- GV-GBL4900 / GBL4911
- GV-GDR4900
- GV-GEB4900
- GV-GEBF4911
- GV-GFER6900
- GV-GVD4910

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

GSERIES-UM-D

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December 2024

Scan the following QR codes for product warranty and technical support policy:

[Warranty] **[Technical Support Policy]**

Safety Instruction

- This product is intended to be supplied by a Listed Power Unit, marked with 'Limited Power Source', 'LPS' on unit, output rated minimum 12V/2 A or POE 48V/ 350mA or AC24V (depending on models), no more than 2000m altitude of operation and Tma=60 Deg.C.
- As for the modes with PoE function, the function of the ITE being investigated to IEC 60950-1 standard is considered not likely to require connection to an Ethernet network with outside plant routing, including campus environment and the ITE is to be connected only to PoE networks without routing to the outside plant.
- Do not attempt to disassemble the camera; in order to prevent electric shock, do not remove screws or covers.
- There are no user-serviceable parts inside. Please contact the nearest service center as soon as possible if there is any failure.
- Avoid aiming the camera directly towards extremely bright objects, such as, sun, as this may damage the image sensor.
- Please follow the instructions to install the camera. Do not reverse the camera, or the reversing image will be received.
- Do not operate it in case temperature, humidity and power supply are beyond the limited stipulations.
- Keep away from heat sources such as radiators, heat registers, stove, etc.
- Do not expose the product to the direct airflow from an air conditioner.
- This manual is for using and managing the product. We may reserve the rights of amending the typographical errors, inconsistencies with the latest version, software upgrades and product improvements, interpretation, and modification. These changes will be published in the latest version without special notification.
- All pictures, charts, images in this manual are only for description and explanation of our products. The ownerships of trademarks, logos and other intellectual properties related to Microsoft, Apple and Google belong to the above-mentioned companies.
- This manual is suitable for face detection network cameras.

Disclaimer

- With regard to the product with internet access, the use of product shall be wholly at your own risks. Our company shall be irresponsible for abnormal operation, privacy leakage or other damages resulting from cyber attack, hacker attack, virus inspection, or other internet security risks; however, Our company will provide timely technical support if necessary.
- Surveillance laws vary from country to country. Check all laws in your local region before using this product for surveillance purposes. We shall not take the responsibility for any consequences resulting from illegal operations.

Cybersecurity Recommendations

- Use a strong password. At least 8 characters or a combination of characters, numbers, and upper and lower case letters should be used in your password.
- Regularly change the passwords of your devices to ensure that only authorized users can access the system (recommended time is 90 days).
- It is recommended to change the service default ports (like HTTP-80, HTTPS-443, etc.) to reduce the risk of outsiders being able to access.
- It is recommended to set the firewall of your router. But note that some important ports cannot be closed (like HTTP port, HTTPS port, Data Port).
- It is not recommended to expose the device to the public network. When it is necessary to be exposed to the public network, please set the external hardware firewall and the corresponding firewall policy.
- It is not recommended to use the v1 and v2 functions of SNMP.
- In order to enhance the security of WEB client access, please create a TLS certificate to enable HTTPS.
- Use black and white list to filter the IP address. This will prevent everyone, except those specified IP addresses from accessing the system.
- If you add multiple users, please limit functions of guest accounts.
- If you enable UPnP, it will automatically try to forward ports in your router or modem. It is convenient for users, but this will increase the risk of data leakage when the system automatically forwards ports. Disabling UPnP is recommended when the function is not used in real applications.
- Check the log. If you want to know whether your device has been accessed by unauthorized users or not, you can check the log. The system log will show you which IP addresses were used to log in your system and what was accessed.

Regulatory Information

FCC Information

1. FCC compliance

The products have been tested and found in compliance with the council FCC rules and regulations part 15 subpart B. These limits are designed to provide reasonable protection against harmful interference. 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 communication. However, there is no guarantee that interference will not occur in a particular installation. The user will be required to correct the interface at his own expense in case the harmful interference occurs.

2. FCC conditions:

Operation of this product is subject the following two conditions: (1) this device may not cause harmful interface, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Information

CE The products have been manufactured to comply with the following directives.

EMC Directive 2014/30/EU

RoHS

The products have been designed and manufactured in accordance with Directive EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

2012/19/EU (WEEE directive): The Directive on waste electrical and electronic equipment (WEEE Directive). To improve the environmental management of WEEE, the improvement of collection, treatment and recycling of electronics at the end of their life is essential. Therefore, the product marked with this symbol must be disposed of in a responsible manner.

Directive 94/62/EC: The Directive aims at the management of packaging and packaging waste and environmental protection. The packaging and packaging waste of the product in this manual refers to must be disposed of at designated collection points for proper recycling and environmental protection.

REACH(EC1907/2006): REACH concerns the Registration, Evaluation, Authorization and Restriction of Chemicals, which aims to ensure a high level of protection of human health and the environment through better and earlier identification of the intrinsic properties of chemical substances. The product in this manual refers to conforms to the rules and regulations of REACH. For more information of REACH, please refer to DG GROWTH or ECHA websites.

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Chapter 1 Introduction

Surveillance Application

Chapter 2 Network Connection

System Requirement

For proper operation of the product, the following requirements should be met for your computer.

Web browser: Edge / IE mode in Edge (plug-in required) / Chrome / Firefox / Safari
*It is recommended to use the latest version of these web browsers.

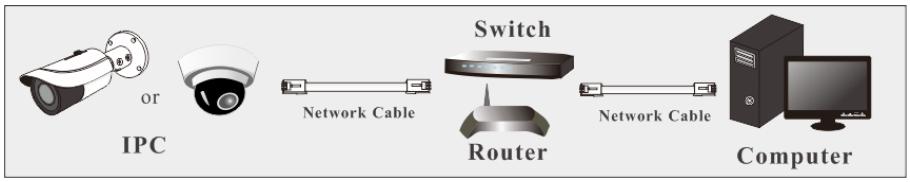
The menu display and operation of the camera may be slightly different by using the browser with plug-in (IE mode in Microsoft Edge) or without plug-in. Installing the applicable plug-in will display more functions of the camera.
Connect the IP camera via LAN or WAN. For this example, we will use IE mode in Microsoft Edge. The details are as follows:

2.1 LAN

In a LAN environment, there are two ways to access the IP camera: 1. through GV-IP Device Utility; 2. directly through IE mode in Microsoft Edge.

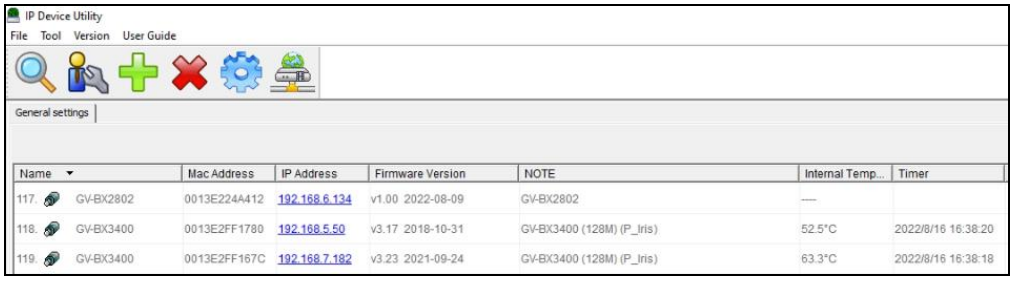
2.1.1 Access Through IP-Tool

Network connection:

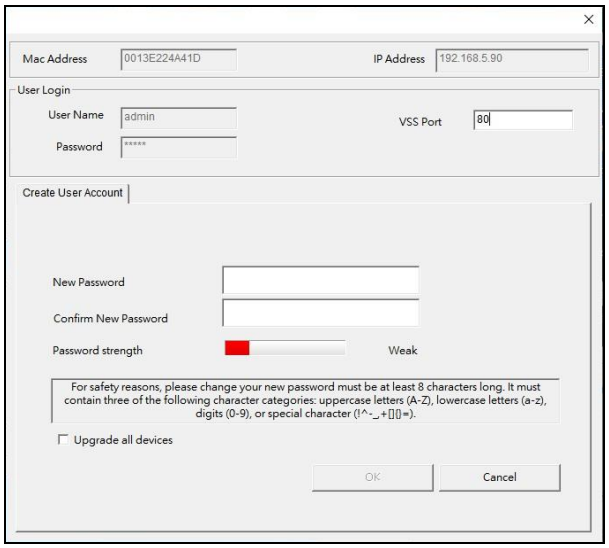


By default, when the camera is connected to LAN with DHCP server, it is automatically assigned with a dynamic IP address. Follow the steps below to look up its IP address, and use the accessed IP address to log in from its Web interface.

1. Make sure the PC and the camera are connected to the LAN, and **GV-IP Device Utility** (V8.9.8 or later) is installed on the PC from our website.
2. On GV-IP Device Utility window, click the button to search for the IP devices in the same LAN. Click the **Name** or **Mac Address** column to sort.
3. Find the camera with its Mac Address, click on its IP address.



4. For first-time users, you are requested to create a password.



5. Type a new password and click **OK.**
6. Click on its IP address again and select **Webpage** to open its Web interface.
7. Type the set password on the login page and click **Login**.

IMPORTANT:

1. By default, the Administrator's username is **admin** and cannot be modified.
2. To change the password using GV-IP Device Utility, click on the camera's IP address, and select Configure > Change Password. Or you can optionally change the password on the camera's Web interface by clicking **Config→Security→User**; see "Modify User" in *4.7.1 User Configuration.*
3. It is highly recommended to use the strong password for your account security. If you want to change your password level, you can go to **Config→Security Management→Password Security** interface to change the level. See "Password Security" in *4.7.4 Security Management.*
4. The security questions should be set after you log in. It is very important for you to reset your password when you forget your password. If you forget the admin password, you can reset the password by clicking **Forget Password** on the login page. For more details, see *4.7.1 User Configuration*.

2.1.2 Directly Access Through IE Mode in Edge

The default network settings are as shown below:

IP address: **192.168.0.10**

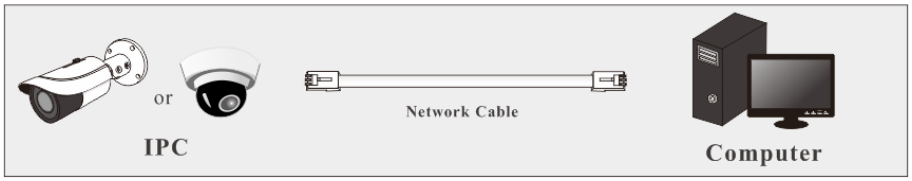
Subnet Mask: **255.255.255.0**

Gateway: **192.168.226.1**

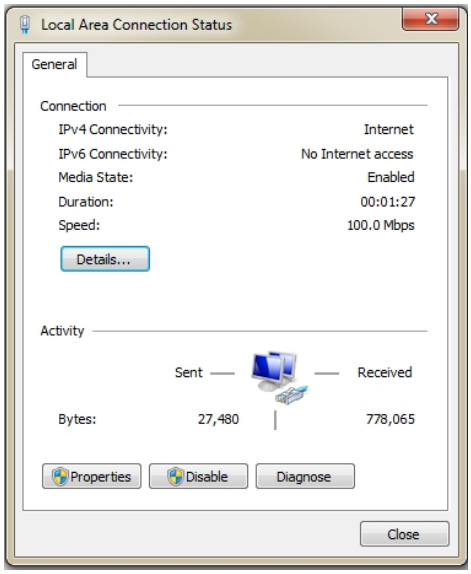
HTTP: **80**

Data port: **9008**

Use the above default settings when logging in the camera for the first time. Directly connect the camera to the computer through network cable.

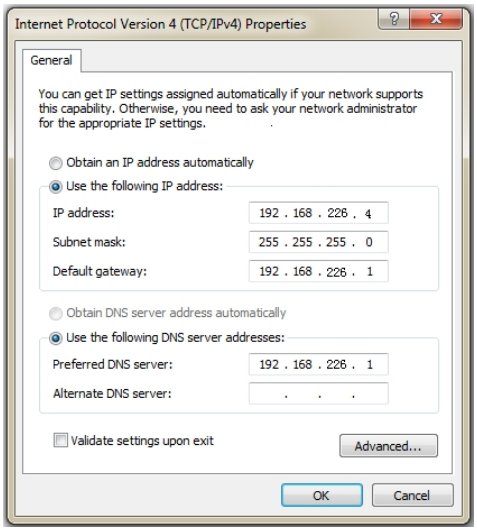


1. Manually set the IP address of the PC and the network segment should be the same as the default settings of the IP camera. Open the network and share center. Click “Local Area Connection” to pop up the following window.



2. Select “Properties” and then select internet protocol according to the actual situation (for example: IPv4).

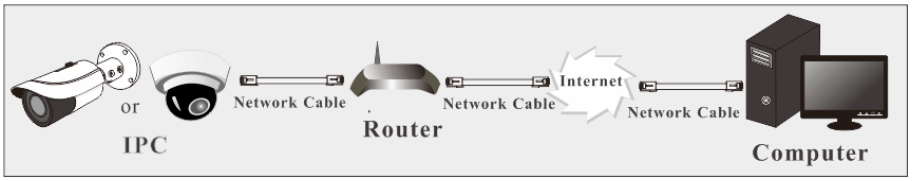
3. Next, click the “Properties” button to set the network of the PC.



4. Open the Web browser and enter the default address of the IP-camera.
5. Follow directions to download and install the plug-in.
6. Enter the default username and password on the login page and click “Login”.

2.2 WAN

Access through the router or virtual server



1. Make sure the camera is connected to the local network and then log in the camera via LAN and go to Config→Network→Port menu to set the port number.

HTTP Port	80
HTTPS Port	443
Data Port	9008
RTSP Port	554

Port Setup

2. Go to Config →Network→TCP/IP menu to modify the IP address.

IPv4 | IPv6 | PPPoE Config | IP Change Notification Config

○ Obtain an IP address automatically

◉ Use the following IP address

IP Address	192.168.226.201	Test
Subnet Mask	255.255.255.0	
Gateway	192.168.226.1	
Preferred DNS Server	210.21.196.6	
Alternate DNS Server	8.8.8.8	

IP Setup

3. Go to the router's management interface through IE mode in Microsoft Edge to forward the IP address and port of the camera in the "Virtual Server".

Port Range

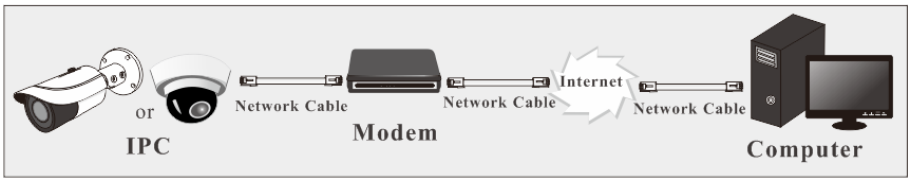
Application	Start		End	Protocol	IP Address	Enable
1	9007	to	9008	Both	192.168.1.201	☑
2	80	to	81	Both	192.168.1.201	☑
3	10000	to	10001	Both	192.168.1.166	☐
4	21000	to	21001	Both	192.168.1.166	☐

Router Setup

4. Open IE mode in Microsoft Edge and enter its WAN IP and http port to access. (For example, if the http port is changed to 81, please enter "192.198.1.201:81" in the address bar of web browser to access).

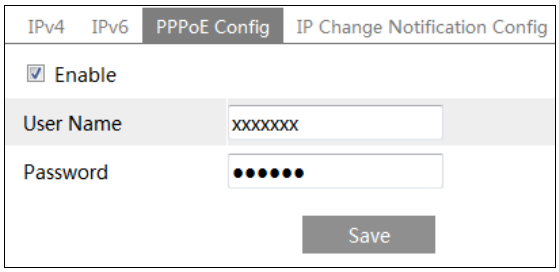
Access through PPPoE dial-up

Network connection



Access the camera through PPPoE auto dial-up. The setup steps are as follow:

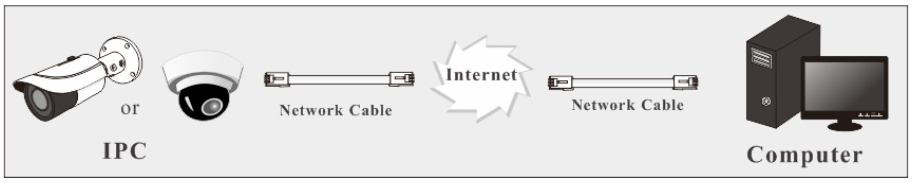
1. Go to Config→Network→Port menu to set the port number.
2. Go to Config →Network→TCP/IP→PPPoE Config menu. Enable PPPoE and then enter the user name and password from your internet service provider.



3. Go to Config →Network→DDNS menu. Before configuring the DDNS, please apply for a domain name first. Please refer to DDNS configuration for detail information.
4. Open IE mode in Microsoft Edge and enter the domain name and http port to access.

Access through static IP

Network connection



The setup steps are as follow:

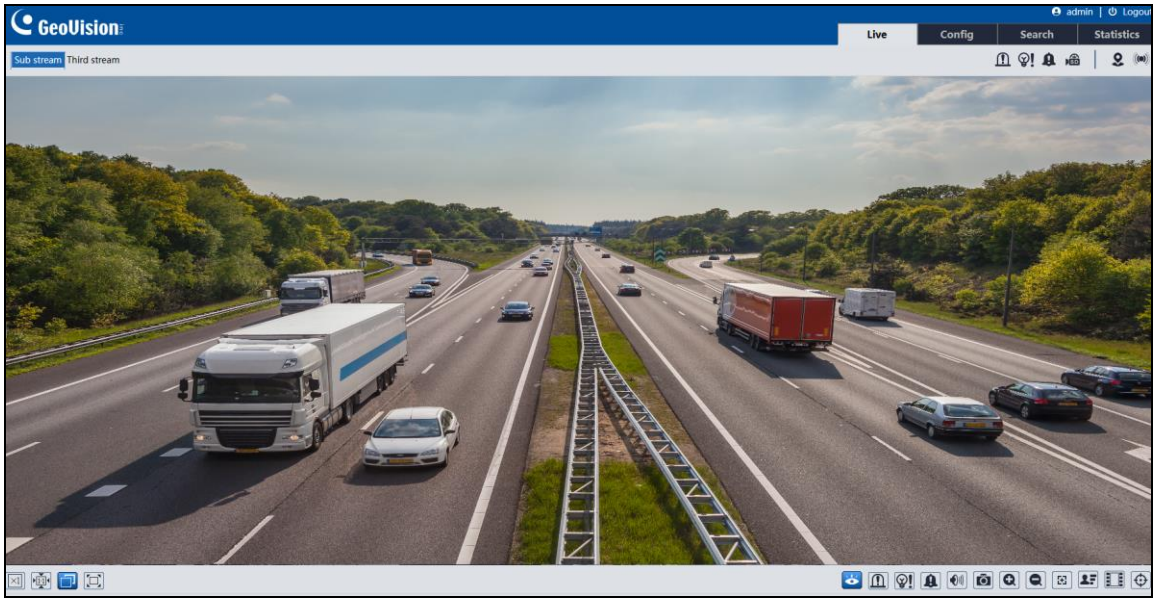
1. Go to Config→Network→Port menu to set the port number.
2. Go to Config →Network→TCP/IP menu to set the IP address. Check “Use the following IP address” and then enter the static IP address and other parameters.
3. Open IE mode in Microsoft Edge and enter its WAN IP and http port to access.

Chapter 3 Live View

After logging in, the following window will be shown.

Note: Two-way audio, local recording, and the preview mode switch (real-time / balanced / fluent mode) are only supported in IE mode in Microsoft Edge.

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GEBF4911 / GVD4910:



For GV-GFER4900:

Before you view the live image, please set the stream mode and installation method as needed (see 4.1.5 Configuring Fisheye Parameters for details). In the live mode, the different streams and live view modes can be switched as needed.

The following table is the instructions of the icons on the live view interface.

Icon	Description	Icon	Description
	Select live preview mode (only for **GV-GFER6900**)		Sensor alarm indicator
	Original size		Motion alarm indicator
	Fit correct scale		Color abnormal indicator (not applicable to **GV-GFER6900**)
	Adapt		Abnormal clarity indicator (not applicable to **GV-GFER6900**)
	Full screen		Scene change indicator (not applicable to **GV-GFER6900**)
	Enable/disable alarm output (not applicable to **GV-GFER6900**)		Alarm output indicator (not applicable to **GV-GFER6900**)
	Enable/disable light alarm (only for **GV-GEBF4911**)		Light alarm indicator (only for **GV-GEBF4911**)
	Enable/disable audio alarm (not applicable to **GV-GFER6900**)		Line Crossing indicator
	Start/stop live view		Region Intrusion indicator
	Start/stop two-way audio (only available in IE mode in Microsoft Edge)		Region Entrance indicator
	Enable/disable audio		Region Exiting indicator
	SD card recording indicator		Face detection indicator (not applicable to **GV-GFER6900**)
	Snapshot		Target Counting by Line indicator
	Start/stop local recording (only available in IE mode in Microsoft Edge)		Target Counting by Area indicator (not applicable to **GV-GFER6900**)
	Zoom in		Object detection indicator (object Abandoned/Missing) (not applicable to **GV-GFER6900**)
	Zoom out		Crowd density indicator (only for **GV-GFER6900**)

Icon	Description	Icon	Description
	AZ control (only for **GV-GEBF4911**)		Heat map indicator
	PTZ control		Loitering detection indicator (not applicable to **GV-GEBF4911 / GFER6900**)
	Face Detection (not applicable to **GV-GFER6900**)		Illegal parking detection indicator (not applicable to **GV-GEBF4911 / GFER6900**)
	Rule information display		Video metadata extraction indicator (not applicable to **GV-GFER6900**)

Note:

1. Those smart alarm indicators will flash only when the camera supports those functions and the corresponding events are enabled.
2. After clicking the audio alarm icon, the sound warning will be triggered according to the set warning times (you can set the warning times by clicking Config→Alarm→Audio Alarm). Click this icon again. After the current warning voice is completely sounded, it will stop.
3. After clicking the light alarm icon, the red-blue light will flash alternatively according to the set flashing time (you can set the flashing time by clicking Config→Alarm→Light Alarm). Click this icon again to stop flashing.

AZ Control

Click AZ control button to show AZ control panel. The descriptions of the control panel are as follows:

Icon	Description	Icon	Description
	Zoom -		Zoom +
	Focus -		Focus +
	One key focus (used when image is out of focus after manual adjustment)		

Note: The AZ Control function is only applicable to GV-GEBF4911.

Live Preview Mode

Click to select the live view mode.

Note: The Live Preview Mode menu is only applicable to GV-GFER6900.

Fisheye view mode: See the picture as shown above.

Panoramic view mode:

Fisheye+ 3PTZ view mode:

Panoramic + 3PTZ view mode:

4PTZ view mode: Requires switching the stream mode in the Fisheye Parameters settings

4PTZ fusion view mode: Displays a complete image formed by 4 smaller windows, none of which can be controlled via the PTZ panel.

In Panoramic + 3PTZ view mode, Fisheye + 3PTZ view mode, or 4PTZ view mode, select a PTZ window and view the image from every direction by controlling the PTZ panel.

PTZ Control

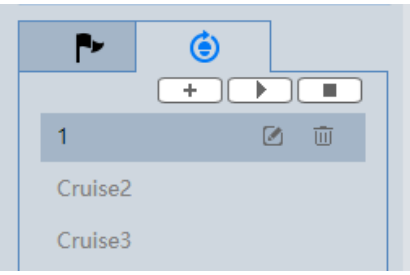
Some cameras can be installed in a compatible external PTZ enclosure through RS485. Click the PTZ icon to reveal the PTZ control panel. The descriptions of the control panel are as follows:

Icon	Description	Icon	Description
	Move upper left direction		Move upper right direction
	Move up		Stop movement
	Move left		Move right
	Move lower left direction		Move lower right direction
	Move down		Speed adjustment
	Zoom out		Zoom in
	Automatic cruise (only for **GV-GFER6900**)		Create and call cruise (only for **GV-GFER6900**)
	Focus – (not applicable to **GV-GFER6900**)		Focus + (not applicable to **GV-GFER6900**)
	Iris - (not applicable to **GV-GFER6900**)		Iris + (not applicable to **GV-GFER6900**)
	Auto scan (not applicable to **GV-GFER6900**)		Wiper (not applicable to **GV-GFER6900**)
	Light (not applicable to **GV-GFER6900**)		Random scan (not applicable to **GV-GFER6900**)
	Group scan (not applicable to **GV-GFER6900**)		Preset

Select and set the preset and click to save the position of the preset. Select preset and click to call the preset. Select the set preset and click to delete it.

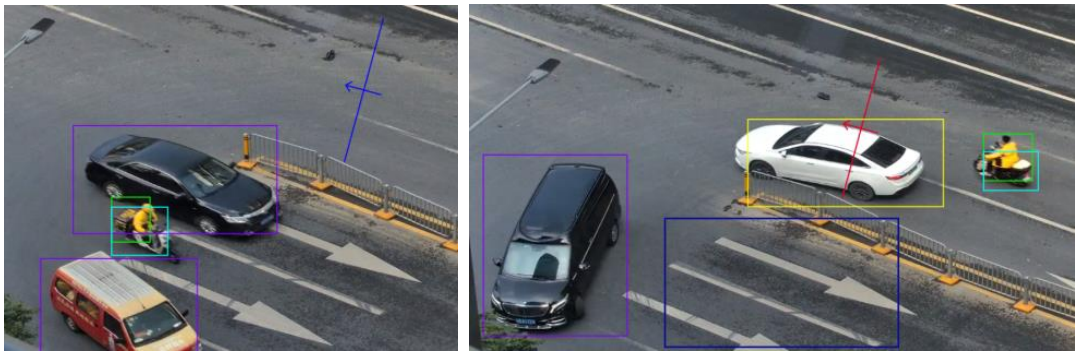
To create a cruise (only for **GV-GFER6900**):

1. Click as shown below.



2. Click to create a cruise. In the cruise creation window, enter the cruise name and then click “Add preset”.
3. In the preset adding window, select the preset name and time. Click “OK” to add this preset. After the presets are added to the cruise, click “OK” to save the settings.
4. Select the cruise and then click to start cruise. Click to stop cruise.
5. The added cruise also can be modified and deleted by clicking or .

Rule Information



Color Descriptions of Target Recognition box:

Green box: detect human

Purple box: detect motor vehicle

Light blue box: detect non-motor vehicle (motorcycle/bicycle)

Rule line or area color display:

Rule line or area: blue

Rule line or area after an event is triggered: turn from blue to red

Chapter 4 Network Camera Configuration

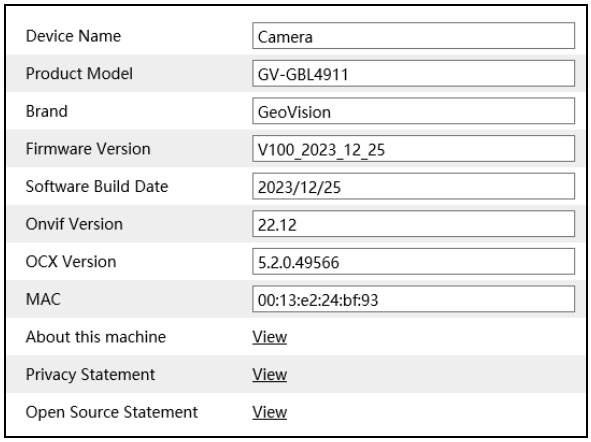
In the Webcam client, choose “Config” to go to the configuration interface.

Note: Wherever applicable, click the “Save” button to save the settings.

4.1 System Configuration

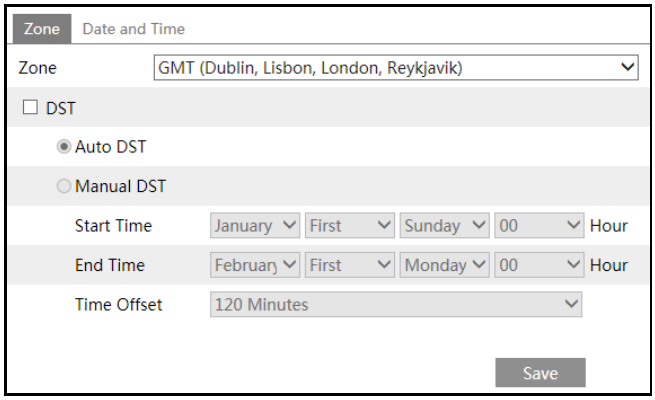
4.1.1 Basic Information

In the “Basic Information” interface, the system information of the device is listed.



4.1.2 Date and Time

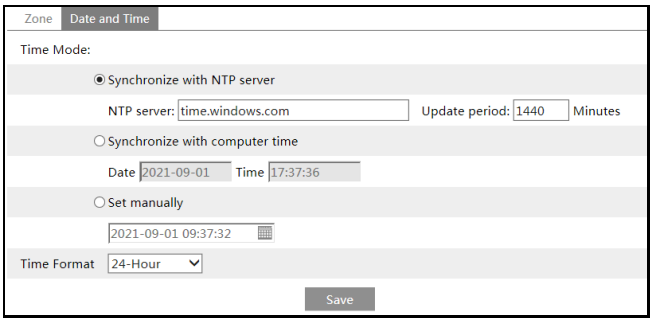
Go to Config→System→Date and Time. Please refer to the following interface.



Select the time zone and DST as required.

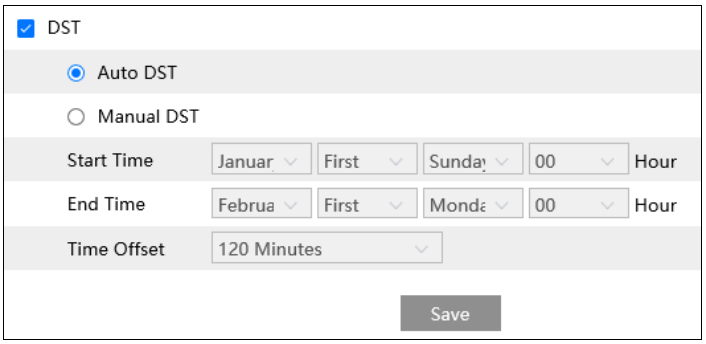
Note: The time zone of the camera and the computer must be the same. It is recommended to modify the time zone of the camera according to the time zone of the computer. If the time zone of the computer is modified, the current web client needs to be closed. Then re-open it and log in again.

