BL2002PID

User Manual

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Revision history

Nr	Date	Remarks
1	11-Mar-23	Initial revision
2		

Note: To ensure proper operation, please read this manual thoroughly before using the product and retain the information for future reference.

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BL2002PID User Manual v1 (20230312)

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Although considerable care has been taken to ensure a correct and suitably comprehensive description of all relevant product components, this manual may nonetheless contain errors and inaccuracies. We invite you to offer your suggestions and comments by email. Your feedback will help us to further improve our documentation.

How to contact us

If you have any comments or queries concerning any aspect related to the product, do not hesitate to contact:

TKH Security B.V.
Meridiaan 32
2801 DA Gouda
The Netherlands

General : +31 182 592 333
Fax : +31 182 592 123
E-mail : support@tkhsecurity.com
WWW : https://tkhsecurity.com

TKH Security LLC
5340 Spectrum Drive, Suite C
Frederick, Maryland 21703
United States of America

General : +1 301 444 2200
Email : sales.us@tkhsecurity.com

Table of Contents

1 About this manual

What's in this manual

This is version 1 of the user assistance which is embedded in the web interface of the BL2002PID camera. The Help topics give you all the information you need to use this product efficiently. They tell you:

- How to get access to the camera
- How to communicate with the camera
- How to operate the camera
- How to configure the settings of the camera

Where to find more information

Find additional manuals, the datasheet, the EU Declaration of Conformity, and the latest firmware for this product at siqua.com. We advise you to make sure that you have the latest version of this manual.

Who this manual is for

These instructions are for all professionals who will configure and operate the BL2002PID camera.

What you need to know

You will have a better understanding of how the camera works if you are familiar with:

- Camera technologies
- CCTV systems and components
- Ethernet network technologies and Internet Protocol (IP)
- Windows environments
- Video, audio, data, and contact closure transmissions
- Video compression methods

Before you continue

Before you continue, read and obey all instructions and warnings in this manual. Keep this manual with the original bill of sale for future reference and, if necessary, warranty service. When you unpack your product, make sure there are no missing or damaged items. If any item is missing, or if you find damage, do not install or operate this product. Ask your supplier for assistance.

Why specifications may change

We are committed to delivering high-quality products and services. The information given in this manual was current when published. As we continuously seek to improve our products and user experience, all features and specifications are subject to change without notice.

2 Safety and compliance

This section provides safety instructions and compliance information.

2.1 Safety instructions

These instructions are intended to make sure that the user can use the product correctly and avoid danger or property loss.

The precaution measure is divided into ‘Warnings’ and ‘Cautions’:

- **Warnings**: Serious injury or death may be caused if any of these warnings are neglected.
- **Cautions**: Injury or equipment damage may be caused if any of these cautions are neglected.

⚠		⚠	
Warnings	Follow these safeguards to prevent serious injury or death.	**Cautions**	Follow these precautions to prevent potential injury or material damage.

Warnings

⚠

- Use a power adapter which can meet the safety extra low voltage (SELV) standard and source it with 12 Vdc or 24 Vac (depending on the model) according to the IEC60950-1 and Limited Power Source standard.
- The input voltage should conform to IEC60950-1 standard: SELV (Safety Extra Low Voltage) and the Limited Power Source. Refer to the appropriate documentation for detailed information.
- The power source should meet limited power source or PS2 requirements according to IEC 60950-1 or IEC 62368-1 standard.
- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all the local codes.
- Install blackout equipment into the power supply circuit for convenient supply interruption.
- Make sure that the ceiling can support more than 50 (N) Newton if the camera is fixed to the ceiling.

- If the product does not work properly, contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- An appropriate overcurrent protective device shall be incorporated external to the equipment, not exceeding the specification of the building.
- Ensure correct wiring of the terminals for connection to an AC mains supply.

Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch the sensor modules with your fingers. If cleaning is necessary, use a cleaning cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
- Do not aim the camera lens at strong light such as the sun or an incandescent lamp. The strong light can cause fatal damage to the camera.
- The sensor may be burned out by a laser beam, so if any laser equipment is used, make sure that the surface of the sensor is not exposed to the laser beam.
- Use the unit under conditions where the temperature remains within the range given in the Technical Specifications of this product. You can download the datasheet of the camera at siqura.com.
- Do not install the camera in a dusty or damp environment, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required to ensure a proper operating environment.
- Keep the camera away from water and any liquid.
- While shipping, the camera should be packed into its original packing.
- Improper use or replacement of the battery may result in the hazard of explosion. Use the battery type recommended by the manufacturer.

Cautions

The following cautions apply to cameras with IR functionality. Be sure to follow them to prevent IR reflection.

- Dust or grease on the dome cover will cause IR reflection. Do not remove the dome cover film until the installation is finished. If there is dust or grease on the dome cover, clean the dome cover with a clean soft cloth and isopropyl alcohol.
- Make sure that the installation location does not have any reflective surfaces of objects that are too close to the camera. The IR light from the camera may reflect back into the lens causing a reflection in the video image.

- The foam ring around the lens must be seated flush against the inner surface of the bubble to isolate the lens from the IR LEDS. Fasten the dome cover to the camera body so that the foam ring and the dome cover are attached seamlessly.

Installation

● Install the equipment according to the instructions in this manual.
● To prevent injury, this equipment must be securely attached to the floor/wall in accordance with the installation instructions.
● Never place the equipment in an unstable location. The equipment may fall, causing serious personal injury or death.

Transportation

● Keep the device in original or similar packaging while transporting it. System Security
● The installer and user are responsible for password and security configuration.

Maintenance

● If the product does not work properly, please contact your dealer or the nearest service center.
● We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
● A few device components (e.g., electrolytic capacitor) require regular replacement. The average lifespan varies, so periodic checking is recommended. Contact your dealer for details. Cleaning
● Please use a soft and dry cloth when clean inside and outside surfaces of the product cover. Do not use alkaline detergents.

Using Environment

● When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out.
● DO NOT expose the device to high electromagnetic radiation or dusty environments.
● For indoor-only device, place it in a dry and well-ventilated environment.
● DO NOT aim the lens at the sun or any other bright light.
● Make sure the running environment meets the requirement of the device. The operating temperature shall be -30 °C to 60 °C (-22 °F to 140 °F), and the operating humidity shall be 95% or less (no condensing).
● DO NOT place the camera in extremely hot, cold, dusty or damp locations, and do not expose it to high electromagnetic radiation.

Emergency

● If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.

Time Synchronization

● Set up device time manually for the first time access if the local time is not synchronized with that of the network. Visit the device via Web browse/client software and go to time settings interface.

Reflection

● Make sure that no reflective surface is too close to the device lens. The IR light from the device may reflect back into the lens causing reflection.

2.2 Compliance information

FCC compliance

This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, ifnot installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

EU Conformity Statement

CE	This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonised European standards listed under the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU + 2015/863/EU.
	2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

	2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

3 Device Activation and Accessing

To protect the security and privacy of the user account and data, you should set a login password to activate the device when access the device via network.

Refer to the user manual of the software client for the detailed information about the client software activation.

3.1 Activate Device

The device needs to be activated by setting a strong password before use. This part introduces activation using different client tools.

3.1.1 Activate Device via Web Browser

Use web browser to activate the device. For the device with the DHCP enabled by default, use SADP software or PC client to activate the device.

Before You Start

Make sure your device and your PC connect to the same LAN.

Steps

1. Change the IP address of your PC to the same subnet as the device. The default IP address of the device is 192.168.1.64.
2. Open a web browser and input the default IP address.
3. Create and confirm the admin password.

⚠ **NOTE**: STRONG PASSWORD RECOMMENDED-We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

4. Click OK to complete activation and enter Live View page.
5. Modify IP address of the camera.
   1) Enter IP address modification page. Configuration → Network → TCP/IP
   2) Change IP address.
   3) Save the settings.

3.2 Access Camera

This part introduces how to access the camera via Web browser or client software.

3.2.1 Access Camera via Web Browser

Before You Start

Check the system requirement to confirm that the operating computer and web browser meets the requirements.

System Requirement

Operating System	Microsoft Windows XP and above version, Mac OS X 10.8 and above version
CPU	2.0 GHz or higher
RAM	1 GB or higher
Display	1024 × 768 resolution or higher
Web Browser	Internet Explorer 8.0 and above version, Mozilla Firefox 30.0-51, Google Chrome 31.0-44, Safari 8.0+

Steps

1. Open the web browser.

⚠ **NOTE**: For some web browsers, a plug-in is required. For detailed requirements, see Plug-in Installation.

2. Input IP address of the camera to enter the login interface.
3. Input user name and password.

⚠ **NOTE**: Illegal login lock is activated by default. If admin user performs seven failed password attempts (five attempts for user/operator), the IP address is blocked for 30 minutes.
If illegal login lock is not needed, go to Configuration → System → Security → Security Service to turn it off.

4. Click Login.
5. Download and install appropriate plug-in for your web browser.

For IE based web browser, webcomponents are optional. For non-IE based web browser, webcomponents, VLC and MJPEG are optional.

What to do next

- You can recover admin password. For detailed settings, see Admin Password Recovery .
- You can set illegal login lock to improve security. For detailed settings, see Illegal Login Lock .

Plug-in Installation

Certain operation systems and web browser may restrict the display and operation of the camera function. You should install plug-in or complete certain settings to ensure normal display and operation. For detailed restricted function, refer to the actual device.

Operating System	Web Browser	Operation
Windows	• Internet Explorer 8+ • Google Chrome 57 and earlier version • Mozilla Firefox 52 and earlier version	Follow pop-up prompts to complete plug-in installation.
	• Google Chrome 57+ • Mozilla Firefox 52+	Click Download Plug-in to download and install plug-in.
Mac OS	• Google Chrome 57+ • Mozilla Firefox 52+ • Mac Safari 16+	Plug-in installation is not required. Go to **Configuration** → **Network** → **Advanced Settings** → **Network Service** to enable WebSocket or Websockets for normal view. Display and operation of certain functions are restricted. For example, Playback and Picture are not available. For detailed restricted function, refer to the actual device.

NOTE: The camera only supports Windows and Mac OS system and does not support Linux system.

Admin Password Recovery

If you forget the admin password, you can reset the password by clicking Forget Password on the login page after completing the account security settings.
You can reset the password by setting the security question or email.

⚠ **NOTE**: When you need to reset the password, make sure that the device and the PC are on the same network segment.

Security Question

You can set the account security during the activation. Or you can go to Configuration → System → User Management , click Account Security Settings, select the security question and input your answer.
You can click Forget Password and answer the security question to reset the admin password when access the device via browser.

Email

You can set the account security during the activation. Or you can go to Configuration → System → User Management , click Account Security Settings, input your email address to receive the verification code during the recovering operation process.

Illegal Login Lock

It helps to improve the security when accessing the device via Internet.
Go to Configuration → System → Security → Security Service , and enable Enable Illegal Login Lock. Illegal Login Attempts and Locking Duration are configurable.
Illegal Login Attempts
When your login attempts with the wrong password reach the set times, the device is locked.
Locking Duration
The device releases the lock after the setting duration.

4 Network Camera Configuration

4.1 Update Firmware

For better user experience, we recommend you to update your device to the latest firmware asap. Please get the latest firmware package from the official website or the local technical expert. For more information, please visit the official website: https://tkhsecurity.com > Products, navigate to your model number, and on the product page, use the Links and Downloads tab sheet to find your camera firmware download link.
For the upgrading settings, refer to Upgrade .

4.2 System Requirement

Your computer should meet the requirements for proper visiting and operating the product.

Operating System	Microsoft Windows XP and above version, Mac OS X 10.8 and above version
CPU	2.0 GHz or higher
RAM	1 GB or higher
Display	1024 × 768 resolution or higher
Web Browser	For the details, see Plug-in Installation

4.3 Live View

It introduces the live view parameters, function icons and transmission parameters settings.

4.3.1 Live View Parameters

The supported functions vary depending on the model.

Enable and Disable Live View
This function is used to quickly enable or disable live view of the channel.

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Adjust Aspect Ratio

Steps

1. Click Live View.

▭

4:3

16:9

□

▣

▭

Live View Stream Type

Select the live view stream type according to your needs. For the detailed information about the stream type selection, refer to Stream Type .

Select the Third-Party Plug-in

When the live view cannot display via certain browsers, you can change the plug-in for live view according to the browser.

Steps

1. Click Live View.

◉

- When you access the device via Internet Explorer, you can select Webcomponents or QuickTime.
- When you access the device via the other browsers, you can select Webcomponents, QuickTime, VLC or MJPEG.

Window Division

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▦

Light

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Count Pixel

It helps to get the height and width pixel of the selected region in the live view image.

Steps

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2. Drag the mouse on the image to select a desired rectangle area.

The width pixel and height pixel are displayed on the bottom of the live view image.

Start Digital Zoom

It helps to see a detailed information of any region in the image.

Steps

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2. In live view image, drag the mouse to select the desired region.
3. Click in the live view image to back to the original image.

Auxiliary Focus

It is used for motorized device. It can improve the image if the device cannot focus clearly.

For the device that supports ABF, adjust the lens angle, then focus and click ABF button on the device. The device can focus clearly.

NOTE: If the device cannot focus with auxiliary focus, you can use Lens Initialization , then use auxiliary focus again to make the image clear.
If auxiliary focus cannot help the device focus clearly, you can use manual focus.

Lens Initialization

Lens initialization is used on the device equipped with motorized lens. The function can reset lens when long time zoom or focus results in blurred image. This function varies according to different models.

Manual Lens Initialization

Auto Lens Initialization

Go to Configuration → System → Maintenance → Lens Correction to enable this function. You can set the arming schedule, and the device will correct lens automatically during the configured time periods.

Quick Set Live View

It offers a quick setup of PTZ, display settings, OSD, video/audio settings on live view page.

Steps

2. Set PTZ, display settings, OSD, video/audio parameters. - For PTZ settings, see Lens Parameters Adjustment .

- For display settings, see Display Settings .
- For OSD settings, see OSD .
- For audio and video settings, see Video and Audio .

⚠ **NOTE**: The function is only supported by certain models.

Lens Parameters Adjustment

It is used to adjust the lens focus, zoom and iris.

Zoom

Focus

PTZ Speed

● Slide to adjust the speed of the pan/tilt movement.

Iris

PTZ Lock

PTZ lock means to disable the zoom, focus and PTZ rotation functions of the corresponding channel, so that to reduce the target missing caused by PTZ adjustment.
Go to Configuration → PTZ , check Enable PTZ Lock, and click Save.

Conduct 3D Positioning

3D positioning is to relocate the selected area to the image center.
Steps

2. Select a target area in live image.

- Left click on a point on live image: the point is relocated to the center of the live image. With no zooming in or out effect.
- Hold and drag the mouse to a lower right position to frame an area on the live: the framed area is zoomed in and relocated to the center of the live image.
- Hold and drag the mouse to an upper left position to frame an area on the live: the framed area is zoomed out and relocated to the center of the live image.

