

Thermal Presence Detector

User Manual

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

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This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Directive 2014/30/EU (EMCD), Directive 2014/35/EU (LVD), Directive 2011/65/EU (RoHS), Directive 2014/53/EU.

For the device without a supplied power adapter, use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements.

For the device without a supplied battery, use the battery provided by a qualified manufacturer. Refer to the product specification for detailed battery requirements.



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Directive 2006/66/EC and its amendment 2013/56/EU (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.

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-003 (B)/NMB-003 (B) standards requirements.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil répond aux exigences des normes CAN ICES-003 (B)/NMB-003 (B).

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Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Danger	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Safety Instruction

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

Laws and Regulations

- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.

Transportation

- Keep the device in original or similar packaging while transporting it.
- Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and the company shall not take any responsibilities.
- DO NOT drop the product or subject it to physical shock. Keep the device away from magnetic interference.

Power Supply

- Please purchase the charger by yourself. Input voltage should meet the Limited Power Source (12 VDC) according to the IEC62368 standard. Please refer to technical specifications for detailed information.
- Make sure the plug is properly connected to the power socket.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- DO NOT connect multiple devices to one power adapter, to avoid over-heating or fire hazards caused by overload.
- DO NOT touch the bare metal contacts of the inlets after the circuit breaker is turned off. Electricity still exists.
- + identifies the positive terminal(s) of equipment which is used with, or generates direct current. - identifies the negative terminal(s) of equipment which is used with, or generates direct current.

Battery

- Risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions. Il y a risque d'explosion si la batterie est remplacée par une batterie de type incorrect. Mettre au rebut les batteries usagées conformément aux instructions.
- The built-in battery cannot be dismantled. Please contact the manufacture for repair if necessary.
- For long-term storage of the battery, make sure it is fully charged every half year to ensure the battery quality. Otherwise, damage may occur.
- This equipment is not suitable for use in locations where children are likely to be present.
- Improper replacement of the battery with an incorrect type may defeat a safeguard (for

example, in the case of some lithium battery types).

- DO NOT dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
- DO NOT leave the battery in an extremely high temperature surrounding environment, which may result in an explosion or the leakage of flammable liquid or gas.
- DO NOT subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.

Installation

- Never place the equipment in an unstable location. The equipment may fall, causing serious personal injury or death.
- This equipment is for use only with corresponding brackets. Use with other (carts, stands, or carriers) may result in instability causing injury.

System Security

- You acknowledge that the nature of Internet provides for inherent security risks, and our company shall not take any responsibilities for abnormal operation, privacy leakage or other damages resulting from cyber attack, hacker attack, however, our company will provide timely technical support if required.
- Please enforce the protection for the personal information and the data security as the device may be confronted with the network security problems when it is connected to the Internet. Please contact us when the device might exist network security risks.
- Please understand that you have the responsibility to configure all the passwords and other security settings about the device, and keep your user name and password.

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.
- Wipe the device gently with a clean cloth and a small quantity of ethanol, if necessary.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- To reduce the risk of fire, replace only with the same type and rating of fuse.
- The serial port of the equipment is used for debugging only.

Using Environment

- Make sure the running environment meets the requirement of the device. The operating temperature shall be -20°C to 50°C (-4°F to 122°F), and the operating humidity shall be 95% or less, no condensing.
- DO NOT expose the device to high electromagnetic radiation or dusty environments.
- DO NOT aim the lens at the sun or any other bright light.
- The equipment shall not be exposed to dripping or splashing and that no objects filled with

liquids, such as vases, shall be placed on the equipment.
- No naked flame sources, such as lighted candles, should be placed on the equipment.
- Provide a surge suppressor at the inlet opening of the equipment under special conditions such as the mountain top, iron tower, and forest.
- Burned fingers when handling the parts with symbol ⚠. Wait one-half hour after switching off before handling the parts.

Emergency

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

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Chapter 1 Overview

1.1 Introduction

Thermal Presence Detector is a detector based on thermal imaging technology.
Due to the advantages of thermal imaging, the detector is able to achieve the detection tasks without the influence of changing light condition.
The detector can be used for health tracking such as out of room detection, out of bed detection, exit without return detection, fall down detection, and people overstay detection in nursing homes.