For **GV-GEBF4911**: Click the “Date and Time” tab to set the time mode and time format.



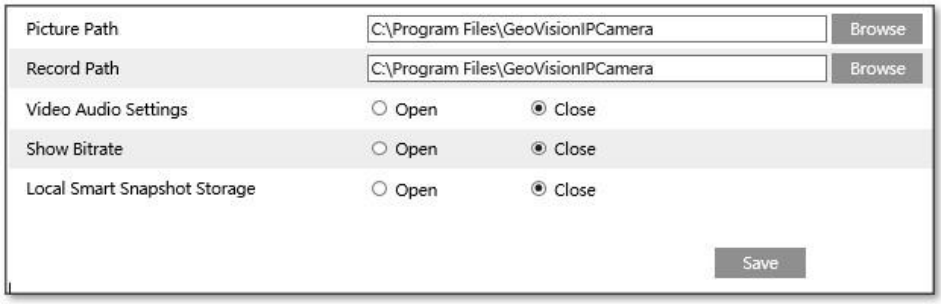
For **GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910:**

Click the “Summer Time” tab to set DST (Daylight Saving Time) as needed.



4.1.3 Local Config

Go to Config→System→Local Config to set up the storage path of captured pictures and recorded videos on the local PC. There is also an option to enable or disable the bitrate display in the recorded files.



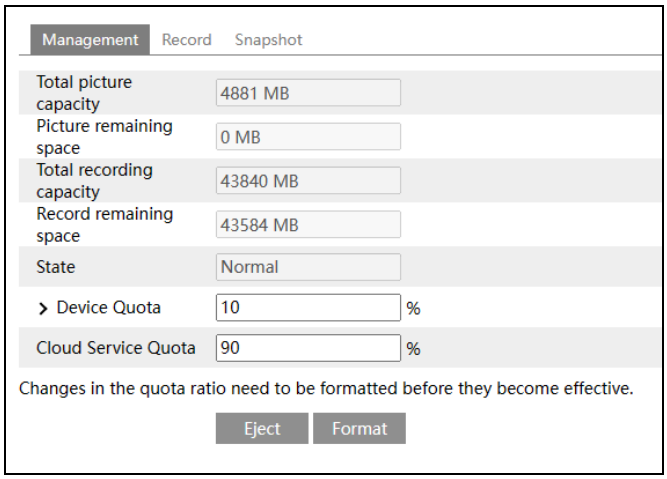
Additionally, “Local smart snapshot storage” can be enabled or disabled here. If enabled, the captured pictures triggered by smart events (like line crossing detection, region entrance, etc.) will be saved to the local PC.

Note:

1. If the performance of your computer is not compatible with IE mode in Microsoft Edge or your computer has no graphics card, low-efficient mode is suggested.
2. In browsers other than IE mode in Microsoft Edge, only Show Bitrate can be set in the above interface.
3. When accessing your camera in browsers other than IE mode in Microsoft Edge, only Show Bitrate can be set in the above interface.

4.1.4 Storage

Go to Config→System→Storage to go to the interface as shown below.



4.1.4.1 SD Card Management

Click the “Format” button to format the SD card. All data will be cleared by clicking this button.

Click the “Eject” button to stop writing data to SD card. Then the SD card can be ejected safely.

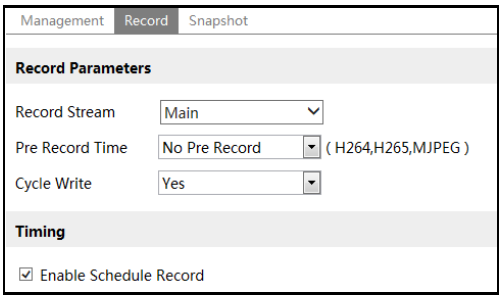
Device Quota: Set the capacity proportion of captured pictures/record files on the SD card.

Cloud Service Quota: Set the capacity proportion of captured pictures/record files uploaded onto GV-Cloud VMS.

Note: For details on connecting to GV-Cloud VMS, see *7. Connecting to GV-Cloud VMS* in *GV-IP Cloud Cameras Quick Start Guide*.

4.1.4.2 Schedule Recording Settings

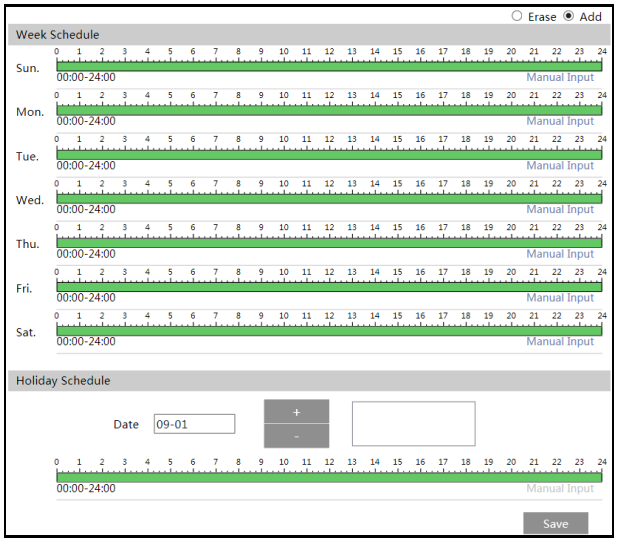
1. Go to Config→System→Storage→Record to go to the interface as shown below.



2. Set record stream, pre-record time, cycle writing.

Pre Record Time: Set the time to record before the actual recording begins.

3. Set schedule recording. Check “Enable Schedule Record” and set the schedule.



Weekly Schedule

Set the alarm time from Monday to Sunday for a single week. Each day is divided in one-hour increments. Green means scheduled. Blank means unscheduled.

“Add”: Add the schedule for a special day. Drag the mouse to set the time on the timeline.

“Erase”: Delete the schedule. Drag the mouse to erase the time on the timeline.

Manual Input: Click it for a specific day to enter specific start and end times. This adds more granularities (minutes).

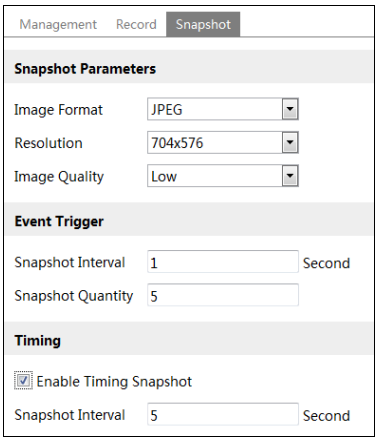
Holiday Schedule

Set the alarm time for alarm a special day, such as a holiday.

Note: Holiday schedule takes priority over weekly schedule.

4.1.4.3 Snapshot Settings

Go to Config→System→Storage→Snapshot to go to the interface as shown below.



Set the format, resolution and quality of the image saved on the SD card and the snapshot interval and quantity and the timing snapshot here.

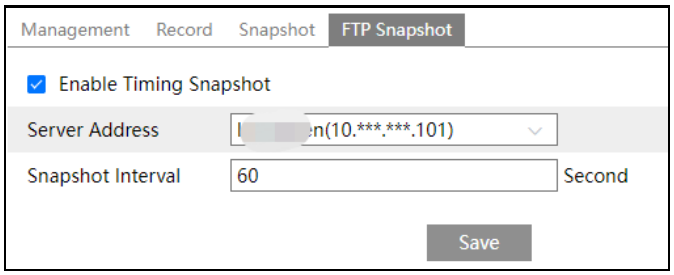
Snapshot Quantity: The number you set here is the maximum quantity of snapshots. The actual quantity of snapshots may be less than this number. Supposing the occurrence time of an alarm event is less than the time of capturing pictures, the actual quantity of snapshots is less than the set quantity of snapshots.

Snapshot Timing

Check the box for "Enable Timing Snapshot" first and set the snapshot interval and schedule. The setup steps of schedule are the same as the schedule recording (See 4.1.4.2 Schedule Recording Settings).

4.1.4.4 FTP Snapshot

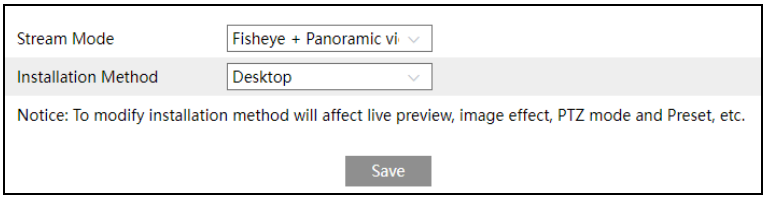
If enabled, the system will upload snapshots to the FTP server according to the time interval.



Server Address: select the set FTP server. See 4.6.10 FTP for the FTP server setting.

4.1.5 Configuring Fisheye Parameters

Before viewing the live image, please go to Config→System→Fisheye Parameters menu to set the stream mode and installation method.



Note: The Fisheye Parameters menu is only applicable to GV-GFER6900.

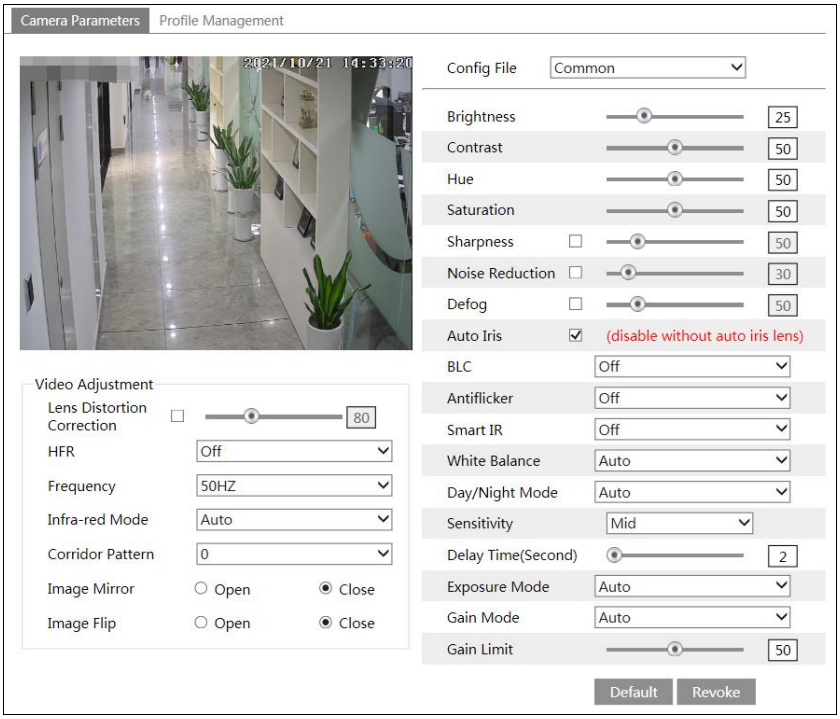
Stream Mode: Fisheye, Panoramic View, Fisheye + Panoramic view + 3PTZ, Fisheye + 4PTZ, and Fisheye + 4PTZ Fusion modes are optional.

Installation Method: Wall, Desktop, and Ceiling installation methods are optional. Select the installation mode according to the actual way of installation.

4.2 Image Configuration

4.2.1 Display Configuration

Go to Image→Display Settings interface as shown below. The image's brightness, contrast, hue and saturation and so on for common, day and night mode can be set up separately. The image effect can be quickly seen by switching the configuration file.



Brightness: Set the brightness level of the camera's image.

Contrast: Set the color difference between the brightest and darkest parts.

Hue: Set the total color degree of the image.

Saturation: Set the degree of color purity. The purer the color, the brighter the image is.

Sharpness: Set the resolution level of the image plane and the sharpness level of the image edge.

Noise Reduction: Decrease the noise and make the image more thorough. Increasing the value will make the noise reduction effect better but it will reduce the image resolution.

Defog: Activating this function and setting an appropriate value as needed in foggy, dusty, smoggy, or rainy environment to get clear images.

Auto Iris: If your camera is equipped with auto Iris lens, please enable it.

Backlight Compensation (BLC):

- Off: Disables the backlight compensation function. It is the default mode.
- HWDR: WDR can adjust the camera to provide a better image when there are both very bright and very dark areas simultaneously in the field of the view by lowering the brightness of the bright area and increasing the brightness of the dark area.

- HLC: Lowers the brightness of the entire image by suppressing the brightness of the image's bright area and reducing the size of the halo area.
- BLC: If enabled, the auto exposure will activate according to the scene so that the object of the image in the darkest area will be seen clearly.

Recording will be stopped for a few seconds while the mode is changing from non-WDR to WDR mode.

Antiflicker:

- Off: disables the anti-flicker function. This is used mostly in outdoor installations.
- 50Hz: reduces flicker in 50Hz lighting conditions.
- 60Hz: reduces flicker in 60Hz lighting conditions.

Smart IR: Choose "ON" or "OFF". This function can effectively avoid image overexposure so as to make the image more realistic. The higher the level is, the more overexposure compensation will be given.

White Balance: Adjust the color temperature according to the environment automatically.
If "Infrared light" is selected for Illumination Mode, "Smart IR" and "Day/Night Mode" can be configured.

Day/Night Mode: Choose "Auto", "Day", "Night" or "Timing".
If "Timing" is selected, you need to set daytime and night time. For example: if "Daytime" is set to "7:00", the camera will switch to Day mode at 7:00; if "Night time" is set to "17:00", the camera will switch from Day mode to Night mode at 17:00.

Shutter Mode (**for GV-GEBF4911)**: Choose "Auto" or "Manual". If manual is chosen, the digital shutter speed can be adjusted.

Shutter (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): Set the upper limit of the effective exposure time. The exposure time will be automatically adjusted (within the set shutter limit value) according to the actual situation.

Gain Mode (**for GV-GEBF4911)**: Choose "Auto" or "Manual". If "Auto" is selected, the gain value will be automatically adjusted (within the set gain limit value) according to the actual situation. If "Manual" is selected, the gain value shall be set manually. The higher the value is, the brighter the image is.

Gain (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): Set the upper limit of the gain. The gain value will be automatically adjusted (within the set gain limit value) according to the actual situation.

Lens Distortion Correction (not applicable to GV-GFER6900): When the image appears distortion to some extent, please enable this function and adjust the level according to the actual scene to correct the distortion.

Frequency: 50 Hz and 60 Hz can be optional.

Corridor Pattern (not applicable to GV-GFER6900): Corridor viewing modes can be used for situations such as long hallways. 0, 90, 180 and 270 are available. The default value is 0.

Image Mirror: Turn the current video image horizontally.

Image Flip: Turn the current video image vertically.

Illumination Mode (for GV-GEBF4911): Choose “White light”, “Infrared light” or “Smart supplement light” as needed.

Smart supplement light (for GV-GEBF4911): If selected, in low ambient light, the system will automatically turn on the IR light or white light. Once there are people appearing in the detection area, it will automatically switch to white light. When no people are detected, it will switch to IR light.

If “White Light” is selected, “Overexposure control” and “white light mode” can be configured.

Overexposure Control (for GV-GEBF4911): Choose “OFF”, “Low”, “Mid” or “High”. This function can automatically adjust the exposure parameter according to the actual effect of the image, effectively avoiding detail missing caused by image overexposure, so that the image will be more vivid. Please set it as needed.

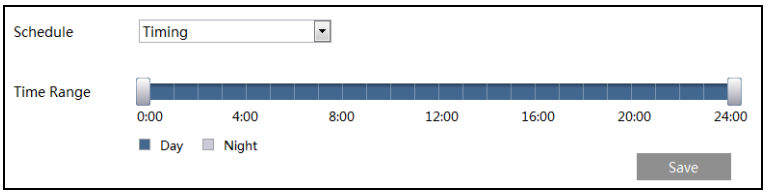
White Light Mode: Choose “Off”, “Auto” or “Manual”. Please select it as needed.

Infrared Mode: Choose “Auto”, “ON” or “OFF”.

Schedule Settings of Image Parameters

Click the “Profile Management” tab as shown below.

Set full time schedule for common, day, night mode and specified time schedule for day and night. Choose “Timing” in the drop-down box of schedule as shown below.

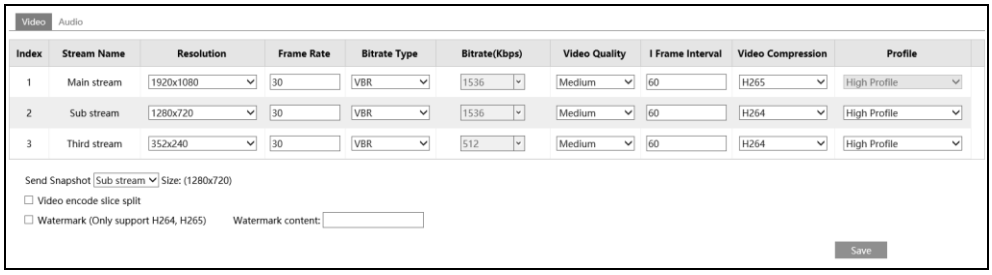


Drag “▮” icons to set the time of day and night. Blue means day time and blank means night time. If the current mode of camera parameters is set to schedule, the image configuration mode will automatically switch between day and night according to the schedule.

4.2.2 Video / Audio Configuration

Go to Image→Video / Audio interface as shown below. In this interface, set the resolution, frame rate, bitrate type, video quality and so on subject to the actual network condition.

Note: The video stream parameters of different camera series may be different. The following pictures and descriptions are for reference only. The real camera interface shall prevail.



For GV-FER6900

You can select streams for different channels.

IP Channel 1: Fisheye view channel, 2 streams can be set. Please set them according to the actual network condition.

IP Channel 2: Panoramic view channel, main stream can be set. Please set them according to the actual network condition.

IP Channel 3/4/5: PTZ view channel, main stream can be set for each channel. Please set them according to the actual network condition.

All Models

Three video streams can be adjustable.

Resolution: The size of image.

Frame rate: The higher the frame rate, the smoother the video is.

Bitrate type: CBR and VBR are optional. Bitrate is related to image quality. CBR means that no matter how much change is seen in the video scene, the compression bitrate will be kept constant. VBR means that the compression bitrate will be adjusted according to scene changes. For example, for scenes that do not have much movement, the bitrate will be kept at a lower value. This can help optimize the network bandwidth usage.

Bitrate: It can be adjusted when the bitrate type is set to CBR. The higher the bitrate, the better the image quality will be.

Video Quality: It can be adjusted when the bitrate type is set to VBR. The higher the image quality, the more bitrate will be required.

I Frame interval: It determines how many frames are allowed between a “group of pictures”. When a new scene begins in a video, until that scene ends, the entire group of frames (or pictures) can be considered as a group of pictures. If there is not much movement in the scene, setting the value higher than the frame rate is fine, potentially resulting in less

bandwidth usage. However, if the value is set too high, and there is a high frequency of movement in the video, there is a risk of frame skipping.

Video Compression: MJPEG, H264+, H264, H265 or H265+ are applicable. MJPEG is not available for main stream. If H.265 / H.265+is chosen, make sure the client system is able to decode H.265 / H.265+. Compared to H.265, H.265+ saves more storage space with the same maximum bitrate in most scenes. Compared to H.264, H.265 reduces the transmission bitrate under the same resolution, frame rate and image quality.

Note: For browsers other than IE mode in Microsoft Edge, MJPEG is not recommended (if the sub / third stream and MJPEG are selected, no image will be output).

Profile: For H.264. Baseline, main and high profiles are selectable.

Send Snapshot: Set the snapshot stream.

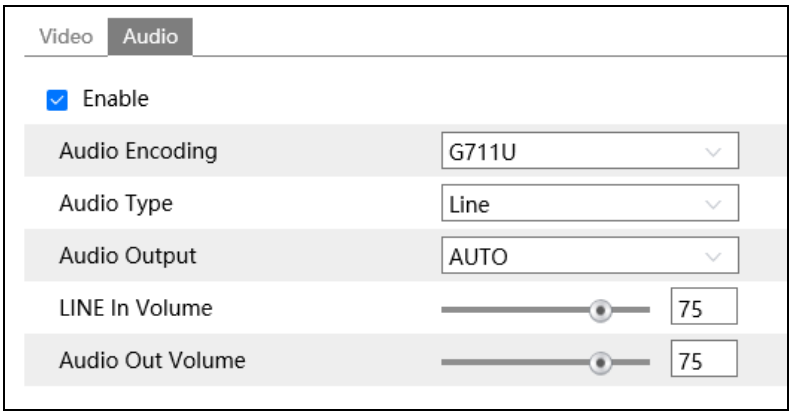
Video encode slice split: If this function is enabled, smooth image can be gotten even though using the low-performance PC.

Watermark: When playing back the local recorded video in the search interface, the watermark can be displayed. To enable it, check the watermark box and enter the watermark text.

Note: When the camera is connected to GV-Cloud VMS, the resolution and bitrate values will be grayed out and cannot be modified. For details on GV-Cloud VMS connection, see *4.5.1 GV-Cloud.*

Click the “Audio” tab to go to the interface as shown below.

Only the models with the built-in MIC support this function.



Audio Encoding: G711A and G711U are selectable.

Audio Type: Line or MIC can be optional.

LINE IN/MIC IN Volume: LINE IN Volume can be set here. If MIC is selected, MIC IN volume can be set.

Audio Output (not applicable to GV-GFER6900): Talkback, warning or auto can be optional. If “Talkback” is selected, the audio output will be used to output sound for two-way talk. If “Warning” is selected, the audio output will be used to output the pre-defined audio alarm. If “Auto” is selected, the system will output sound for two-way talk or warning voice as needed. But when it is warning and two-way audio is being enabled simultaneously, two-way audio will be output first.

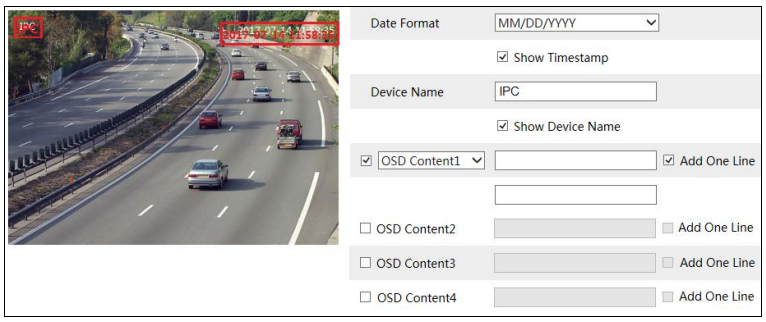
Speaker (for GV-GEBF4911): Talkback, warning or auto can be optional. If “Talkback” is selected, the built-in speaker will be used to output sound for two-way talk. If “Warning” is selected, the built-in speaker will be used to output the pre-defined audio alarm. If “Auto” is selected, the system will output sound for two-way talk or warning voice as needed. But when it is warning and two-way audio is being enabled simultaneously, two-way audio will be output first.

Audio Out Volume: This function is available for the model with audio out interface.

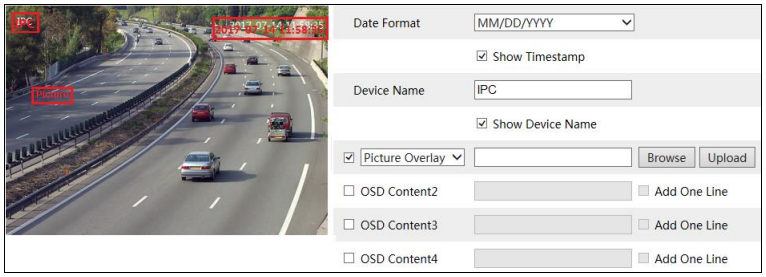
4.2.3 OSD Configuration

Go to Image→OSD interface as shown below.

For GV-GEBF4911



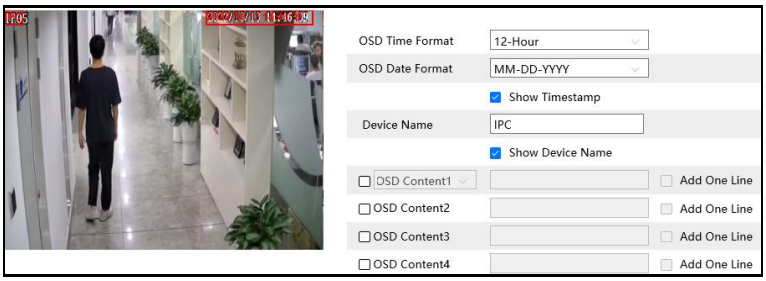
Set time stamp, device name, OSD content and picture overlap here. After enabling the corresponding display and entering the content, drag them to change their position. Then click the “Save” button to save the settings.



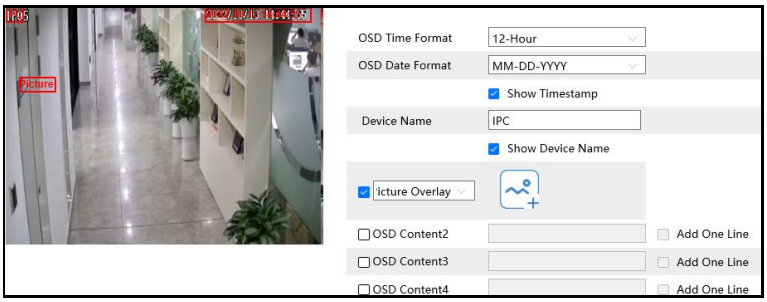
Picture Overlap Settings:

Check “OSD Content1”, choose “Picture Overlay” and click “Browse” to select the overlap picture. Then click “Upload” to upload the overlap picture. The pixel of the image shall not exceed 200*200, or it cannot be uploaded.

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910



Set time stamp, device name, OSD content and picture overlap here. After enabling the corresponding display and entering the content, drag them to change their position. Then click the “Save” button to save the settings.



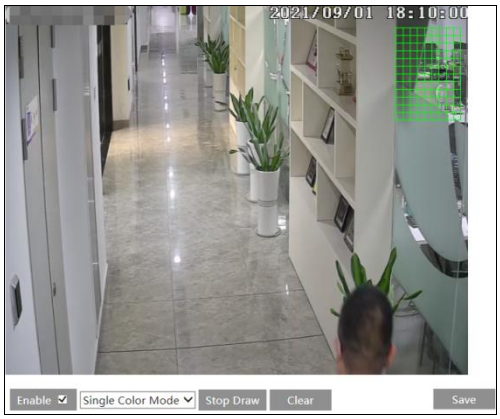
Picture Overlap Settings:

Check “OSD Content1”, choose “Picture Overlay” and click to select the overlap picture. Then click “Open” to upload the overlap picture. The pixel of the image shall not exceed 200*200, or it cannot be uploaded.

Note: For GV-GFER6900, the OSD information can only be overlaid on the Fisheye channel.

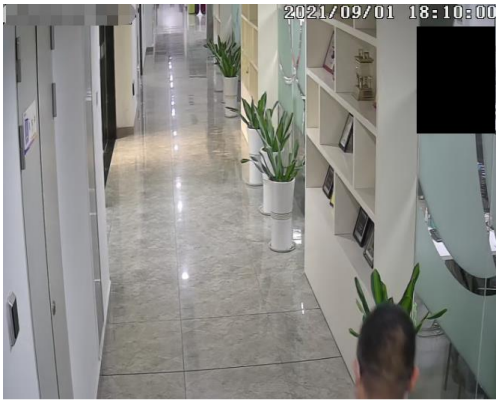
4.2.4 Video Mask

Go to Image→Video Mask interface as shown below. A maximum of 4 zones can be set up.



To set up video mask:

1. Enable video mask.
2. Click the “Draw Area” button and then drag the mouse to draw the video mask area.
3. Click the “Save” button to save the settings.
4. Return to the live to verify that the area has been drawn as shown as blocked out in the image.

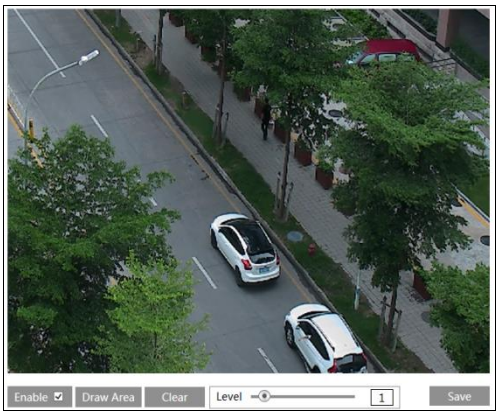


To clear the video mask:

Click the “Clear” button to delete the current video mask area.

4.2.5 ROI Configuration

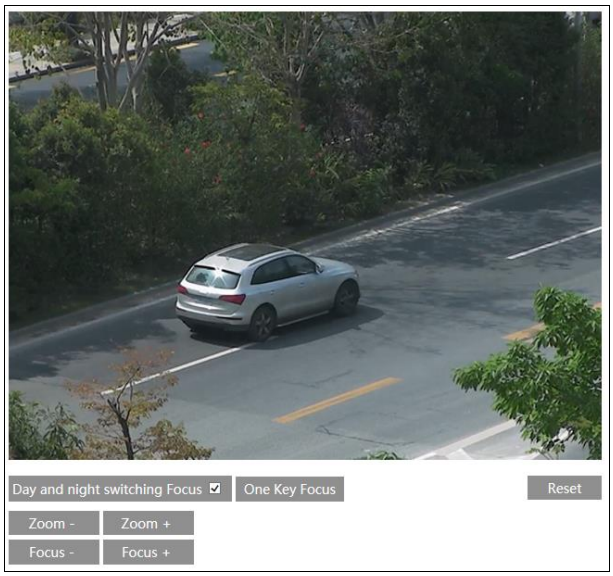
Go to Image→ROI Config interface as shown below. An area in the image can be set as a region of interest. This area will have a higher bitrate than the rest of the image, resulting in better image quality for the identified area.



1. Check “Enable” and then click the “Draw Area” button.
2. Drag the mouse to set the ROI area.
3. Set the level.
4. Click the “Save” button to save the settings.

4.2.6 Lens Control

This function is only available for the model with motorized zoom lens. Within this section, zoom and focus can be controlled. If the image is out of focus after a manual adjustment, one key focus can be used to set the focus automatically. Go to Config→Image→ Zoom/Focus interface to set.