3. Click the button again to turn off the function.

4.3.2 Set Transmission Parameters

The live view image may be displayed abnormally according to the network conditions. In different network environments, you can adjust the transmission parameters to solve the problem.

Steps

1. Go to Configuration → Local .

2. Set the transmission parameters as required.

Protocol

TCP

TCP ensures complete delivery of streaming data and better video quality, yet the real-time transmission will be affected. It is suitable for the stable network environment.

UDP

UDP is suitable for the unstable network environment that does not demand high video fluency.

MULTICAST

MULTICAST is suitable for the situation that there are multiple clients. You should set the multicast address for them before selection.

⚠ **NOTE**: For detailed information about multicast, refer to Multicast.

HTTP

HTTP is suitable for the situation that the third-party needs to get the stream from the device.

Play Performance

Shortest Delay

The device takes the real-time video image as the priority over the video fluency.

Balanced

The device ensures both the real-time video image and the fluency.

Fluent

The device takes the video fluency as the priority over teal-time. In poor network environment, the device cannot ensures video fluency even the fluency is enabled.

Custom

You can set the frame rate manually. In poor network environment, you can reduce the frame rate to get a fluent live view. But the rule information may cannot display.

3. Click OK.

4.3.3 Set Smooth Streaming

It is a function to tackle the latency and network congestion caused by unstable network condition, and keep the live view stream on the web browser or the client software smooth.

Before You Start

Add the device to your client software and select NPQ protocol in client software before configuring the smooth streaming function.

Be sure that the Bitrate Type is selected as Constant and the SVC is selected as OFF before enabling the function. Go to Configuration → Video/Audio → Video to set the parameters.

Steps

1. Go to the settings page: Configuration → Network → Advanced Settings → Smooth Streaming .
2. Check Enable Smooth Streaming.
3. Select the mode for smooth streaming.

Auto	The resolution and bitrate are adjusted automatically and resolution takes the priority. The upper limits of these two parameters will not exceed the values you set on Video page. Go to Configuration → Video/Audio → Video , set the Resolution and Max. Bitrate before you enable smooth streaming function. In this mode, the frame rate will be adjusted to the maximum value automatically.
Resolution Priority	The resolution stays the same as the set value on Video page, and the bitrate will be adjusted automatically. Go to Configuration → Video/Audio → Video , set the Max. Bitrate before you enable smooth streaming function. In this mode, the framerate will be adjusted to the maximum value automatically.
Frame Rate Priority	The image is still smooth even under the poor network, while the image quality may be not good.
Error Correction	The resolution and bitrate stay the same as the set values on Video page. The mode is used to correct the data error during transmission to ensure the image quality. You can set the Error Correction Proportion within range of 0-100. When the proportion is 0, the data error will be corrected by data retransmission. When the proportion is higher than 0, the error data will be corrected via redundant data that is added to the stream and data retransmission. The higher the value is, the more redundant date will be generated, the more data error would be corrected, but the larger bandwidth would be required. When the proportion is 100, the redundant data will be as large as the original data, and the bandwidth is twice required.

	⚠ **NOTE**: Be sure the bandwidth is sufficient in the Error Correction mode.

4. Save the settings.

4.4 Video and Audio

This part introduces the configuration of video and audio related parameters.

4.4.1 Video Settings

This part introduces the settings of video parameters, such as, stream type, video encoding, and resolution.
Go to setting page: Configuration → Video/Audio → Video .

Stream Type
For device supports more than one stream, you can specify parameters for each stream type.
Main Stream
The stream stands for the best stream performance the device supports. It usually offers the best resolution and frame rate the device can do. But high resolution and frame rate usually means larger storage space and higher bandwidth requirements in transmission.
Sub Stream
The stream usually offers comparatively low resolution options, which consumes less bandwidth and storage space.
Other Streams
Steams other than the main stream and sub stream may also be offered for customized usage.

Set Custom Video
You can set up additional video streams if required. For custom video streams, you can preview them, but cannot record or play back them.

⚠ **NOTE**: ● The function is only supported by certain camera models.
● After restoring the device (not restore to default settings), quantity of custom video streams and their names are kept, but the related parameters are restored.

Steps

+

2. Change the stream name as needed.

⚠ **NOTE**: Up to 32 letters and symbols (except &, <, >, ', or ") are allowed for the stream name.

3. Customize the stream parameters (resolution, frame rate, max. bitrate, video encoding).
4. Optional: Add stream description as needed.
5. Optional: If a custom stream is not needed, click to delete it.
6. Click Save.

Video Type

Select the content (video and audio) that should be contained in the stream.

Video

Only video content is contained in the stream.

Video & Audio

Video content and audio content are contained in the composite stream.

Resolution

Select video resolution according to actual needs. Higher resolution requires higher bandwidth and storage.

Bitrate Type and Max. Bitrate

Constant Bitrate

It means that the stream is compressed and transmitted at a comparatively fixed bitrate. The compression speed is fast, but mosaic may occur on the image.

Variable Bitrate

It means that the device automatically adjust the bitrate under the set Max. Bitrate. The compression speed is slower than that of the constant bitrate. But it guarantees the image quality of complex scenes.

Video Quality

When Bitrate Type is set as Variable, video quality is configurable. Select a video quality according to actual needs. Note that higher video quality requires higher bandwidth.

Frame Rate

The frame rate is to describe the frequency at which the video stream is updated and it is measured by frames per second (fps).

A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout. Note that higher frame rate requires higher bandwidth and larger storage space.

Video Encoding

It stands for the compression standard the device adopts for video encoding.

⚠ **NOTE**: Available compression standards vary according to device models.

H.264

H.264, also known as MPEG-4 Part 10, Advanced Video Coding, is a compression standard. Without compressing image quality, it increases compression ratio and reduces the size of video file than MJPEG or MPEG-4 Part 2.

H.264+

H.264+ is an improved compression coding technology based on H.264. By enabling H.264+, you can estimate the HDD consumption by its maximum average bitrate. Compared to H.264, H.264+ reduces storage by up to 50% with the same maximum bitrate in most scenes.
When H.264+ is enabled, Max. Average Bitrate is configurable. The device gives a recommended max. average bitrate by default. You can adjust the parameter to a higher value if the video quality is less satisfactory. Max. average bitrate should not be higher than max. bitrate.

⚠ **NOTE**: When H.264+ is enabled, Video Quality, I Frame Interval, Profile, SVC, Main Stream Smoothing and ROI are not supported.

H.265

H.265, also known as High Efficiency Video Coding (HEVC) and MPEG-H Part 2, is a compression standard. In comparison to H.264, it offers better video compression at the same resolution, frame rate and image quality.

H.265+

H.265+ is an improved compression coding technology based on H.265. By enabling H.265+, you can estimate the HDD consumption by its maximum average bitrate. Compared to H.265, H.265+ reduces storage by up to 50% with the same maximum bitrate in most scenes.
When H.265+ is enabled, Max. Average Bitrate is configurable. The device gives a recommended max. average bitrate by default. You can adjust the parameter to a higher value if the video quality is less satisfactory. Max. average bitrate should not be higher than max. bitrate.

⚠ **NOTE**: When H.265+ is enabled, Video Quality, I Frame Interval, Profile, and SVC are not supported.

I-Frame Interval

I-frame interval defines the number of frames between 2 I-frames.
In H.264 and H.265, an I-frame, or intra frame, is a self-contained frame that can be independently decoded without any reference to other images. An I-frame consumes more bits than other frames.

Thus, video with more I-frames, in other words, smaller I-frame interval, generates more steady and reliable data bits while requiring more storage space.

SVC

Scalable Video Coding (SVC) is the name for the Annex G extension of the H.264 or H.265 video compression standard.
The objective of the SVC standardization has been to enable the encoding of a high-quality video bitstream that contains one or more subset bitstreams that can themselves be decoded with a complexity and reconstruction quality similar to that achieved using the existing H.264 or H.265 design with the same quantity of data as in the subset bitstream. The subset bitstream is derived by dropping packets from the larger bitstream.
SVC enables forward compatibility for older hardware: the same bitstream can be consumed by basic hardware which can only decode a low-resolution subset, while more advanced hardware will be able decode high quality video stream.

MPEG4

MPEG4, referring to MPEG-4 Part 2, is a video compression format developed by Moving Picture Experts Group (MPEG).

MJPEG

Motion JPEG (M-JPEG or MJPEG) is a video compression format in which intraframe coding technology is used. Images in a MJPEG format is compressed as individual JPEG images.

Profile

This function means that under the same bitrate, the more complex the profile is, the higher the quality of the image is, and the requirement for network bandwidth is also higher.

Smoothing

It refers to the smoothness of the stream. The higher value of the smoothing is, the better fluency of the stream will be, though, the video quality may not be so satisfactory. The lower value of the smoothing is, the higher quality of the stream will be, though it may appear not fluent.

4.4.2 ROI

ROI (Region of Interest) encoding helps to discriminate the ROI and background information in video compression. The technology assigns more encoding resource to the region of interest, thus to increase the quality of the ROI whereas the background information is less focused.

Set ROI

ROI (Region of Interest) encoding helps to assign more encoding resource to the region of interest, thus to increase the quality of the ROI whereas the background information is less focused.

Before You Start

Please check the video coding type. ROI is supported when the video coding type is H.264 or H.265.

Steps
1. Go to Configuration → Video/Audio → ROI .
2. Check Enable.
3. Select Stream Type.
4. Select Region No. in Fixed Region to draw ROI region.
   1) Click Draw Area.
   2) Click and drag the mouse on the view screen to draw the fixed region.
   3) Click Stop Drawing.

⚠ **NOTE**: Select the region that needs to be adjusted and drag the mouse to adjust its position.

5. Input the Region Name and ROI Level.
6. Click Save.

⚠ **NOTE**: The higher the ROI level is, the clearer the image of the detected region is.

7. Optional: Select other region No. and repeat the above steps if you need to draw multiple fixed regions.

4.4.3 Display Info. on Stream

The information of the objects (e.g. human, vehicle, etc.) is marked in the video stream. You can set rules on the connected rear-end device or client software to detect the events including line crossing, intrusion, etc.
Steps
1. Go to the setting page: Configuration → Video/Audio → Display Info. on Stream .
2. Check Enable Dual-VCA.
3. Click Save.

4.4.4 Audio Settings

It is a function to set audio parameters such as audio encoding, environment noise filtering.
Go to the audio settings page: Configuration → Video/Audio → Audio .

Audio Encoding

Select the audio encoding compression of the audio.

Audio Input

LineIn	Set Audio Input to LineIn when the device connects to the audio input device with the high output power, such as MP3, synthesizer or active pickup.
MicIn	Set Audio Input to MicIn when the device connects to the audio input device with the low output power, such as microphone or passive pickup.

⚠ **NOTE**: ● Connect the audio input device as required.
● The audio input display varies with the device models.

Audio Output

It is a switch of the device audio output. When it is disabled, all the device audio cannot output. The audio output display varies with the device modes.

⚠ **NOTE**: ● Connect the audio output device as required.

Environmental Noise Filter

Set it as OFF or ON. When the function is enabled, the noise in the environment can be filtered to some extent.

4.4.5 Two-way Audio

It is used to realize the two-way audio function between the monitoring center and the target in the monitoring screen.

Before You Start

● Make sure the audio input device (pick-up or microphone) and audio output device (speaker) connected to the device is working properly. Refer to specifications of audio input and output devices for device connection.
● If the device has built-in microphone and speaker, two-way audio function can be enabled directly.

Steps

1. Click Live View.

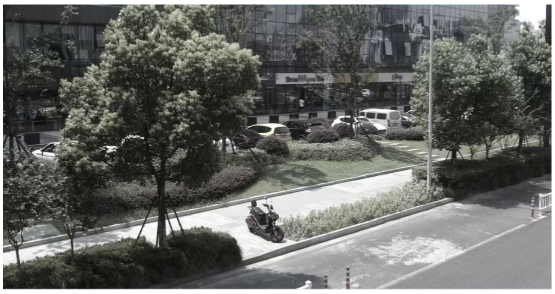
4.4.6 Display Settings

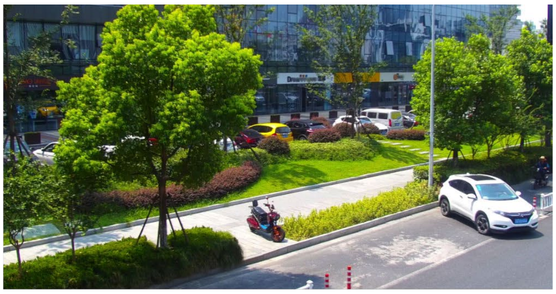
It offers the parameter settings to adjust image features.

Go to Configuration → Image → Display Settings . Click Default to restore settings.

Scene Mode
There are several sets of image parameters predefined for different installation environments. Select a scene according to the actual installation environment to speed up the display settings.

Image Adjustment
By adjusting the Brightness, Saturation, Hue, Contrast and Sharpness, the image can be best displayed.


Low Saturation


High Saturation

Exposure Settings
Exposure is controlled by the combination of iris, shutter, and photo sensibility. You can adjust image effect by setting exposure parameters.
In manual mode, you need to set Exposure Time, Gain and Slow Shutter.

Focus
It offers options to adjust the focus mode.

Focus Mode

Auto

The device focuses automatically as the scene changes. If you cannot get a well-focused image under auto mode, reduce light sources in the image and avoid flashing lights.

Semi-auto

The device focuses once after the PTZ and lens zooming. If the image is clear, the focus does not change when the scene changes.

Manual

You can adjust the focus manually on the live view page.

Day/Night Switch

Day/Night Switch function can provide color images in the day mode and turn on fill light in the night mode. Switch mode is configurable.

Day

The image is always in color.

Night

The image is black/white or colorful and the supplement light will be enabled to ensure clear live view image at night.

⚠ **NOTE**: Select the region that needs to be adjusted and drag the mouse to adjust its position.

Auto

The camera switches between the day mode and the night mode according to the illumination automatically.

Scheduled-Switch

Set the Start Time and the End Time to define the duration for day mode.

⚠ **NOTE**: Day/Night switch function varies according to models.

Grey Scale

You can choose the range of the Grey Scale as [0-255] or [16-235].

Rotate

When enabled, the live view will rotate 90 ° counterclockwise. For example, 1280 × 720 is rotated to 720 × 1280.

Enabling this function can change the effective range of monitoring in the vertical direction.

Lens Distortion Correction

For device equipped with motorized lens, image may appear distorted to some extent. Enable this function to correct the distortion.

NOTE: ● This function is only supported by certain device equipped with motorized lens.
● The edge of image will be lost if this function is enabled.