1.2 Application

The mobile client Hik-Connect or PC client iVMS-4200 and HikCentral Professional can be used to configure the detector and to receive alarm information.

Table 1-1 Applications

Main Parts	Usage	Main Setting Procedure
● Thermal Presence Detector ● PC Client iVMS-4200 and HikCentral Professional	Use PC client to configure and manage the device, and receive alarm notifications.	Activate and add the device to PC client iVMS-4200 and HikCentral Professional. See *User Manual of iVMS-4200* and *User Manual of HikCentral Professional* for instructions.
● Thermal Presence Detector ● Mobile Client Hik-Connect	Use your mobile client to configure and manage the device, and receive alarm notifications.	● Activate and configure the device. See ***Device Activation and Accessing***. ● Add the device to your mobile client. See ***Enable Hik-Connect Service on Camera***.

Chapter 2 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.

Note

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

2.1 Activate the Device via SADP

Search and activate the online devices via SADP software.

Before You Start

Access ***https://www.hikmicrotech.com*** to get SADP software to install.

Steps

1. Connect your computer to the same Wi-Fi network that the device is in.
2. Run SADP software to search the online devices of the LAN.
3. Check **Device Status** from the device list, and select **Inactive** device.
4. Create and input the new password in the password field, and confirm the password.

Caution

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.

5. Click **OK**.
   Device Status changes into **Active**.
6. Optional: Change the network parameters of the device in **Modify Network Parameters**.

2.2 Activate the Device via Browser

You can access and activate the device via the browser.

Steps

1. Connect the device to the PC using the network cables.
2. Change the IP address of the PC and device to the same segment.

Note

The default IP address of the device is 192.168.1.64. You can set the IP address of the PC from 192.168.1.2 to 192.168.1.253 (except 192.168.1.64). For example, you can set the IP address of the PC to 192.168.1.100.

3. Input ***192.168.1.64*** in the browser.
4. Set device activation password.

Caution

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: 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.

5. Click **OK**.
6. Input the activation password to log in to the device.
7. Optional: Go to **Configuration** → **Network** → **Basic** → **TCP/IP** to change the IP address of the device to the same segment of your network.

2.3 Login

Log in to the device via Web browser.

2.3.1 Plug-in Installation

Certain operation systems and web browser may restrict the display and operation of the device 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 10+	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. Go to **Configuration** → **Network** → **Advanced Settings** → **Network Service** to enable WebSocket or WebSockets for normal view if

Operating System	Web Browser	Operation
		plug-in installation is not required. 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.
Mac OS 10.13+	Mac Safari 12+	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 device only supports Windows and Mac OS system and does not support Linux system.

2.3.2 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.

Chapter 3 Health Tracking

Health tracking is used to detect out of bed, out of room, fall down, people overstay, and exit without return for specified groups, such as the elderly in nursing homes. The device triggers alarms when there are exceptions, so as to prevent accidents.

3.1 Set Exit Without Return Detection Rule

Exit without return detection detects if the people stay in the toilet for over long time. Set the detection rule for this function, and the device triggers alarms when the in-toilet duration exceeds the set value.

Steps

1. Go to **Configuration** → **Health Tracking** → **Rule**.
2. Click + to add a rule, and enter a name for the rule.
3. Select the rule type as **Exit Without Return**.
4. Click ⟋, and a yellow line will appear on the live view.

Note

B is the toilet direction.

5. Optional: Left click the yellow line, hold the mouse to adjust its position, and drag the end of the line with the mouse to adjust its length and angle.
6. Set the duration for the in-toilet time.
7. Check to enable this rule.
8. Click **Save**.
9. Refer to ***Set Arming Schedule*** for setting scheduled time. Refer to ***Linkage Method Settings*** for setting linkage method.

3.2 Set Out of Bed Detection Rule

Set a rule for the out of bed detection. After enabling the rule, the device triggers alarms when the people leave the bed.