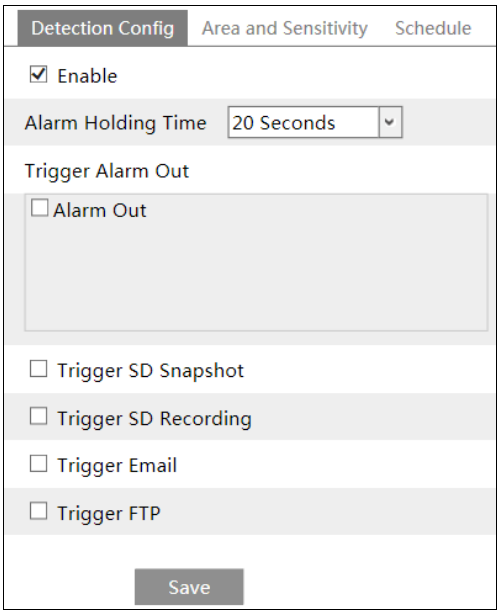


4.3 Alarm Configuration

4.3.1 Motion Detection

Go to Alarm→Motion Detection to set motion detection alarm.

For GV-GEBF4911 / GFER6900



1. Check "Enable" check box to activate motion based alarms. If unchecked, the camera will not send out any signals to trigger motion-based recording to the NVR or CMS, even if there is motion in the video.

   Alarm Holding Time: It refers to the interval time between the adjacent motion detections. For instance, if the alarm holding time is set to 20 seconds, once the camera detects a motion, it will go to alarm and would not detect any other motion in 20 seconds. If there is another motion detected during this period, it will be considered as continuous movement; otherwise, it will be considered as a single motion.

   Alarm Out: If selected, this would trigger an external relay output that is connected to the camera on detecting a motion based alarm.

   Trigger Audio Alarm: If selected, the warning voice will be uttered on detecting a motion based alarm. (Please set the warning voice first. See 4.3.6 Audio Alarm for details).

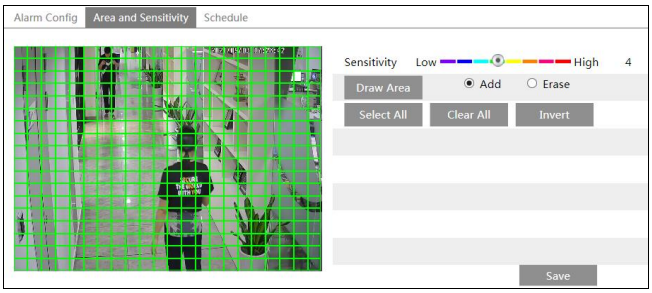
   Trigger SD Snapshot: If selected, the system will capture images on motion detection and save the images on an SD card.

   Trigger SD Recording: If selected, video will be recorded on an SD card on motion detection.

   Trigger Email: If "Trigger Email" and "Attach Picture" are checked (email address must be set first in the Email configuration interface), the captured pictures and triggered event will be sent to the set addresses.

   Trigger FTP: If "Trigger FTP" and "Attach Picture" are checked, the captured pictures will be sent into FTP server address. Please refer to 4.6.10 FTP for more details.

2. Set motion detection area and sensitivity. Click the “Area and Sensitivity” tab to go to the interface as shown below.



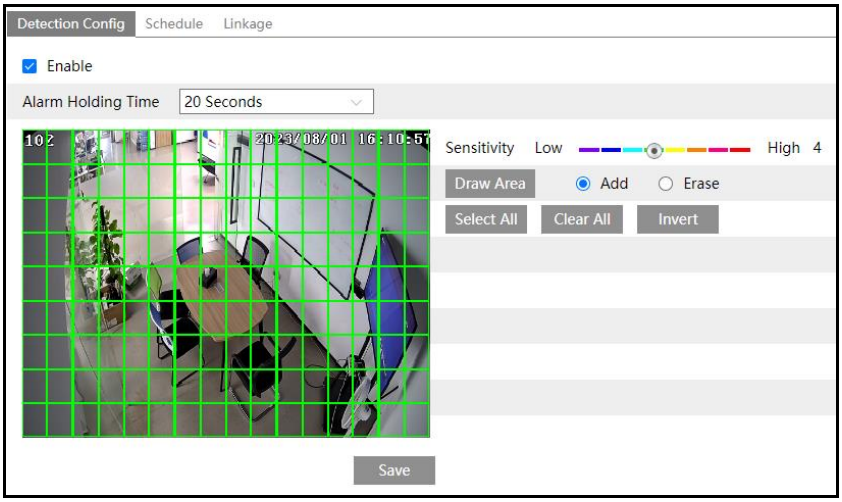
Move the “Sensitivity” scroll bar to set the sensitivity. Higher sensitivity value means that motion will be triggered more easily.

Select “Add” and click “Draw”. Drag the mouse to draw the motion detection area; Select “Erase” and drag the mouse to clear motion detection area.

After that, click the “Save” to save the settings.

3. Set the schedule for motion detection. The schedule setup steps of the motion detection are the same as the schedule recording setup (See 4.1.4.2 Schedule Recording Settings).

4. For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



1. Check “Enable” check box to activate motion-based alarms. If unchecked, the camera will not send out any signals to trigger motion-based recording to the NVR or CMS, even if there is motion in the video.

   Alarm Holding Time: It refers to the interval time between the adjacent motion detections. For instance, if the alarm holding time is set to 20 seconds, once the camera detects a motion, it will go to alarm and would not detect any other motion in 20 seconds. If there is another motion detected during this period, it will be considered as continuous movement; otherwise, it will be considered as a single motion.

2. Set motion detection area and sensitivity.

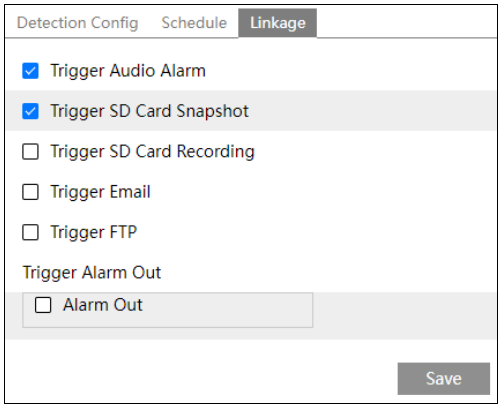
   Move the “Sensitivity” scroll bar to set the sensitivity. Higher sensitivity value means that motion will be triggered more easily.

   Select “Add” and click “Draw”. Drag the mouse to draw the motion detection area; Select “Erase” and drag the mouse to clear motion detection area.

   After that, click the “Save” to save the settings.

3. Set the schedule for motion detection. The schedule setup steps of the motion detection are the same as the schedule recording setup (See 4.1.4.2 Schedule Recording Settings).

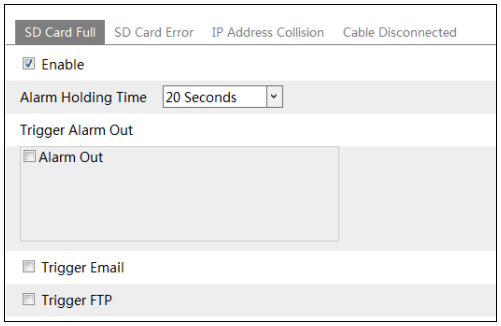
4. Click “Linkage” to configure the alarm linkage items. For details, see *For GV-GEBF4911* above.



4.3.2 Exception Alarm

- **SD Card Full**

1. Go to Config→Alarm→Exception Alarm→SD Card Full.

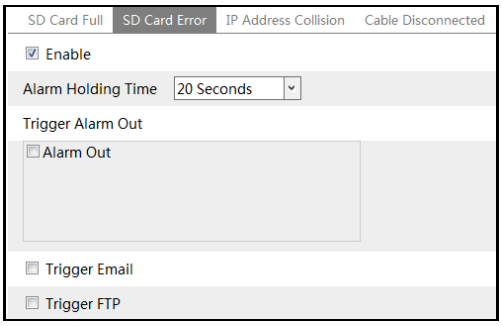


2. Click “Enable”.
3. Set the alarm holding time and alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

- **SD Card Error**

When there are some errors in writing SD card, the corresponding alarms will be triggered.

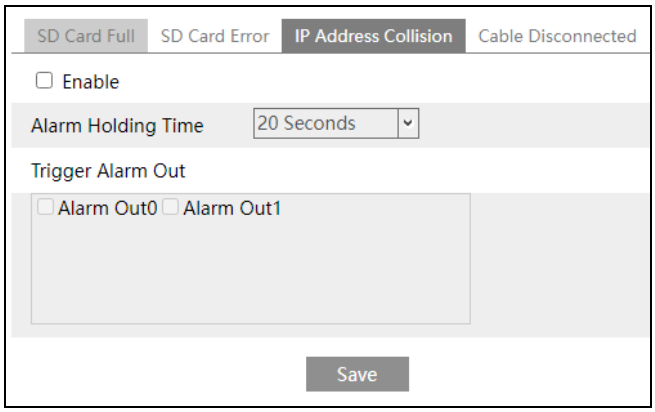
1. Go to Config→Alarm→Exception Alarm→SD Card Error as shown below.



2. Click “Enable”.
3. Set the alarm holding time and alarm trigger options. Trigger alarm out, Email and FTP. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

- **IP Address Conflict**

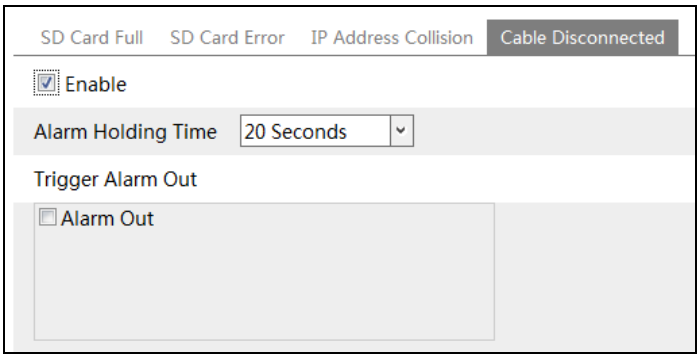
1. Go to Config→Alarm→Exception Alarm→IP Address Collision as shown below.



2. Click “Enable” and set the alarm holding time.
3. Trigger alarm out. When the IP address of the camera conflicts with the IP address of other devices, the system will trigger the alarm out.

- **Cable Disconnection**

1. Go to Config→Alarm→Exception Alarm→Cable Disconnected as shown below.



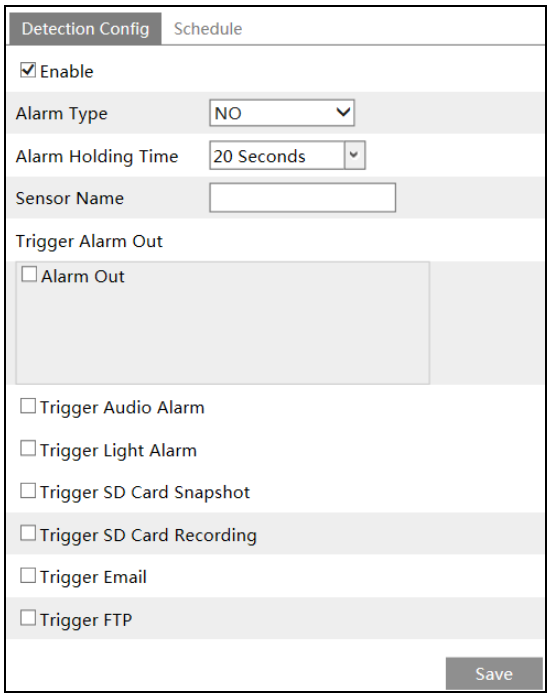
2. Click “Enable” and set the alarm holding time.
3. Trigger alarm out. When the camera is disconnected, the system will trigger the alarm out.

4.3.3 Alarm In

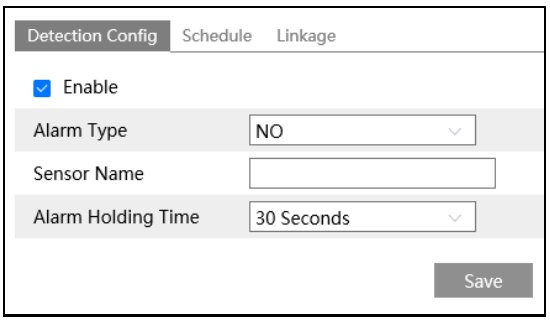
To set sensor alarm (alarm in):

Go to Config→Alarm→Alarm In interface as shown below.

GV-GEBF4911 / GFER6900



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



1. Click “Enable” and set the alarm type, alarm holding time and sensor name.
2. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

Note: For alarm trigger options: if **Day/night switch linkage** is enabled, the system will switch to day or night mode upon the occurrence of the sensor alarm. Note that this is only applicable to GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910.

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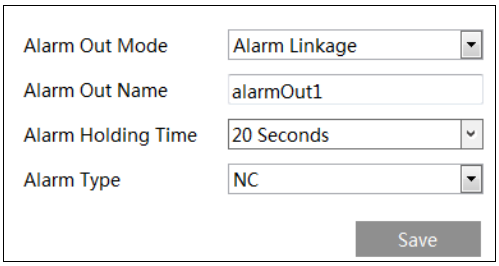
3. Click “Save” button to save the settings.
4. Set the schedule of the sensor alarm. The setup steps of the schedule are the same as the schedule recording setup. (See 4.1.4.2 Schedule Recording Settings).

If there are two sensors, please select the sensor ID. Click “Apply settings to” to quickly apply the settings to the other alarm input.

4.3.4 Alarm Out

Go to Config→Alarm→Alarm Out.

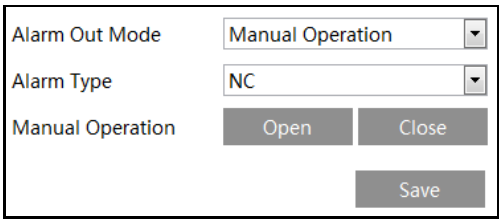


Alarm Out ID: The alarm out can be set respectively by selecting alarm out ID.

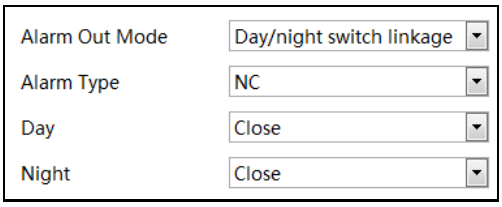
Alarm Out Mode: Alarm linkage, manual operation, day/night switch linkage and timing are optional.

Alarm Linkage: Having selected this mode, select alarm out name, alarm holding time at the "Alarm Holding Time" pull down list box and alarm type.

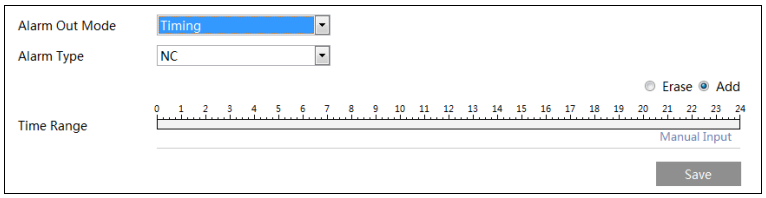
Manual Operation: Having selected this mode, select the alarm type and click "Open" to trigger the alarm out immediately; click "Close" to stop alarm.



Day/Night Switch Linkage (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): Having selected this mode, select the alarm type and choose to open or close alarm out when the camera switches to day or night mode.



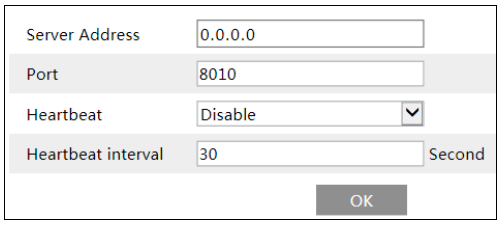
Timing: Select the alarm type. Then click "Add" and drag the mouse on the timeline to set the schedule of alarm out; click "Erase" and drag the mouse on the timeline to erase the set time schedule. After this schedule is saved, the alarm out will be triggered in the specified time.



4.3.5 Alarm Server

Go to Alarm→Alarm Server interface as shown below.

Set the server address, port, heartbeat and heartbeat interval. When an alarm occurs, the camera will transfer the alarm event to the alarm server. If an alarm server is not needed, there is no need to configure this section.

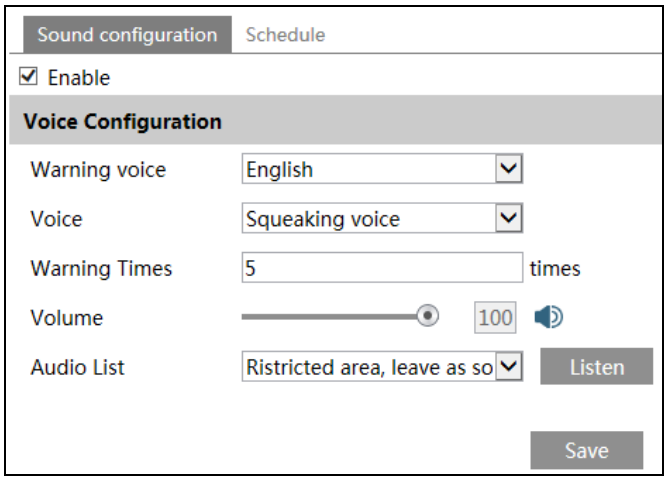


For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910: Click to view the entire server address; click to hide a part of sensitive data.

4.3.6 Audio Alarm

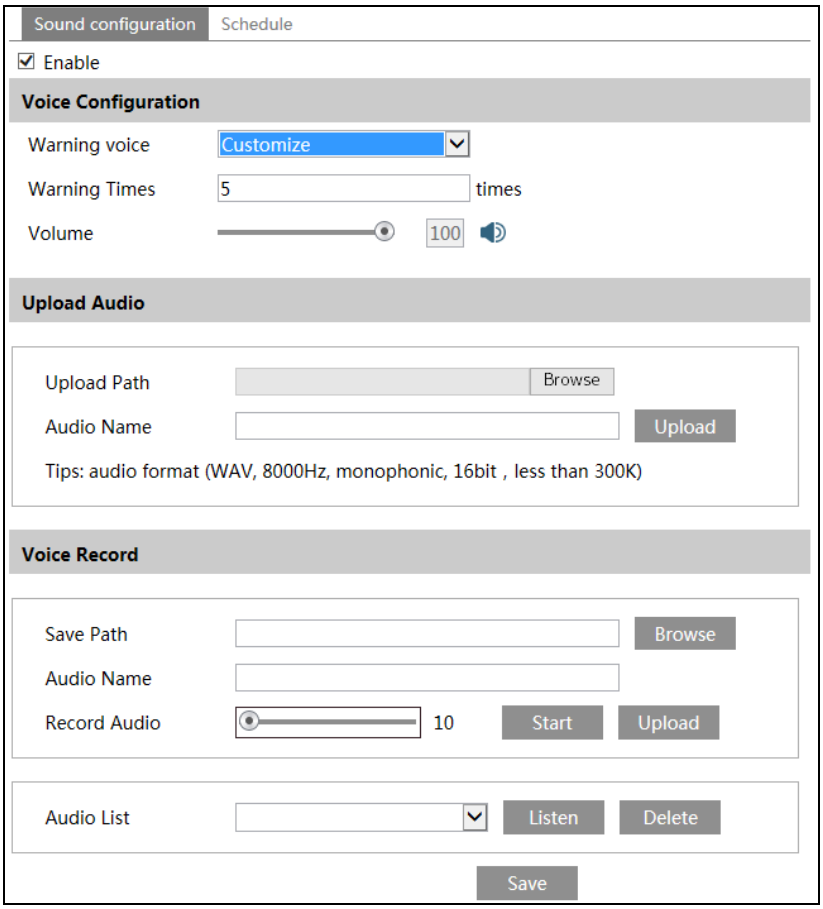
Go to Alarm→Audio Alarm interface as shown below.

Enable audio alarm. If disabled, the warning sound will not be uttered by clicking the icon in the live view interface.



Note: The Audio Alarm function is not applicable to GV-GFER6900.

1. Select the warning voice. If you want to customize the voice, you can chose “Customize”. Click “Browse” to choose the audio file you to upload and then enter the audio name. Finally, click “Upload” to upload the audio file. Note that the format of the audio file must meet the requirement, or it will not be uploaded. After you upload the audio file, you can select the audio name from the audio list and click “Listen” to listen to it. Click “Delete” to delete the audio.



You can also record your own voice in the above interface and then upload.

- Insert the microphone into your PC.
- Click “Browse” to choose the save path of the audio you want to record.
- Set the record audio volume and then click “Start” to start recording your voice.
- Click “Upload” to upload your customized voice.

2. Select the voice and then set the warning times and volume as needed. Warning times: it ranges from 1 to 50.
3. Set the schedule of audio alarm. The setup steps of the schedule are the same as the schedule recording setup. (See 4.1.4.2 Schedule Recording Settings).
4. Click OK to save the settings.

4.3.7 Light Alarm

Go to Alarm→Audio Alarm interface as shown below.

Note: The Audio Alarm function is only applicable to GV-GEBF4911.

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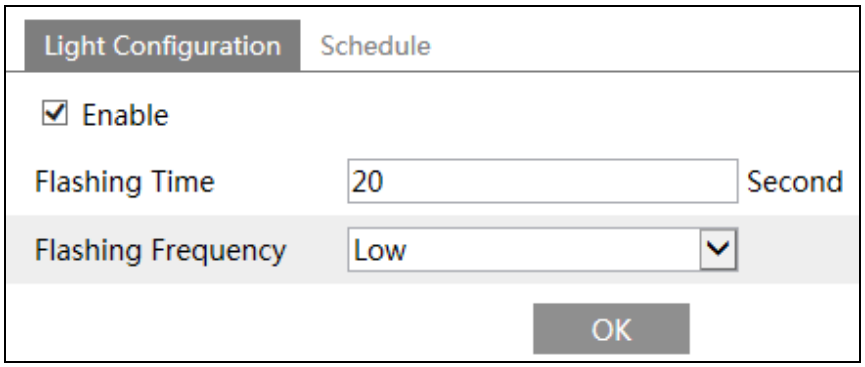
1. Enable light alarm as needed. If it is disabled, the flashing light will not be turned on by clicking in the live view interface.
2. Set the flashing time and frequency of the light.



Flashing Time: The flashing time ranges from 1 second to 60 seconds.

Flashing Frequency: Three options – low, middle and high

3. Set the schedule of audio alarm. The setup steps of the schedule are the same as the schedule recording setup. (See 4.1.4.2 Schedule Recording Settings).

4.3.8 Video Exception

For more details, see *4.4.2 Video Exception.*

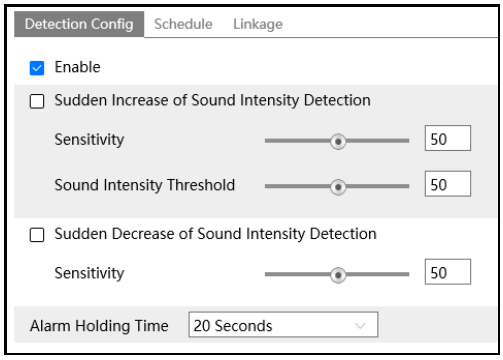
4.3.9 Audio Exception

Alarms will be triggered when the abnormal sound is detected in the surveillance scene, such as the sudden increase/decrease of the sound intensity.

Note: The Audio Exception function is only applicable to GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910.

To set audio exception detection:

1. Go to **Alarm→Audio Exception** interface as shown below.



2. Enable audio exception.
3. Select the audio exception detection types.

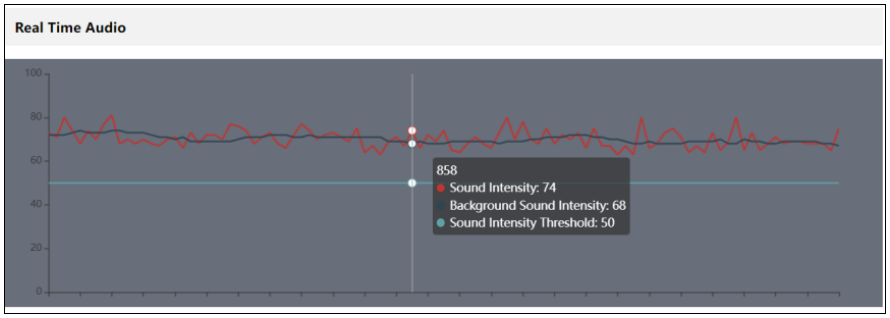
   Sudden Increase of Sound Intensity Detection: Detect sudden increase of sound intensity. If enabled, sensitivity and sound intensity threshold are configurable. Alarms will be triggered when the detected sound intensity exceeds the sound threshold.

   Sensitivity: The higher the value is, the easier the alarm will be triggered.

   Sound Intensity Threshold: It is the sound intensity reference for the detection. The lower the value is, the easier the alarm will be triggered. It is recommended to set as the average sound intensity in the environment. The louder the environment sound, the higher the value should be. Please adjust it according to the actual environment condition.

   Sudden Decrease of Sound Intensity Detection: Detect sudden decrease of sound intensity. Please set the sensitivity as needed. The higher the value is, the easier the alarm will be triggered.

Real-time audio graphic:
Red wavy line stands for the current detected sound intensity.
Navy blue line stands for the environment (background) sound intensity.
Green line stands for the sound intensity threshold.
In order to reduce false alarm, it is recommended to set the sensitivity and sound intensity threshold according to the real-time audio graphic.



4. Set the alarm holding time and click “Save” to save the settings.
5. Set the schedule of the audio exception detection. The setup steps of schedule are the same as the schedule recording (See 4.1.4.2 Schedule Recording Settings).
6. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

Note: The alarm recording type triggered by audio exception event is “Common”. In the search interface, you can search the recorded files of audio exception by selecting the “Common” event.

4.4 Event Configuration

For more accuracy, here are some recommendations for installation.

- Cameras should be installed on stable surfaces, as vibrations can affect the accuracy of detection.
- Avoid pointing the camera at the reflective surfaces (like shiny floors, mirrors, glass, lake surfaces and so on).
- Avoid places that are narrow or have too much shadowing.
- Avoid scenario where the object's color is similar to the background color.
- At any time of day or night, please make sure the image of the camera is clear and with adequate and even light, avoiding overexposure or too much darkness on both sides.

The event types supported by GV-Cloud Cameras are as follows.

1. **Video Analytics and Smart Alarms:**

   Object Abandoned / Missing Detection, Video Exception (Scene Change Detection, Video Blur Detection, Abnormal Color Detection)

2. **AI Analytics:**

   a. **Smart Events:** Line Crossing, Region Entrance, Region Exiting, Target Counting by Line, Target Counting by Area, Region Intrusion, Crowd Density, Heat Map, Video Metadata, Loitering Detection, Illegal Parking Detection

   b. **Face Events:** Face Detection

The configurations and supported AI analytics for each model, along with stream mode compatibility, are detailed as follows.

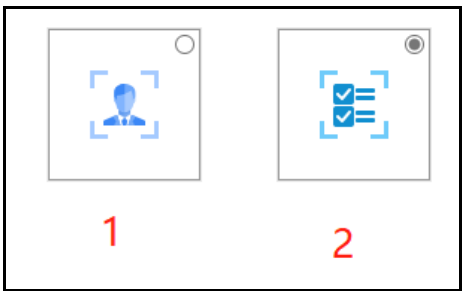
For GV-GEBF4911:

1. Only 1 AI event can be enabled at a time: either smart events or face events.
2. Only 1 smart event is supported when connected to GV-Cloud VMS or GV-Center V2.

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910:

1. Multiple AI events can be enabled at the same time.
2. Smart events and face events cannot be enabled at the same time.
3. Enabling more than 2 smart events may reduce performance and detection accuracy. To ensure comprehensive detection and optimal camera performance, limit to a maximum of 2 smart events.
4. Only 2 smart events are supported when connected to GV-Cloud VMS or GV-Center V2.

5. You can enable the AI event type as needed. Go to Config→Event→Enable Event interface as shown below.



AI Event Types: 1. Face Event; 2. Smart Event

The default AI event type is smart event. To switch to face event, select it and click **Save**. After a successful reboot, the corresponding event will be displayed. Configure as needed.

For GV-GFER6900:

1. Only 1 AI event can be enabled at a time: smart events only, as GV-GFER6900 does not support face events.
2. Only 1 smart event is supported when connected to GV-Cloud VMS or GV-Center V2.
3. Supported AI analytics and stream modes:

<table>
<tr><th colspan="2" rowspan="2">Stream Mode</th><th colspan="2">Supports AI Analytics</th></tr>
<tr><th>Ceiling Mount
(Human detection only)</th><th>Wall or Desktop Mount
(Human and vehicle detection)</th></tr>
<tr><td>1</td><td>Fisheye View</td><td>Target Counting by Line, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Crowd Density, Heat Map</td><td>N/A
(not supported)</td></tr>
<tr><td>2</td><td>Panoramic View</td><td>N/A
(not supported)</td><td rowspan="2">Target Counting by Line, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Crowd Density</td></tr>
<tr><td>3</td><td>Fisheye
+ Panoramic View
+ 3 PTZ</td><td rowspan="3">Target Counting by Line, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Crowd Density, Heat Map</td></tr>
<tr><td>4</td><td>Fisheye
+ 4 PTZ Fisheye</td><td rowspan="2">N/A
(not supported)</td></tr>
<tr><td>5</td><td>Fisheye
+ 4 PTZ Fusion</td></tr>
</table>

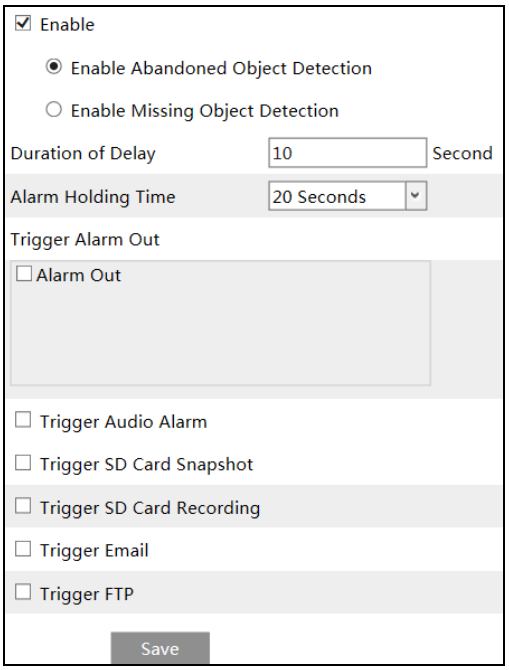
4.4.1 Object Abandoned / Missing

Alarms will be triggered when the objects are removed from or left at the pre-defined area.