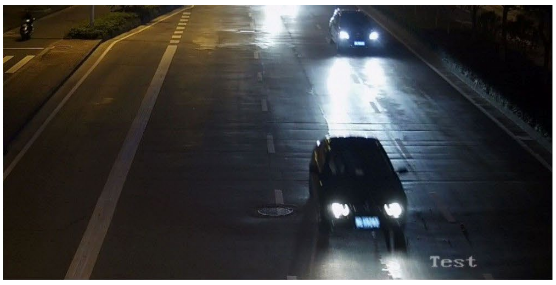
BLC

If you focus on an object against strong backlight, the object will be too dark to be seen clearly. BLC (backlight compensation) compensates light to the object in the front to make it clear. If BLC mode is set as Custom, you can draw a red rectangle on the live view image as the BLC area.

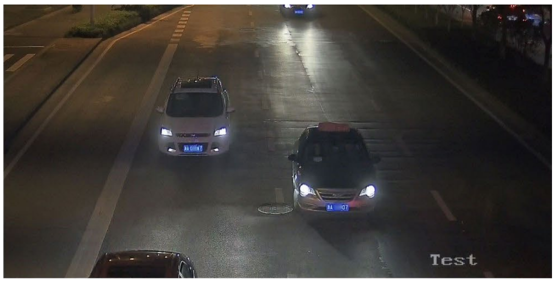
WDR

The WDR (Wide Dynamic Range) function helps the camera provide clear images in environment with strong illumination differences.
When there are both very bright and very dark areas simultaneously in the field of view, you can enable the WDR function and set the level. WDR automatically balances the brightness level of the whole image and provides clear images with more details.

NOTE: When WDR is enabled, some other functions may be not supported. Refer to the actual interface for details.



WDR Off



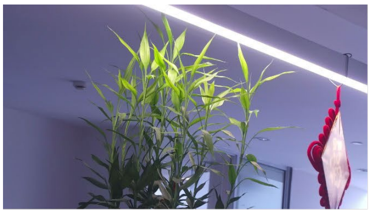
WDR On

HLC

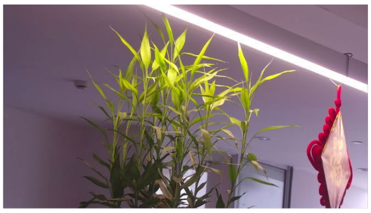
When the bright area of the image is over-exposed and the dark area is under-exposed, the HLC (High Light Compression) function can be enabled to weaken the bright area and brighten the dark area, so as to achieve the light balance of the overall picture.

White Balance

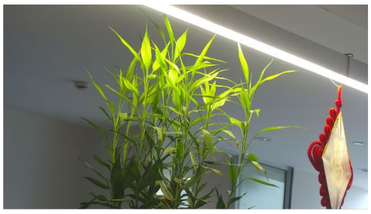
White balance is the white rendition function of the camera. It is used to adjust the color temperature according to the environment.



Cold



Warm



Auto White Balance

DNR

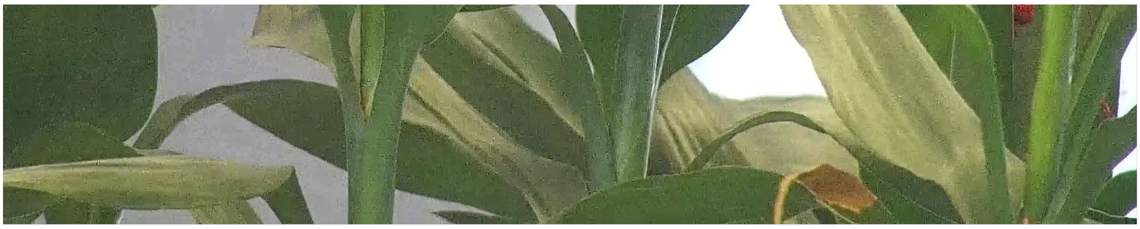
Digital Noise Reduction is used to reduce the image noise and improve the image quality. Normal and Expert modes are selectable.

Normal

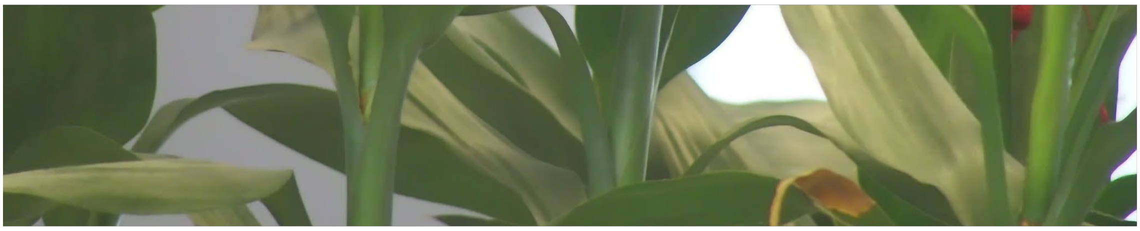
Set the DNR level to control the noise reduction degree. The higher level means stronger reduction degree.

Expert

Set the DNR level for both space DNR and time DNR to control the noise reduction degree. The higher level means stronger reduction degree.



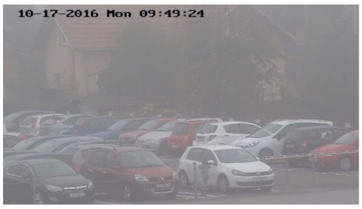
DNR Off



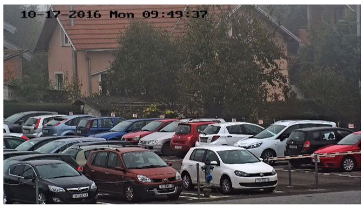
DNR On

Defog

You can enable the defog function when the environment is foggy and the image is misty. It enhances the subtle details so that the image appears clearer.



Defog Off



Defog On

EIS

Increase the stability of video image by using jitter compensation technology.

Mirror

When the live view image is the reverse of the actual scene, this function helps to display the image normally.
Select the mirror mode as needed.

⚠ **NOTE**: The video recording will be shortly interrupted when the function is enabled.

Image Parameters Switch

The device automatically switches image parameters in set time periods.
Go to image parameters switch setting page: Configuration → Image → Image Parameters Switch , and set parameters as needed.

Set Switch

Switch the image parameters to the scene automatically in certain time periods.

Steps

1. Check Enable.
2. Select and configure the corresponding time period and the scene.

> ⚠ **NOTE**: For the scene configuration, refer to Scene Mode

3. Click Save.

Video Standard

Video standard is an ability of a video card or video display device that defines the amount of colors that are shown and the resolution. The two most common video standard used are NTSC and PAL. In NTSC, 30 frames are transmitted each second. Each frame is made up of 525 individual scan lines. In PAL, 25 frames are transmitted each second. Each frame is made up of 625 individual scan lines. Select video signal standard according to the video system in your country/region.

Local Video Output
If the device is equipped with video output interfaces, such as BNC, CVBS, HDMI, and SDI, you can preview the live image directly by connecting the device to a monitor screen.
Select the output mode as ON/OFF to control the output.

4.4.7 OSD

You can customize OSD (On-screen Display) information such as device name, time/date, font, color, and text overlay displayed on video stream.
Go to OSD setting page: Configuration → Image → OSD Settings . Set the corresponding parameters, and click Save to take effect.

Character Set
Select character set for displayed information. If Korean is required to displayed on screen, select EUC-KR. Otherwise, select GBK.

Displayed Information
Set camera name, date, week, and their related display format.

Text Overlay
Set customized overlay text on image.

OSD Parameters
Set OSD parameters, such as Display Mode, OSD Size, Font Color, and Alignment.

4.4.8 Set Privacy Mask

The function blocks certain areas in the live view to protect privacy. No matter how the device moves, the blocked scene will never be seen.

Steps

1. Go to privacy mask setting page: Configuration → Image → Privacy Mask .
2. Check Enable Privacy Mask.
3. Click Draw Area. Drag the mouse in the live view to draw a closed area.

Drag the corners of the area:	Adjust the size of the area.
Drag the area:	Adjust the position of the area.
Click Clear All:	Clear all the areas you set.

4. Click Stop Drawing
5. Click Save.

4.4.9 Overlay Picture

Overlay a customized picture on live view.

Before You Start
The picture to overlay has to be in BMP format with 24-bit, and the maximum picture size is 128 × 128 pixel.

Steps
1. Go to picture overlay setting page: Configuration → Image → Picture Overlay .
2. Click Browse to select a picture, and click Upload.

The picture with a red rectangle will appear in live view after successfully uploading.

3. Check Enable Picture Overlay.
4. Drag the picture to adjust its position.
5. Click Save.

4.4.10 Set Target Cropping

You can crop the image, transmit and save only the images of the target area to save transmission bandwidth and storage.
Steps
1. Go to Configuration → Video/Audio → Target Cropping .
2. Check Enable Target Cropping and set Third Stream as the Stream Type.

⚠ **NOTE**: After enabling target cropping, the third stream resolution cannot be configured.

3. Select a Cropping Resolution.

A red frame appears in the live view.

4. Drag the frame to the target area.
5. Click Save.

⚠ **NOTE**: ● Only certain models support target cropping and the function varies according to different camera models.
● Some functions may be disabled after enabling target cropping.

4.5 Video Recording and Picture Capture

This part introduces the operations of capturing video clips and snapshots, playback, and downloading captured files.

4.5.1 Storage Settings

This part introduces the configuration of several common storage paths.

Set Memory Card

If you choose to store the files to memory card, make sure you insert and format the memory card in advance.

Before You Start

Insert the memory card to the camera. For detailed installation, refer to Quick Start Guide of the camera.

Steps

1. Go to storage management setting page: Configuration → Storage → Storage Management → HDD Management .
2. Select the memory card, and click Format to start initializing the memory card.
   The Status of memory card turns to Normal from Uninitialized, which means the memory card can be used normally.
3. Optional: Define the Quota of the memory card. Input the quota percentage for different contents according to your need.
4. Click Save.

Detect Memory Card Status

The device detects the status of Hikvision memory card. You receive notifications when your memory card is detected abnormal.

Before You Start

The configuration page only appears when a Hikvision memory card is installed to the device.

Steps

1. Go to Configuration → Storage → Storage Management → Memory Card Detection .
2. Click Status Detection to check the Remaining Lifespan and Health Status of your memory card.

   Remaining Lifespan

   It shows the percentage of the remaining lifespan. The lifespan of a memory card may be influenced by factors such as its capacity and the bitrate. You need to change the memory card if the remaining lifespan is not enough.

   Health Status

It shows the condition of your memory card. There are three status descriptions: good, bad, and damaged. You will receive a notification if the health status is anything other than good when the Arming Schedule and Linkage Method are set.

⚠ **NOTE**: It is recommended that you change the memory card when the health status is not "good".

3. Click R/W Lock to set the permission of reading and writing to the memory card.
   - Add a Lock
     a. Select the Lock Switch as ON.
     b. Enter the password.
     c. Click Save
   - Unlock
     ● If you use the memory card on the device that locks it, unlocking will be done automatically and no unlocking procedures are required on the part of users.
     ● If you use the memory card (with a lock) on a different device, you can go to HDD Management to unlock the memory card manually. Select the memory card, and click Unlock. Enter the correct password to unlock it.
   - Remove the Lock
     a. Select the Lock Switch as OFF.
     b. Enter the password in Password Settings.
     c. Click Save.

⚠ **NOTE**: ● Only admin user can set the R/W Lock.
● The memory card can only be read and written when it is unlocked.
● If the device, which adds a lock to a memory card, is restored to the factory settings, you can go to HDD Management to unlock the memory card.

4. Set Arming Schedule and Linkage Method. See Set Arming Schedule and Linkage Method Settings for details.
5. Click Save.

Set FTP

You can configure the FTP server to save images which are captured by events or a timed snapshot task.

Before You Start

Get the FTP server address first.

Steps

1. Go to Configuration → Network → Advanced Settings → FTP .

2. Configure FTP settings.

   FTP Protocol

   FTP and SFTP are selectable. The files uploading is encrypted by using SFTP protocol.

   Server Address and Port

   The FTP server address and corresponding port.

   User Name and Password

   The FTP user should have the permission to upload pictures.

   If the FTP server supports picture uploading by anonymous users, you can check Anonymous to hide your device information during uploading.

   Directory Structure

   The saving path of snapshots in the FTP server.

   Picture Filing Interval

   For better picture management, you can set the picture filing interval from 1 day to 30 days. Pictures captured in the same time interval will be saved in one folder named after the beginning date and ending date of the time interval.

   Picture Name

   Set the naming rule for captured pictures. You can choose Default in the drop-down list to use the default rule, that is, IP address_channel number_capture time_event type.jpg (e.g., 10.11.37.189_01_20150917094425492_FACE_DETECTION.jpg). Or you can customize it by adding a Custom Prefix to the default naming rule.
3. Check Upload Picture to enable uploading snapshots to the FTP server.
4. Check Enable Automatic Network Replenishment.

⚠ **NOTE**: Upload to FTP/Memory Card/NAS in Linkage Method and Enable Automatic Network Replenishment should be both enabled simultaneously.

5. Click Test to verify the FTP server.
6. Click Save.

Set NAS

Take network server as network disk to store the record files, captured images, etc.

Before You Start

Get the IP address of the network disk first.

Steps

1. Go to NAS setting page: Configuration → Storage → Storage Management → Net HDD .
2. Click HDD No.. Enter the server address and file path for the disk.

   Server Address

   The IP address of the network disk.

   File Path

   The saving path of network disk files.

Mounting Type

Select file system protocol according to the operation system.

Enter user name and password of the net HDD to guarantee the security if SMB/CIFS is selected.

3. Test to check whether the network disk is available.
4. Click Save.

eMMC Protection

It is to automatically stop the use of eMMC as a storage media when its health status is poor.

⚠ **NOTE**: The eMMC protection is only supported by certain device models with an eMMC hardware.

Go to Configuration → System → Maintenance → System Service for the settings.

eMMC, short for embedded multimedia card, is an embedded non-volatile memory system. It is able to store the captured images or videos of the device.

The device monitors the eMMC health status and turns off the eMMC when its status is poor. Otherwise, using a worn-out eMMC may lead to device boot failure.

Set Cloud Storage

It helps to upload the captured pictures and data to the cloud. The platform requests picture directly from the cloud for picture and analysis. The function is only supported by certain models.

⚠ **NOTE**: If the cloud storage is enabled, the pictures are stored in the cloud video manager firstly.

Steps

1. Go to Configuration → Storage → Storage Management → Cloud Storage .
2. Check Enable Cloud Storage.
3. Set basic parameters.

Protocol Version — The protocol version of the cloud video manager.

Server IP — The IP address of the cloud video manager. It supports IPv4 address.