Steps

1. Go to **Configuration** → **Health Tracking** → **Rule**.
2. Click + to add a rule, and enter a name for the rule.
3. Select the rule type as **Out of Bed**.
4. Click ⬡, and click on the live image to draw a region.

Note

- Only 1 out of bed rule can be configured.
- The rule area must be a convex quadrilateral.

5. Optional: Drag the frame to adjust the position of the drawn area.
6. Set the sensitivity for the rule.
7. Check to enable this rule.
8. Click **Save**.
9. Refer to ***Set Arming Schedule*** for setting scheduled time. Refer to ***Linkage Method Settings*** for setting linkage method.

3.3 Set Out of Room Detection Rule

Set rules for the out of room detection. After enabling the rule, the device triggers alarms when the people leave the room.

Steps

1. Go to **Configuration** → **Health Tracking** → **Rule**.
2. Click + to add a rule, and enter a name for the rule.
3. Select the rule type as **Out of Room**.
4. Click , and a yellow line will appear on the live view.
5. Select the line crossing direction from the drop-down list.
6. Optional: Left click the yellow line, hold the mouse to adjust its position, and drag the end of the line with the mouse to adjust its length and angle.
7. Set the sensitivity for the rule.
8. Check to enable this rule.
9. Click **Save**.
10. Refer to ***Set Arming Schedule*** for setting scheduled time. Refer to ***Linkage Method Settings*** for setting linkage method.

3.4 Set People Overstay Detection Rule

People overstay detection detects if people stay in the drawn area for over long time. Set the detection rule for this function, and the device triggers alarms when the overstay duration exceeds the set value.

Steps

1. Go to **Configuration** → **Health Tracking** → **Rule**.
2. Click + to add a rule, and enter a name for the rule.
3. Select the rule type as **People Overstay**.
4. Click ⬡, and click on the live image to draw an area.

Note

The rule area must be a convex quadrilateral.

5. Optional: Drag the frame to adjust the position of the drawn area.
6. Set the overstay duration and overstay people number.
7. Check to enable this rule.
8. Click **Save**.
9. Refer to ***Set Arming Schedule*** for setting scheduled time. Refer to ***Linkage Method Settings*** for setting linkage method.

Note

At most 5 people overstay rules can be configured. If you have configured a out of bed rule, only 4 people overstay rules can be configured.

3.5 Set Fall Down Detection Rule

Fall down detection detects if the people fall down and stay on the ground over long time. Set the detection rule for this function, and the device triggers alarms when the falling down duration exceeds the set value.

Steps

1. Go to **Configuration** → **Health Tracking** → **Rule**.
2. Select the rule type as **Fall Down**.
3. Set the duration for falling down.
4. Check to enable this rule.
5. Click **Save**.
6. Refer to ***Set Arming Schedule*** for setting scheduled time. Refer to ***Linkage Method Settings*** for setting linkage method.

Chapter 4 Event and Alarm

This part introduces the configuration of events. The device takes certain response to triggered alarm.

4.1 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**.

4.2 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 varies according to different models.

Chapter 5 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.

5.1 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 for one 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**.

5.2 Linkage Method Settings

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

5.2.1 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.

Steps

1. Go to **Configuration** → **Event** → **Basic Event** → **Alarm Output**.
2. Set alarm output parameters.

Automatic Alarm	For 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**.

5.2.2 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.

5.2.3 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**.

5.2.4 Notify Surveillance Center

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

5.2.5 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***

Chapter 6 Live View

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

6.1 Live View Parameters

The supported functions vary depending on the model.

6.1.1 Start and Stop Live View

Click **Live View**. Click ▶ to start live view. Click ■ to stop live view.

6.1.2 Window Proportion

- 16:9 refers to the window size is 16 : 9.
- 4:3 refers to the window size is 4 : 3.
- 1× refers to original window size.
- ⛶ refers to self-adaptive window size.

6.1.3 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***.

6.1.4 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**.
2. Click ◉ to select the plug-in.

6.1.5 Start Digital Zoom

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

Steps

1. Click 🔍 to enable the digital zoom.
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.

6.2 Quick Set Live View

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

Steps

1. Click to show quick setup page.
2. Set display settings, OSD, and video/audio parameters.
   - 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.

6.3 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.

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.

3. Click **OK**.

Chapter 7 Video and Audio

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

7.1 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**.

7.1.1 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.

7.1.2 Video Type

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

Video

Only video content is contained in the stream.

7.1.3 Resolution

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

7.1.4 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.

7.1.5 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.

7.1.6 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.

7.1.7 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.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.

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.

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.

7.1.8 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.

7.1.9 Display VCA Info

VCA information can be displayed by Player and Video.

Player

Player means the VCA info can be displayed by the dedicated player provided by the manufacturer.

Video

Video means the VCA info can be displayed by any general video player.

7.2 Display Settings

It offers the parameter settings to adjust image features.
Go to **Configuration** → **Image** → **Display Settings**.
Click **Default** to restore settings.

7.2.1 Image Adjustment

By adjusting the **Brightness**, and **Contrast**, the image can be best displayed.

7.2.2 Image Adjustment (Thermal Channel)

You can optimize the image display effect of thermal channel by manual correction.

Manual Correction

Click **DPC (Defective Pixel Correction)** to optimize the image once.

Note

It is a normal phenomenon that short video freezing might occur during the process of **Manual Correction**.

Thermal AGC Mode

Choose the AGC mode according to different scenes to balance and improve the image quality.

- Histogram: Choose for scene with obvious WDR and high temperature difference, can improve image contrast and enhance image. E.g. the scene contains both indoor and outdoor scenes.
- Linear: Choose for scene with low temperature difference and the target is not obvious, can improve image contrast and enhance image. E.g. the bird in forest.
- Self-Adaptive: Choose AGC mode automatically according to current scene.

7.2.3 DNR

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

Normal

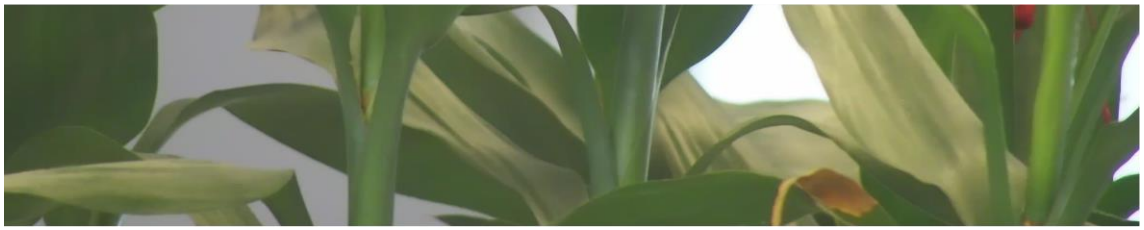
Set the DNR level to control the noise reduction degree. The higher level means stronger reduction degree.

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

Figure 7-1 DNR

7.2.4 Set Palette

You can select the palette mode to display the thermal grayscale image to colored image.

Steps

1. Go to **Configuration** → **Image** → **Display Settings**.
2. Select a palette mode in **Image Enhancement** according to your need.

Result

The live view displays the image with palette.

7.2.5 DDE

Digital Detail Enhancement is used to adjust the details of the image. **OFF** and **Normal** modes are selectable.

OFF

Disable this function.

Normal

Set the DDE level to control the details of the image. The higher the level is, the more details shows, but the higher the noise is.

7.2.6 Brightness Sudden Change

When the brightness of target and the background is hugely different (the temperature difference of target and background is huge), the system reduces the difference for viewing.

7.2.7 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.

7.3 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 Mosaic 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**.

7.4 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.

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**, and **Font Color**.

Chapter 8 Video Recording and Picture Capture

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

8.1 Storage Settings

This part introduces the configuration of several common storage paths.

8.1.1 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**.

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

8.1.3 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.

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.

3. Click **Upload Picture** to enable uploading snapshots to the FTP server.
4. Click **Test** to verify the FTP server.
5. Click **Save**.

8.1.4 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.

Steps

Caution

If the cloud storage is enabled, the pictures are stored in the cloud video manager firstly.

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. Click **Save**.

8.2 Video Recording

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

8.2.1 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

Note

The function varies according to different models.

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. Click **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**.

8.2.2 Record Manually

Steps

1. Go to **Configuration** → **Local**.
2. Set the **Record File Size** and saving path to for recorded files.
3. Click **Save**.
4. Click in the live view interface to start recording. Click to stop recording.

8.2.3 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.
3. Click to play the video files.
   – Click to clip video files.
   – Click 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.

4. Click on the playback interface to download 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.

8.3 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.

8.3.1 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**.

8.3.2 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.

8.3.3 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.

Chapter 9 Network Settings

9.1 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** → **Basic Configuration** → **Network** → **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.

Note

The network that the device is connected to should support DHCP (Dynamic Host Configuration Protocol).

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.

9.1.1 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.

9.2 Port

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

Caution

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.

RTSP Port

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

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.

Server Port

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

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

- 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.

9.3 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**.

9.3.1 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 time.

9.3.2 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.

9.4 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.

9.5 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**.

9.6 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.

9.7 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.

9.8 Enable Hik-Connect Service on Camera

Hik-Connect service should be enabled on your camera before using the service.
You can enable the service through SADP software or Web browser.

9.8.1 Enable Hik-Connect Service via Web Browser

Follow the following steps to enable Hik-Connect Service via Web Browser.

Before You Start

You need to activate the camera before enabling the service.

Steps

1. Access the camera via web browser.
2. Enter platform access configuration interface. **Configuration** → **Network** → **Advanced Settings** → **Platform Access**
3. Select Hik-Connect as the **Platform Access Mode**.
4. Check **Enable**.
5. Click and read "Terms of Service" and "Privacy Policy" in pop-up window.
6. Create a verification code or change the old verification code for the camera.

Note

The verification code is required when you add the camera to Hik-Connect service.

7. Save the settings.

9.8.2 Enable Hik-Connect Service via SADP Software

This part introduce how to enable Hik-Connect service via SADP software of an activated camera.

Steps

1. Run SADP software.
2. Select a camera and enter **Modify Network Parameters** page.
3. Check **Enable Hik-Connect**.
4. Create a verification code or change the old verification code.

Note

The verification code is required when you add the camera to Hik-Connect service.

5. Click and read "Terms of Service" and "Privacy Policy".
6. Confirm the settings.

9.8.3 Access Camera via Hik-Connect

Hik-Connect is an application for mobile devices. Using the App, you can view live image, receive alarm notification and so on.

Before You Start

Connect the camera to network with network cables.

Steps

1. Download Hik-Connect from ***https://www.hikmicrotech.com*** and install it on your mobile device.
2. Start the application and register for a Hik-Connect user account.

3. Log in after registration.
4. In the app, tap "+" on the upper-right corner and then scan the QR code of the camera to add the camera. You can find the QR code on the package.
5. Follow the prompts to set the network connection and add the camera to your Hik-Connect account.

   For detailed information, refer to the user manual of the Hik-Connect app.

9.9 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.

9.10 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. Select **Protocol**.

Note

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

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

9.11 Set Network Service

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

Steps

Note

This function varies according to different models.

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, and digital zoom function cannot be used.
   If the device uses HTTP, enable WebSocket.
   If the device uses HTTPS, enable WebSockets.

   TLS (Transport Layer Security)

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

9.12 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.

Chapter 10 System and Security

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

10.1 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.

10.2 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.

10.3 Import and Export Configuration File

It helps speed up batch configuration on other devices with the same parameters.

Steps

1. Export configuration file.
   1) Go to **Configuration** → **System** → **Maintenance** → **Upgrade & Maintenance**.
   2) Click **Device Parameters** and input the encryption password to export the current configuration file.
   3) Set the saving path to save the configuration file in local computer.
2. Import configuration file.
   1) Access the device that needs to be configured via web browser.
   2) Click **Browse** to select the saved configuration file.
   3) Input the encryption password you have set when exporting the configuration file.
   4) Click **Import**.

10.4 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.

10.5 Reboot

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

10.6 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.

10.7 Upgrade

Before You Start

You need to obtain the correct upgrade package.

Caution

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**.

10.8 View Open Source Software License

Go to **Configuration** → **System** → **System Settings** → **About**, and click **View Licenses**.

10.9 Time and Date

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

10.9.1 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**.

10.9.2 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**.

10.9.3 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**.

10.10 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**.

10.11 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 termial with RS-485 cable.

Steps

1. Go to **Configuration** → **System** → **System Settings** → **RS-485**.
2. Set the RS-485 parameters.

Note

You should keep the parameters of the device and the computer or terminal all the same.

3. Click **Save**.

10.12 Security

You can improve system security by setting security parameters.

10.12.1 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.

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.

Note

Refer to the specific content of protocol to view authentication requirements.

10.12.2 Security Audit Log

The security audit logs refer to the security operation 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. Security audit logs can be saved on device internal storage. The log will be saved every half hour after device booting. Due to limited storage space, you can also save the logs on a log server.

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.

Steps

Note

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.

Set Log Server

The log server should support syslog (RFC 3164) over TLS.

Steps

1. Check **Enable Log Upload Server**.
2. Input **Log Server IP** and **Log Server Port**.
3. Click **Test** to test the settings.
4. Install client certificate.
   1) Click **Create** to create the certificate request. Fill in the required information in the pop-up window.
   2) Click **Download** to download the certificate request and submit it to the trusted certificate authority for signature.
   3) Install the signed certificate to the device.
5. Install the CA certificate to the device.

10.12.3 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 to the list.
Modify	Modify the selected IP address in the list.
Delete	Delete the selected IP address in the list.

5. Click **Save**.

10.12.4 Set SSH

SSH is a protocol to ensure security of remote login. This setting is reserved for professional maintenance personnel only.

Steps

1. Go to **Configuration** → **System** → **Security** → **Security Service**.
2. Check **Enable SSH**.
3. Click **Save**.

10.12.5 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**.
3. Optional: Check **HTTPS Browsing** to access the device only via HTTPS protocol.
4. Click **Delete** to recreate and install certificate.

Create and install self-signed certificate	Refer to ***Create and Install Self-signed Certificate***
Create certificate request and install certificate	Refer to ***Install Authorized Certificate***

5. Click **Save**.

Create and Install Self-signed Certificate

Steps

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

Result

The device will install the self-signed certificate by default.

Install Authorized Certificate

If the demand for external access security is high, you can create and install authorized certificate via HTTPS protocol to ensure the data transmission security.

Steps

1. Select **Create certificate request first and continue the installation**.
2. Click **Create**.
3. Follow the prompt to input **Country/Region**, **Hostname/IP**, **Validity** and other parameters.
4. Click **Download** to download the certificate request and submit it to the trusted authority for signature.
5. Import certificate to the device.
   - Select **Signed certificate is available, start the installation directly**. Click **Browse** and **Install** to import the certificate to the device.
   - Select **Create the certificate request first and continue the installation**. Click **Browse** and **Install** to import the certificate to the device.
6. Click **Save**.

10.12.6 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**.

10.12.7 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.

10.13 User and Account

10.13.1 Set User Account and Permission

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

Caution

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**.

Chapter 11 Appendix

11.1 Common Material Emissivity Reference

Material	Emissivity
Human Skin	0.98
Printed Circuit Board	0.91
Concrete	0.95
Ceramic	0.92
Rubber	0.95
Paint	0.93
Wood	0.85
Pitch	0.96
Brick	0.95
Sand	0.90
Soil	0.92
Cloth	0.98
Hard Paperboard	0.90
White Paper	0.90
Water	0.96

11.2 Device Command

Scan the following QR code to get device common serial port commands.
Note that the command list contains the commonly used serial port commands for HikMicro thermal cameras.

11.3 Device Communication Matrix

Scan the following QR code to get device communication matrix.
Note that the matrix contains all communication ports of HikMicro thermal cameras.

11.4 FAQ

Scan the following QR code to get device common FAQ.



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