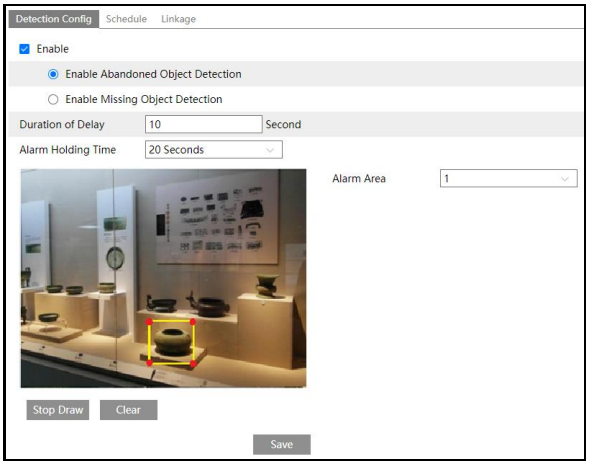
To set abandoned/missing object detection:

Go to Config→Event→Object Abandoned/Missing interface as shown below.

GV-GEBF4911



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



Note: The Object Abandoned / Missing function is not applicable to GV-GFER6900.

1. Enable abandoned/missing object detection and then select the detection type.

   Enable Abandoned Object Detection: Alarms will be triggered if there are items left in the pre-defined area.

   Enable Missing Object Detection: Alarms will be triggered if there are items missing in the pre-defined area.

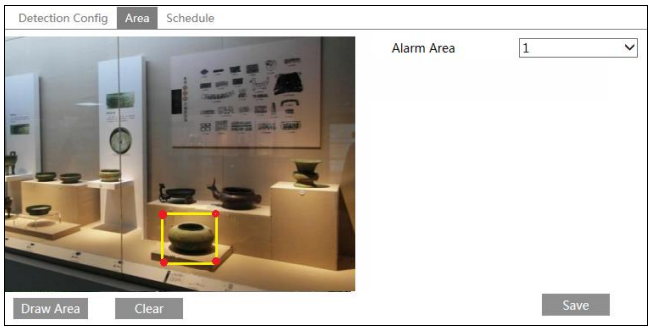
   Duration of Delay: It is the alarm delay time of the object left in the region (ranging from 10~3600s) or the alarm delay time of the object removed from the region (ranging from 3~3600s). For example, if "Enable Abandoned Object Detection" is selected and the duration of delay is set as 10, alarms will be triggered after the object is left and stay in the region for 10s, but when someone takes away the object within 10s, alarms will not be triggered.

   Set the alarm holding time and alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

For GV-GEBF4911

2. Click “Save” button to save the settings.

3. Set the alarm area of the abandoned/missing object detection. Click the “Area” tab to go to the interface as shown below.



Set the alarm area number and then enter the desired alarm area name. Only one alarm area can be added. Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

4. Set the schedule of the abandoned/missing object detection. The setup steps of schedule are the same as the schedule recording (See 4.1.4.2 Schedule Recording Settings).

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

3. Set the alarm area of the abandoned/missing object detection. Set the alarm area number and then enter the desired alarm area name. Only one alarm area can be added. Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

4. Click “Save” button to save the settings.

5. Set the schedule of the abandoned/missing object detection. The setup steps of schedule are the same as the motion detection schedule settings (See 4.1.4.2 Schedule Recording Settings).

6. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

※ The configuration requirements of camera and surrounding areas

1. The range of the detection object should occupy from 1/50 to 1/3 of the entire image.
2. The detection time of objects in the camera shall be from 3 to 5 seconds.
3. The defined area cannot be covered frequently and continuously (like people and traffic flow).
4. It is necessary for abandoned/missing object detection that the drawn frame must be very close to the margin of the object in enhancing the sensitivity and accuracy of the detection.
5. Abandoned/missing object detection cannot determine the objects' ownership. For instance, there is an unattended package in the station. Abandoned object detection can detect the package itself but it cannot determine to whom it belongs to.
6. Try not to enable abandoned/missing object detection when light changes greatly in the scene.
7. Try not to enable abandoned/missing object if there are complex and dynamic environments in the scene.
8. Adequate light and clear scenery are very important to abandoned/missing object detection.

4.4.2 Video Exception

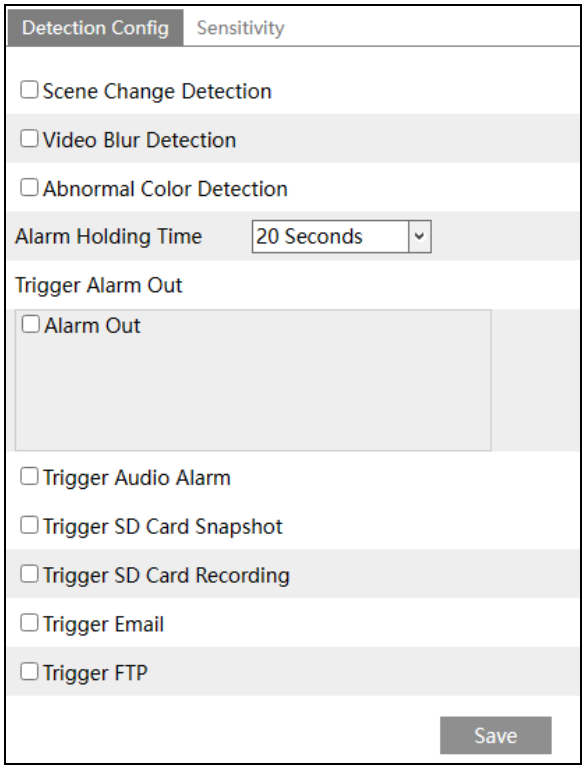
This function can detect changes in the surveillance environment affected by the external factors.

To set exception detection:

Note: The Video Exception function is not applicable to GV-GFER6900.

For GV-GEBF4911

Go to Config→Event→Video Exception interface as shown below.



1. Enable the applicable detection that's desired.

   Scene Change Detection: Alarms will be triggered if the scene of the monitor video has changed.

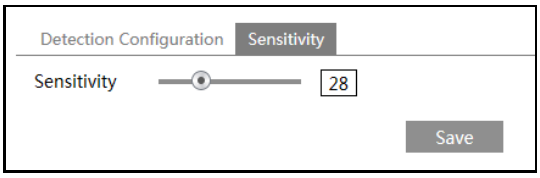
   Video Blur Detection: Alarms will be triggered if the video becomes blurry.

   Abnormal Color Detection: Alarms will be triggered if the image is abnormal caused by color deviation.

2. Set the alarm holding time and alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

3. Click "Save" button to save the settings.

4. Set the sensitivity of the exception detection. Click “Sensitivity” tab to go to the interface as shown below.



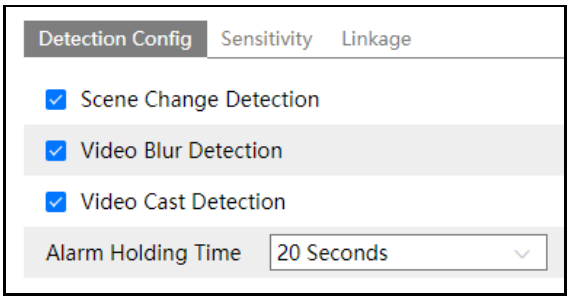
Drag the slider to set the sensitivity value or directly enter the sensitivity value in the textbox. Click “Save” button to save the settings.

The sensitivity value of Scene Change Detection: The higher the value is, the more sensitive the system responds to the amplitude of the scene change.

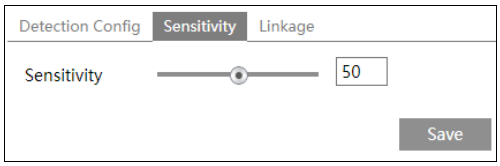
The sensitivity value of Video Blur Detection: The higher the value is, the more sensitive the system responds to the blurriness of the image.

The sensitivity value of Abnormal Color Detection: The higher the value is, the more sensitive the system responds to the color shift of the image.

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910
Go to Config→Alarm→Video Exception interface as shown below.



1. Enable the applicable detection that's desired.
   Scene Change Detection: Alarms will be triggered if the scene of the monitor video has changed.
   Video Blur Detection: Alarms will be triggered if the video becomes blurry.
   Video Cast Detection: Alarms will be triggered if the image is abnormal because of color deviation.
2. Set the alarm holding time.
3. Click "Save" button to save the settings.
4. Set the sensitivity of the exception detection. Click "Sensitivity" tab to go to the interface as shown below.



   Drag the slider to set the sensitivity value or directly enter the sensitivity value in the textbox. Click "Save" button to save the settings.
   The sensitivity value of Scene Change Detection: The higher the value is, the more sensitive the system responds to the amplitude of the scene change.
   The sensitivity value of Video Blur Detection: The higher the value is, the more sensitive the system responds to the blurriness of the image.
   The sensitivity value of Video Cast Detection: The higher the value is, the more sensitive the system responds to the color shift of the image.

5. Click "Linkage" to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

After checking "Trigger SD Card Snapshot" and/or "Trigger SD Card Recording", you can search the recorded files or snapshots of video exception by selecting the "Common" event.

※ The requirements of camera and surrounding area

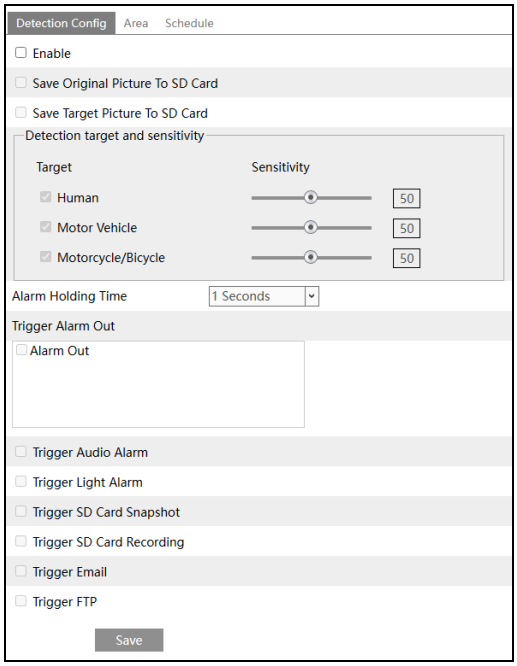
1. Auto-focusing function should not be enabled for exception detection.
2. Try not to enable exception detection when light changes greatly in the scene.
3. Please contact us for more detailed application scenarios.

4.4.3 Line Crossing

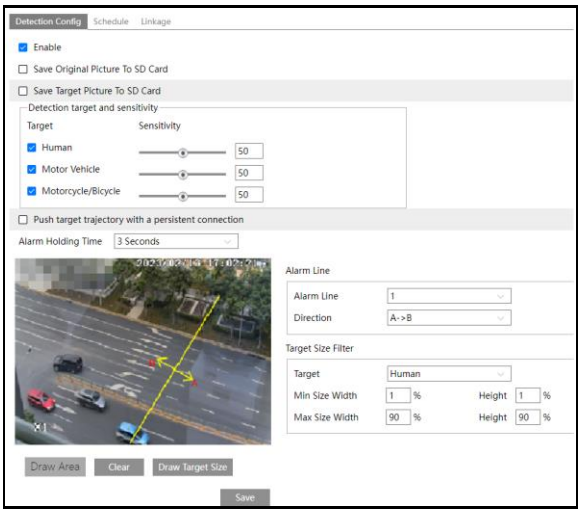
Line Crossing: Alarms will be triggered if the target crosses the pre-defined alarm lines.

Go to Config→Event→Line Crossing interface as shown below.

GV-GEBF4911 / GFER6900



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



1. Enable line crossing alarm and select the snapshot type and the detection target.

   Save Original Picture to SD Card: If it is enabled, the detected original pictures will be captured and saved to the SD card when the targets cross the alarm line.

   Save Target Picture to SD Card: If it is enabled, the detected target cutout pictures will be captured and saved to the SD card when the targets cross the alarm line.

Note: To save snapshots to the local PC, please enable "Local Smart Snapshot Storage" in the local config interface first. To save snapshots to the SD card, please install an SD card first.

Detection Target:

- **Human:** Select it and then alarms will be triggered if someone crosses the pre-defined alarm lines.
- **Motor Vehicle**: Select it and then alarms will be triggered if a vehicle with four or more wheels (eg. a car, bus or truck) crosses the pre-defined alarm lines.
- **Motorcycle/Bicycle**: Select it and then alarms will be triggered if a vehicle with two wheels (eg. a motorcycle or bicycle) crosses the pre-defined alarm lines.

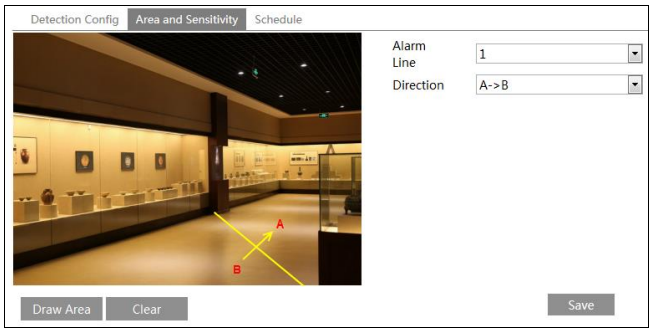
All of the three types of objects can be selected simultaneously. Please select the detection objects as needed. If no object / target is selected, alarms will not be triggered even if line crossing detection is enabled.

Push target trajectory with a persistent connection (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): Push target trajectory (moving coordinate) to API test tool with a persistent connection. If enabled, the system will push the target trajectory upon detecting a target. If disabled, the system will push the target trajectory only when triggering line crossing alarm.

2. Set the alarm holding time.

For GV-GEBF4911 / GFER6900

3. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.
4. Click "Save" button to save the settings.
5. Set area and sensitivity of the line crossing alarm. Click the "Area and Sensitivity" tab ("Area" tab for GV-GFER6900) to go to the interface as shown below.



Set the alarm line number and direction. Up to 4 lines can be added. Multiple lines cannot be added simultaneously.

Direction: A←→B, A→B and A←B optional. This indicates the direction of the intruder/vehicle crosses over the alarm line.

- **A←→B**: The alarm will be triggered when the intruder/vehicle crosses over the alarm line from B to A or from A to B.
- **A→B**: The alarm will be triggered when the intruder/vehicle crosses over the alarm line from A to B.
- **A←B**: The alarm will be triggered when the intruder/vehicle crosses over the alarm line from B to A.

Click the "Draw Area" button and then drag the mouse to draw a line in the image. Click the "Stop Draw" button to stop drawing. Click the "Clear" button to delete the lines. Click the "Save" button to save the settings.

6. Set the schedule of the line crossing alarm. The setup steps of the schedule are the same as the schedule recording setup (See 4.1.4.2 Schedule Recording Settings).
7. In the live view interface, click "Fisheye" (ceiling mounting mode) to view line crossing detection. (This step is only applicable to GV-GFER6900)

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

3. Set alarm lines and target size filter for line crossing detection.

   Set the alarm line number and direction. Four lines can be added. Multiple lines cannot be added simultaneously.

   Direction: A←→B, A→B and A←B optional. This indicates the direction of the intruder who crosses over the alarm line that would trigger the alarm.

   A←→B: The alarm will be triggered when the intruder crosses over the alarm line from B to A or from A to B.

   A→B: The alarm will be triggered when the intruder crosses over the alarm line from A to B.

   A←B: The alarm will be triggered when the intruder crosses over the alarm line from B to A.

   Click the “Draw Area” button and then drag the mouse to draw a line in the image. Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the lines. Click the “Save” button to save the settings.

   To set target size filter:

   Click “Draw Target Size” to draw the maximum and minimum size of a specific target as shown below.

   Target: Choose “Human”, “Motor Vehicle” or “Motorcycle/Bicycle” as needed.

   Green box is the maximum target detection box; yellow box is the minimum target detection box.

   Click the green box to edit the maximum target detection box; click the yellow box to edit the minimum target detection box.

   Drag one of four corners of the green or yellow box to change the box size. The corresponding size value on the right will be changed too. You can also enter the digital number to directly change the box size.

   Click and drag the green or yellow box to move its position.

   Finally, click “Save” to save the settings.

   After the target size range is set, only the target whose size is between the minimum value and the maximum value can be detected.

4. Click “Save” button to save the settings.
5. Set the schedule of the line crossing detection. The setup steps of schedule are the same as the motion detection schedule settings (See 4.1.4.2 Schedule Recording Settings).
6. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

※ Configuration requirements of camera and surrounding area

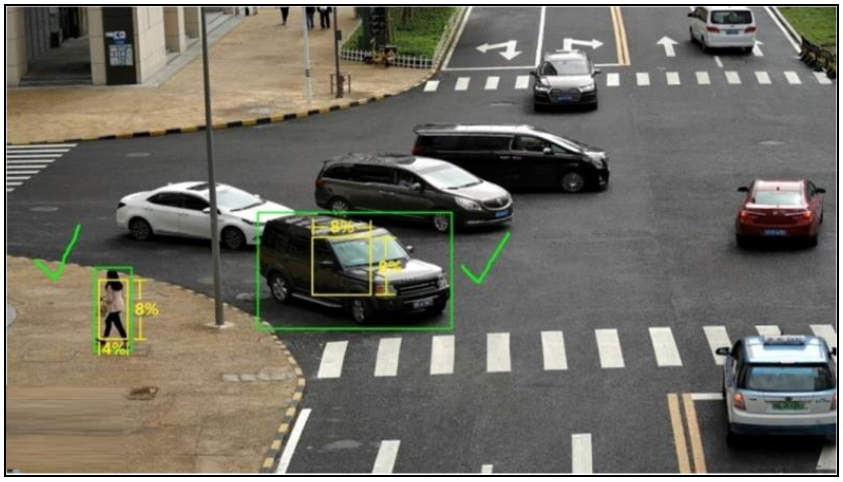
1. Auto-focusing function should not be enabled for line crossing detection.
2. Avoid the scenes with many trees or the scenes with various light changes (like many flashing headlights). The ambient brightness of the scenes shouldn’t be too low.
3. Cameras should be mounted at a height of 2.8 meters or above.
4. The recommended depression angle of the camera is from 30° to 45° (See 8. Installation suggestion below).
5. For pedestrians, their heads and main bodies should be clearly visible on a video. The detected objects should not be less than 1% of the entire image and the largest sizes of the detected objects should not be more than 1/8 of the entire image.

   For vehicles, the depression angle should not be more than the recommended value. The sideways or horizontal viewing angle is recommended on a video.
6. Make sure cameras can view objects for at least 2 seconds in the detected area for accurate detection.
7. Adequate light and clear scenery are crucial for line crossing detection.
8. Please adjust the installation position or focus to meet the requirements of the target recognition size.

   The recommended target recognition size:

Percentage	Human	Motor Vehicle	Motorcycle/Bicycle
Minimum (Width × Height)	4% × 8%	8% × 8%	4% × 4%
Maximum (Width × Height)	50%× 50%	50%× 50%	50%× 50%

Note: The percentage means that a target occupies the percentage of the entire image. For example, in a 1080p (1920×1080) video image, the minimum resolution of human is 80×160 (w=1920 x 4%=80, h=1920 x 8%=160).



Correct example

The target recognition box meets the requirements of the minimum size. The yellow box stands for the minimum recognition size. The green box stands for the set target box.

Wrong example

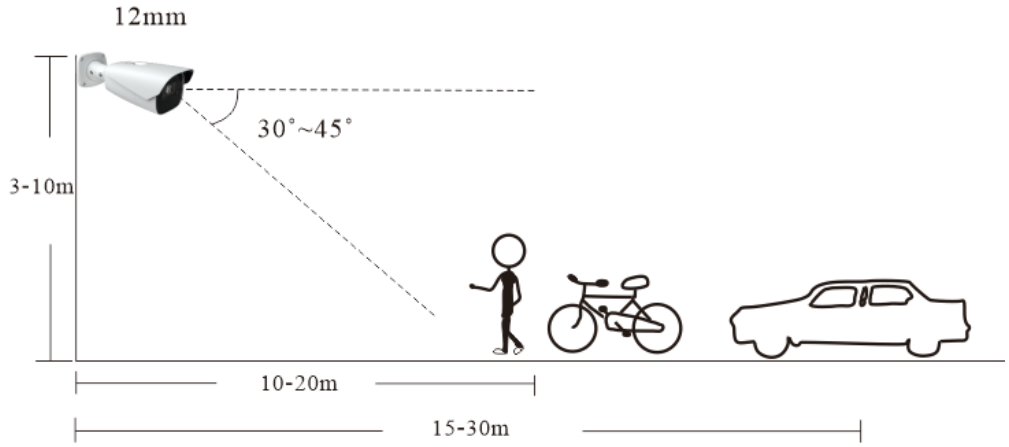
The yellow box stands for the minimum recognition size. The green box stands for the set target box. These two target recognition boxes don’t meet the requirement of the minimum size. Therefore, you need to adjust the camera position or focus as needed.

9. Installation suggestion:

Outdoor mounting:

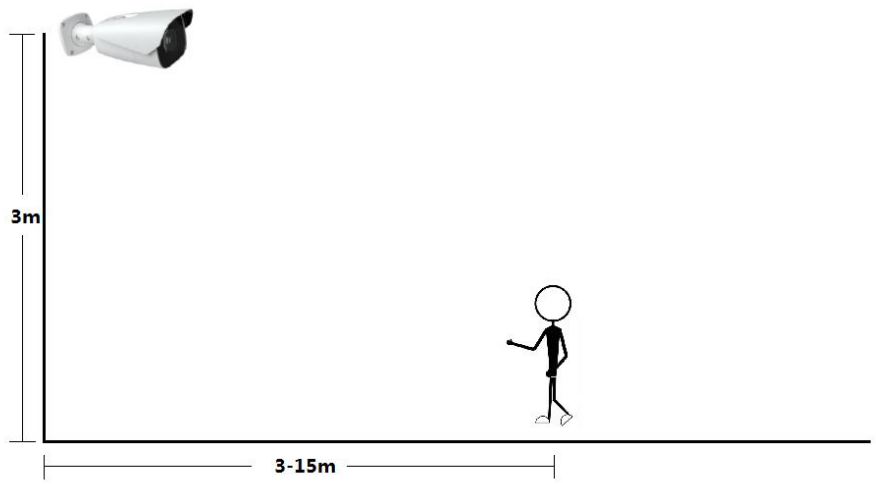
The optimal detection distance varies due to different focal length. Please refer to the following table.

Focal Length	Installation Height(m)	Human/Motorcycle/Bicycle		Motor Vehicle	
		Maximum Distance(m)	Optimal Distance(m)	Maximum Distance(m)	Optimal Distance(m)
2.8 mm	3-10	8	4-8	15	10-15
3.6 mm	3-10	10	5-10	20	15-20
12 mm	3-10	25	10~20	35	15~30
22 mm	3-10	45	30~40	70	20~50



Example for 12 mm focal length

Indoor Mounting:

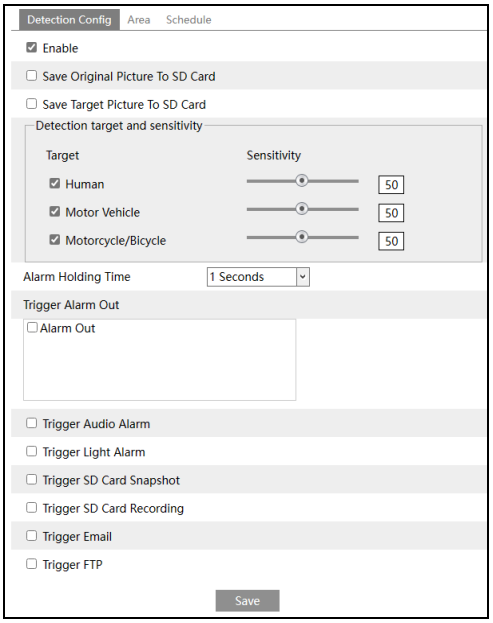


4.4.4 Region Entrance

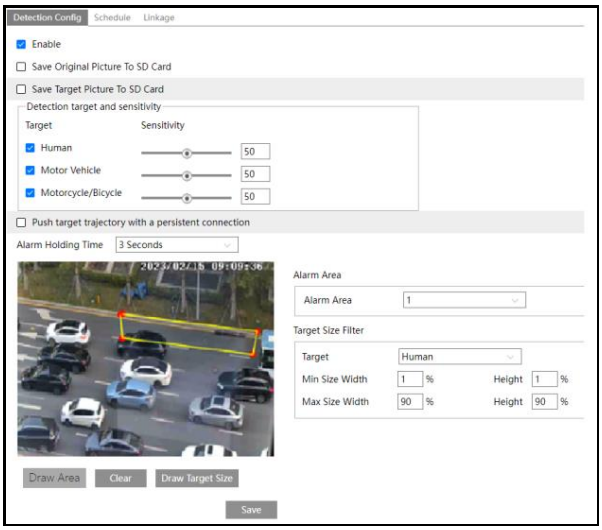
Region Entrance: Alarms will be triggered if the target enters the pre-defined areas.

Go to Config→Event→Region Entrance interface as shown below.

GV-GEBF4911 / GFER6900



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



1. Enable region entrance detection and select the snapshot type and the detection target.

   Save Original Picture to SD Card: If it is enabled, the detected original pictures will be captured and saved to the SD card when the targets intrude into the pre-defined areas.

   Save Target Picture to SD Card: If it is enabled, the detected target cutout pictures will be captured and saved to the SD card when the targets intrude into the pre-defined areas.

Note: To save snapshots to the local PC, please enable "Local Smart Snapshot Storage" in the local config interface first. To save snapshots to the SD card, please install an SD card first.

Detection Target:

- **Human:** Select it and then alarms will be triggered if someone intrudes into the pre-defined area.
- **Motor Vehicle**: Select it and then alarms will be triggered if a vehicle with four or more wheels (eg. a car, bus or truck) intrudes into the pre-defined area.
- **Motorcycle/Bicycle**: Select it and then alarms will be triggered if a vehicle with two wheels (eg. a motorcycle or bicycle) intrudes into the pre-defined area.

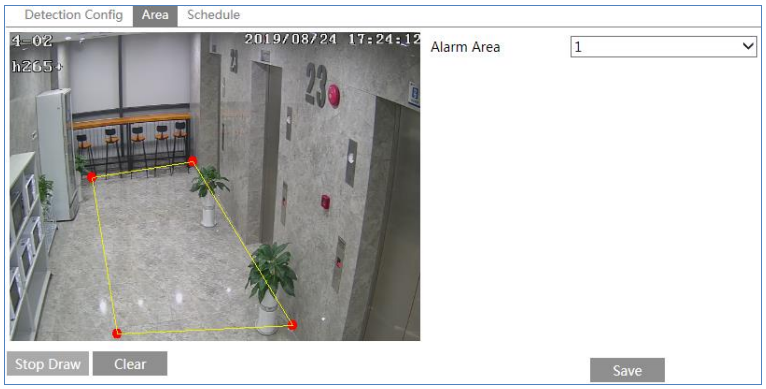
All of the three types of objects can be selected simultaneously. Please select the detection objects as needed. If no object/target is selected, alarms will not be triggered even if intrusion detection is enabled.

Push target trajectory with a persistent connection (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): Push target trajectory (moving coordinate) to API test tool with a persistent connection. If enabled, the system will push the target trajectory upon detecting a target. If disabled, the system will push the target trajectory only when triggering line crossing alarm.

2. Set the alarm holding time.

For GV-GEBF4911 / GFER6900

3. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.
4. Click the “Save” button to save the settings.
5. Set the alarm area of the region entrance detection. Click the “Area” tab to go to the interface as shown below.



Set the alarm area number on the right side. Up to 4 alarm areas can be added.

Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image on the left side (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

6. Set the schedule of the region intrusion detection. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

3. Set alarm areas and target size filter for region intrusion detection.
4. Set the alarm area number. Four alarm areas can be added.
5. Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

Target size filter setup: The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing).

6. Set the schedule of the region entrance detection. The setup steps of schedule are the same as the motion detection schedule settings (See 4.1.4.2 Schedule Recording Settings).
7. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

※ Configuration requirements of camera and surrounding area

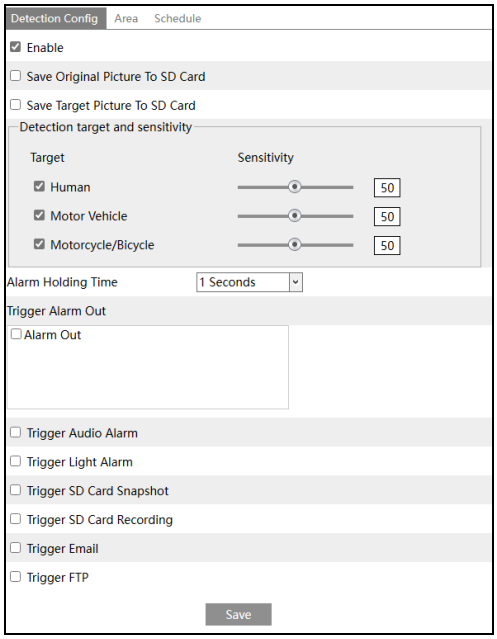
The requirements are similar to line crossing detection. Please refer to *Configuration requirements of camera and surrounding area* in 4.4.3 Line Crossing for details.

4.4.5 Region Exiting

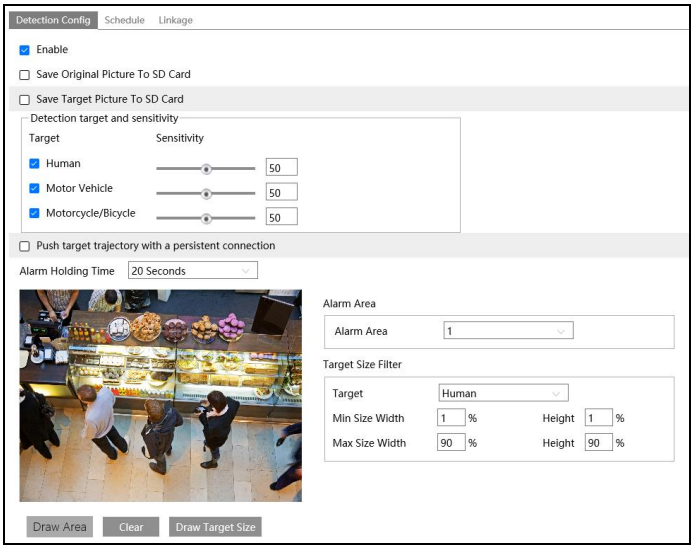
Region Exiting: Alarms will be triggered if the target exits from the pre-defined areas.