Serve Port — The port of the cloud video manager. You are recommended to use the default port.

AccessKey — The key to log in to the cloud video manager.

SecretKey — The key to encrypt the data stored in the cloud video manager.

User Name and Password — The user name and password of the cloud video manager.

Picture Storage Pool ID	The ID of the picture storage region in the cloud video manager. Make sure storage pool ID and the storage region ID are the same.

4. Click Test to test the configured settings.
5. Save.

4.5.2 Video Recording

This part introduces the operations of manual and scheduled recording, playback, and downloading recorded files.

Record Automatically
This function can record video automatically during configured time periods.

Before You Start
Select Trigger Recording in event settings for each record type except Continuous. See Event and Alarm for details.

Steps

1. Go to Configuration → Storage → Schedule Settings → Record Schedule .
2. Check Enable.
3. Select a record type.

> ⚠ **NOTE**: The record type is vary according to different models.

Continuous
   The video will be recorded continuously according to the schedule.
Motion
   When motion detection is enabled and trigger recording is selected as linkage method, object movement is recorded.
Alarm
   When alarm input is enabled and trigger recording is selected as linkage method, the video is recorded after receiving alarm signal from external alarm input device.
Motion | Alarm
   Video is recorded when motion is detected or alarm signal is received from the external alarm input device.
Motion & Alarm
   Video is recorded only when motion is detected and alarm signal is received from the external alarm input device.
Event

The video is recorded when configured event is detected.

4. Set schedule for the selected record type. Refer to Set Arming Schedule for the setting operation.
5. Advanced to set the advanced settings.

Overwrite

Enable Overwrite to overwrite the video records when the storage space is full. Otherwise the camera cannot record new videos.

Pre-record

The time period you set to record before the scheduled time.

Post-record

The time period you set to stop recording after the scheduled time. Stream Type Select the stream type for recording.

⚠ **NOTE**: When you select the stream type with higher bitrate, the actual time of the pre-record and post-record may be less than the set value.

Recording Expiration

The recordings are deleted when they exceed the expired time. The expired time is configurable. Note that once the recordings are deleted, they can not be recovered.

6. Click Save.

Record Manually

Steps

1. Go to Configuration → Local .
2. Set the Record File Size and saving path to for recorded files.
3. Click Save.

Set Lite Storage

After the lite storage is enabled, the frame rate and bitrate of the video stream can be reduced to lengthen the storage time of the memory card when there is no moving object in the monitoring scenario.

Steps

1. Go to Configuration → Storage → Storage Management → Lite Storage .
2. Check Enable and set the level. The higher the level is, the larger the frame rate and bitrate are, and the shorter the recommended storage time is.
3. Set the storage time. The device automatically calculates the bitrate and offers the recommended storage time according to the memory card space and level. You are recommended to set the storage time to the device recommended time.

⚠ **NOTE**: ● If the lite storage is enabled, unformatted memory card will be formatted automatically.
● The displayed available space of the memory card is assigned by default according to Percentage of Record in Storage → Storage Management → Quota . You can adjust it as required.
● Only certain device models support the function.

Playback and Download Video

You can search, playback and download the videos stored in the local storage or network storage.

Steps

1. Click Playback.
2. Set search condition and click Search.

The matched video files showed on the timing bar.

▶ ✂

Double click the live view image to play video files in full screen. Press ESC to exit full screen.

⚠ **NOTE**: Go to Configuration → Local , click Save clips to to change the saving path of clipped video files.

⭳

1) Set search condition and click Search.
2) Select the video files and then click Download.

⚠ **NOTE**: Go to Configuration → Local , click Save downloaded files to to change the saving path of downloaded video files.

4.5.3 Capture Configuration

The device can capture the pictures manually or automatically and save them in configured saving path. You can view and download the snapshots.

Capture Automatically

This function can capture pictures automatically during configured time periods.

Before You Start

If event-triggered capture is required, you should configure related linkage methods in event settings. Refer to Event and Alarm for event settings.

Steps

1. Go to Configuration → Storage → Schedule Settings → Capture → Capture Parameters .
2. Set the capture type. Timing

Capture a picture at the configured time interval.

Event-Triggered

Capture a picture when an event is triggered.

3. Set the Format, Resolution, Quality, Interval, and Capture Number.
4. Refer to Set Arming Schedule for configuring schedule time.
5. Click Save.

Capture Manually

Steps

1. Go to Configuration → Local .
2. Set the Image Format and saving path to for snapshots.
   JPEG
   The picture size of this format is comparatively small, which is better for network transmission.
   BMP
   The picture is compressed with good quality.
3. Click Save.
4. Click near the live view or play back window to capture a picture manually.

Set Timing Wake

When the device is sleeping, it will wake up at the set time interval, and capture pictures and upload them.

Steps

⚠ **NOTE**: The function is only supported by certain device models.

1. Go to Configuration → System → System Settings → Power Consumption Mode , under Sleep Schedule, click the time schedule to set Sleep Capture Interval.
2. Enter Configuration → Event → Basic Event → Timing Wake .
3. Check Enable.
4. Select Capture Types.
5. For the linkage method settings, see Linkage Method Settings .
6. Click Save.

Result

The device will wake up at the set sleep capture interval, and capture pictures and upload them.

View and Download Picture

You can search, view and download the pictures stored in the local storage or network storage.

Steps

1. Click Picture.

2. Set search condition and click Search.

The matched pictures showed in the file list.

3. Select the pictures then click Download to download them.

⚠ **NOTE**: Go to Configuration → Local , click Save snapshots when playback to change the saving path of pictures.

4.6 Event and Alarm

This part introduces the configuration of events. The device takes certain response to triggered alarm. Certain events may not be supported by certain device models.

4.6.1 Basic Event

Set Motion Detection

It helps to detect the moving objects in the detection region and trigger the linkage actions.

Steps

1. Go to Configuration → Event → Basic Event → Motion Detection .
2. Check Enable Motion Detection.
3. Optional: Highlight to display the moving object in the image in green.
   1) Check Enable Dynamic Analysis for Motion.
   2) Go to Configuration → Local .
   3) Set Rules to Enable.
4. Select Configuration Mode, and set rule region and rule parameters. - For the information about normal mode, see Normal Mode . - For the information about expert mode, see Expert Mode .
5. Set the arming schedule and linkage methods. For the information about arming schedule settings, see Set Arming Schedule . For the information about linkage methods, see Linkage Method Settings .
6. Click Save.

Expert Mode

You can configure different motion detection parameters for day and night according to the actual needs.

Steps

1. Select Expert Mode in Configuration.
2. Set parameters of expert mode.
   Scheduled Image Settings
      OFF

Image switch is disabled.

Auto-Switch

The system switches day/night mode automatically according to environment. It displays colored image at day and black and white image at night.

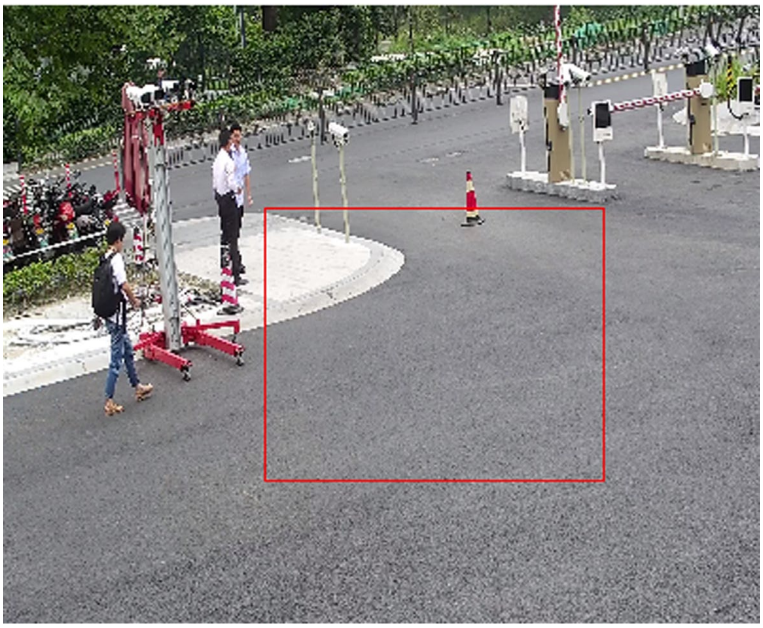
Scheduled-Switch

The system switches day/night mode according to the schedule. It switches to day mode during the set periods and switches to night mode during the other periods.

Sensitivity

The higher the value of sensitivity is, the more sensitive the motion detection is. If scheduled image settings is enabled, the sensitivity of day and night can be set separately.

3. Select an Area and click Draw Area. Click and drag the mouse on the live image and then release the mouse to finish drawing one area.



Stop Drawing Finish drawing one area.

Clear All Delete all the areas.

4. Click Save.
5. Optional: Repeat above steps to set multiple areas.

Normal Mode

You can set motion detection parameters according to the device default parameters.

Steps

1. Select normal mode in Configuration.

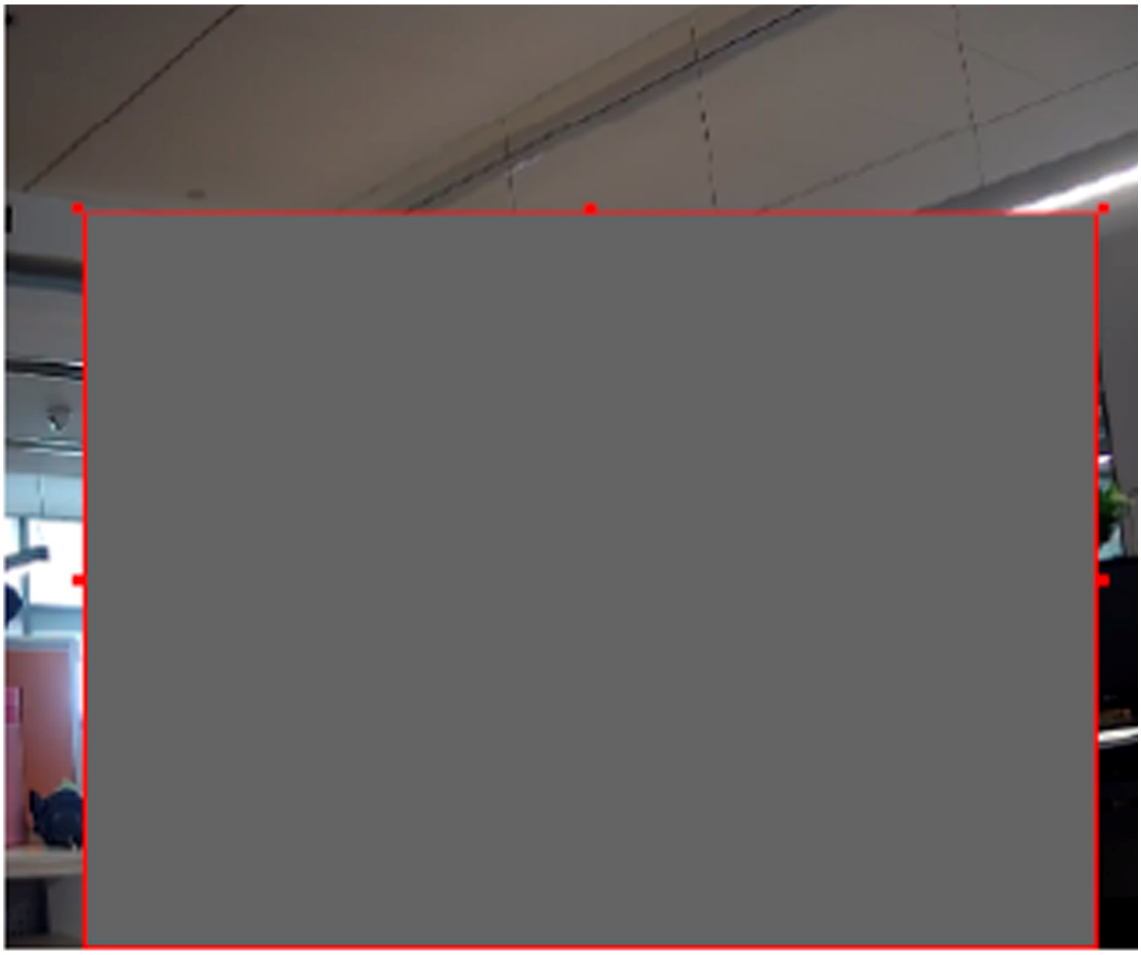
2. Set the sensitivity of normal mode. The higher the value of sensitivity is, the more sensitive the motion detection is. If the sensitivity is set to 0, motion detection and dynamic analysis do not take effect.
3. Set Detection Target. Human and vehicle are available. If the detection target is not selected, all the detected targets will be reported, including the human and vehicle.
4. Click Draw Area. Click and drag the mouse on the live video, and then release the mouse to finish drawing one area.
   Stop Drawing Stop drawing one area.
   Clear All Clear all the areas.
5. Optional: You can set the parameters of multiple areas by repeating the above steps.

Set Video Tampering Alarm

When the configured area is covered and cannot be monitored normally, the alarm is triggered and the device takes certain alarm response actions.

Steps

1. Go to Configuration → Event → Basic Event → Video Tampering .
2. Check Enable.
3. Set the Sensitivity. The higher the value is, the easier to detect the area covering.
4. Click Draw Area and drag the mouse in the live view to draw the area.
   Stop Drawing Finish drawing.
   Clear All Delete all the drawn areas.



5. Refer to Set Arming Schedule for setting scheduled time. Refer to Linkage Method Settings for setting linkage method.
6. Click Save.

Set PIR Alarm

A PIR (Passive Infrared) alarm is triggered when an intruder moves within the detector's field of view. The heat energy dissipated by a person, or any other warm blooded creature such as dogs, cats, etc., can be detected.

Steps

⚠ **NOTE**: Only certain models support PIR alarm.

1. Go to Configuration → Advanced Configuration → Basic Event → PIR Alarm .
2. Check Enable PIR Alarm.
3. Refer to Set Arming Schedule for setting scheduled time. Refer to Linkage Method Settings for setting linkage method.

4. Click Save.

Set Exception Alarm

Exception such as network disconnection can trigger the device to take corresponding action.

Steps

1. Go to Configuration → Event → Basic Event → Exception .
2. Select Exception Type.

HDD Full	The HDD storage is full.
HDD Error	Error occurs in HDD.
Network Disconnected	The device is offline.
IP Address Conflicted	The IP address of current device is same as that of other device in the network.
Illegal Login	Incorrect user name or password is entered.

3. Refer to Linkage Method Settings for setting linkage method.
4. Click Save.

Set Alarm Input

Alarm signal from the external device triggers the corresponding actions of the current device.

Before You Start

Make sure the external alarm device is connected. See Quick Start Guide for cable connection.