Go to Config→Event→Region Exiting interface as shown below.

GV-GEBF4911 / GFER6900



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



1. Enable region exiting detection and select the snapshot type and the detection target.
2. Set the alarm holding time and alarm trigger options.
3. Set the alarm area of the region exiting detection.
4. Set the schedule of the region exiting detection.

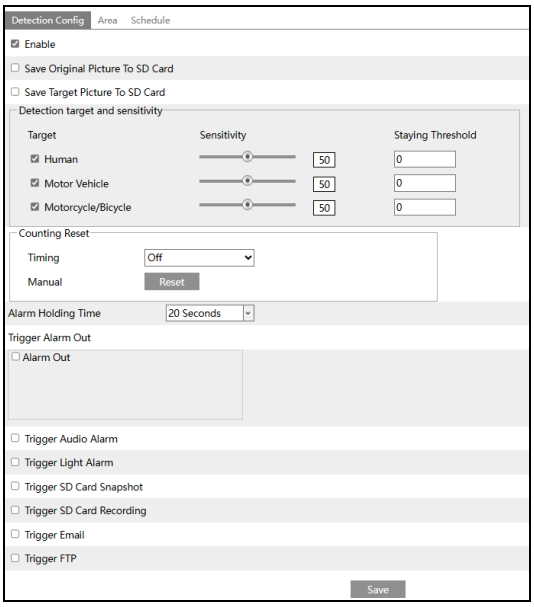
The setup steps of the region exiting detection are the same as the region entrance detection setup (See 4.4.4 Region Entrance for details).

4.4.6 Target Counting by Line

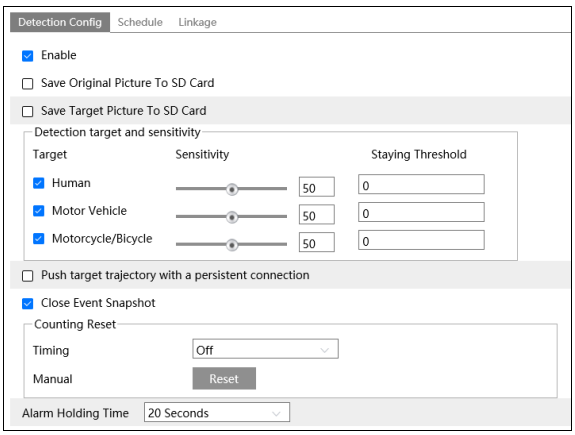
This function is to calculate the number of the people or vehicles crossing the alarm line through detecting, tracking and counting the shapes of the people or vehicles.

1. Go to Config→Event→Target Counting by Line as shown below.

GV-GEBF4911 / GFER6900



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



2. Enable target counting by line and select the snapshot type and the detection target.

   Detection Target: Select the target to calculate. Human, motor vehicle and motorcycle/bicycle can be selected.

   Staying Threshold: When the targets (human/vehicle) staying in the specified area exceed the threshold, alarms will be triggered.

   Counting Reset: The current number of the target counting can be reset. You can choose to reset the counting daily, weekly or monthly. Click “Reset” to manually reset the current number of crossing line people/car/bike counting.

   Push target trajectory with a persistent connection (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): Push target trajectory (moving coordinate) to API test tool with a persistent connection. If enabled, the system will push the target trajectory upon detecting a target. If disabled, the system will push the target trajectory only when triggering target counting by line.

   Close Event Snapshot (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): If enabled, the pictures that are captured when counting targets will be neither saved to an SD card/local PC nor pushed to the NVR/APP/platform/….

For GV-GEBF4911 / GFER6900

3. Set the alarm trigger options. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

4. Set the alarm line. Click the “Area” tab to go to the interface as shown below.

Set the alarm line number and direction. Only one alarm line can be added.

Direction：A→B and A←B can be optional. The direction of the arrow is entrance.

Statistics: If enabled, you can see the statistical information in the live view interface. If disabled, the statistical information will not be displayed in the live view interface.

The statistical OSD information can be customized as needed.

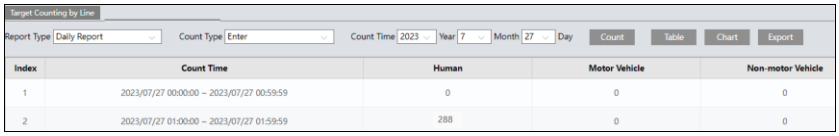
Click the “Draw Area” button and then drag the mouse to draw a line in the image. Check “Statistics” and then move the red box to change the position of the statistical information displayed on the screen. Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the lines.

Click the “Save” button to save the settings.

5. Set the schedule of the target counting by line. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).

6. View the statistical information in the live view interface. (For GV-GFER6900, click the Fisheye live preview mode in the live view interface.)

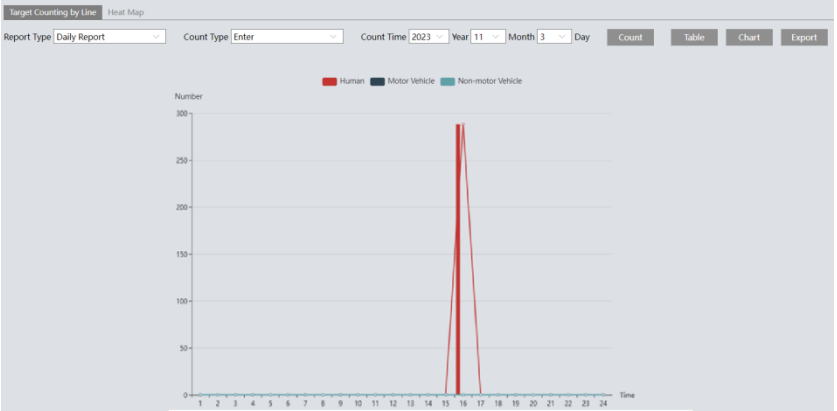
7. View the statistical information of target counting by line. Click “Statistics” to enter the following interface.



Select the report type. Daily report, weekly report, monthly report and annual report are selectable.

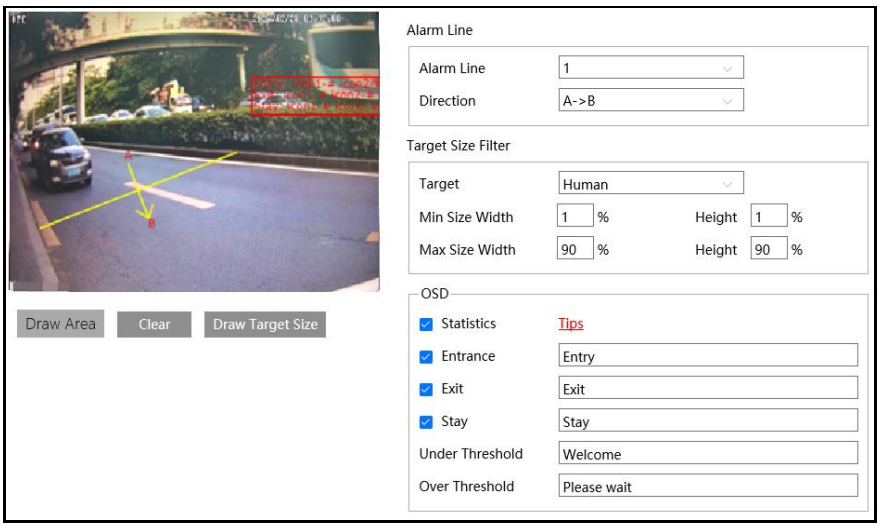
Select the count type. Enter or leave can be optional.

Select the start time and then click “Count”. Then the counting result will display in the statistic result area. Click Table or Chart to display the result in different way.



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

3. Set the alarm holding time.
4. Set alarm lines and target size filter.



Set the alarm line number and direction. Only one alarm line can be added.

Direction: A→B and A←B can be optional. The direction of the arrow is entrance.

Click the “Draw Area” button and then drag the mouse to draw a line in the image. Click the “Clear” button to delete the lines.

Target size filter setup: The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

Statistics: If enabled, you can see the statistical information in the live view interface. If disabled, the statistical information will not be displayed in the live view interface.

Check “Statistics” and then move the red box to change the position of the statistical information displayed on the screen.

The statistical OSD information can be customized as needed.

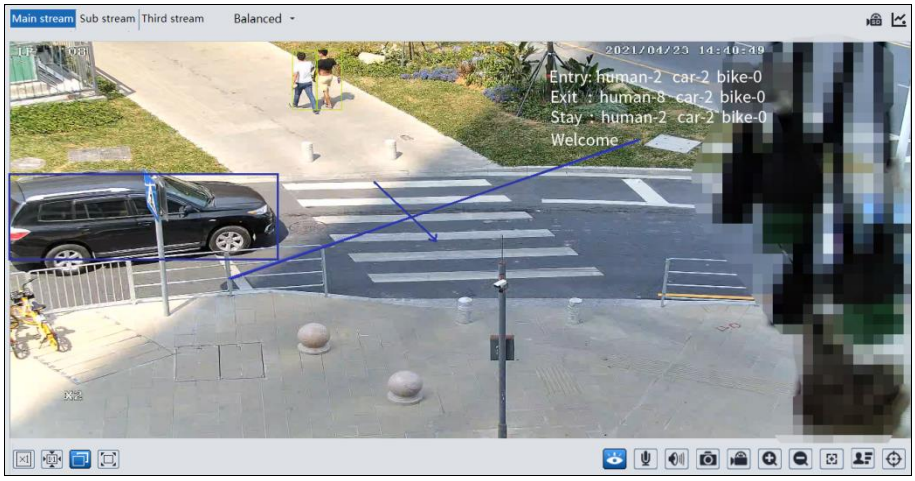
Note: When target counting by line and by area are enabled simultaneously, the OSD position shown in the image depends on the OSD position of target counting by area.

Click “Save” button to save the settings.

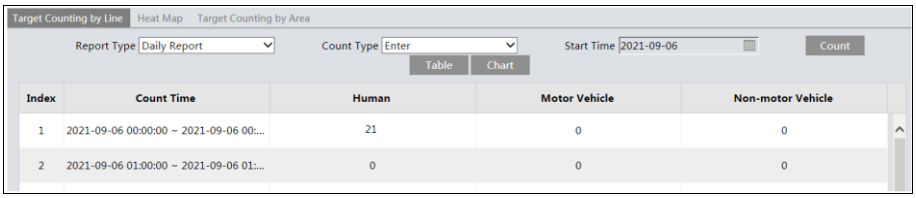
5. Set the schedule of the target counting by line. The setup steps of schedule are the same as the motion detection schedule settings (See 4.1.4.2 Schedule Recording Settings).

6. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

7. View the statistical information in the live view interface.



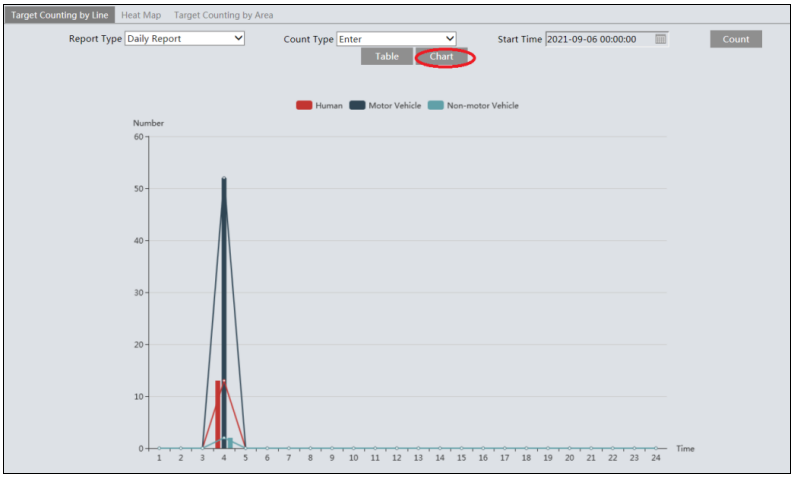
8. View the statistical information of target counting by line. Click Statistics→Target Counting by Line (**GV-GEBF4911 / GFER6900**) / Chart→Target Counting by Line (**GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910**) to enter the following interface.



Select the Report Type. Daily Report, Weekly Report, Monthly Report, and Annual Report are selectable.

Select the Count Type. Enter or leave can be optional.

Select the start time and then click “Count”. Then the counting result will display in the statistic result area. Click Table or Statistics to display the result in different way.



※ Configuration requirements of camera and surrounding area

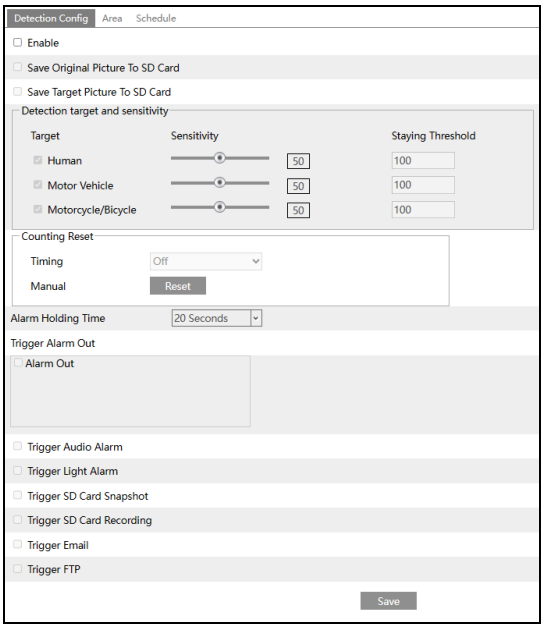
The requirements are similar to line crossing detection. Please refer to *Configuration requirements of camera and surrounding area* in 4.4.3 Line Crossing for details.

4.4.7 Target Counting by Area

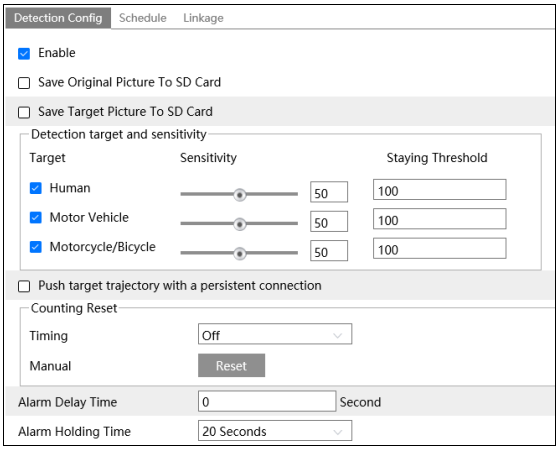
This function is to calculate the number of the people or vehicles intruding into the pre-defined area through detecting, tracking and counting the shapes of the people or vehicles.

Go to Config→Event→Target Counting by Area as shown below.

GV-GEBF4911



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



Note: The Target Counting by Area function is not applicable to GV-GFER6900.

1. Enable target counting by area, select the snapshot type, the detection target, counting reset.

For GV-GEBF4911

2. Set up alarm triggers. The setup steps are the same as the target counting by line. Please refer to 4.3.1 Motion Detection for details.
3. Set the statistic area. Click the "Area" tab to go to the interface as shown below.

Select the alarm area number on the right side. Only one alarm area can be added.

Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image on the left side (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

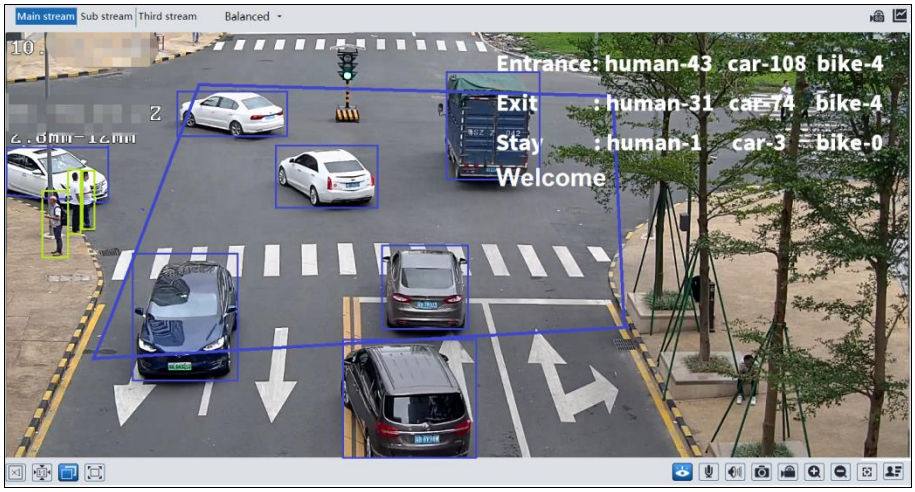
Push target trajectory with a persistent connection (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910): The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

Statistics (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910): If enabled, you can see the statistical information in the live view interface. If disabled, the statistical information will not be displayed in the live view interface.

Check “Statistics” and then move the red box to change the position of the statistical information displayed on the screen.

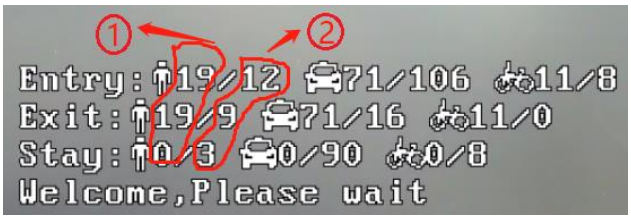
The statistical OSD information can be customized as needed.

4. Set the schedule of the target counting by area. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).
5. To set up alarm triggers for GV-GDR4900 / GEB4900, click “Linkage”. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.
6. View the statistical information in the live view interface.



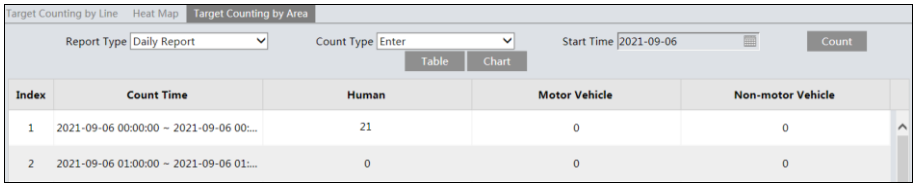
Note: When target counting by line and by area are enabled simultaneously, the OSD position shown in the image depends on the OSD position of target counting by area.

Only for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



①: the statistical number of target counting by area
②: the statistical number of target counting by line
Each line of the above OSD information (including OSD content, colon, slashes and images) cannot exceed 37 characters, or some data will not be displayed completely.

7. View the statistical information of target counting by area. Click Statistics→Target Counting by Area (**GV-GEBF4911**) / Chart→ Target Counting by Area (**GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910**) to enter the following interface.



Please select Report Type, Count Type and Count Time as needed. Then click “Count” to search the statistic result. Click “Statistics” to view the statistic result intuitively.

※ Configuration requirements of camera and surrounding area

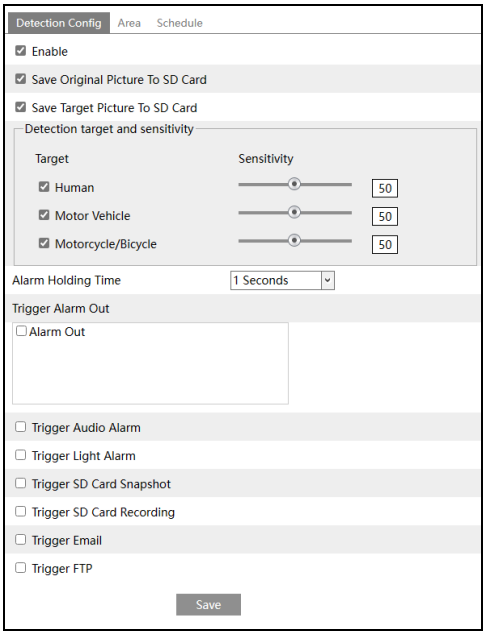
The requirements are similar to line crossing detection. Please refer to *Configuration requirements of camera and surrounding area* in 4.4.3 Line Crossing for details.

4.4.8 Region Intrusion

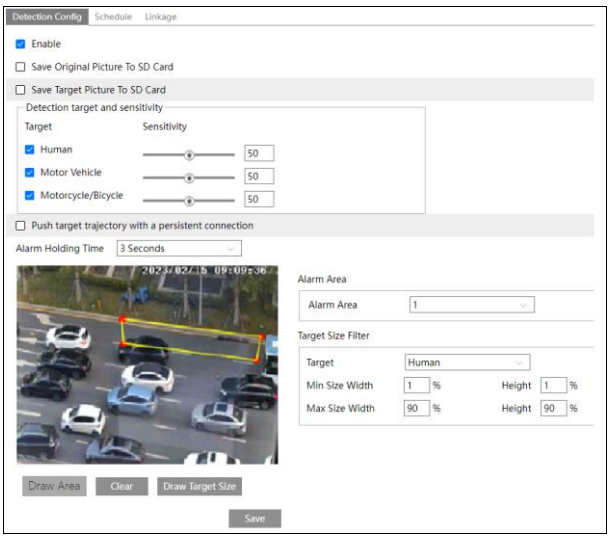
Region Intrusion: Alarms will be triggered if the target intrudes into the pre-defined areas. This function can be applicable to important supervision places, danger areas and prohibited areas, like military administrative zones, high danger areas, no man's areas, etc.

Go to Config→Event→Region Intrusion interface as shown below.

GV-GEBF4911 / GFER6900



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



1. Enable intrusion detection and select the snapshot type and the detection target.

   Save Original Picture to SD Card: If it is enabled, the detected original pictures will be captured and saved to the SD card when the targets intrude into the pre-defined areas.

   Save Target Picture to SD Card: If it is enabled, the detected target cutout pictures will be captured and saved to the SD card when the targets intrude into the pre-defined areas.

Note: To save snapshots to the local PC, please enable "Local Smart Snapshot Storage" in the local config interface first. To save snapshots to the SD card, please install an SD card first.

Detection Target:

- **Human:** Select it and then alarms will be triggered if someone intrudes into the pre-defined area.
- **Motor Vehicle**: Select it and then alarms will be triggered if a vehicle with four or more wheels (e.g., a car, bus or truck) intrudes into the pre-defined area.
- **Motorcycle/Bicycle**: Select it and then alarms will be triggered if a vehicle with two wheels (e.g., a motorcycle or bicycle) intrudes into the pre-defined area.

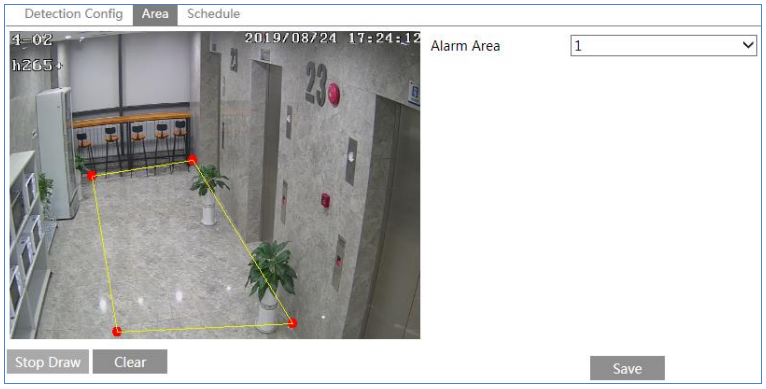
All of the three types of objects can be selected simultaneously. Please select the detection objects as needed. If no object/target is selected, alarms will not be triggered even if intrusion detection is enabled.

Push target trajectory with a persistent connection (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910): The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

2. Set the alarm holding time.

For GV-GEBF4911 / GFER6900

3. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to motion detection chapter for details.
4. Click the “Save” button to save the settings.
5. Set the alarm area of the region intrusion detection. Click the “Area” tab to go to the interface as shown below.



Set the alarm area number on the right side. Up to 4 alarm areas can be added.

Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image on the left side (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

6. Set the schedule of the region intrusion detection. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).
7. In the live view interface, click “Fisheye” (ceiling mounting mode) to view region intrusion detection. (This step is only applicable to GV-GFER6900)

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

3. Set alarm areas and target size filter for region intrusion detection.
4. Set the alarm area number. Four alarm areas can be added.

   Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

   Target size filter setup: The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).
5. Click “Save” button to save the settings.
6. Set the schedule of region intrusion detection. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).
7. To set up alarm triggers, click “Linkage”. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

※ Configuration requirements of camera and surrounding area

The requirements are similar to line crossing detection. Please refer to *Configuration requirements of camera and surrounding area* in 4.4.3 Line Crossing for details.

4.4.9 Face Detection

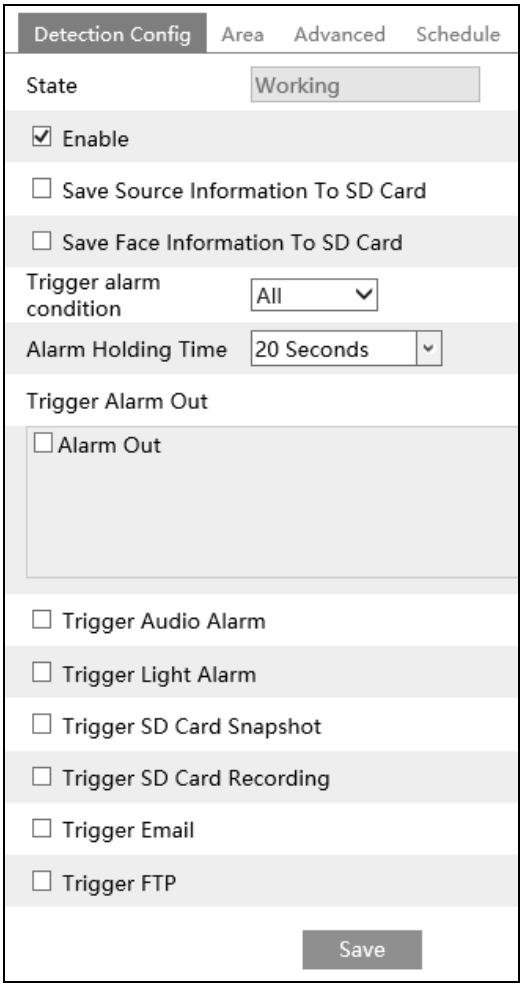
Face detection function is to detect the face appearing in the surveillance scene. Alarms will be triggered when a face is detected.

Note: The Face Detection function is not applicable to GV-GFER6900.

The setting steps are as follows:

For GV-GEBF4911

1. Go to Config→Event→Face Detection as shown below.



2. Enable the face detection function.

   Save Source Information to SD Card: if checked, the whole picture will be saved to the local PC or SD card when detecting a face.

   Save Face Information to SD Card: if checked, the captured face picture will be saved to the local PC or SD card when detecting a face.

Note: To save images to the local PC, please enable the local smart snapshot storage first (Config→System→Local Config). To save images to the SD card, please install an SD card first.

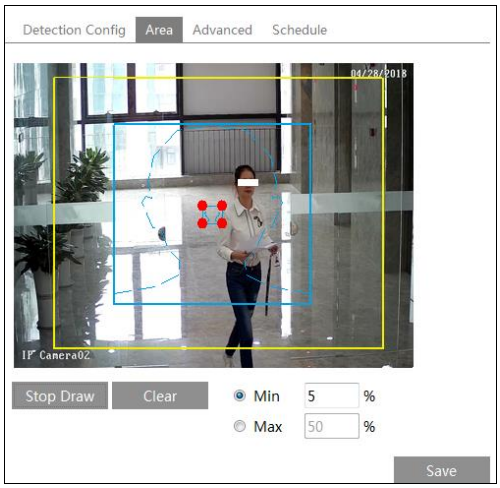
---

3. Set alarm holding time and alarm trigger options. The alarm trigger setup steps are the same as motion detection setup. Please refer to 4.3.1 Motion Detection chapter for details.

   Trigger alarm condition: all or mask off can be selectable.

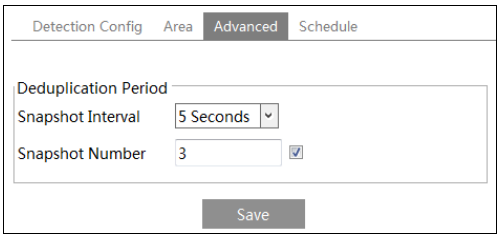
   - All: Alarms will be triggered when the camera detects a face (with/without a mask).
   - Mask off: Alarms will be triggered when the detected person is not wearing a mask on the face.

4. Set alarm detection area.



   Click “Draw Area” and drag the border lines of the rectangle to modify its size. Move the rectangle to change its position. Click “Stop Draw” to stop drawing the area. Click “Clear” to clear the area. Then set the detectable face size by defining the maximum value and the minimum value (The default size range of a single face image occupies from 3% to 50% of the entire image).

5. Advanced settings. Choose the snapshot interval and number as needed to avoid capturing multiple similar pictures in a very short period of time.



Snapshot Interval: If 5 seconds is selected, the camera will capture the same target once every 5 seconds during its continuous tracking period.

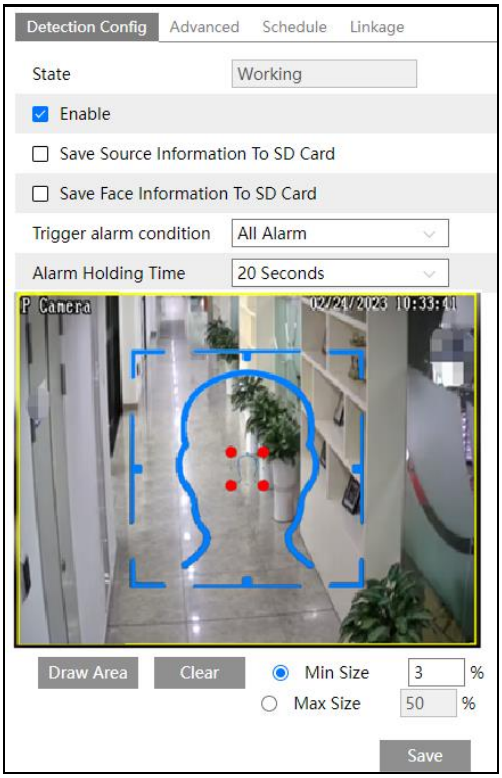
Snapshot Number: If the snapshot number is enabled and set (eg. 3), the camera will capture the same target once every 5 seconds and it will capture this target 3 times at most during its continuous tracking period. If the snapshot number is disabled, the camera will capture the same target once every 5 seconds until the target disappears in the detected area.

6. Set the schedule of the face detection. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

1. Click Config→Event→Enable Event. Select the face event and then save the setting. After the camera restarts successfully, you can view the face detection menu.

2. Go to Config→Event→Face Detection as shown below.



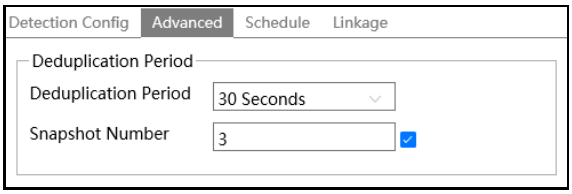
3. Enable the face detection function.
   Save Source Information to SD Card: if checked, the whole picture will be saved to SD card when detecting a face.
   Save Face Information to SD Card: if checked, the captured face picture will be saved to SD card when detecting a face.

Note: To save images to the local PC, please enable the local smart snapshot storage first (Config→System→Local Config). To save images to the SD card, please install an SD card first.

---

4. Set alarm condition and the alarm holding time.
   Trigger alarm condition: all or mask off can be selectable.
   All: Alarms will be triggered when the camera detects a face (with/without a mask).
   Mask off: Alarms will be triggered when the detected person is not wearing a mask on the face.
5. Set alarm detection area.
   Click “Draw Area” and drag the border lines of the rectangle to modify its size. Move the rectangle to change its position. Click “Stop Draw” to stop drawing the area. Click “Clear” to clear the area. Then set the detectable face size by defining the maximum value and the minimum value (The default size range of a single face image occupies from 3% to 50% of the entire image).

6. Advanced settings. Choose the snapshot interval and number as needed to avoid capturing multiple similar pictures in a very short period of time.



Deduplication Period: If 30 seconds is selected, the camera will capture the same target once every 30 seconds during its continuous tracking period.
Snapshot Number: If the snapshot number is enabled and set (eg. 3), the camera will capture the same target once every 30 seconds and it will capture this target 3 times at most during its continuous tracking period. If the snapshot number is disabled, the camera will capture the same target once every 30 seconds until the target disappears in the detected area.

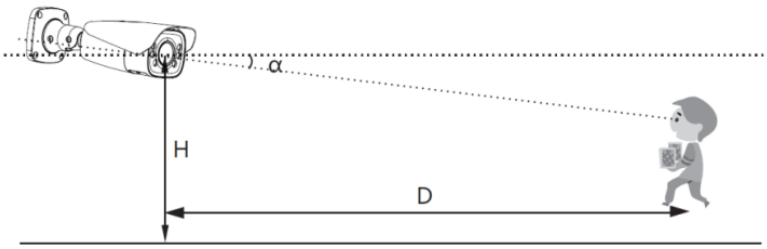
7. Advanced settings. Choose the snapshot interval and number as needed to avoid capturing multiple similar pictures in a very short period of time.
8. Set the schedule of face detection. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).
9. To set up alarm triggers, click “Linkage”. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

Face Capture View

After enabling face detection function, return to the live view interface. Click to go to the following interface. When there are faces detected, the face pictures will be listed on the right. The features of captured faces also can be displayed, such as gender, whether to wear a mask, whether to wear glasses, age group, etc.

※ Configuration requirements of camera and surrounding area

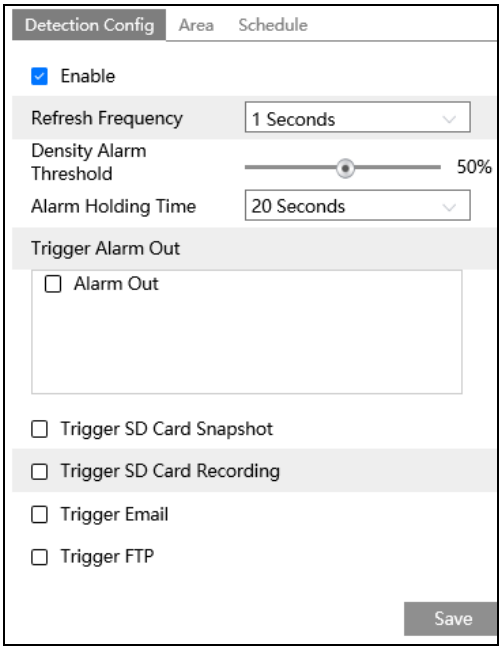
1. Cameras must be installed in the area with stable and adequate light sources.
2. The installation height ranges from 2.0 m to 3.5 m, adjustable according to the focal-length of different lenses and object distances.
3. The depression angle of the camera shall be less than or equal to 15°.



4. The object distance depends on the focal-length of the lens mounted in the camera.
5. In order to guarantee the captured face recognition rate, the requirement for face capture area: left or right turn angle is less than about 30°; pitching angle is less than 20°.
6. Face illumination must be uniform, if the brightness is low or there is a large area of shadow, need to do the light filling.
7. When the capture scenario is backlight, the camera's BLC/HLC/WDR need to be turned on, or fill the light.
8. The following scenes are not applicable, like crowded scenes (airport, railway station, square, etc.), backlight scenes, crossroads and so on.

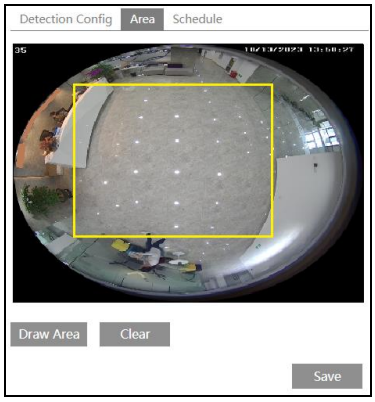
4.4.10 Crowd Density

This function can detect the density of the people in a specified area (like square, supermarket). Go to Config→Event→Crowd Density as shown below.



Note: The Crowd Density function is only applicable to GV-GFER6900.

1. Enable the crowd density detection.
2. Set “Refresh Frequency”, “Density Alarm Threshold” and “Alarm Holding Time”.
   Refresh Frequency: The refresh frequency of the detection result.
   Density Alarm Threshold: Alarms will be triggered once the percentage of the crowd density in a specified area exceeds the pre-defined threshold value.
3. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to motion detection section for details.
4. Set an alarm area for the crowd density detection. Click the “Area” tab as shown below. Click “Draw Area” and drag the mouse to draw a rectangle area. Drag the border lines of the rectangle to modify its size and move the rectangle to change its position. Click “Stop Draw” to stop drawing the area. Click “Clear” to clear the area.



5. Set the schedule of the crowd density detection. The setup steps of the schedule are the same as schedule recording setup (See *4.1.4.2 Schedule Recording Settings*).

Note: The camera only can roughly calculate the crowd density through detecting the human faces. The head or back of the person detected is not counted.

※Configuration of camera and surrounding area

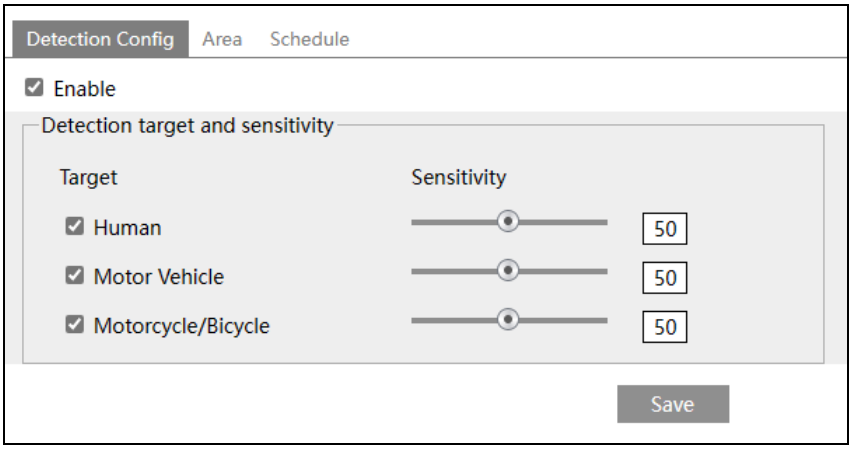
1. The camera lens should face to the people flow.
2. The size range of a single person image should take up from 1% to 5% of the entire image and the height range of a single person image should occupy from 1/5 to 1/2 of the entire image.
3. This function is inapplicable to the scene where there are many moving objects except human shape. (eg. moving cars)
4. A lot of trees and billboards will affect the detection results in the detected area.

4.4.11 Heat Map

Heat Map is to display the flow distribution of people/vehicles in pre-defined areas by different colors.

For GV-GEBF4911 / GFER6900

1. Enable Heat Map, set snapshot type and detection target type as needed.



Note: For **GV-GFER6900:**

1. The Motor Vehicle and Motorcycle/Bicycle targets are not applicable.
2. The Heat Map function is only available when the installation method is set to "Ceiling".

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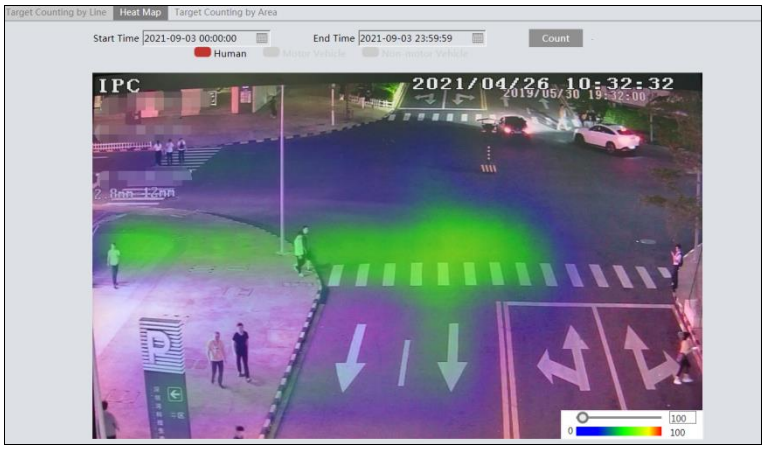
2. Set heat map display area. Up to 4 areas can be set.

Click the "Draw Area" button and then click around the area where you want to set as the alarm area in the image on the left side (the alarm area should be a closed area). Click the "Stop Draw" button to stop drawing. Click the "Clear" button to delete the alarm area. Click the "Save" button to save the settings.

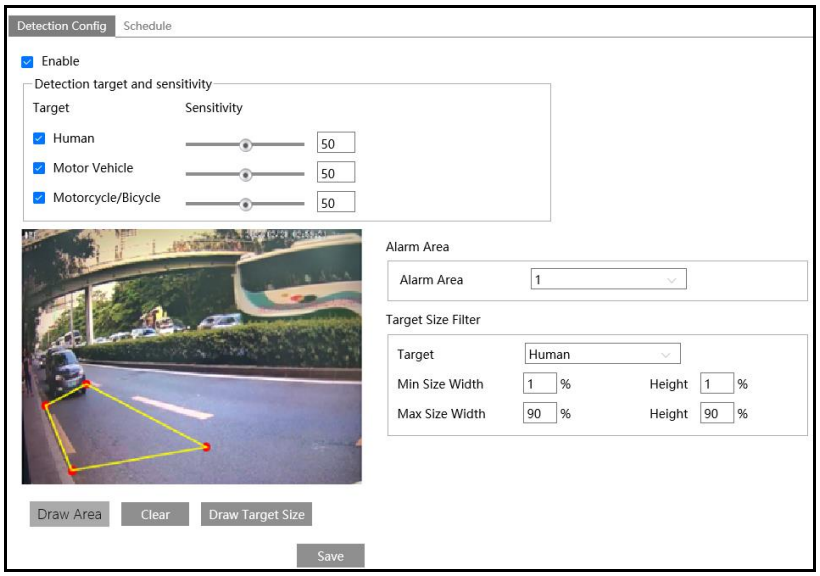
3. Set the schedule of heat map. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).

4. View the heat map data (click Statistics→Heat Map). Set the start time and the end time. Click “Count” to view the heat map as shown below. The default heat map is people flow data display. Click “Motor Vehicle” or “Non-motor Vehicle” to view the corresponding data. (People flow data is the only display option for GV-GFER6900.)



For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910

1. Enable Heat Map, set snapshot type and detection target type as needed.
2. Set heat map display area and target size filter. Up to 4 areas can be set.



Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

Target size filter setup: The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

3. Set the schedule of region intrusion detection. The setup steps of the schedule are the same as schedule recording setup (See 4.1.4.2 Schedule Recording Settings).
4. View the heat map data (click Chart→Heat Map). Set the start time and the end time.

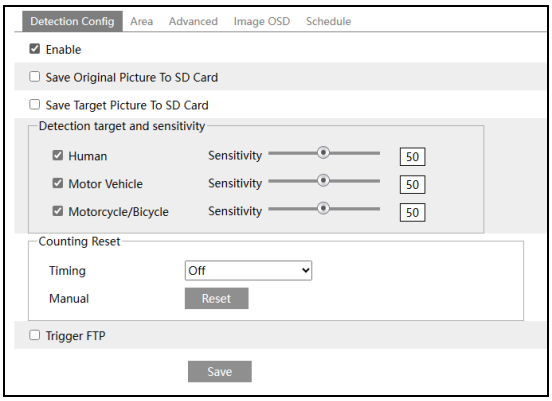
   Click “Count” to view the heat map as shown below. The default heat map is people flow data display. Click “Motor Vehicle” or “Motorcycle/bicycle” to view the corresponding data.

4.4.12 Video Metadata

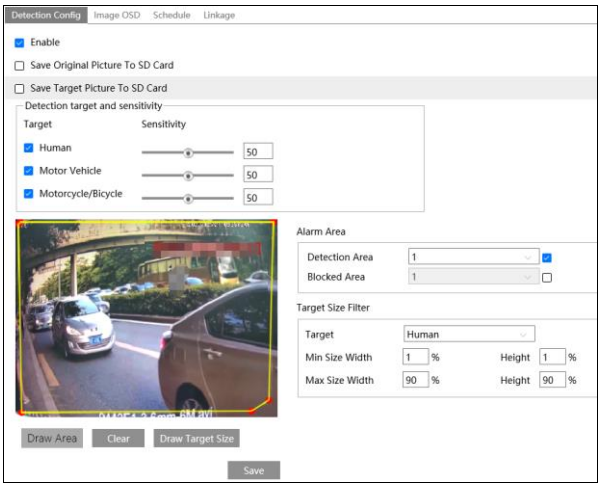
Video Metadata: Human, motor vehicle and non-motor vehicle in the video can be classified, counted and captured, and the relevant features can be extracted and displayed on the live interface.

Go to Config→Event→Video Metadata interface. The setting steps are as follows:

GV-GEBF4911



GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910



Note: The Video Metadata function is not applicable to GV-GFER6900.

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1. Enable video metadata and select the snapshot type and the detection target.

   Save Original Picture to SD Card: If it is enabled, the detected original pictures will be captured and saved to the SD card when the targets enter the pre-defined areas.

   Save Target Picture to SD Card: If it is enabled, the detected target cutout pictures will be captured and saved to the SD card when the targets enter the pre-defined areas.

   Detection target: Human, motor vehicle and motorcycle/bicycle. All of the three types of objects can be selected simultaneously.

   Counting Reset: The current number of the target counting can be reset. You can choose to reset the counting daily, weekly or monthly. Click “Reset” to manually reset the current number of crossing line people/car/bike counting.

   Blocked Area: Up to 4 blocked areas can be set. Targets that enter the pre-defined blocked area will not be captured.

   You need to set the detection area and blocked area separately.

   Target size filter setup (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910): The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

2. Check “Trigger FTP” as needed. For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910, click “Linkage” to access the interface.

3. Set the detection area and blocked area.

Detection Area: 4 detection areas can be set. Targets that enter in the pre-defined detection area will be counted and captured.

Blocked Area: 4 blocked areas can be set. Targets that enter in the pre-defined blocked area will not be counted and captured.

You need to set the detection area and blocked area separately.

To set detection area:

Check the checkbox of detection area and select the number and to set the detection area.

Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image on the left side (the alarm area should be a closed area). Click the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

To set blocked area:

Check the checkbox of blocked area and select the number and to set the blocked area. The setting steps are the same as detection area settings.

Statistics (only for GV-GEBF4911): If enabled, you can see the statistical information of human, motor vehicle and non-motor vehicle in the live view interface.

The statistical OSD information can be customized as needed.

4. Advanced settings. Click the “Advanced” tab to enter the advanced setting interface. Select the recognition mode as needed. Interval mode and instant mode can be selectable.
   Interval mode (only for GV-GEBF4911): the system will push the captured picture to the live interface according to the set interval time.

   Instant mode (only for GV-GEBF4911): the system will push the captured picture immediately once a target is detected.
5. Select the attribute information of the target. Click “Image OSD” and then select the relevant attribute information. When the target is detected, the information you select will be displayed in the attribute display area. See **Video Metadata View** below for details.
6. Set the schedule of video metadata function. The setup steps of the schedule are the same as schedule recording setup. (See 4.1.4.2 Schedule Recording Settings).

After all settings above are configured, return to the live interface to view the captured pictures and features.

Video Metadata View

In the live interface, click to view the following smart snapshots.

Human information will be shown on the right panel.

Motor vehicle and non-motor vehicle information will be shown on the left panel.

Click the captured picture to view the detailed information, including original picture, target picture and detailed attributes.

A maximum of 1,000 captured pictures can be shown on the live interface. If exceeded, the previous captured pictures will be overwritten.

Note: This function is not applicable to the scene with a large flow of people and vehicles.

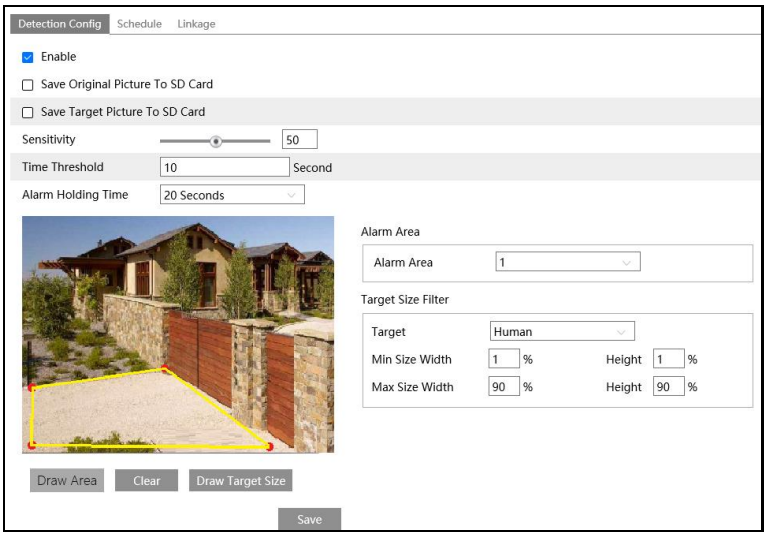
4.4.13 Loitering Detection

Loitering Detection: when someone entering and loitering in a pre-defined area exceeds the threshold, alarms will be triggered until the object leaves this area.

Note: The Loitering Detection function is only applicable to GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910.

Go to Event→Loitering Detection interface as shown below. The setting steps are as follows:

1. Enable loitering detection and select the snapshot type.



2. Set sensitivity, time threshold and alarm holding time.

   Sensitivity: The higher the value is, the easier the alarm can be triggered.

   Time Threshold: the time that a person is allowed to stay in the area. If a person staying and moving in the specified area exceeds the threshold, alarms will be triggered until this person leaves or stops moving.

   For example: Set the threshold to “60seconds; when a person staying and moving in the specified area exceeds 60seconds, an alarm is triggered and continues. 2 minutes later, this person stops moving in the specified area, and then the alarm stops. However, the alarm will continue once this person moves again in the specified area unless the person leaves this area.

   Alarm Holding Time: it is the time that the alarm extends for after an alarm ends.

3. Set alarm areas and target size filter.

   Select the alarm area number. Four alarm areas can be added.

   Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

Target size filter setup: The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

4. Set the schedule of the target counting by line. The setup steps of schedule are the same as the motion detection schedule settings (See 4.1.4.2 Schedule Recording Settings).
5. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

※ **Configuration requirements of camera and surrounding area**

1. Avoid enabling this function in complex scenes, such as a scene with a large flow of people and vehicles.
2. The requirements are similar to line crossing detection. Please refer to *Configuration requirements of camera and surrounding area* in 4.4.3 Line Crossing for details.

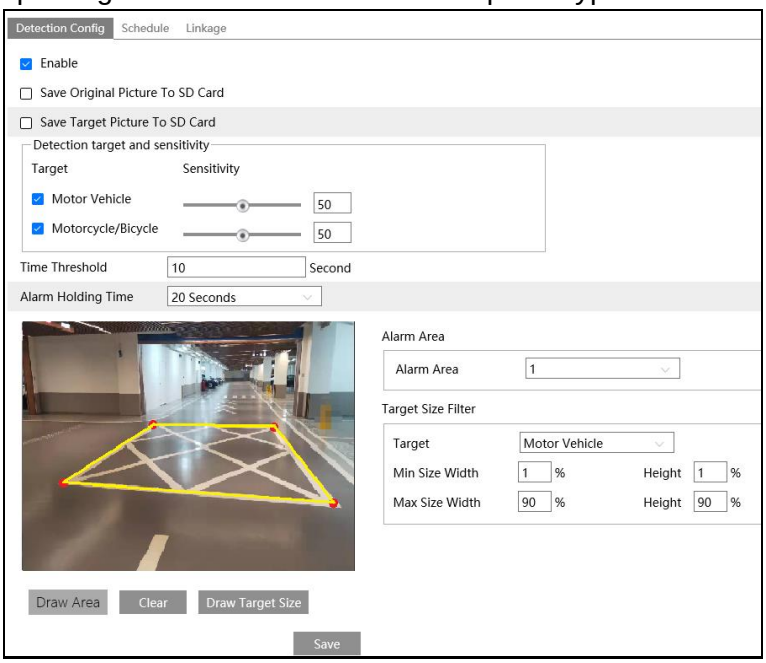
4.4.14 Illegal Parking Detection

Illegal Parking Detection: when a vehicle (like a car, truck, motorcycle, etc.) staying in a no-parking zone exceeds the threshold, alarms will be triggered until the vehicle is driven away.

Note: The Illegal Parking Detection function is only applicable to GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GVD4910.

Go to Event→Illegal Parking Detection. The setting steps are as follows:

1. Enable illegal parking detection and select the snapshot type.



2. Set the detection target, sensitivity, time threshold and alarm holding time.

   Motor Vehicle: a vehicle with four or more wheels

   Motorcycle/Bicycle Vehicle: a vehicle with two wheels (e.g., a motorcycle or bicycle)

   Sensitivity: the higher the value is, the easier the alarm can be triggered.

   Time Threshold: the time that a vehicle is allowed to stay in the specified area. If a vehicle staying in the area exceeds the threshold, alarms will be triggered until it is driven away. For example, the time threshold is set to 30s. When the system detects a vehicle stopping in the set no-parking zone, it will start counting. Alarms will be triggered after it stays for more than 30s. And the illegal parking alarm will not stop until the vehicle is driven away from the non-parking zone.

   Alarm Holding Time: it is the time that the alarm extends for after the overstaying vehicle leaves.

3. Set alarm areas and target size filter.

   Select the alarm area number. Four alarm areas can be added.

Click the “Draw Area” button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.

Target size filter setup: The setup steps of the target size filter are the same as line crossing target size filter setup (See 4.4.3 Line Crossing for details).

4. Set the schedule of the target counting by line. The setup steps of schedule are the same as the motion detection schedule settings (See 4.1.4.2 Schedule Recording Settings).
5. Click “Linkage” to configure the alarm linkage items. The setup steps are the same as motion detection. Please refer to 4.3.1 Motion Detection for details.

※ Configuration requirements of camera and surrounding area

1. Avoid enabling this function in complex scenes, such as a scene with a large flow of people and vehicles.
2. The requirements are similar to line crossing detection. Please refer to *Configuration requirements of camera and surrounding area* in 4.4.3 Line Crossing for details.

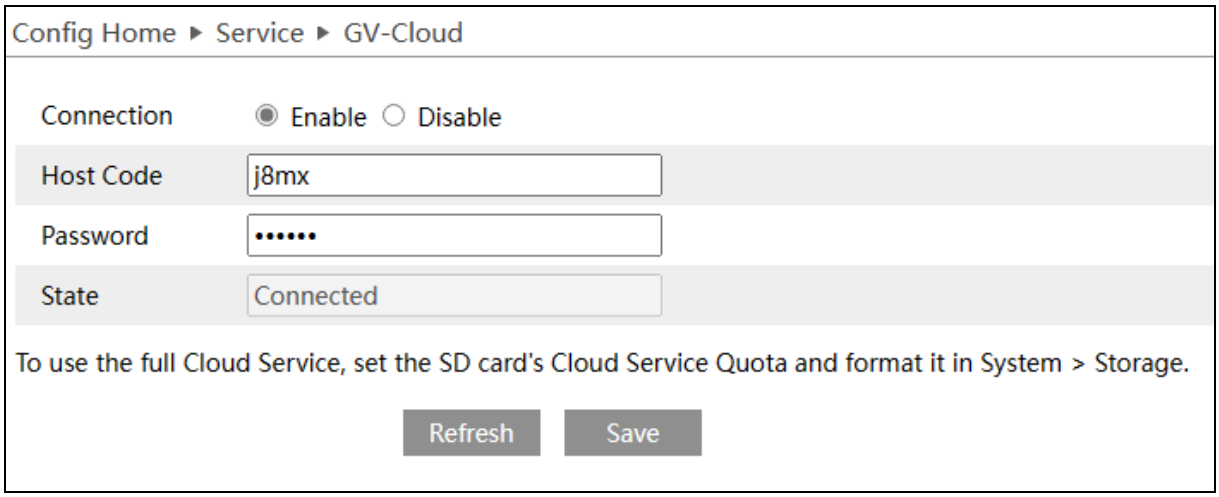
4.5 Service

4.5.1 GV-Cloud VMS

The GV-Cloud VMS service is a cloud-based data center and video surveillance solution. Thousands of on-site videos, alarm devices, and AI events can be monitored and managed from a single platform. With GV-Cloud VMS, you can easily search for events and watch live streams or recordings from anywhere using a web browser.

Go to Config→Service→GV-Cloud interface as shown below.

It is required to sign up and log in GV-Cloud first to create a host for the camera.



1. Enable the function and fill in the Host Code and Password created on GV-Cloud.
2. Click Save and Refresh to set up and refresh the connection.

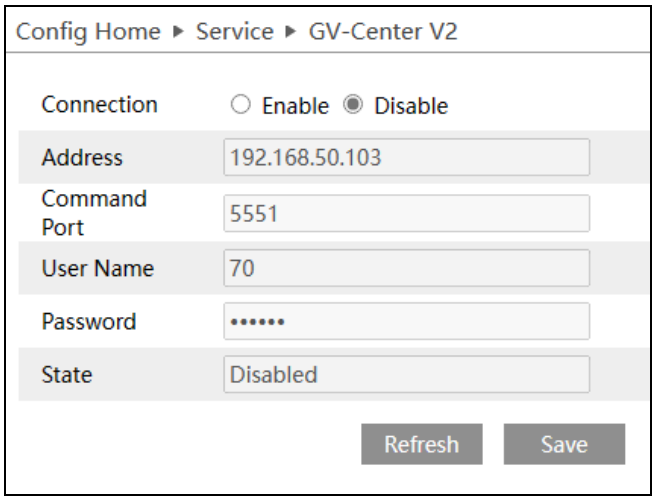
Note:

1. See *7. Connecting to GV-Cloud VMS* in the *Quick Start Guide* for detailed steps.
2. **Motion Detection** is required for GV-Cloud connection. The event is enabled by default for the following scenarios:
   i. When the camera is successfully connected to GV-Cloud
   ii. When the camera reconnects to GV-Cloud after disconnection
   iii. When the camera is rebooted after connecting to GV-Cloud
3. Make sure to assign adequate service quota from the camera's SD card for the snapshots and recordings uploaded onto GV-Cloud VMS. For details on setting the SD card storage quota for GV-Cloud VMS, see *4.1.4 Storage.*
4. The following events are supported on GV-Cloud VMS:
   A. **GV-GBL4900 / GBL4911 / GDR4900 / GEBF4911 / GFER6900 / GVD4910:** Motion Detection, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Video Exception (Scene Change / Video Blur Detection), I/O events
   B. **GV-GEB4900:** Motion Detection, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Video Exception (Scene Change / Video Blur Detection)
5. When connecting to GV-Cloud VMS, avoid connecting to other GV-Software at the same time.

4.5.2 GV-Center V2

GV-Center V2 is a Central Monitoring System (CMS) software that allows users to monitor, receive and record events from IP cameras and surveillance systems on a single platform. During alert events, GV-Center V2 receives live view and messages with attached recordings, allowing users to track any abnormalities on the premises.

Go to Config→Service→GV-Center V2 interface as shown below.



1. Enable the function and fill in the connection information.
2. Click **Save** and Refresh to set up and refresh the connection.

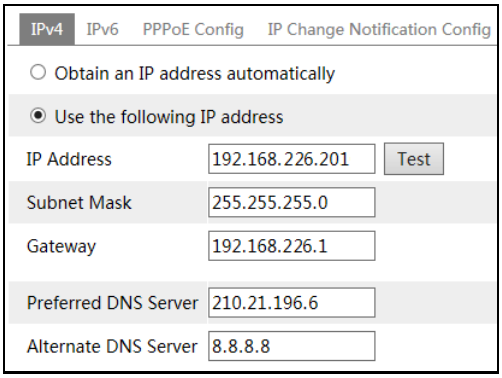
Note:

1. See *8. Connecting to GV-Center V2* in the *Quick Start Guide* for detailed steps.
2. The following events are supported on GV-Center V2:
   A. **GV-GBL4900 / GBL4911 / GDR4900 / GEBF4911 / GFER6900 / GVD4910:** Motion Detection, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Video Exception (Scene Change Detection), I/O events
   B. **GV-GEB4900:** Motion Detection, Line Crossing, Region Entrance, Region Exiting, Region Intrusion, Video Exception (Scene Change Detection)

4.6 Network Configuration

4.6.1 TCP/IP

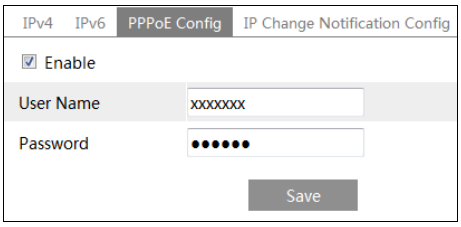
Go to Config→Network→TCP/IP interface as shown below. There are two ways for network connection.