Steps

1. Go to Configuration → Event → Basic Event → Alarm Input .
2. Check Enable Alarm Input Handling.
3. Select Alarm Input NO. and Alarm Type from the dropdown list. Edit the Alarm Name.
4. Refer to Set Arming Schedule for setting scheduled time. Refer to Linkage Method Settings for setting linkage method.
5. Click Copy to... to copy the settings to other alarm input channels.
6. Click Save.

Set Video Quality Diagnosis

When the video quality of the device is abnormal and the alarm linkage is set, the alarm will be triggered automatically.

Steps

1. Go to Configuration → Event → Basic Event → Video Quality Diagnosis .
2. Select Diagnosis Type.
3. Set the corresponding parameters.

   Alarm Detection Interval

      The time interval to detect the exception.

   Sensitivity

The higher the value is, the more easily the exception will be detected, and the higher possibility of misinformation would be.

Alarm Delay Times

The device uploads the alarm when the alarm reaches the set number of times.

4. Check Enable, and the selected diagnosis type will be detected.
5. Set arming schedule. See Set Arming Schedule .
6. Set linkage method. See Linkage Method Settings .
7. Click Save.

⚠ **NOTE**: The function is only supported by certain models. The actual display varies with models.

Set Vibration Detection

It is used to detect whether the device is vibrating. The device reports an alarm and triggers linkage actions if the function is enabled.

Steps

1. Go to Configuration → Event → Basic Event → Vibration Detection .
2. Check Enable.
3. Drag the slider to set the detection sensitivity. You can also enter number to set the sensitivity.
4. Set the arming schedule. See Set Arming Schedule .
5. Set the linkage method. See Linkage Method Settings .
6. Click Save.

⚠ **NOTE**: The function is only supported by certain models. The actual display varies with models.

4.6.2 Smart Event

Set smart events by the following instructions.

⚠ **NOTE**: ● For certain device models, you need to enable the smart event function on VCA Resource page first to show the function configuration page.
● The function varies according to different models.

Detect Audio Exception

Audio exception detection function detects the abnormal sound in the scene, such as the sudden increase/decrease of the sound intensity, and some certain actions can be taken as response.

Steps

1. Go to Configuration → Event → Smart Event → Audio Exception Detection .
2. Select one or several audio exception detection types.

Audio Loss Detection

Detect sudden loss of audio track.

Sudden Increase of Sound Intensity Detection

Detect sudden increase of sound intensity. Sensitivity and Sound Intensity Threshold are configurable.

⚠ **NOTE**: ● The lower the sensitivity is, the more significant the change should be to trigger the detection.
● The sound intensity threshold refers to the sound intensity reference for the detection. It is recommended to set as the average sound intensity in the environment. The louder the environment sound, the higher the value should be. You can adjust it according to the real environment.

Sudden Decrease of Sound Intensity Detection

Detect sudden decrease of sound intensity. Sensitivity is configurable.

3. Refer to Set Arming Schedule for setting scheduled time. Refer to Linkage Method Settings for setting linkage methods.
4. Click Save.

⚠ **NOTE**: The function is only supported by certain models. The actual function varies according to different models.

Set Defocus Detection

The blurred image caused by lens defocus can be detected. If it occurs, the device can take linkage actions.

Steps

1. Go to Configuration → Event → Smart Event → Defocus Detection .
2. Check Enable.
3. Set Sensitivity. The higher the value is, the more easily the defocus image can trigger the alarm. You can adjust the value according to the actual environment.
4. For the linkage method settings, refer to Linkage Method Settings .
5. Click Save.

⚠ **NOTE**: The function is only supported by certain models. The actual display varies with models.

Detect Scene Change

Scene change detection function detects the change of the scene. Some certain actions can be taken when the alarm is triggered.

Steps
1. Go to Configuration → Event → Smart Event → Scene Change Detection .
2. Click Enable.
3. Set the Sensitivity. The higher the value is, the more easily the change of scene can be detected. But the detection accuracy is reduced.
4. Refer to Set Arming Schedule for setting scheduled time. Refer to Linkage Method Settings for setting linkage method.
5. Click Save.

⚠ **NOTE**: The function varies according to different models.

Set Face Detection

It helps to detect the face in the detection region. If a face is detected, the device triggers the linkage actions.

Steps
1. Go to Configuration → Event → Smart Event → Face Detection .
2. Check Enable Face Detection.
3. Optional: Highlight to display the face in the image.

1) Check Enable Dynamic Analysis For Face Detection. 2) Go to Configuration → Local , set Rules to Enable.

4. Set Sensitivity. The lower the sensitivity is, the profile of the face or unclear face is more difficult to detect.
5. Set the arming schedule and linkage methods. For the information about arming schedule settings, see Set Arming Schedule . For the information about linkage methods, see Linkage Method Settings .
6. Click Save.

Set Video Loss

This function can detect the video signal loss in time and trigger the linkage action.

Steps
1. Go to Configuration → Event → Basic Event → Video Loss .
2. Check Enable.
3. Refer to Set Arming Schedule for setting scheduled time. Refer to Linkage Method Settings for setting linkage method.
4. Click Save.

Set Intrusion Detection

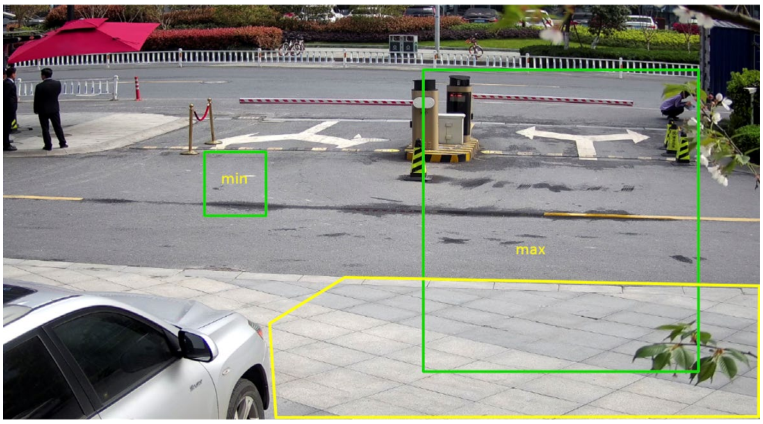
It is used to detect objects entering and loitering in a predefined virtual region. If it occurs, the device can take linkage actions.

Before You Start

● For certain device models, you need to enable the smart event function on VCA Resource page first.
● For the device supporting HEOP, go to VCA → APP to import and enable Smart Event.

Steps

1. Go to VCA → Smart Event → Intrusion Detection . For certain device models, you should go to Configuration → Event → Smart Event → Intrusion Detection .
2. Check Enable.
3. Select a Region. For the detection region settings, refer to Draw Area .
4. Set the minimum size and the maximum size for the target to improve detection accuracy. Only targets whose size are between the maximum size and the minimum size trigger the detection. For the detail settings, refer to Set Size Filter .
5. Set rules.
   Sensitivity
      Sensitivity stands for the percentage of the body part of an acceptable target that enters the predefined region. Sensitivity = 100 - S1/ST × 100. S1 stands for the target body part that goes across the predefined region. ST stands for the complete target body. The higher the value of sensitivity is, the more easily the alarm can be triggered.
   Threshold
      Threshold stands for the threshold for the time of the object loitering in the region. If the time that one object stays exceeds the threshold, the alarm is triggered. The larger the value of the threshold is, the longer the alarm triggering time is.



6. Optional: You can set the parameters of multiple areas by repeating the above steps.
7. For the arming schedule settings, refer to Set Arming Schedule . For the linkage method settings, refer to Linkage Method Settings .
8. Click Save.

Set Line Crossing Detection

It is used to detect objects crossing a predefined virtual line. If it occurs, the device can take linkage actions.

Before You Start

● For certain device models, you need to enable the smart event function on VCA Resource page first.

● For the device supporting HEOP, go to VCA → APP to import and enable Smart Event.

Steps

1. Go to VCA → Smart Event → Line Crossing Detection . For certain device models, you should go to Configuration → Event → Smart Event → Line Crossing Detection .
2. Check Enable.
3. Select one Line and set the size filter. For the size filter settings, refer to Set Size Filter .
4. Click Draw Area and a line with an arrow appears in the live video. Drag the line to the location on the live video as desired.
5. Set rules.

   Direction

      It stands for the direction from which the object goes across the line.

      A<->B: The object going across the line from both directions can be detected and alarms are triggered.

      A->B: Only the object crossing the configured line from the A side to the B side can be detected.

      B->A: Only the object crossing the configured line from the B side to the A side can be detected.

   Sensitivity

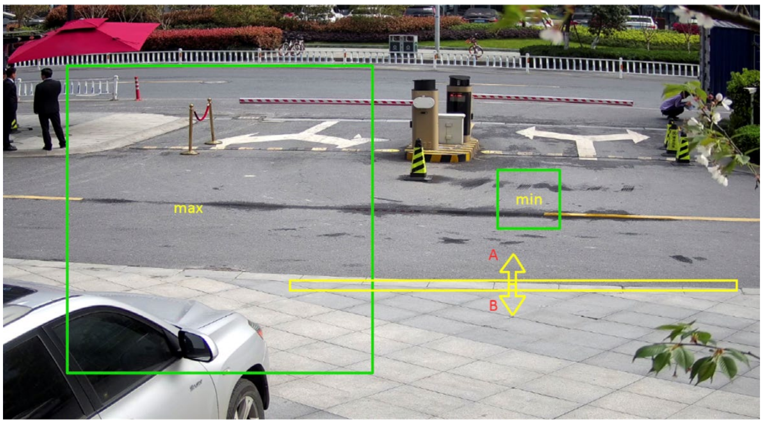
      It stands for the percentage of the body part of an acceptable target that goes across the predefined line. Sensitivity = 100 - S1/ST × 100. S1 stands for the target body part that goes across the pre-defined line. ST stands for the complete target body. The higher the value of sensitivity is, the more easily the alarm can be triggered.

   Detection Target

      Human and vehicle are available. If the detection target is not selected, all the detected targets will be reported, including the human and vehicle.

   Target Validity

      If you set a higher validity, the required target features should be more obvious, and the alarm accuracy would be higher. The target with less obvious features would be missing.



6. Optional: You can set the parameters of multiple areas by repeating the above steps.
7. For the arming schedule settings, refer to Set Arming Schedule . For the linkage method settings, refer to Linkage Method Settings .
8. Click Save.

Set Region Entrance Detection

It is used to detect objects entering a predefined virtual region from the outside place. If it occurs, the device can take linkage actions.

Before You Start

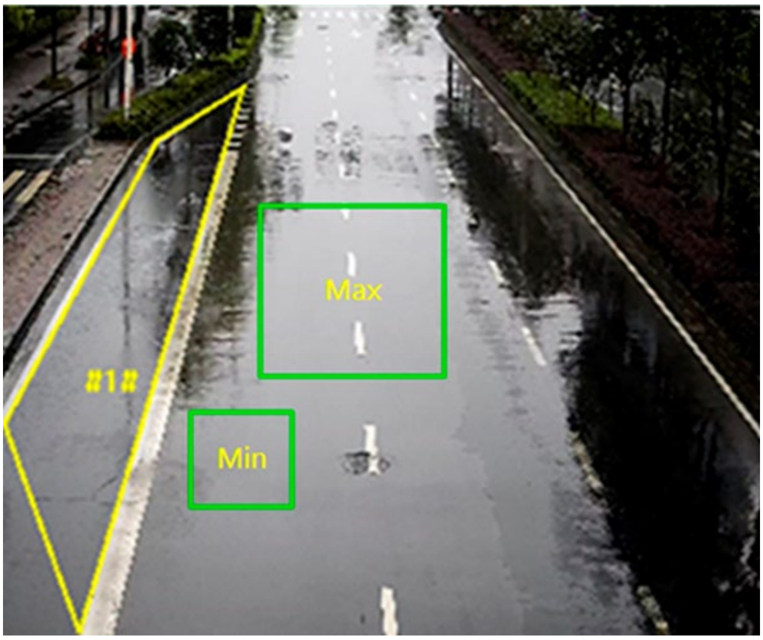
● For certain device models, you need to enable the smart event function on VCA Resource page first.
● For the device supporting HEOP, go to VCA → APP to import and enable Smart Event.

Steps

1. Go to VCA → Smart Event → Region Entrance Detection . For certain device models, you should go to Configuration → Event → Smart Event → Region Entrance Detection .
2. Check Enable.
3. Select a Region. For the detection region settings, refer to Draw Area .
4. Set the minimum size and the maximum size for the target to improve detection accuracy. Only targets whose size are between the maximum size and the minimum size trigger the detection. For the detail settings, refer to Set Size Filter .
5. Set the detection target, sensitivity and the target validity.
   Sensitivity
      It stands for the percentage of the body part of an acceptable target that goes across the predefined region. Sensitivity = 100 - S1/ST × 100. S1 stands for the target body part that goes across the predefined region. ST stands for the complete target body. The higher the value of sensitivity is, the more easily the alarm can be triggered.
   Detection Target
      Human and vehicle are available. If the detection target is not selected, all the detected targets will be reported, including the human and vehicle.

Target Validity

If you set a higher validity, the required target features should be more obvious, and the alarm accuracy would be higher. The target with less obvious features would be missing.



6. Optional: You can set the parameters of multiple areas by repeating the above steps.
7. For the arming schedule settings, refer to Set Arming Schedule . For the linkage method settings, refer to Linkage Method Settings .
8. Click Save.

Set Region Exiting Detection

It is used to detect objects exiting from a predefined virtual region. If it occurs, the device can take linkage actions.

Before You Start

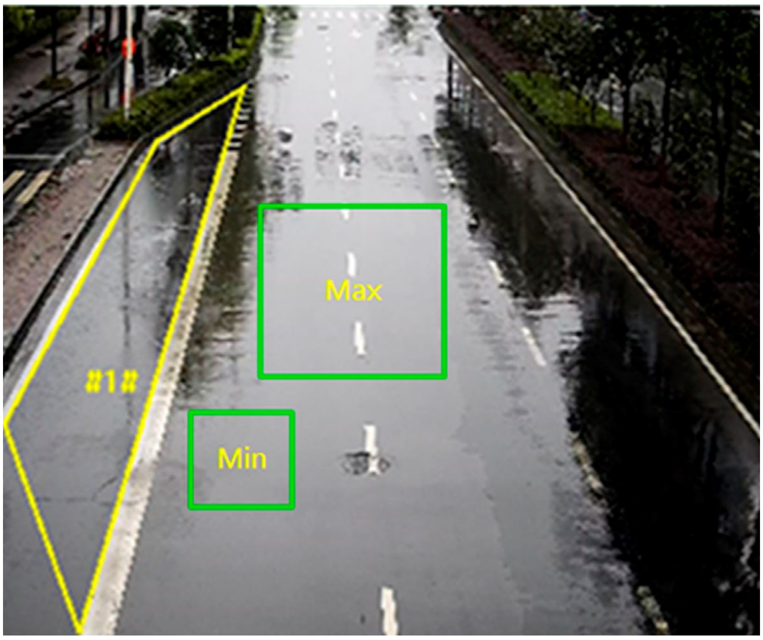
● For certain device models, you need to enable the smart event function on VCA Resource page first.

● For the device supporting HEOP, go to VCA → APP to import and enable Smart Event.

Steps

1. Go to VCA → Smart Event → Region Exiting Detection . For certain device models, you should go to Configuration → Event → Smart Event → Region Exiting Detection .
2. Check Enable.
3. Select a Region. For the detection region settings, refer to Draw Area .

4. Set the minimum size and the maximum size for the target to improve detection accuracy. Only targets whose size are between the maximum size and the minimum size trigger the detection. For the detail settings, refer to Set Size Filter .
5. Set the detection target, sensitivity and the target validity.
   Sensitivity
      It stands for the percentage of the body part of an acceptable target that goes across the predefined region. Sensitivity = 100 - S1/ST × 100. S1 stands for the target body part that goes across the predefined region. ST stands for the complete target body. The higher the value of sensitivity is, the more easily the alarm can be triggered.
   Detection Target
      Human and vehicle are available. If the detection target is not selected, all the detected targets will be reported, including the human and vehicle.
   Target Validity
      If you set a higher validity, the required target features should be more obvious, and the alarm accuracy would be higher. The target with less obvious features would be missing.



6. Optional: You can set the parameters of multiple areas by repeating the above steps.
7. For the arming schedule settings, refer to Set Arming Schedule . For the linkage method settings, refer to Linkage Method Settings .
8. Click Save.

Set Unattended Baggage Detection

It is used to detect the objects left over in the pre-defined region. Linkage methods can be triggered after the object is left and stays in the region for a set time period.

Steps

1. Go to Configuration → Event → Smart Event → Unattended Baggage Detection .
2. Check Enable.
3. Select one Region. For the detection region settings, refer to Draw Area .
4. Set rules.

   Sensitivity

   Sensitivity stands for the percentage of the body part of an acceptable target that enters the pre-defined region. Sensitivity = 100 - S1/ST × 100. S1 stands for the target body part that goes across the pre-defined region. ST stands for the complete target body. The higher the value of sensitivity is, the more easily the alarm can be triggered.

   Threshold

   It stands for the time of the objects left in the region. Alarm is triggered after the object is left and stays in the region for the set time period.

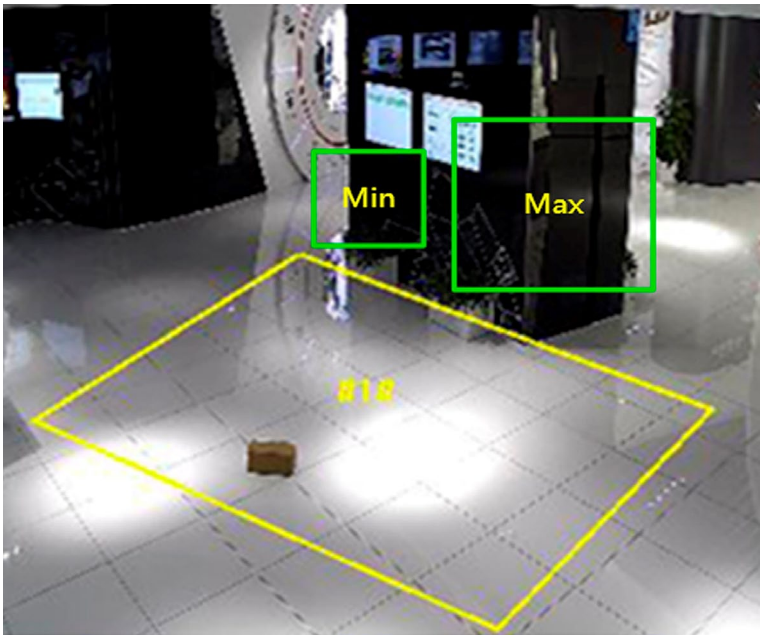


Figure 2-12 Set Rule

5. Optional: You can set the parameters of multiple areas by repeating the above steps.
6. For the arming schedule settings, refer to Set Arming Schedule . For the linkage method settings, refer to Linkage Method Settings .
7. Click Save.

Set Object Removal Detection

It detects whether the objects are removed from the pre-defined detection region, such as the exhibits on display. If it occurs, the device can take linkage actions and the staff can take measures to reduce property loss.

Steps

1. Go to Configuration → Event → Smart Event → Object Removal Detection .

2. Check Enable.
3. Select a Region. For the region settings, see Draw Area .
4. Set the rule.

   Sensitivity

   It stands for the percentage of the body part of an acceptable target that leaves the pre-defined region.

   Sensitivity = 100 – S1/ST*100

   S1 stands for the target body part that leaves the pre-defined region. ST stands for the complete target body.

   Example: If you set the value as 60, a target is possible to be counted as a removed object only when 40 percent body part of the target leaves the region.

   Threshold

   The threshold for the time of the objects removed from the region. If you set the value as 10, alarm is triggered after the object disappears from the region for 10s.
5. Optional: Repeat the above steps to set more regions.
6. For the arming schedule settings, see Set Arming Schedule . For the linkage method settings, see Linkage Method Settings .
7. Click Save.

⚠ **NOTE**: The function is only supported by certain models. The actual display varies with the models..

Draw Area

This section introduces the configuration of area.

Steps

1. Click Detection Area.
2. Click on the live view to draw the boundaries of the detection region, and right click to complete drawing.
3. Click Save.

⚠ **NOTE**: ● Click Clear to clear the selected area.
● Click Clear All to clear all pre-defined areas.

Set Size Filter

This part introduces the setting of size filter. Only the target whose size is between the minimum value and maximum value is detected and triggers alarm.

Steps

1. Click Max. Size, and drag the mouse in the live view to draw the maximum target size.
2. Click Min. Size, and drag the mouse in the live view to draw the minimum target size.
3. Click Save.

4.7 Network Settings

4.7.1 TCP/IP

TCP/IP settings must be properly configured before you operate the device over network. IPv4 and IPv6 are both supported. Both versions can be configured simultaneously without conflicting to each other.

Go to Configuration → Network → Basic Settings → TCP/IP for parameter settings.

NIC Type

Select a NIC (Network Interface Card) type according to your network condition.

IPv4

Two IPv4 modes are available.

DHCP

The device automatically gets the IPv4 parameters from the network if you check DHCP. The device IP address is changed after enabling the function. You can use SADP to get the device IP address.

Manual

You can set the device IPv4 parameters manually. Input IPv4 Address, IPv4 Subnet Mask, and IPv4 Default Gateway, and click Test to see if the IP address is available.

IPv6

Three IPv6 modes are available.

Route Advertisement

The IPv6 address is generated by combining the route advertisement and the device Mac address.

⚠ **NOTE**: Route advertisement mode requires the support from the router that the device is connected to.

DHCP

The IPv6 address is assigned by the server, router, or gateway.

Manual

Input IPv6 Address, IPv6 Subnet, IPv6 Default Gateway. Consult the network administrator for required information.

MTU

It stands for maximum transmission unit. It is the size of the largest protocol data unit that can be communicated in a single network layer transaction. The valid value range of MTU is 1280 to 1500.

DNS

It stands for domain name server. It is required if you need to visit the device with domain name. And it is also required for some applications (e.g., sending email). Set Preferred DNS Server and Alternate DNS server properly if needed.

Dynamic Domain Name

Check Enable Dynamic Domain Name and input Register Domain Name. The device is registered under the register domain name for easier management within the local area network.

⚠ **NOTE**: DHCP should be enabled for the dynamic domain name to take effect.

Multicast

Multicast is group communication where data transmission is addressed to a group of destination devices simultaneously.

Go to Configuration → Network → Basic Settings → Multicast for the multicast settings.

IP Address

It stands for the address of multicast host.

Stream Type

The stream type as the multicast source.

Video Port

The video port of the selected stream.

Audio Port

The audio port of the selected stream.

Multicast Discovery

Check the Enable Multicast Discovery, and then the online network camera can be automatically detected by client software via private multicast protocol in the LAN.

4.7.2 SNMP

You can set the SNMP network management protocol to get the alarm event and exception messages in network transmission.

Before You Start

Before setting the SNMP, you should download the SNMP software and manage to receive the device information via SNMP port.

Steps

1. Go to the settings page: Configuration → Network → Advanced Settings → SNMP .
2. Check Enable SNMPv1, Enable SNMP v2c or Enable SNMPv3.

⚠ **NOTE**: The SNMP version you select should be the same as that of the SNMP software.
And you also need to use the different version according to the security level required. SNMP v1 is not secure and SNMP v2 requires password for access. And SNMP v3 provides encryption and if you use the third version, HTTPS protocol must be enabled.

3. Configure the SNMP settings.
4. Click Save.

4.7.3 Set SRTP

The Secure Real-time Transport Protocol (SRTP) is a Real-time Transport Protocol (RTP) internet protocol, intended to provide encryption, message authentication and integrity, and replay attack protection to the RTP data in both unicast and multicast applications.

Steps

1. Go to Configuration → Network → Advanced Settings → SRTP .
2. Select Server Certificate.
3. Select Encrypted Algorithm.
4. Click Save.

⚠ **NOTE**: ● Only certain device models support this function.
● If the function is abnormal, check if the selected certificate is abnormal in certificate management.

4.7.4 Port Mapping

By setting port mapping, you can access devices through the specified port.

Before You Start

When the ports in the device are the same as those of other devices in the network, refer to Port to modify the device ports.

Steps

1. Go to Configuration → Network → Basic Settings → NAT .
2. Select the port mapping mode.
   Auto Port Mapping   Refer to Set Auto Port Mapping for detailed information.
   Manual Port Mapping Refer to Set Manual Port Mapping for detailed information.
3. Click Save.

Set Auto Port Mapping

Steps

1. Check Enable UPnP™, and choose a friendly name for the camera, or you can use the default name.
2. Select the port mapping mode to Auto.
3. Click Save.

⚠ **NOTE**: UPnP function on the router should be enabled at the same.

Set Manual Port Mapping

Steps

1. Check Enable UPnP™, and choose a friendly name for the device, or you can use the default name.
2. Select the port mapping mode to Manual, and set the external port to be the same as the internal port.
3. Click Save.

What to do next

Go to the router port mapping settings interface and set the port number and IP address to be the same as those on the device. For more information, refer to the router user manual.

Set Port Mapping on Router

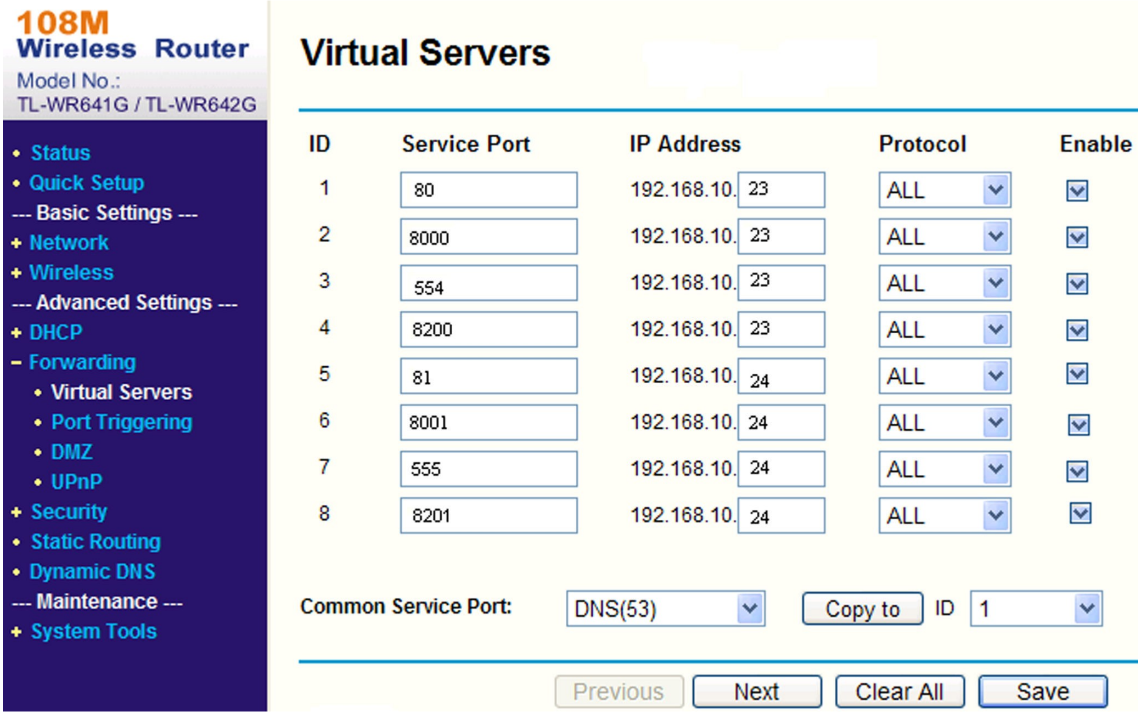
The following settings are for a certain router. The settings vary depending on different models of routers.

Steps

1. Select the WAN Connection Type.
2. Set the IP Address, Subnet Mask and other network parameters of the router.
3. Go to Forwarding → Virtual Severs , and input the Port Number and IP Address.
4. Click Save.

Example

When the cameras are connected to the same router, you can configure the ports of a camera as 80, 8000, and 554 with IP address 192.168.1.23, and the ports of another camera as 81, 8001, 555, 8201 with IP 192.168.1.24.



Virtual Servers

ID	Service Port	IP Address	Protocol	Enable
1	80	192.168.10.23	ALL	☑
2	8000	192.168.10.23	ALL	☑
3	554	192.168.10.23	ALL	☑
4	8200	192.168.10.23	ALL	☑
5	81	192.168.10.24	ALL	☑
6	8001	192.168.10.24	ALL	☑
7	555	192.168.10.24	ALL	☑
8	8201	192.168.10.24	ALL	☑

Common Service Port: DNS(53) Copy to ID 1

⚠ **NOTE**: The port of the network camera cannot conflict with other ports. For example, some web management port of the router is 80. Change the camera port if it is the same as the management port.

4.7.5 Port

The device port can be modified when the device cannot access the network due to port conflicts.

⚠ **NOTE**: Do not modify the default port parameters at will, otherwise the device may be inaccessible.

Go to Configuration → Network → Basic Settings → Port for port settings.

HTTP Port

It refers to the port through which the browser accesses the device. For example, when the HTTP Port is modified to 81, you need to enter http://192.168.1.64:81 in the browser for login.

HTTPS Port

It refers to the port through which the browser accesses the device with certificate. Certificate verification is required to ensure the secure access.

RTSP Port

It refers to the port of real-time streaming protocol.

SRTP Port

It refers to the port of secure real-time transport protocol.

Server Port

It refers to the port through which the client adds the device.

Enhanced SDK Service Port

It refers to the port through which the client adds the device. Certificate verification is required to ensure the secure access.

WebSocket Port

TCP-based full-duplex communication protocol port for plug-in free preview.

WebSockets Port

TCP-based full-duplex communication protocol port for plug-in free preview. Certificate verification is required to ensure the secure access.

⚠ **NOTE**: ● Enhanced SDK Service Port, WebSocket Port, and WebSockets Port are only supported by certain models.

● For device models that support that function, go to Configuration → Network → Advanced Settings → Network Service to enable it.

4.7.6 Access to Device via Domain Name

You can use the Dynamic DNS (DDNS) for network access. The dynamic IP address of the device can be mapped to a domain name resolution server to realize the network access via domain name.

Before You Start

Registration on the DDNS server is required before configuring the DDNS settings of the device.

Steps

1. Refer to TCP/IP to set DNS parameters.
2. Go to the DDNS settings page: Configuration → Network → Basic Settings → DDNS .
3. Check Enable DDNS and select DDNS type.

   DynDNS

   Dynamic DNS server is used for domain name resolution.

   NO-IP

   NO-IP server is used for domain name resolution.
4. Input the domain name information, and click Save.
5. Check the device ports and complete port mapping. Refer to Port to check the device port , and refer to Port Mapping for port mapping settings.
6. Access the device.

   By Browsers

   Enter the domain name in the browser address bar to access the device.

   By Client Software

Add domain name to the client software. Refer to the client manual for specific adding methods.

4.7.7 Access to Device via PPPoE Dial Up Connection

This device supports the PPPoE auto dial-up function. The device gets a public IP address by ADSL dial-up after the device is connected to a modem. You need to configure the PPPoE parameters of the device.

Steps

1. Go to Configuration → Network → Basic Settings → PPPoE .
2. Check Enable PPPoE.
3. Set the PPPoE parameters.
   Dynamic IP
      After successful dial-up, the dynamic IP address of the WAN is displayed.
   User Name
      User name for dial-up network access.
   Password
      Password for dial-up network access.
   Confirm
      Input your dial-up password again.
4. Click Save.
5. Access the device.
   By Browsers
      Enter the WAN dynamic IP address in the browser address bar to access the device.
   By Client Software
      Add the WAN dynamic IP address to the client software. Refer to the client manual for details.

⚠ **NOTE**: The obtained IP address is dynamically assigned via PPPoE, so the IP address always changes after rebooting the camera. To solve the inconvenience of the dynamic IP, you need to get a domain name from the DDNS provider (e.g. DynDns.com). Refer to Access to Device via Domain Name for detail information.

4.7.8 Wireless Dial

Data of audio, video and image can be transferred via 3G/4G wireless network.

⚠ **NOTE**: The function is only supported by certain device models.

Set Wireless Dial

The built-in wireless module offers dial-up access to the Internet for the device.

Before You Start

Get a SIM card, and activate 3G/4G services. Insert the SIM card to the corresponding slot.

Steps

1. Go to Configuration → Network → Advanced Settings → Wireless Dial .
2. Check to enable the function.
3. Click Dial Parameters to configure and save the parameters.
4. Click Dial Plan. See Set Arming Schedule for detailed information.
5. Optional: Set Allowlist. See for detailed information.
6. Click Dial Status.
   Click Refresh Refresh the dial status.
   Click Disconnect Disconnect the 3G/4G wireless network.
   When the Dial Status turns to Connected, it means a successful dial.
7. Access the device via the IP Address of the computer in the network. - Input the IP address in the browser to access the device.
   - Add the device in client application. Select IP/Domain, and input IP address and other parameters to access the device.

4.7.9 Wi-Fi

Connect the device to wireless network by setting Wi-Fi parameters.

⚠ **NOTE**: The function is only supported by certain device models.

Connect Device to Wi-Fi

Before You Start

Refer to the user manual of wireless router or AP to set SSID, key, and other parameters.

Steps

1. Go to TCP/IP settings page: Configuration → Network → Basic Configuration → TCP/IP .
2. Select Wlan to set the parameters. Refer to TCP/IP for detailed configuration.
   For stable use of Wi-Fi, it is not recommended to use DHCP.
3. Go to Wi-Fi settings page: Configuration → Network → Advanced Configuration → Wi-Fi .
4. Set and save the parameters.
   1) Click Search.

2) Select a SSID, which should be the same as that of wireless router or AP. The parameters of the network is automatically shown in Wi-Fi.
3) Select the Network Mode as Manage.
4) Input the key to connect the wireless network. The key should be that of the wireless network connection you set on the router.

What to do next
Go to TCP/IP settings page: Configuration → Network → Basic Configuration → TCP/IP , and click Wlan to check the IPv4 Address and log in the device.

4.7.10 Set Network Service

You can control the ON/OFF status of certain protocol as desired.

⚠ **NOTE**: The function varies according to different models.

Steps
1. Go to Configuration → Network → Advanced Settings → Network Service .
2. Set network service.

WebSocket & WebSockets
WebSocket or WebSockets protocol should be enabled if you use Google Chrome 57 and its above version or Mozilla Firefox 52 and its above version to visit the device. Otherwise, live view, image capture, digital zoom, etc. cannot be used.
If the device uses HTTP, enable WebSocket.
If the device uses HTTPS, enable WebSockets.
When you use WebSockets, select the Server Certificate.

⚠ **NOTE**: Complete certificate management before selecting server certificate. Refer to Certificate Management for detailed information.

SDK Service & Enhanced SDK Service
Check Enable SDK Service to add the device to the client software with SDK protocol.
Check Enable Enhanced SDK Service to add the device to the client software with SDK over TLS protocol.
When you use Enhanced SDK Service, select the Server Certificate.

⚠ **NOTE**: ● Complete certificate management before selecting server certificate. Refer to Certificate Management for detailed information.
● When set up connection between the device and the client software, it is recommended to use Enhanced SDK Service and set the communication in Arming Mode to encrypt the data transmission. See the user manual of the client software for the arming mode settings.

TLS (Transport Layer Security)

The device offers TLS1.1, TLS1.2 and TLS1.3. Enable one or more protocol versions according to your need.

Bonjour

Uncheck to disable the protocol.

3. Click Save.

4.7.11 Set Open Network Video Interface

If you need to access the device through Open Network Video Interface protocol, you can configure the user settings to enhance the network security.

Steps

1. Go to Configuration → Network → Advanced Settings → Integration Protocol .
2. Check Enable Open Network Video Interface.
3. Click Add to configure the Open Network Video Interface user.
   Delete
   Delete the selected Open Network Video Interface user.
   Modify
   Modify the selected Open Network Video Interface user.
4. Click Save.
5. Optional: Repeat the steps above to add more Open Network Video Interface users.

4.7.12 Set ISUP

When the device is registered on ISUP platform (formerly called Ehome), you can visit and manage the device, transmit data, and forward alarm information over public network.

Steps

1. Go to Configuration → Network → Advanced Settings → Platform Access .
2. Select ISUP as the platform access mode.

3. Select Enable.
4. Select a protocol version and input related parameters.
5. Click Save.
   Register status turns to Online when the function is correctly set.

4.7.13 Set Alarm Server

The device can send alarms to destination IP address or host name through HTTP, HTTPS, or ISUP protocol. The destination IP address or host name should support HTTP, HTTP, or ISUP data transmission.

Steps

1. Go to Configuration → Network → Advanced Settings → Alarm Server .
2. Enter Destination IP or Host Name, URL, and Port.
3. Optional: Check Enable to enable ANR.
4. Select Protocol.

⚠ **NOTE**: HTTP, HTTPS, and ISUP are selectable. It is recommended to use HTTPS, as it encrypts the data transmission during communication.

5. Click Test to check if the IP or host is available.
6. Click Save.

4.8 Arming Schedule and Alarm Linkage

Arming schedule is a customized time period in which the device performs certain tasks. Alarm linkage is the response to the detected certain incident or target during the scheduled time.

4.8.1 Set Arming Schedule

Set the valid time of the device tasks.

Steps

1. Click Arming Schedule.
2. Drag the time bar to draw desired valid time.

⚠ **NOTE**: Up to 8 periods can be configured per day.

3. Adjust the time period
   - Click on the selected time period, and enter the desired value. Click Save.
   - Click on the selected time period. Drag the both ends to adjust the time period. - Click on the selected time period, and drag it on the time bar.
4. Optional: Click Copy to... to copy the same settings to other days.
5. Click Save.

4.8.2 Linkage Method Settings

You can enable the linkage functions when an event or alarm occurs.

Trigger Alarm Output
If the device has been connected to an alarm output device, and the alarm output No. has been configured, the device sends alarm information to the connected alarm output device when an alarm is triggered.

⚠ **NOTE**: The function is only supported by certain models.

Steps
1. Go to Configuration → Event → Basic Event → Alarm Output .
2. Set alarm output parameters.
   Automatic AlarmFor the information about the configuration, see Automatic Alarm .
   Manual Alarm For the information about the configuration, see Manual Alarm .
3. Click Save.

Manual Alarm
You can trigger an alarm output manually.
Steps
1. Set the manual alarm parameters.
   Alarm Output No.
      Select the alarm output No. according to the alarm interface connected to the external alarm device.
   Alarm Name
      Edit a name for the alarm output.
   Delay
      Select Manual.
2. Click Manual Alarm to enable manual alarm output.
3. Optional: Click Clear Alarm to disable manual alarm output.

Automatic Alarm

Set the automatic alarm parameters, then the device triggers an alarm output automatically in the set arming schedule.

Steps

1. Set automatic alarm parameters.

   Alarm Output No.

   Select the alarm output No. according to the alarm interface connected to the external alarm device.

   Alarm Name

   Custom a name for the alarm output.

   Delay

   It refers to the time duration that the alarm output remains after an alarm occurs.
2. Set the alarming schedule. For the information about the settings, see Set Arming Schedule .
3. Click Copy to… to copy the parameters to other alarm output channels.
4. Click Save.

FTP/NAS/Memory Card Uploading

If you have enabled and configured the FTP/NAS/memory card uploading, the device sends the alarm information to the FTP server, network attached storage and memory card when an alarm is triggered.

Refer to Set FTP to set the FTP server.

Refer to Set NAS for NAS configuration.

Refer to Set Memory Card for memory card storage configuration.

Send Email

Check Send Email, and the device sends an email to the designated addresses with alarm information when an alarm event is detected. For email settings, refer to Set Email .

Set Email

When the email is configured and Send Email is enabled as a linkage method, the device sends an email notification to all designated receivers if an alarm event is detected.

Before You Start

Set the DNS server before using the Email function. Go to Configuration → Network → Basic Settings → TCP/IP for DNS settings.

Steps

1. Go to email settings page: Configuration → Network → Advanced Settings → Email .
2. Set email parameters.
   1) Input the sender's email information, including the Sender's Address, SMTP Server, and SMTP Port.

2) Optional: If your email server requires authentication, check Authentication and input your user name and password to log in to the server. 3) Set the E-mail Encryption.
   - When you select SSL or TLS, and disable STARTTLS, emails are sent after encrypted by SSL or TLS. The SMTP port should be set as 465.
   - When you select SSL or TLS and Enable STARTTLS, emails are sent after encrypted by STARTTLS, and the SMTP port should be set as 25.

⚠ **NOTE**: If you want to use STARTTLS, make sure that the protocol is supported by your email server. If you check the Enable STARTTLS while the protocol is not supported by your email sever, your email is sent with no encryption.

4) Optional: If you want to receive notification with alarm pictures, check Attached Image. The notification email has 3 attached alarm pictures about the event with configurable image capturing interval.
5) Input the receiver's information, including the receiver's name and address. 6) Click Test to see if the function is well configured.

3. Click Save.

Notify Surveillance Center

Check Notify Surveillance Center, the alarm information is uploaded to the surveillance center when an alarm event is detected.

Trigger Recording

Check Trigger Recording, and the device records the video about the detected alarm event. For recording settings, refer to Video Recording and Picture Capture .

Flashing Light

After enabling Flashing Light and setting the Flashing Light Alarm Output, the light flashes when an alarm event is detected.

Set Flashing Alarm Light Output

Steps

1. Go to Configuration → Event → Basic Event → Flashing Alarm Light Output .
2. Set Flashing Duration, Flashing Frequency and Brightness.

   Flashing Duration

      The time period the flashing lasts when one alarm happens.

   Flashing Frequency

      The flashing speed of the light. High, Medium, and Low are selectable.

   Brightness

      The brightness of the light.
3. Edit the arming schedule.

4. Click Save.

⚠ **NOTE**: The function is only supported by certain models.

Set Audible Alarm Output

When the device detects targets in the detection area, audible alarm can be triggered as a warning.

Steps

1. Go to Configuration → Event → Basic Event → Audible Alarm Output .
2. Select Sound Type and set related parameters.
   - Select Prompt and set the alarm times you need.
   - Select Warning and its contents. Set the alarm times you need.
   - Select Custom Audio. You can select a custom audio file from the drop-down list. If no file is available, you can click Add to upload an audio file that meets the requirement. Up to three audio files can be uploaded.
3. Optional: Click Test to play the selected audio file on the device.
4. Set arming schedule for audible alarm. See Set Arming Schedule for details.
5. Click Save.

⚠ **NOTE**: The function is only supported by certain models.

4.9 System and Security

It introduces system maintenance, system settings and security management, and explains how to configure relevant parameters.

4.9.1 View Device Information

You can view device information, such as Device No., Model, Serial No. and Firmware Version. Enter Configuration → System → System Settings → Basic Information to view the device information.

4.9.2 Search and Manage Log

Log helps locate and troubleshoot problems.

Steps

1. Go to Configuration → System → Maintenance → Log .
2. Set search conditions Major Type, Minor Type, Start Time, and End Time.
3. Click Search.

The matched log files will be displayed on the log list.

4. Optional: Click Export to save the log files in your computer.

4.9.3 Simultaneous Login

The administrator can set the maximum number of users logging into the system through web browser simultaneously.
Go to Configuration → System → User Management , click General and set Simultaneous Login.

4.9.4 Import and Export Configuration File

It helps speed up batch configuration on other devices with the same parameters.
Enter Configuration → System → Maintenance → Upgrade & Maintenance . Choose device parameters that need to be imported or exported and follow the instructions on the interface to import or export configuration file.

4.9.5 Export Diagnose Information

Diagnose information includes running log, system information, hardware information.
Go to Configuration → System → Maintenance → Upgrade & Maintenance , and click Diagnose Information to export diagnose information of the device.

4.9.6 Reboot

You can reboot the device via browser.
Go to Configuration → System → Maintenance → Upgrade & Maintenance , and click Reboot.

4.9.7 Restore and Default

Restore and Default helps restore the device parameters to the default settings.
Steps

1. Go to Configuration → System → Maintenance → Upgrade & Maintenance .
2. Click Restore or Default according to your needs.

   Restore

      Reset device parameters, except user information, IP parameters and video format to the default settings.

   Default

      Reset all the parameters to the factory default.

⚠ **NOTE**: Be careful when using this function. After resetting to the factory default, all the parameters are reset to the default settings.

4.9.8 Upgrade

Before You Start
You need to obtain the correct upgrade package.

⚠ **NOTE**: DO NOT disconnect power during the process, and the device reboots automatically after upgrade.

Steps

1. Go to Configuration → System → Maintenance → Upgrade & Maintenance .
2. Choose one method to upgrade.

Firmware	Locate the exact path of the upgrade file.
Firmware Directory	Locate the directory which the upgrade file belongs to.

3. Click Browse to select the upgrade file.
4. Click Upgrade.

4.9.9 Device Auto Maintenance

Steps

1. Check Enable Auto Maintenance.
2. Read the prompt information and click OK.
3. Select the date and time you want to restart the device.
4. Click Save.

⚠ **NOTE**: The function is only available for Administrator.

After enabling auto maintenance, the device will automatically restart according to the maintenance plan. The device cannot record video during the restarting process.

4.9.10 View Open Source Software License

4.9.11 Wiegand

Check Enable and select the protocol. The default protocol is SHA-1 26bit.
If enabled, the recognized license plate number will be output via the selected Wiegand protocol.

⚠ **NOTE**: The function is only supported by certain camera models.

4.9.12 Metadata

Metadata is the raw data that the camera collects before algorithm processing. It provide the option to users to explore various data usages.

⚠ **NOTE**: The function is only supported by certain camera models.

Go to Configuration → System → Metadata Settings to enable metadata uploading of the desired function.

Smart Event
The metadata of the smart event includes the target ID, target coordinate, time, etc.

4.9.13 Time and Date

You can configure time and date of the device by configuring time zone, time synchronization and Daylight Saving Time (DST).

Synchronize Time Manually
Steps

1. Go to Configuration → System → System Settings → Time Settings .
2. Select Time Zone.
3. Click Manual Time Sync..
4. Choose one time synchronization method.
   - Select Set Time, and manually input or select date and time from the pop-up calendar.
   - Check Sync. with computer time to synchronize the time of the device with that of the local PC.
5. Click Save.

Set NTP Server

You can use NTP server when accurate and reliable time source is required.

Before You Start

Set up a NTP server or obtain NTP server information.

Steps

1. Go to Configuration → System → System Settings → Time Settings .
2. Select Time Zone.
3. Click NTP.
4. Set Server Address, NTP Port and Interval.

⚠ **NOTE**: Server Address is NTP server IP address.

5. Click Test to test server connection.
6. Click Save.

Synchronize Time by Satellite

Steps

1. Enter Configuration → System → System Settings → Time Settings .
2. Select Satellite Time Sync..
3. Set Interval.
4. Click Save.

⚠ **NOTE**: The function is only supported by certain camera models.

Set DST

If the region where the device is located adopts Daylight Saving Time (DST), you can set this function.

Steps

1. Go to Configuration → System → System Settings → DST .
2. Check Enable DST.
3. Select Start Time, End Time and DST Bias.
4. Click Save.

4.9.14 Set RS-485

RS-485 is used to connect the device to external device. You can use RS-485 to transmit the data between the device and the computer or terminal when the communication distance is too long.

Before You Start
Connect the device and computer or terminal with RS-485 cable.

Steps

1. Go to Configuration → System → System Settings → RS-485 .
2. Set the RS-485 parameters.
3. Click Save.

⚠ **NOTE**: You should keep the parameters of the device and the computer or terminal all the same.

4.9.15 Set RS-232

RS-232 can be used to debug device or access peripheral device. RS-232 can realize communication between the device and computer or terminal when the communication distance is short.

Before You Start
Connect the device to computer or terminal with RS-232 cable.

Steps

1. Go to Configuration → System → System Settings → RS-232 .
2. Set RS-232 parameters to match the device with computer or terminal.
3. Click Save.

4.9.16 Power Consumption Mode

⚠ **NOTE**: The function is only supported by certain camera models.

It is used to switch the power consumption when the device is working.
Go to Configuration → Proactive Mode → Power Consumption Mode , select the desired power consumption mode.
Performance Mode

The device works with all the functions enabled.

Proactive Mode

The device DSP works normally. It records the videos with the main stream at the half frame rate, and supports the remote login, preview and the configuration.

Low Power Sleep

When the device power is lower than Threshold of Low Power Sleep Mode, the device enters sleep mode.

When the device power is recovered to 10% above the threshold, the device enters the user configuration mode.

Scheduled Sleep

If the device is during Scheduled Sleep Time, it enters the sleep mode, otherwise it enters the user configuration mode.

⚠ **NOTE**: For the scheduled sleep schedule settings, see Set Arming Schedule .
The device supports the timing wake. For the details, see Set Timing Wake .

4.9.17 External Device

For the device supporting external devices, including the supplement light, wiper on the housing, the LED light, and heater, you can control them via the Web browser when it is used with the housing. External devices vary with models.

Supplement Light Settings

You can set supplement light and refer to the actual device for relevant parameters.

Smart Supplement Light

Smart supplement light avoids over exposure when the supplement light is on.

Supplement Light Mode

When the device supports supplement light, you can select supplement light mode.

IR Mode

IR light is enabled.

White Light Mode

White light is enabled.

Mix Mode

Both IR light and white light are enabled.

Off

Supplement light is disabled.

Brightness Adjustment Mode

Auto

The brightness adjusts according to the actual environment automatically.

Manual

You can drag the slider or set value to adjust the brightness.

Heater

You can enable heater to remove fog around the lens of the device.
Go to Configuration → System → System Settings → External Device and select the mode as required.

4.9.18 Security

You can improve system security by setting security parameters.

Authentication

You can improve network access security by setting RTSP and WEB authentication.
Go to Configuration → System → Security → Authentication to choose authentication protocol and method according to your needs.

RTSP Authentication

Digest and digest/basic are supported, which means authentication information is needed when RTSP request is sent to the device. If you select digest/basic, it means the device supports digest or basic authentication. If you select digest, the device only supports digest authentication.

RTSP Digest Algorithm

MD5, SHA256 and MD5/SHA256 encrypted algorithm in RTSP authentication. If you enable the digest algorithm except for MD5, the third-party platform might not be able to log in to the device or enable live view because of compatibility. The encrypted algorithm with high strength is recommended.

WEB Authentication

Digest and digest/basic are supported, which means authentication information is needed when WEB request is sent to the device. If you select digest/basic, it means the device supports digest or basic authentication. If you select digest, the device only supports digest authentication.

WEB Digest Algorithm

MD5, SHA256 and MD5/SHA256 encrypted algorithm in WEB authentication. If you enable the digest algorithm except for MD5, the third-party platform might not be able to log in to the device or enable live view because of compatibility. The encrypted algorithm with high strength is recommended.

⚠ **NOTE**: Refer to the specific content of protocol to view authentication requirements.

Set IP Address Filter

IP address filter is a tool for access control. You can enable the IP address filter to allow or forbid the visits from the certain IP addresses.

IP address refers to IPv4.

Steps

1. Go to Configuration → System → Security → IP Address Filter .
2. Check Enable IP Address Filter.
3. Select the type of IP address filter.
   Forbidden IP addresses in the list cannot access the device.
   Allowed Only IP addresses in the list can access the device.
4. Edit the IP address filter list.
   Add Add a new IP address or IP address range to the list.
   Modify Modify the selected IP address or IP address range in the list.
   Delete Delete the selected IP address or IP address range in the list.
5. Click Save.

Set HTTPS

HTTPS is a network protocol that enables encrypted transmission and identity authentication, which improves the security of remote access.

Steps

1. Go to Configuration → Network → Advanced Settings → HTTPS .
2. Check Enable to access the camera via HTTP or HTTPS protocol.
3. Check Enable HTTPS Browsing to access the camera only via HTTPS protocol.
4. Select the Server Certificate.
5. Click Save.

⚠ **NOTE**: If the function is abnormal, check if the selected certificate is abnormal in Certificate Management.

Set QoS

QoS (Quality of Service) can help improve the network delay and network congestion by setting the priority of data sending.

⚠ **NOTE**: QoS needs support from network device such as router and switch.

Steps

1. Go to Configuration → Network → Advanced Configuration → QoS .
2. Set Video/Audio DSCP, Alarm DSCP and Management DSCP.

⚠ **NOTE**: Network can identify the priority of data transmission. The bigger the DSCP value is, the higher the priority is. You need to set the same value in router while configuration.

3. Click Save.

Set IEEE 802.1X

IEEE 802.1x is a port-based network access control. It enhances the security level of the LAN/ WLAN. When devices connect to the network with IEEE 802.1x standard, the authentication is needed.

Go to Configuration → Network → Advanced Settings → 802.1X , and enable the function. Set Protocol and EAPOL Version according to router information.

Protocol

EAP-LEAP, EAP-TLS, and EAP-MD5 are selectable

EAP-LEAP and EAP-MD5

If you use EAP-LEAP or EAP-MD5, the authentication server must be configured. Register a user name and password for 802.1X in the server in advance. Input the user name and password for authentication.

EAP-TLS

If you use EAP-TLS, input Identify, Private Key Password, and upload CA Certificate, User Certificate and Private Key.

EAPOL Version

The EAPOL version must be identical with that of the router or the switch.

Control Timeout Settings

If this function is enabled, you will be logged out when you make no operation (not including viewing live image) to the device via web browser within the set timeout period. Go to Configuration → System → Security → Advanced Security to complete settings.

Search Security Audit Logs

You can search and analyze the security log files of the device so as to find out the illegal intrusion and troubleshoot the security events.

⚠ **NOTE**: This function is only supported by certain camera models.

Steps

This function is only supported by certain camera models.

1. Go to Configuration → System → Maintenance → Security Audit Log .
2. Select log types, Start Time, and End Time.
3. Click Search.
   The log files that match the search conditions will be displayed on the Log List.
4. Optional: Click Export to save the log files to your computer.

Security Reinforcement

Security reinforce is a solution to enhance network security. With the function enabled, risky functions, protocols, ports of the device are disabled and more secured alternative functions, protocols and ports are enabled.
Go to Configuration → System → Security → Advanced Security . Check Security Reinforcement, and click Save.

SSH

Secure Shell (SSH) is a cryptographic network protocol for operating network services over an unsecured network.
Go to Configuration → System → Security → Security Service , and check Enable SSH. The SSH function is disabled by default.

⚠ **NOTE**: Use the function with caution. The security risk of device internal information leakage exists when the function is enabled.

4.9.19 Certificate Management

It helps to manage the server/client certificates and CA certificate, and to send an alarm if the certificates are close to expiry date, or are expired/abnormal.

⚠ **NOTE**: This function is only supported by certain camera models.

Create Self-signed Certificate

Steps

1. Click Create Self-signed Certificate.
2. Follow the prompt to enter Certificate ID, Country/Region, Hostname/IP, Validity and other parameters.

   ⚠ **NOTE**: The certificate should be digits or letters and be no more than 64 characters.

3. Click OK.
4. Optional: Click Export to export the certificate, or click Delete to delete the certificate to recreate a certificate, or click Certificate Properties to view the certificate details.

Create Certificate Request

Before You Start

Select a self-signed certificate.

Steps

1. Click Create Certificate Request.
2. Enter the related information.
3. Click OK.

Import Certificate

Steps

1. Click Import.
2. Click Create Certificate Request.
3. Enter the Certificate ID.
4. Click Browser to select the desired server/client certificate.
5. Select the desired import method and enter the required information.
6. Click OK.
7. Optional: Click Export to export the certificate, or click Delete to delete the certificate to recreate a certificate, or click Certificate Properties to view the certificate details.

⚠ **NOTE**: ● Up to 16 certificates are allowed.
● If certain functions are using the certificate, it cannot be deleted.
● You can view the functions that are using the certificate in the functions column.
● You cannot create a certificate that has the same ID with that of the existing certificate and import a certificate that has the same content with that of the existing certificate.

Install Server/Client Certificate

Steps

1. Go to Configuration → System → Security → Certificate Management .
2. Click Create Self-signed Certificate, Create Certificate Request and Import to install server/client certificate.

Create self-signed certificate Refer to Create Self-signed Certificate
Create certificate request Refer to Create Certificate Request Import Certificate Refer to Import Certificate

Install CA Certificate

Steps

1. Click Import.
2. Enter the Certificate ID.
3. Click Browser to select the desired server/client certificate.
4. Select the desired import method and enter the required information.
5. Click OK.

⚠ **NOTE**: ● Up to 16 certificates are allowed.

Enable Certificate Expiration Alarm

Steps

1. Check Enable Certificate Expiration Alarm. If enabled, you will receive an email or the camera links to the surveillance center that the certificate will expire soon, or is expired or abnormal.
2. Set the Remind Me Before Expiration (day), Alarm Frequency (day) and Detection Time (hour).
3. Click Save.

⚠ **NOTE**: ● If you set the reminding day before expiration to 1, then the camera will remind you the day before the expiration day. 1 to 30 days are available. Seven days is the default reminding days.
● If you set the reminding day before expiration to 1, and the detection time to 10:00, and the certificate will expire in 9:00 the next day, the camera will remind you in 10:00 the first day.

4.9.20 User and Account

The administrator can add, modify, or delete other accounts, and grant different permission to different user levels.

⚠ **NOTE**: To increase security of using the device on the network, please change the password of your account regularly. Changing the password every 3 months is recommended. If the device is used in high-risk environment, it is recommended that the password should be changed every month or week.

Steps

1. Go to Configuration → System → User Management → User Management .
2. Click Add. Enter User Name, select Level, and enter Password. Assign remote permission to users based on needs.

   Administrator

   The administrator has the authority to all operations and can add users and operators and assign permission.

   User

   Users can be assigned permission of viewing live video, setting PTZ parameters, and changing their own passwords, but no permission for other operations.

   Operator

   Operators can be assigned all permission except for operations on the administrator and creating accounts.

Modify Select a user and click Modify to change the password and permission.
Delete Select a user and click Delete.

⚠ **NOTE**: The administrator can add up to 31 user accounts.

3. Click OK.

Simultaneous Login

The administrator can set the maximum number of users logging into the system through web browser simultaneously.
Go to Configuration → System → User Management , click General and set Simultaneous Login.

Online Users

The information of users logging into the device is shown.
Go to Configuration → System → User Management → Online Users to view the list of online users.