Use IP address (take IPv4 for example): There are two options for IP setup: obtain an IP address automatically by DHCP and use the following IP address. Please choose one of the options as needed.

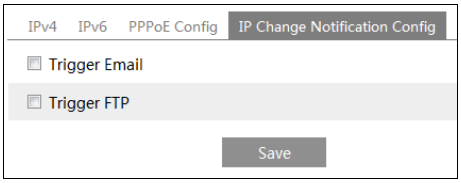
Test: Test the effectiveness of the IP address by clicking this button.

Use PPPoE: Click the "PPPoE Config" tab to go to the interface as shown below. Enable PPPoE and then enter the user name and password from your ISP.



Either method of network connection can be used. If PPPoE is used to connect internet, the camera will get a dynamic WAN IP address. This IP address will change frequently. To be notified, the IP change notification function can be used.

Click "IP Change Notification Config" to go to the interface as shown below.

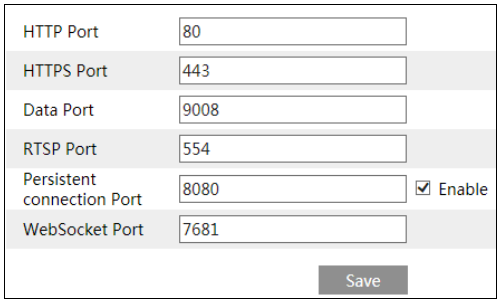


Trigger Email: When the IP address of the device is changed, the new IP address will be sent to the email address that has been set up.

Trigger FTP: When the IP address of the device is changed, the new IP address will be sent to FTP server that has been set up.

4.6.2 Port

Go to Config→Network→Port interface as shown below. HTTP port, Data port and RTSP port can be set.



HTTP Port: The default HTTP port is 80. It can be changed to any port which is not occupied.

HTTPS Port: The default HTTPs port is 443. It can be changed to any port which is not occupied.

Data Port: The default data port is 9008. Please change it as necessary.

RTSP Port: The default port is 554. Please change it as necessary.

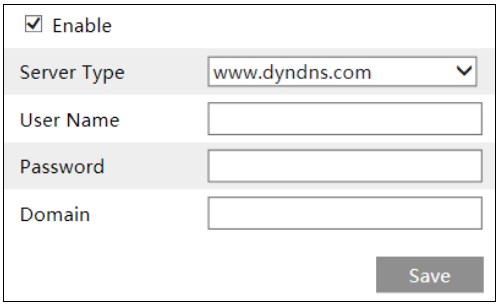
Persistent Connection Port: The port is used for a persistent connection of the third-party platform to push smart data, like face pictures.

WebSocket Port: Communication protocol port for plug-in free preview.

4.6.3 DDNS

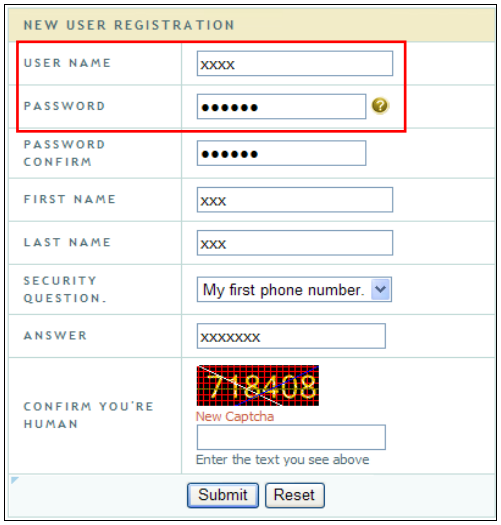
If the camera is set up with a DHCP connection, DDNS should be set for the internet.

1. Go to Config→Network→ DDNS.



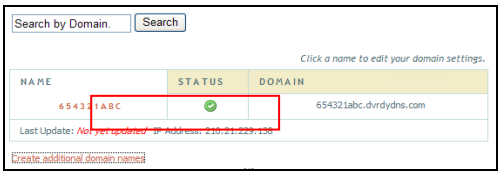
2. Apply for a domain name. Take www.dvrdyndns.com for example.

   Enter www.dvrdydns.com in the address bar of IE mode in Microsoft Edge to visit its website. Then, click the “Registration” button.



   Create domain name.

   After the domain name is successfully applied for, the domain name will be listed as below.



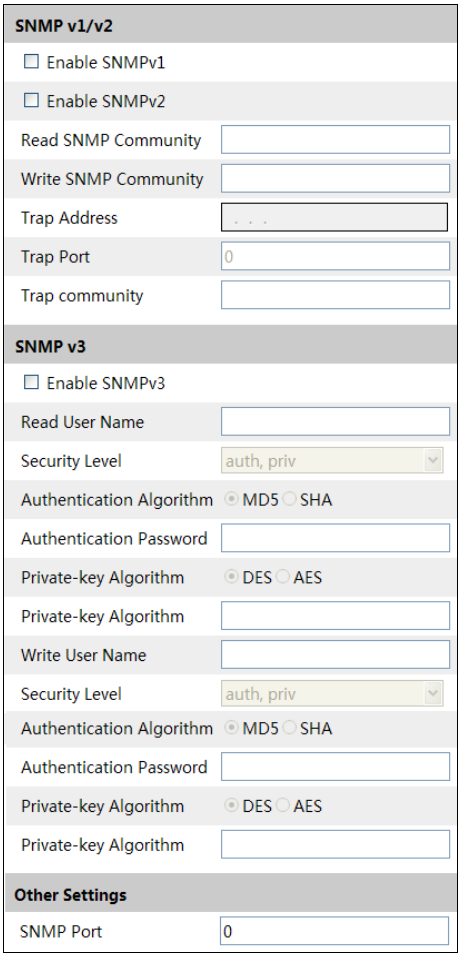
3. Click “Edit” and “Enable” (for GV-GDR4900 / GEB4900 / GFER6900). Enter the username, password, domain you apply for in the DDNS configuration interface.

4. Click the “Save” button to save the settings.

4.6.4 SNMP

To get camera status, parameters and alarm information and remotely manage the camera, the SNMP function can be used. Before using SNMP, please install an SNMP management tool and set the parameters of the SNMP, such as SNMP port, trap address.

1. Go to Config→Network→SNMP.

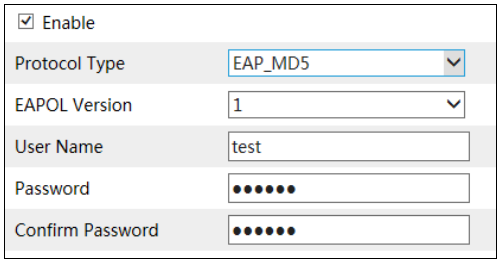


2. Click “Edit” at the bottom (for GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910). Check the corresponding version checkbox (Enable SNMPv1, Enable SNMPv2, Enable SNMPv3) according to the version of the SNMP software that will be used.
3. Set the values for “Read SNMP Community”, “Write SNMP Community”, “Trap Address”, “Trap Port” and so on. Please make sure the settings are the same as that of the SNMP software.

Note: Please use the different version in accordance with the security level you required. The higher the version is, the higher the level of the security is.

4.6.5 802.1x

If it is enabled, the camera's data can be protected. When the camera is connected to the network protected by the IEEE 802.1x, user authentication is needed.



To use this function, the camera shall be connected to a switch supporting 802.1x protocol. The switch can be reckoned as an authentication system to identify the device in a local network. If the camera connected to the network interface of the switch has passed the authentication of the switch, it can be accessed via the local network.

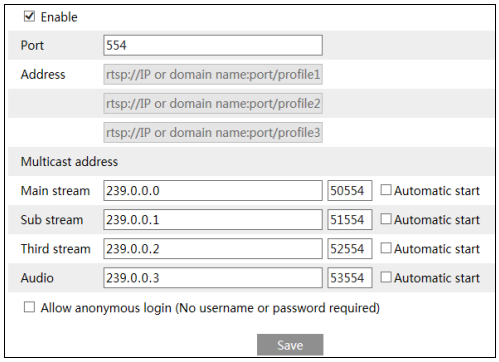
For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910: Click "Edit" to start the setup.

Protocol type / **EAPOL version**: Please use the default settings.

User name / **Password**: The user name and password must be the same with the user name and password applied for and registered in the authentication server.

4.6.6 RTSP

Go to Config→Network→RTSP.



For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910: Click “Edit” to start the setup. Select “Enable” to enable the RTSP function.

Port: Access port of the streaming media. The default number is 554.

RTSP Address: The RTSP address (unicast) format that can be used to play the stream in a media player.

Multicast Address

- **Main stream:** The address format is “rtsp://IP address:rtsp port/profile1?transportmode=mcast”.
- **Sub stream**: The address format is “rtsp://IP address:rtsp port/profile2?transportmode=mcast”.
- **Third stream**: The address format is “rtsp://IP address:rtsp port/profile3?transportmode=mcast”.

Audio: Having entered the main/sub stream in a VLC player, the video and audio will play automatically.

If “Allow anonymous login…” is checked, there is no need to enter the username and password to view the video.

If “Automatic Start” is enabled, the multicast received data should be added into a VLC player to play the video.

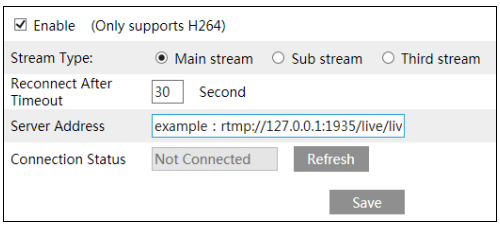
Note:

1. This camera supports local play through a VLC player. Enter the RTSP address (unicast or multicast, eg. rtsp://192.168.226.201:554/profile1?transportmode=mcast) in a VLC player to realize the simultaneous play with the web client.
2. The IP address mentioned above cannot be the address of IPv6.
3. Avoid the use of the same multicast address in the same local network.
4. When playing the video through the multicast streams in a VLC player, please pay attention to the mode of the VLC player. If it is set to TCP mode, the video cannot be played.
5. If the coding format of the video of the main stream is MJPEG, the video may be disordered at some resolutions.

4.6.7 RTMP

You can access the third-party (like YouTube) to realize video live view through RTMP protocol.

Go to Config→Network→RTMP.



For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910: Click “Edit” to start the setup. Check “Enable”, select stream type, set the reconnection time after timeout and server address as needed.

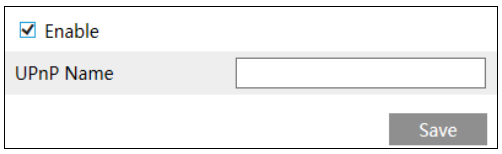
Server address: Enter the server address allocated by the third-party server.

After that, click “Save” to save the settings. Then click “Refresh” to view the connection status.

4.6.8 UPnP

If this function is enabled, the camera can be quickly accessed through the LAN.

Go to Config→Network→UPnP. Enable UPNP and then enter UPnP name.



4.6.9 Email

If you need to trigger Email when an alarm happens or IP address is changed, please set the Email here first.

Go to Config→Network →Email.

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4911, click “Edit and Test” to set the sender and the recipient.

Sender Address: Sender’s e-mail address.

User name and password: Sender’s user name and password (you don’t have to enter the username and password if “Anonymous Login” is enabled).

Server Address: The SMTP IP address or host name.

Select the secure connection type at the “Secure Connection” pull-down list according to what’s required.

SMTP Port: The SMTP port.

Send Interval(S): The time interval of sending email. For example, if it is set to 60 seconds and multiple motion detection alarms are triggered within 60 seconds, they will be considered as only one alarm event and only one email will be sent. If one motion alarm event is triggered and then another motion detection alarm event is triggered after 60 seconds, two emails will be sent. When different alarms are triggered at the same time, multiple emails will be sent separately.

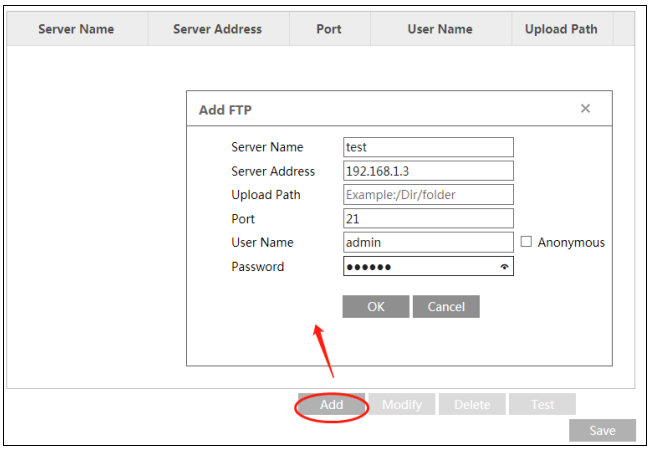
Click the “Test” button to test the connection of the account.

Recipient Address: Receiver’s e-mail address.

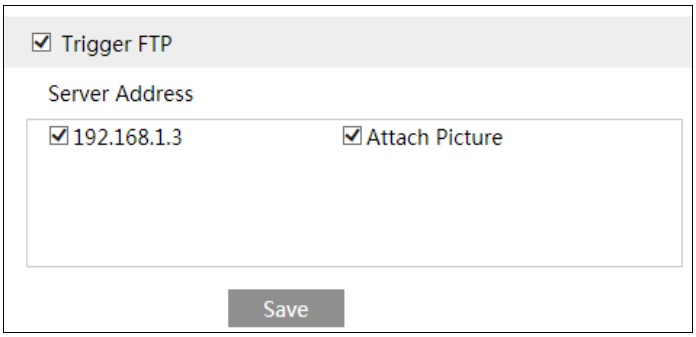
4.6.10 FTP

After an FTP server is set up, captured pictures from events will be uploaded to the FTP server.

1. Go to Config→Network →FTP.



2. For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910: Click “Edit and Test” to start the setup.
3. Click “Add” to add the information of the FTP. After that, click “Save” to save the settings.
   Server Name: The name of the FTP server.
   Server Address: The IP address or domain name of the FTP.
   Upload Path: The directory where files will be uploaded to.
   Port: The port of the FTP server.
   User Name and Password: The username and password that are used to login to the FTP server.
4. In the event setting interface (like intrusion, line crossing, etc.), trigger FTP as shown below.



Rule of FTP storage path: /device MAC address/event type/date/time/

For example: a face detection alarm occurs

FTP file path: \00-18-ae-a8-da-2a\VFD\2021-01-09\14\

Event name table:

File Name	Event Type
IP	IP address change

MOTION	Motion Detection
SENSOR	Sensor Alarm
TRIPWIRE	Line Crossing Detection
PERIMETER	Region Intrusion Detection
OSC	Object Abandoned/Missing
AVD	Video Exception
VFD	Face Detection
AOIENTRY	Region Entrance
AOILEAVE	Region Exiting
PASSLINECOUNT	Target Counting by Line
TRAFFIC	Target Counting by Area
LOITER	Loitering Detection
PVD	Illegal Parking Detection
SDFULL	SD Full
SDERROR	SD Error
VSD	Video Metadata

TXT file content:

Device name: xxx mac: device MAC address Event Type time:

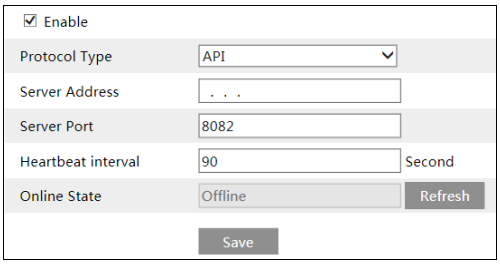
For example:

device name: IPC mac: 00-18-ae-a8-da-2a MOTION time: 2021-03-16 12:20:07

4.6.11 HTTP POST

For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910: Click “Edit” to start the setup.
Go to Config→Network →HTTP POST interface.

Check “Enable”, select protocol type and then set the server address (IP address/domain name), server port and heartbeat interval.



Server Address: The IP address/domain name of the third-party platform.

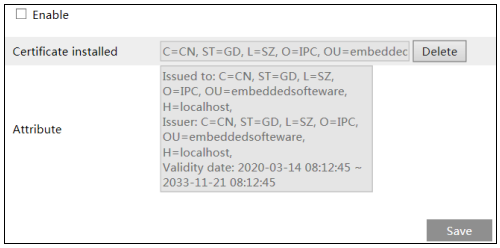
Server Port: The server port of the third-party platform.

After the above parameters are set, click “Save” to save the settings. Then the camera will automatically connect the third-party platform. The online state can be viewed in the above interface. After the camera is successfully connected, it will send the alarm information (HTTP format) to the third-party platform once the smart alarm is triggered. The alarm information includes target tracing coordinates, target features, the captured original/target image (like the captured face picture, motor vehicle picture) and so on.

4.6.12 HTTPS

HTTPs provides authentication of the web site and protects user privacy.

Go to Config →Network→HTTPS as shown below.

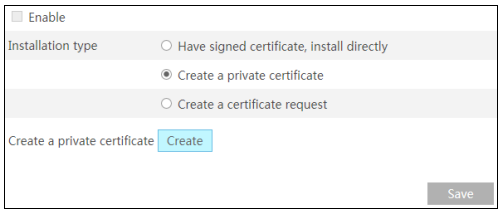


There is a certificate installed by default as shown above. Enable this function and save it. Then the camera can be accessed by entering https://IP: https port via the web browser (e.g., https://192.168.226.201:443).

A private certificate can be created if users don't want to use the default one. Click "Delete" to cancel the default certificate. Then the following interface will be displayed.

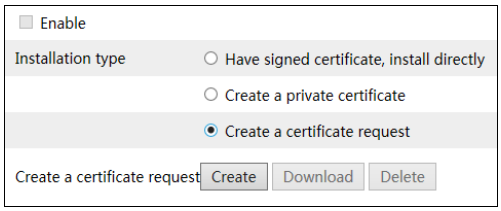
*If there is a signed certificate, click "Browse" to select it and then click "Install" to install it.

*Click "Create a private certificate" to enter the following creation interface.



Click the "Create" button to create a private certificate. Enter the country (only two letters available), domain (camera's IP address/domain), validity date, password, province/state, region and so on. Then click "OK" to save the settings.

*Click "Create a certificate request" to enter the following interface.



Click "Create" to create the certificate request. Then download the certificate request and submit it to the trusted certificate authority for signature. After receiving the signed certificate, import the certificate to the device.

4.6.13 QoS

QoS (Quality of Service) function is used to provide different quality of services for different network applications. With the deficient bandwidth, the router or switch will sort the data streams and transfer them according to their priority to solve the network delay and network congestion by using this function.

Go to Config→Network→QoS.

Video/Audio DSCP	13
Alarm DSCP	35
Manager DSCP	53

Video/Audio DSCP: The range is from 0 to 63.

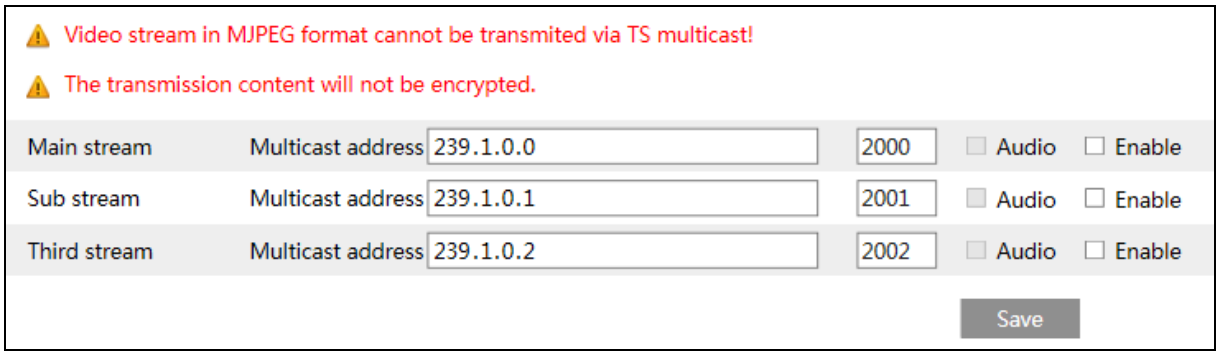
Alarm DSCP: The range is from 0 to 63.

Manager DSCP: The range is from 0 to 63.

Generally, the larger the number is, the higher the priority is.

4.6.14 TS Multicast

By using transport stream multicast (TS Multicast), multiple users can view the video image simultaneously even if there is not enough bandwidth.



Note: TS Multicast is only applicable to GV-GEBF4911.

Multicast address: the multicast IP address of Main Stream/Sub Stream/Third Stream ranges from 224.0.0.0 to 239.255.255.255.

Port: Main stream:2000; sub stream:2001; third stream:2002

Main stream: The address format is “udp://@IP address: main stream port.”

Sub stream: The address format is “udp://@IP address: sub stream port.”

Third stream: The address format is “udp://@IP address: third stream port.”

Audio: if enabled, the video and audio will play automatically.

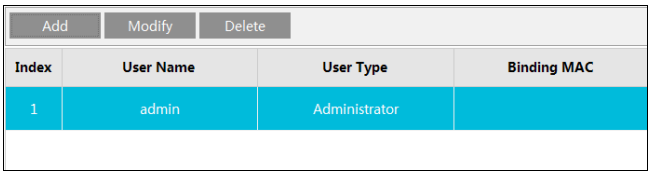
For example: you can test the TS multicast by using a VLC player. Enter the TS multicast address (eg. udp://@239.1.0.1:2001) in a VLC player.

Note: The TS multicast user also will be counted as an online user. You can go to Config→Security→Online User to view.

4.7 Security Configuration

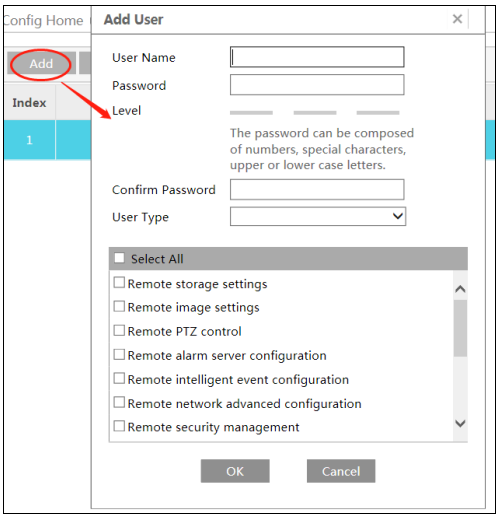
4.7.1 User Configuration

Go to Config→Security→User interface as shown below.



Add user:

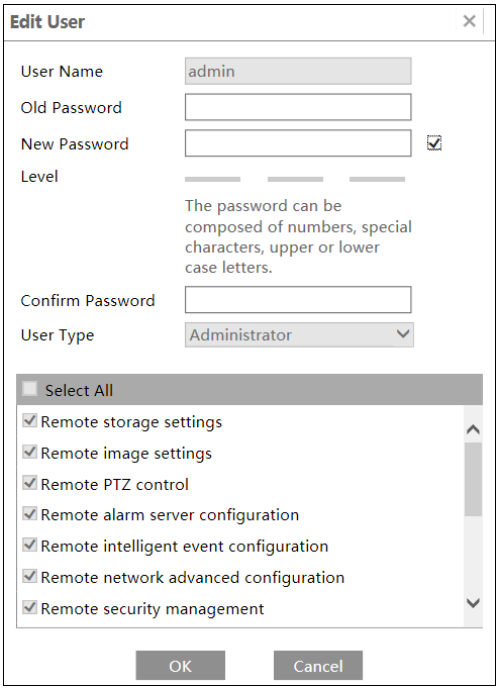
1. Click the “Add” button to pop up the following textbox.



2. Enter user name in the “User Name” textbox.
3. Enter the password in the “Password” and “Confirm Password” textbox. Please set the password according to the requirement of the password security level (Go to Config→Security→Security Management→Password Security interface to set the security level).
4. Choose the user type and select the desired user permissions.
5. Click the “OK” button and then the newly added user will be displayed in the user list.

Modify user:

1. Select a user to modify password in the user configuration list box.
2. The “Edit user” dialog box pops up by clicking the “Modify” button.



3. Enter the old password of the user in the “Old Password” text box.
4. Enter the new password in the “New password” and “Confirm Password” text box.
5. Select the user permissions for advanced or normal user.
6. Click the “OK” button to save the settings.

Note: When the password level is set to “Strong”, the password cannot be set the same as the previous five.

Delete user:

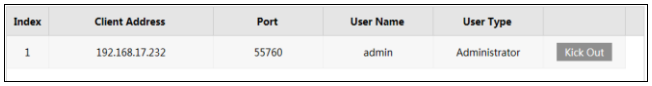
1. Select the user to be deleted in the user configuration list box.
2. Click the “Delete” button to delete the user.

Note: The default administrator account cannot be deleted.

Safety Question Settings: Set the questions and answers for admin to reset the password after you forget the password. You can set the account security question during the activation, or you can go to **Config→Security→User,** and click **Safety Question.** Select the security questions and input your answers.

4.7.2 Online User

Go to Config→Security→Online User to view the user who is viewing the live video.

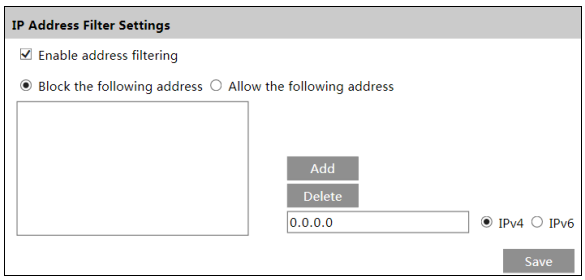


Index	Client Address	Port	User Name	User Type	
1	192.168.17.232	55760	admin	Administrator	Kick Out

An administrator user can kick out all the other users (including other administrators).

4.7.3 Block and Allow Lists

Go to Config→Security→Block and Allow Lists as shown below.



The setup steps are as follows:

Check the “Enable address filtering” check box.

Select “Block/Allow the following address”, IPv4/IPv6 and then enter IP address in the address box and click the “Add” button.

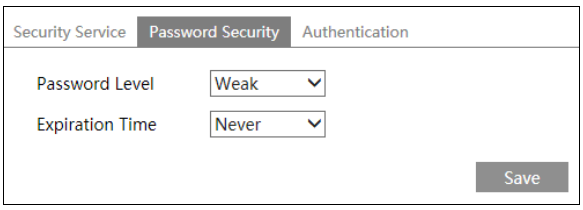
4.7.4 Security Management

Go to Config→Security→Security Management as shown below.

- **Security Service**
  In order to prevent against malicious password unlocking, “locking once illegal login” function can be enabled here. If this function is enabled, login failure after trying six times will make the login interface locked. The camera can be logged in again after a half hour or after the camera reboots.

  Trigger Email: if enabled, e-mail will be sent when logging in/out or illegal login lock occurs.

- **Password Security**



  Please set the password level and expiration time as needed.

  Password Level: Weak, Medium or Strong.

  - Weak: Numbers, special characters, upper or lower case letters can be used. You can choose one of them or any combination of them when setting the password.
  - Meddle: 8~16 characters, including at least two of the following categories: numbers, special characters, upper case letters and lower case letters.
  - Strong: 8~16 characters. Numbers, special characters, upper case letters and lower case letters must be included.

  For your account security, it is recommended to set a strong password and change your password regularly.

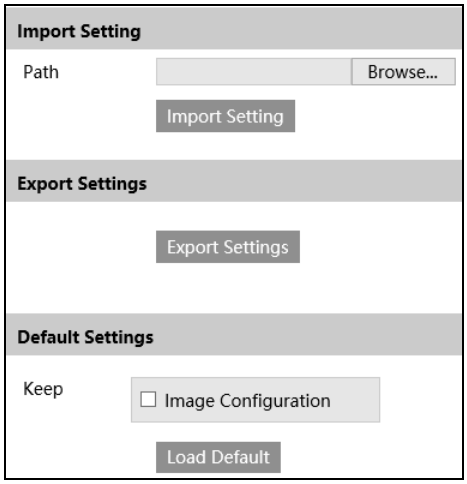
- **HTTP Authentication**
  Basic or Token is selectable.

4.8 Maintenance Configuration

4.8.1 Backup and Restore

Go to Config→Maintenance→Backup and Restore.

GV-GEBF4911



- **Import & Export Settings**

Configuration settings of the camera can be exported form a camera into another camera.

1. Click “Browse” to select the save path for import or export information on the PC.
2. Click the “Import Setting” or “Export Setting” button.

- **Default Settings**

Click the “Load Default” button to restore all system settings to the default factory settings except those you want to keep.

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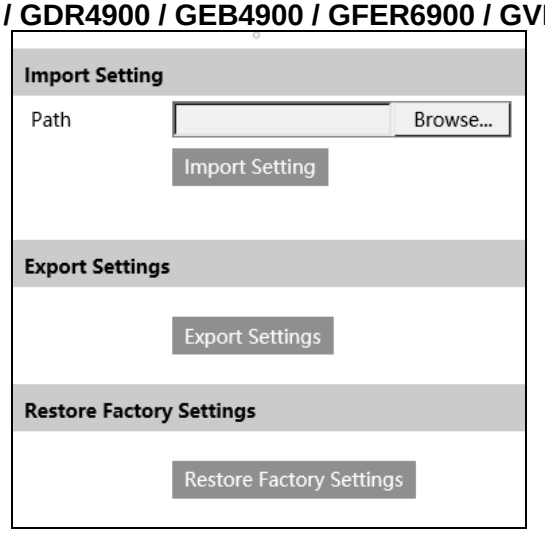


- **Import & Export Settings**

Configuration settings of the camera can be exported form a camera into another camera.

1. Click “Browse” to select the save path for import or export information on the PC.
2. Click the “Import Setting” or “Export Setting” button.

Note: The login password needs to be entered after clicking the “Import Setting” button.

- **Restore Factory Settings**

Click the “Restore Factory Settings” button and then verify the password to restore all system settings to the default factory settings.

4.8.2 Reboot

Go to Config→Maintenance→Reboot.

Click the “Reboot” button to reboot the device.

Timed Reboot Setting:

If necessary, the camera can be set up to reboot on a time interval. Enable “Time Settings”, set the date and time and then click the “Save” button to save the settings.

4.8.3 Upgrade

Go to Config→Maintenance→Upgrade. In this interface, the camera firmware can be updated.

1. Click the “Choose File” / “Browse” button to select the save path of the upgrade file.
2. Click the “Upgrade” or “Back up and upgrade” button to start upgrading the firmware.

Note: If “Back up and upgrade” is selected, the configuration file will be exported to your local PC before starting upgrading.

3. Enter the correct password and then the device will restart automatically

IMPORTANT:

1. Do not allow downgrading from the current version to the lower version.
2. Do not close the browser or disconnect the camera from the network during the upgrade, or it will cause system failure. After the device is successfully upgraded, there are ten minutes of observation. During this observation period, do not upgrade the device again.

Note: To decrease the upgrade risk, the camera adopts two systems. After one system is successfully upgraded, the other system will be synchronized. If one system fails caused by power failure or other reasons during the upgrade, the other system will not be affected and the camera still can work normally. You can also upgrade your camera through the normal system.

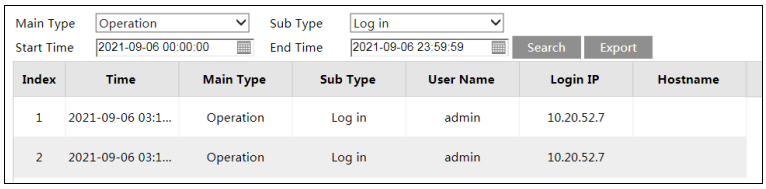
Export Upgrade Log: If upgrade error occurs, the upgrade log can be exported to help the technician to analyze and solve the problem.

In case of failed upgrade, power off and power on the camera for 40 seconds, and repeat it for 7 times to switch to another system.

4.8.4 Operation Log

To query and export log:

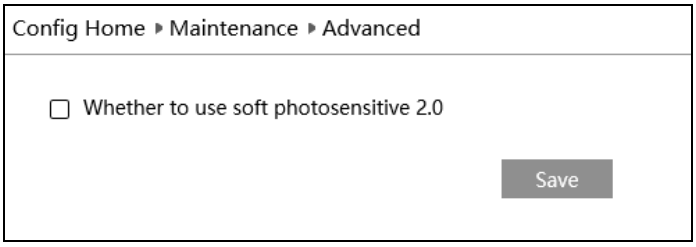
1. Go to Config→Maintenance→Operation Log.



2. Select the main type, sub type, start and end time.
3. Click “Search” to view the operation log.
4. Click “Export” to export the operation log.

4.8.5 Advanced

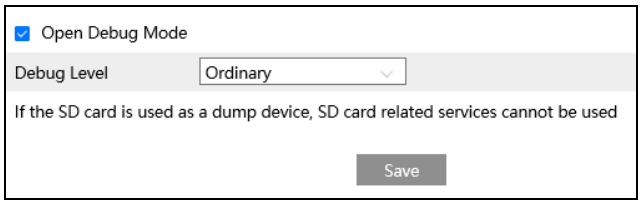
The software photosensitive 2.0 function is used to enable software light sensitivity mode depending on the setup environment.



Note: The Advanced setting is not applicable to GV-GEBF4911 / GFER6900.

4.8.6 Debug Mode

Debug Mode is used to record and collect the required system data, so that the technician can quickly find out and analyze the problem, and help us to improve service.
Before enabling the debug mode, you are advised to consult our technical support.



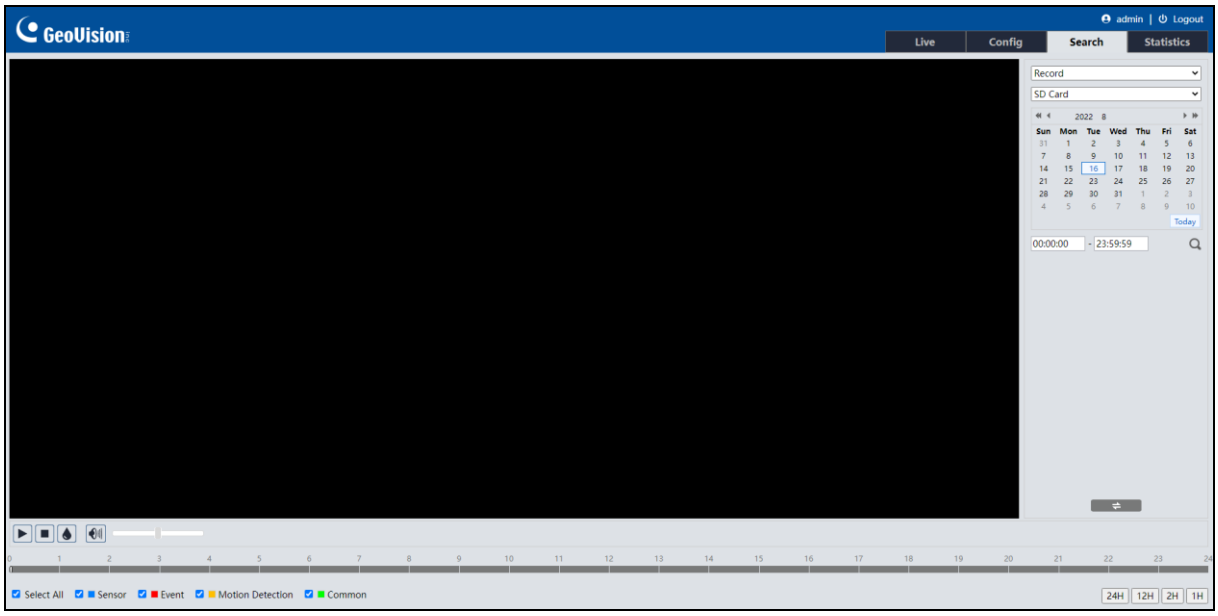
Note: Once the SD card is used to collect the system data, the SD card will not be used to store snapshots and recorded files. Only when you disable debug mode and format the SD card in the storage interface (Config→System→Storage→Management) after the device is rebooted, can the SD card be used to store snapshots and recorded files.

Chapter 5 Search

5.1 Image Search

Click Search to go to the interface as shown below. Images that are saved on the SD card can be found here.

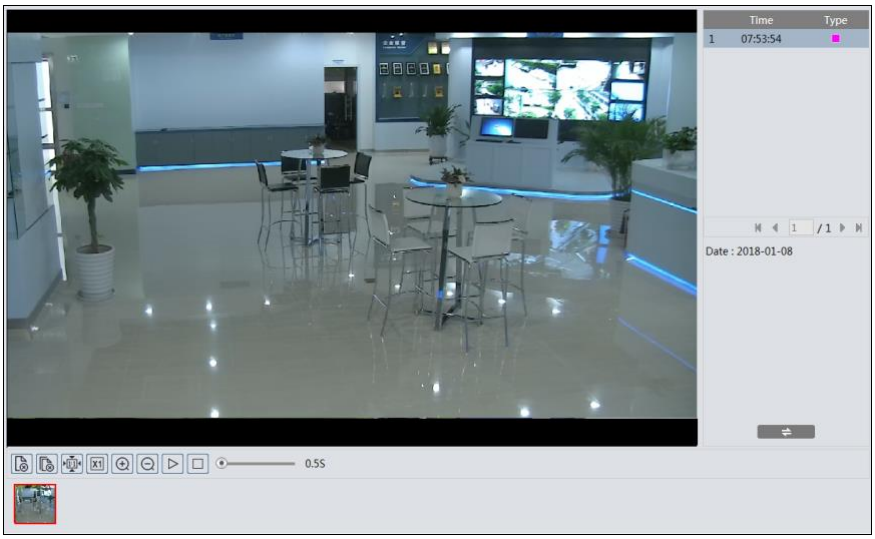
Note: Local images can only be searched in IE mode in Microsoft Edge.



For GV-GEBF4911

- **Local Image Search**

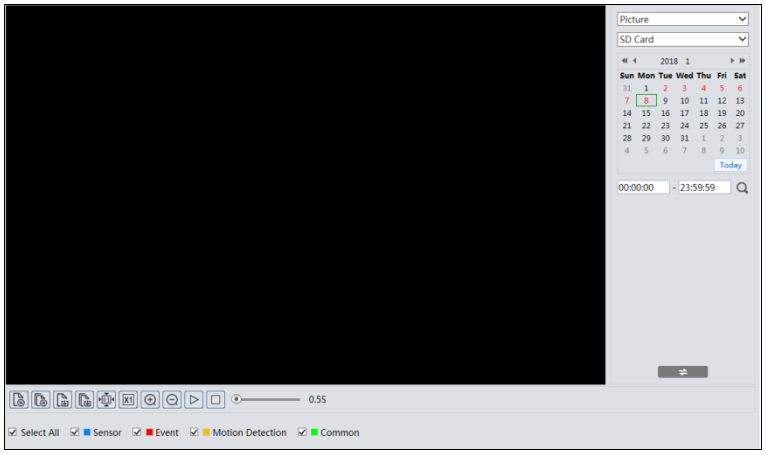
1. Choose “Picture”—“Local”.
2. Set time: Select date and choose the start and end time.
3. Click to search the images.
4. Double click a file name in the list to view the captured photos.



Click to return to the previous interface.

- **SD Card Image Search**

1. Choose “Picture”—“SD Card”.



2. Set time: Select date and choose the start and end time.
3. Choose the alarm events at the bottom of the interface.
4. Click to search the images.
5. Double click a file name in the list to view the captured photos.

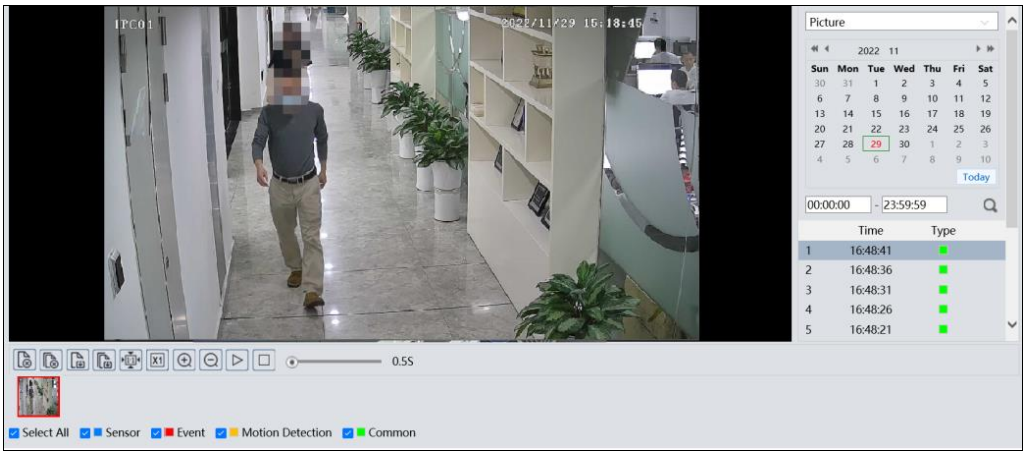
Click to return to the previous interface.

GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910

- **SD Card Image Search**

1. Choose “Picture”.

2. Set time: Select date and choose the start and end time.
3. Choose the alarm events at the bottom of the interface.
4. Click to search the images.
5. Double click a file name in the list to view the captured photos.



The descriptions of the buttons are shown as follows.

Icon	Description	Icon	Description
	Close: Select an image and click this button to close the image.		Close all: Click this button to close all images.
	Save: Click this button to select the path for saving the image on the PC.		Save All: Click this button to select the path for saving all pictures on the PC.
	Proper Size: Click to fit the image on the screen.		Actual size: Click this button to display the actual size of the image.
	Zoom in: Click this button to digitally zoom in.		Zoom out: Click this button to digitally zoom out.
	Slide show play: Click this button to start the slide show mode.		Stop: Click this button to stop the slide show.
5.5S	Play speed: Play speed of the slide show.		

5.2 Video Search

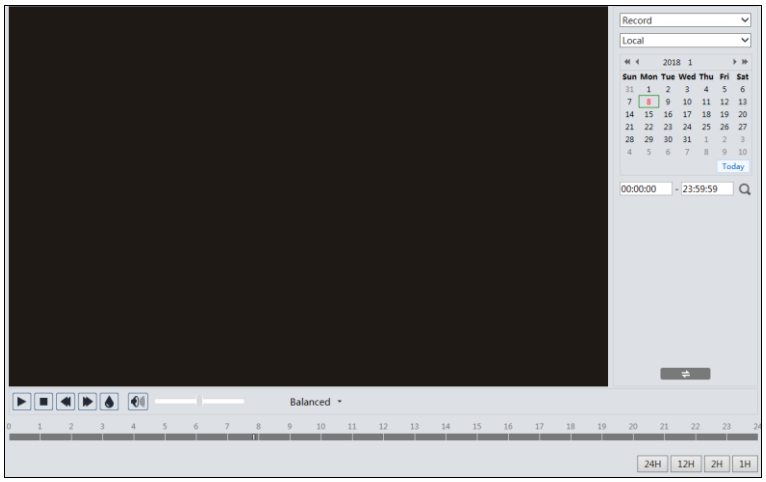
Click Search to go to the interface as shown below. Videos were recorded locally to the PC / save in the SD card can be played in this interface.

Note: Local videos can only be searched in IE mode in Microsoft Edge.

For GV-GEBF4911

- **Local Video Search**

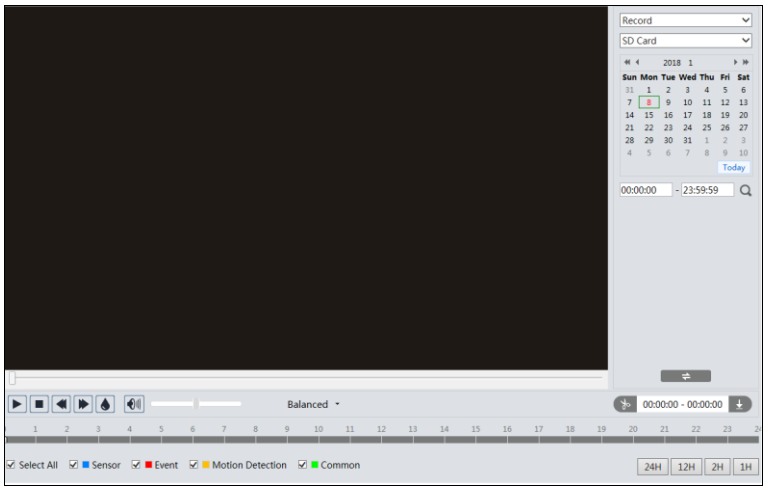
1. Choose “Record”—“Local”.
2. Set search time: Select the date and choose the start and end time.
3. Click to search the images.



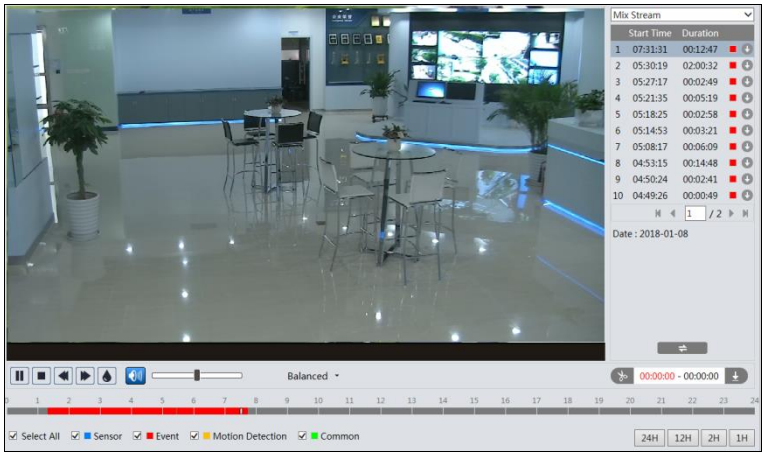
4. Double click on a file name in the list to start playback.

- **SD Card Video Search**

1. Choose “Record”—“SD Card”.
2. Set search time: Select the date and choose the start and end time.
3. Click to search the images.

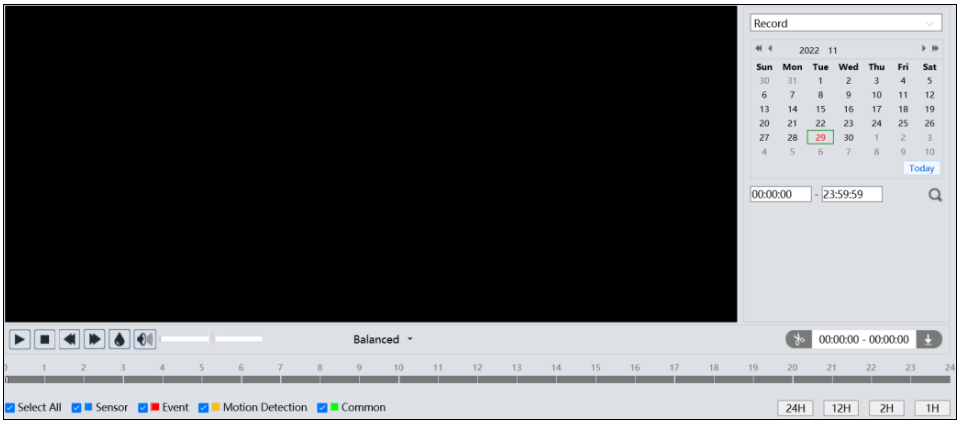


4. Select the alarm events at the bottom of the interface.
5. Select mix stream (video and audio stream) or video stream as needed.
6. Double click on a file name in the list to start playback.

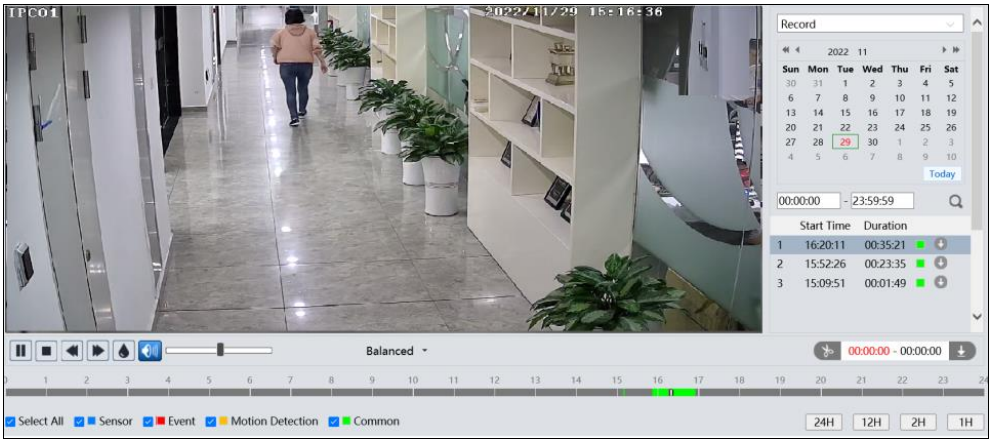


For GV-GBL4900 / GBL4911 / GDR4900 / GEB4900 / GFER6900 / GVD4910

1. Choose “Record”.
2. Set search time: Select the date and choose the start and end time.
3. Click to search the images.



4. Select the alarm events at the bottom of the interface.
5. Double click on a file name in the list to start playback.



Icon	Description	Icon	Description
	Play button. After pausing the video, click this button to continue playing.		Pause button
	Stop button		Speed down
	Speed up		Watermark display
	Enable / disable audio; drag the slider to adjust the volume after enabling audio.		

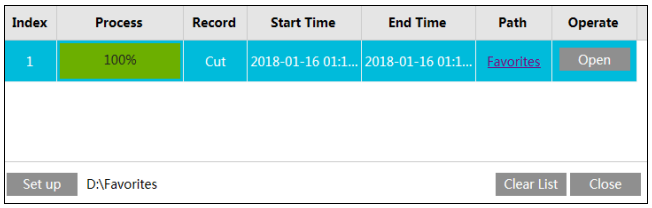
Note: and can only be displayed in the above interface via IE mode in Microsoft Edge.

Additionally, playback mode switch (balanced / real-time / fluent mode) and downloading functions are also only supported in IE mode in Microsoft Edge.

The time table can be shown in 24H / 12H / 2H / 1H format by clicking the corresponding buttons.

Video clip and downloading

1. Search the video files according to the above-mentioned steps.
2. Select the start time by clicking on the time table.
3. Click to set the start time and then this button turns blue .
4. Select the end time by clicking on the time table. Then click the button to set the end time.
5. Click to download the video file in the PC.



Click “Set up” to set the storage directory of the video files.

Click “Open” to play the video.

Click “Clear List” to clear the downloading list.

Click “Close” to close the downloading window.

Appendix

Appendix 1 Troubleshooting

How to find the password?

A: The password for ***admin*** can be reset through “Edit Safety Question” function.

Click “Forget Password?” on the login page and enter the corresponding answer of the selected question in the popup window. After you correctly answer all questions, you can reset the password for ***admin***. If you forget the answer of the question, this way will be invalid, please contact your dealer for help.

B: The passwords of other users can be reset by ***admin***.

Fail to connect devices through IE mode in Microsoft Edge.

A: Network is not well connected. Check the connection and make sure it is connected well.

B: IP address is not available. Reset the IP address.

C: Web port number has been changed: contact administrator to get the correct port number.

D: Exclude the above reasons. Restore to default setting by IP-Tool.

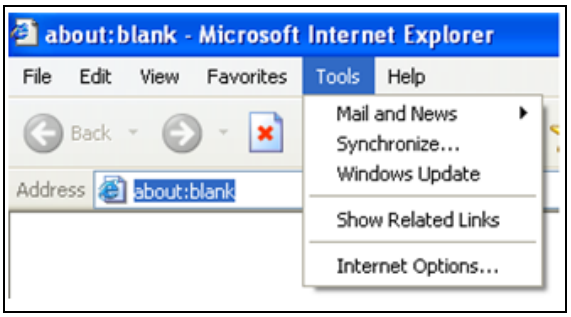
IP tool cannot search devices.

It may be caused by the anti-virus software in your computer. Please exit it and try to search device again.

IE mode in Microsoft Edge does not support downloading the plug-in.

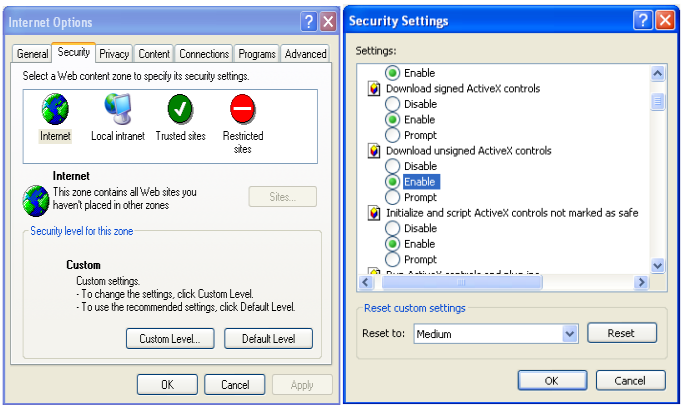
A. IE mode in Microsoft Edge may be set up to block plug-ins. Follow the steps below.

1. Open IE mode in Microsoft Edge and then click Tools→Internet Options.



2. Select Security→Custom Level.
3. Enable all the options under the plug-ins.
4. Click OK to finish setup.

B. Other plug-ins or anti-virus blocks the plug-in. Please uninstall or close them.



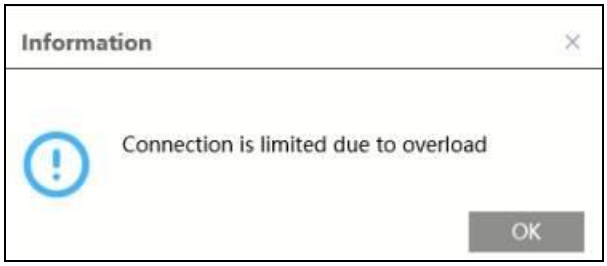
No sound can be heard.

A: Audio input device is not connected. Please connect and try again.

B: Audio function is not enabled at the corresponding channel. Please enable this function.

What's the Web/ONVIF/RTSP connection limit?

A maximum of 6 connections of Web/ONVIF/RTSP is supported. When the connection exceeds the specification, the following message pops up:



Appendix 2 Configuration Requirements and Surrounding Area

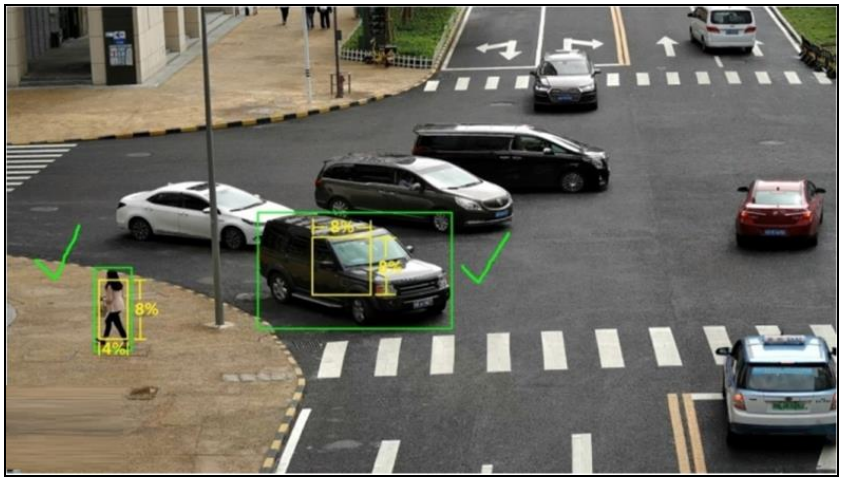
1. Auto-focusing function should not be enabled. Enabling auto-focusing may cause significant changes in the picture, leading to temporary algorithm interruption.
2. Try to avoid excessive obstruction from trees, while also avoiding excessive variations in lighting conditions in the scene, such as frequent and excessive car headlights, etc., to improve the accuracy of intelligent functions. The brightness of the scene should not be too low, as excessively dim scenes will reduce the accuracy of alarms. Adequate lighting and clear scenery are important conditions.
3. The optimal overhead angle for the camera is between 30 degrees and 45 degrees (see outdoor installation diagram for 12 mm lens).

   For pedestrians: It is necessary to include the upper body, with the head and torso.

   For vehicles: The downward angle should not be too large (not exceeding the recommended angle). Oblique and horizontal views are preferred over downward views, and it is recommended to install the camera with an oblique view.
4. When the camera is detecting, the target should spend at least about 2 seconds passing through the detection area.
5. Not suitable for scenes with significant changes in lighting.
6. Adjust the camera so that the area needing protection is positioned as centrally as possible within the field of view. There should be no obstructions in the main thoroughfare areas. Try to exclude swaying obstructions such as trees, bushes, flags, etc., from the detection area.
7. Please adjust the camera's installation position or focal length so that the targets of interest in the frame meet certain size requirements. Optimal target recognition sizes:

Percentage	Human	Motor Vehicle	Motorcycle/Bicycle
Minimum (Width × Height)	4% × 8%	8% × 8%	4% × 4%
Maximum (Width × Height)	50%× 50%	50%× 50%	50%× 50%

The proportion here refers to the ratio of the target's width to the width of the frame. For example, in a resolution of 1920×1080, the minimum resolution for a person would be 80×160 (w=1920×4%=80, h=1920×8%=160).



Correct example: The target meets the minimum size requirements. The yellow box in the image represents the minimum detection box.

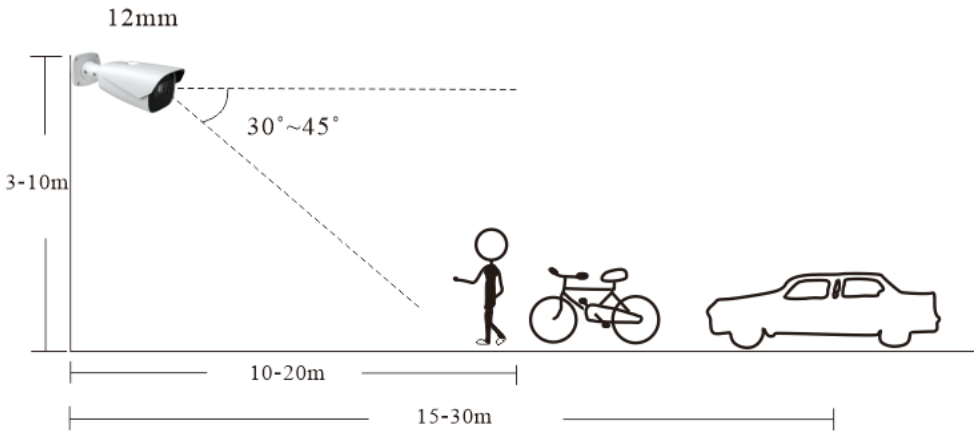
Incorrect example: The target does not meet the minimum size requirements. The yellow box in the image represents the minimum detection box.

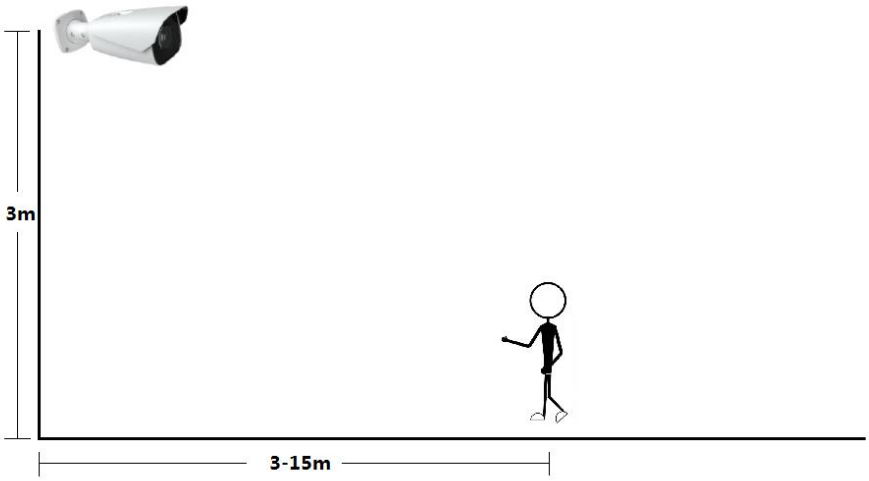
8. Installation suggestion:

Outdoor mounting:

The optimal detection distance varies due to different focal length. Please refer to the following table.

Focal Length	Installation Height (m)	Human/Motorcycle/Bicycle		Motor Vehicle	
		Maximum Distance (m)	Optimal Distance (m)	Maximum Distance (m)	Optimal Distance (m)
2.8 mm	3-10	8	4-8	15	10-15
3.6 mm	3-10	10	5-10	20	15-20
12 mm	3-10	25	10~20	35	15~30
22 mm	3-10	45	30~40	70	20~50



Example for 12 mm focal length

Indoor Mounting: