HIKVISION

Acoustic Imager

User Manual

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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.
ℹ**Note**	Provides additional information to emphasize or supplement important points of the main text.

Contents

Chapter 1 Intrduction

Acoustic Imager (the device) is a sound wave detection product that detects the leakage of pressurized air or local discharge in high-pressure systems in industrial environment, and images in acoustic palette format to mark the sound source position.

Acoustic imager can be used in power transmission, substation, and power distribution in the power industry, as well as in the detection of gas transmission pipes, tanks, and valves in the petrochemical industry.

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 www.hikvision.com to get SADP software to install.

Steps

1. Connect the device to network using the network cable.
2. Run SADP software to search the online devices.
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** → **Network Settings** → **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.

Web Browser	Operation
● Google Chrome 70+ ● Mozilla Firefox 70+ ● Edge 89+ ● Safari 13+	Click 🧩 to download and install plug-in.

2.3.2 Login

Steps

1. Enter the device IP address in the browser to display the login screen.
2. Enter user **name** and **password**. Click *Login*.
3. Optional:Use the auxiliary toolbar.

Click🔍	Enter keywords in the search box, and the device will display the search results. Click the results to go to the function configuration page.
Clickⓘ	It is used to view device help instructions, online documents, and open source software instructions.
Clickadmin ˅	It is used to view the current login account information, and can be used for password operation and logout.

Note

Account permission is required to change password.

Chapter 3 Live View

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

3.1 Live View Parameters

The supported functions vary depending on the model.

3.1.1 Start and Stop Live View

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

3.1.2 Aspect Ratio

Aspect Ratio is the display ratio of the width to height of the image.

- 4:3 refers to 4:3 window size.
- 16:9 refers to 16:9 window size.
- ☒ refers to original window size.
- ▣ refers to self-adaptive window size.
- ▢ refers to original ratio window size.

3.1.3 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.

3.1.4 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.

3.1.5 Start Digital Zoom Full Screen

It is used to view the image in full screen.
Click ⛶ to enable full screen, and press ***ESC*** to exit full screen.

3.2 Set General Settings

In different frequency bands, the position of the sound source in the scene is marked and located in the form of acoustic palette, and the real-time sound intensity level of the sound source is displayed.

Steps

1. Go to **Live View** → **General Settings**.
2. Select **Sound Source Mode**.

   Single Sound Source Mode

   The live view image will show only one frequency point which is the most powerful one.

   Multiple Sound Source Mode

   The live view image will show more than one frequency points which are the most powerful frequency points.
3. Draw detection area.
   1) Enable ***Enable*** .
   2) Click ***Draw*** to draw an area in the live view.
   3) Optional: Click ***Draw** again* to clear the selected area and draw again.
4. Set **Max. Frequency** and **Min. Frequency**. Locate the sound in the frequency range and display the acoustic palette in the corresponding sound source position in the image.

ℹNote

- Adjusting frequency ranges from 5 to 72 KHz.
- Frequency range (the difference between max. and min. frequency) is: 0.05 to 24 KHz.

5. Set acoustic palette.

   Dynamic Range

   Max. Decibel and Min. Decibel Difference. The larger the dynamic range, the larger the acoustic palette.

   Noise Threshold

   It is a threshold for setting acoustic palette overlay on the live view image. If the value is lower than the threshold, the data will be filtered. When the real-time sound intensity is no greater than the threshold, the acoustic palette will not be overlaid.When the real-time sound intensity is greater than the threshold, the acoustic palette will be overlaid.

Opacity

The higher the opacity, the more obvious the acoustic palette. The lower the opacity of the cloud image, the more obvious the image.

Palette Mode

Set the palette mode of the acoustic palette to improve the recognition of sound source target details. The acoustic palette will display different colors based on changes in sound intensity.

6. Click **Save**.

3.3 Set Filtering Settings

Real-time filtering is supported. You can collect the filtered sound signal in live view. The filtering parameters affect live view sound and video sound, and do not affect acoustic palette localization.

Steps

1. Go to **Live View →Filter Settings**.
2. Select **Sound Source Mode**.

Single Sound Source Mode

The live view image will show only one frequency point which is the most powerful one.

Multiple Sound Source Mode

The live view image will show more than one frequency points which are the most powerful frequency points.

3. Draw detection area.
   1) Enable ***Enable*** .
   2) Click ***Draw*** to draw an area in the live view.
   3) Optional: Click ***Draw** again* to clear the selected area and draw again.
2. Enable the corresponding bandpass filtering according to actual needs.

Note

High-Pass and Low-Pass filtering can be enabled at the same time .

3. Set **Filtering Order** and **Frequency Points**.

Note

When enabling both high-pass and low-pass filtering, the low frequency point should be larger than the high frequency point.

4. Click **Save**.

Chapter 4 Common Settings

Go to setting page: **Configuration** → **Common Settings** to set video parameters, image parameters, OSD parameters, and time parameters of the device.

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**.

4.1.1 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.

4.1.2 Video Type

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

Video Stream

Only video content is contained in the stream.

Video&Audio

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

4.1.3 Resolution

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

4.1.4 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.

4.1.5 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.

4.1.6 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.

4.1.7 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.

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.

4.1.8 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.

4.2 Display Settings

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

4.2.1 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

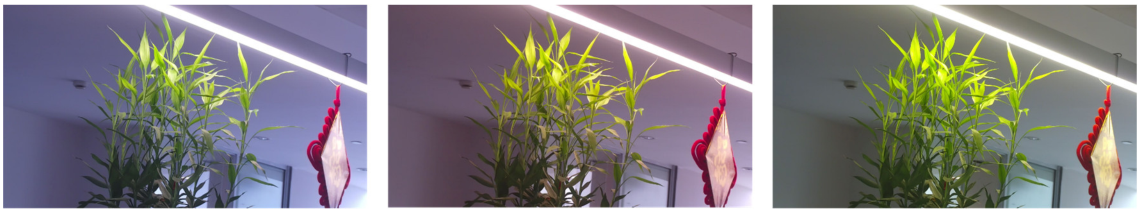
By adjusting the **Brightness**, **Saturation**, **Contrast** and **Sharpness**, the image can be best displayed.

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**.

White Balance

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



Cold Warm Auto White Balance

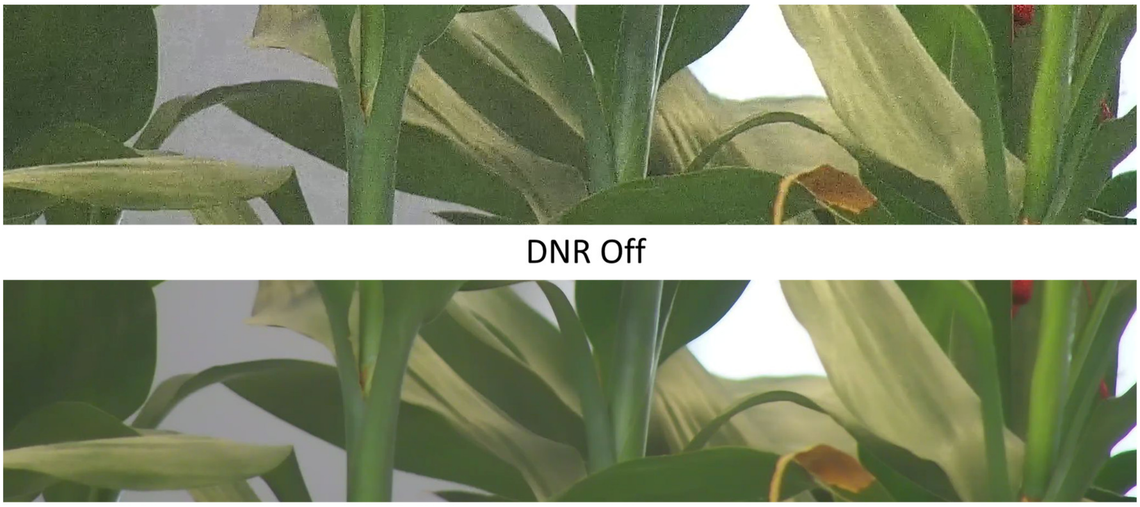
Figure 4-1 White Balance

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.



DNR Off

DNR On

Figure 4-2 DNR

4.2.2 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. In PAL, 25 or 50 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.

4.3 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.

Display

Set device name, date, week, and their related display formats. For certain device models, you can also set tilt angle as the displayed information.

Format Settings

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

Text Overlay

Set customized overlay text on image.

4.4 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. Select **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.

Click **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**.

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** → **Time Settings**.
2. Check **Enable**.
3. Select **Start Time**, **End Time** and **DST Bias**.
4. Click **Save**.

Chapter 5 Video and Audio

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

5.1 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**.

5.1.1 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.

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

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

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Variable Bitrate

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5.1.5 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.

5.1.6 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.

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5.2 Audio Settings

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

Note

Only certain models support the function.

5.3 Display Settings

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

5.3.1 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

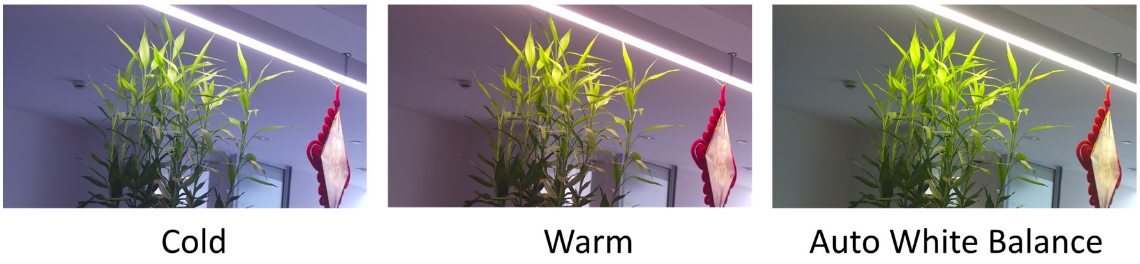
By adjusting the **Brightness**, **Saturation**, **Contrast** and **Sharpness**, the image can be best displayed.

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**.

White Balance

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



Cold

Warm

Auto White Balance

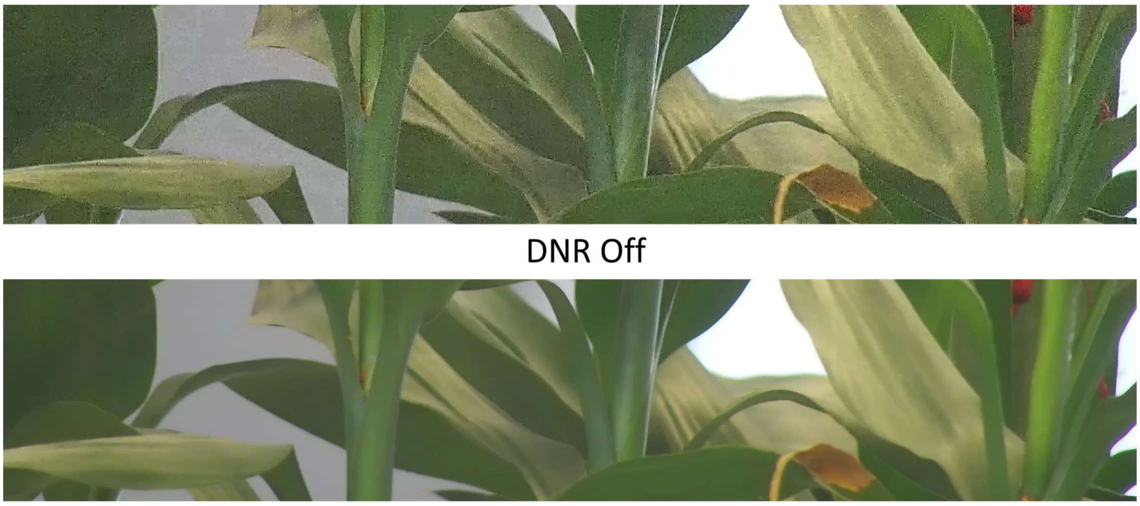
Figure 5-1 White Balance

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.



DNR Off

DNR On

Figure 5-2 DNR

5.3.2 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. In PAL, 25 or 50 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.

5.4 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.

Display

Set device name, date, week, and their related display formats. For certain device models, you can also set tilt angle as the displayed information.

Format Settings

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

Text Overlay

Set customized overlay text on image.

Chapter 6 Video Recording and Picture Capture

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

6.1 Storage Settings

This part introduces the configuration of several common storage paths.

6.1.1 Memory Card

You can view the capacity, free space, status, type, and property of the memory card. Encryption of memory card is supported to ensure data security.

Set New or Unencrypted Memory Card

Before You Start

Insert a new or unencrypted memory card to the device. For detailed installation, refer to *Quick Start Guide* of the device.

Steps

1. Go to **Configuration** → **Storage** → **Storage Management** → **HDD Management**.
2. Select the memory card.

   Note

   If an **Unlock** button appears, you need to unlock the memory card first. See ***Detect Memory Card Status*** for details.

3. Click **Format** to initialize the memory card.
   When the **Status** of memory card turns from **Uninitialized** to **Normal**, the memory card is ready for use.
4. Optional: Encrypt the memory card.
   1) Click **Encrypted Format**.
   2) Set the encryption password.
   3) Click **OK**.
      When the **Encryption Status** turns to **Encrypted**, the memory card is ready for use.

   Note

   Keep your encryption password properly. Encryption password cannot be found if forgotten.

5. Optional: Define the **Quota** of the memory card. Input the percentage for storing different contents according to your needs.
6. Click **Save**.

Set Encrypted Memory Card

Before You Start

- Insert an encrypted memory card to the device. For detailed installation, refer to *Quick Start Guide* of the device.
- You need to know the correct encryption password of the memory card.

Steps

1. Go to **Configuration** → **Storage** → **Storage Management** → **HDD Management**.
2. Select the memory card.
3. Verify the encryption password.
   1) Click **Parity**.
   2) Enter the encryption password.
   3) Click **OK**.
      When the **Encryption Status** turns to **Encrypted**, the memory card is ready for use.

Note

If the encryption password is forgotten and you still want to use this memory card, see ***Set New or Unencrypted Memory Card*** to format and set the memory card. All existing contents will be removed.

4. Optional: Define the **Quota** of the memory card. Input the percentage for storing different contents according to your needs.
5. Click **Save**.

6.1.2 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**.
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**.

6.2 Video Recording

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

6.2.1 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

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.

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. Set the advanced recording parameters.

   Overwrite

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

   Pre-record

   The time period you set to record before 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.

   Record Delay

   The time to delay recording when the event or alarm ends.
6. Click **Save**.

6.2.2 Record Manually

Steps

1. Go to **Configuration** → **Local**.
2. Set the **Video Size** and **Video Saving Path** for recorded video files.
3. Click **Save**.
4. Click ◉ in the live view interface to start recording. Click ◉ to stop recording.

What to do next

View the recorded video files.

Go to **Configuration** → **Local** and click **Open** behind **Video Saving Path** to open the saving path and view the files.

6.2.3 Playback and Download Video

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

Steps

1. Go to **Playback** → **Video**.
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 play video files in full screen. Press **ESC** to exit full screen.
   - Click ⏹ to stop video playback for all channels.
4. Optional: Click ✂ to clip video files. Click ✂ again to stop clipping video files

Note

Go to **Configuration** → **Local** → **Clip Saving Path**, view and change the saving path of clipped video files.

5. Optional: Click ⤓ on the playback interface to download files.

Note

Go to **Configuration** → **Local** → **Downloaded File Saving Path**, view and change the saving path of downloaded video files.

6.3 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.

6.3.1 Capture Automatically

This function can capture pictures automatically during configured time periods.

Steps

1. Go to **Configuration** → **Storage** → **Schedule Settings** → **Capture**.
2. Set capture schedule. Refer to ***Set Arming Schedule*** for configuring schedule time.

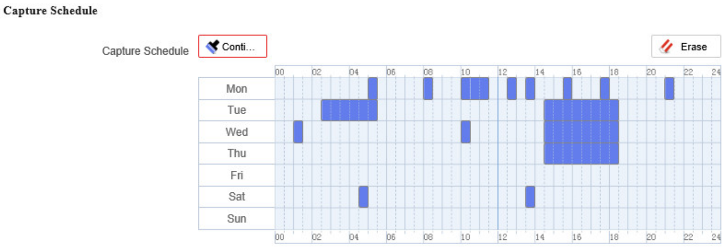


Figure 6-1 Set Capture Schedule

3. Set the capture type.

   Scheduled

   Capture a picture at the configured time interval.

4. Set the **Format**, **Resolution**, **Quality**, **Interval**, and **Capture Number**.

Note

The resolution of the captured picture is the same as the resolution of the captured picture stream. You can select **Stream Type** in **Advanced**.

5. Click **Save**.

6.3.2 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.

6.3.3 View and Download Picture

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

Steps

1. Go to **Playback** → **Picture**.
2. Set search condition and click **Search**.

   The matched pictures showed in the file list.

3. Download the pictures.

- Select the pictures then click **Download** to download them.
- Click **Download This Page** to download the pictures of this page.
- Click **Download All** to download all the pictures.

Note

Go to **Configuration** → **Local** → **Playback Capture Saving Path**, view and change the saving path of captured pictures when playback.

Chapter 7 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.

7.1 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** → **Event and Detection** → **Video Tampering**.
2. Check **Enable**.
3. Set the **Sensitivity**. The higher the value is, the easier to detect the area covering.
4. Click ⊲ and drag the mouse in the live view to draw the area.

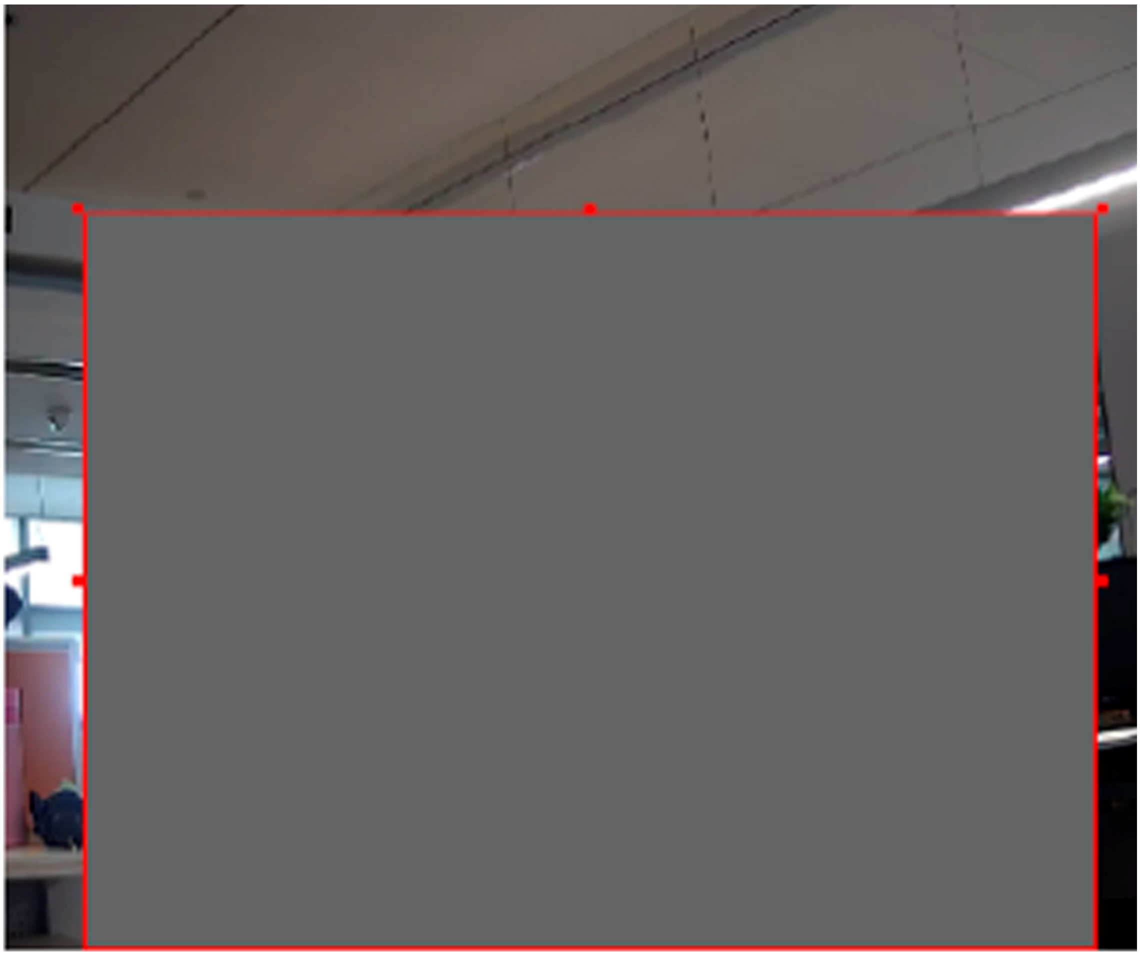


Figure 7-1 Set Video Tampering Area

5. Optional: Click 🗑 to delete all the drawn areas.
6. Refer to ***Set Arming Schedule*** for setting scheduled time. Refer to ***Linkage Method Settings*** for setting linkage method.
7. Click **Save**.

7.2 Set Exception Alarm

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

Steps

1. Go to **Configuration** → **Event** → **Event and Detection** → **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**.

7.3 Set Audio Detection

Check if the audio of the device is normal. If it is abnormal, the device can take linkage actions.

Steps

1. Go to **Configuration** → **Event** → **Event and Detection** → **Audio Detection**.
2. Select one or several audio detection types.

   Enable Decibel Threshold Detection

   If the decibel is larger than the set decibel threshold and exceeds the set duration, the alarm will be triggered.

   Enable Frequency Threshold Detection

   If the decibel is larger than the set frequency threshold and exceeds the set duration, the alarm will be triggered.

   Enable Sound Source Localization Detection

When there is acoustic palette in the image, the alarm will be triggered.

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.

7.4 Set Microphone Exception

Check if the microphone of the device is normal. If it is abnormal, the device can take linkage actions.

Steps

1. Go to **Configuration** → **Event** → **Event and Detection** →**Microphone Exception**.
2. Select **Detection Mode**.

Auto Detection

The detection will be triggered automatically according to the auto detection interval.

Manual Detection

After you click ***Detect***, one detection will be executed immediately, and the detection result updated to the latest.

3. For the linkage method settings, refer to ***Linkage Method Settings***.
4. Click **Save**.

Note

The function is only supported by certain models. The actual display varies with models.

Chapter 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.

8.1 Set Arming Schedule

Set the valid time of the device tasks.

Steps

1. Optional: Click **Arming Schedule and Linkage Method** in the related event interface.
2. Click **Edit** behind **Arming Schedule**.
3. Click **Draw**, and drag the time bar to draw desired valid time.

Note

- Each cell represents 30 minutes.
- Move the mouse over the drawn time period to see specific time periods and fine-tune the start time and end time.
- Up to 8 periods can be configured for one day.

4. Click **Erase**, and drag the time bar to clear selected valid time.
5. Click **OK** to save the settings.

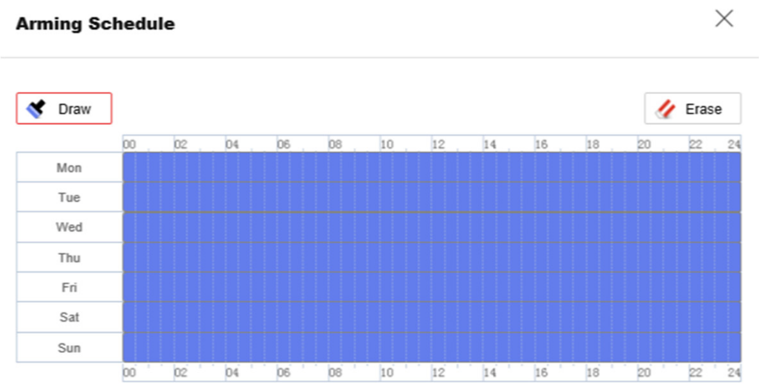


Figure 8-1 Set Arming Schedule

8.2 Linkage Method Settings

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

8.2.1 Memory Card Uploading

If you have enabled and configured the memory card uploading, the device sends the alarm information to the memory card when an alarm is triggered.
Refer to ***Set New or Unencrypted Memory Card*** for memory card storage configuration.

8.2.2 Notify Surveillance Center

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

8.2.3 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***.

8.2.4 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.

Set Alarm Server

Steps

1. Go to **Configuration** → **Event** → **Alarm Setting** → **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**.

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** → **Network** → **Network 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.

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.

Domain Name Settings

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.

9.2 Set Wireless Dial

The wireless network is provided with the mobile telecommunications technology via the 3G/4G SIM card. For devices equipped with 3G/4G SIM card, the data stream of audio, video and image can be transferred via 3G/4G wireless network.

Note

The wireless dial function is only supported by certain models.

Before You Start

Install a 3G/4G SIM card on the device to realize the wireless communication function.

Steps

1. Go to **Configuration → Network → Network Settings → Wireless Dial.**
2. Set dial-up parameters and save.

Dial Mode

Auto

Set the **Dial Plan** for dialing.

Manual

Click ***Connect*** to dial up, disconnect at the set offline time, or disconnect manually.

Network Mode

Auto

The device will automatically switch mobile communication type according to signal strength.

4G

4G is connected to the network, and 4G is faster than 3G to transmit audio, video, and image data.

3G

Connect to network via 3G.

Phone

It is used to enter the corresponding number of the current SIM card.

MTU

It is used to set the max. transmission unit. It refers to the size of the max. data package in network transmission.

Note

- The supported mobile communication type is dependent on models.
- Private network parameters should be configured by the operator. Configuration is not required.

Verification Protocol

Auto, **CHAP**, and PAP are selectable. Auto is recommended.

9.3 Data Monitoring

You can view and manage the SIM card data or wired network data used by the device. SIM card data is the data service provided by network carriers; wired network data is usually provided through a 4G router.

Steps

3. Go to **Configuration** → **Network** → **Network Settings** → **Data Monitoring**.
4. Check **Enable**.
5. Set the following parameters according to your data plan.

Plan Type

Daily, **Monthly**, or **Annually** can be selected.

Data Plan

Enter the amount of usable data and select the unit.

Pre-Alarm Threshold

When the used data reaches the set percentage of data plan, the device sends an alarm message, and shows notification on the OSD or pop-up window.

6. Select **Normal Linkage**.
   If Send Email or Notify Surveillance Center is selected, the device sends an alarm message by Email or to surveillance center when the used data reaches the threshold.
7. Click **Save**.

Note

The function varies with different device models.

8.

9.4 HTTP(S)

HTTP is an application-layer protocol for transmitting hypermedia documents. 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** → **Network Service** → **HTTP(S)**.
2. Enter **HTTP Port**.

Note

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.

3. Check **Enable** in **HTTPS**.

Note

You can click **TLS Settings** to set the TLS version that the device supports. Refer to for details.

4. Enter **HTTPS Port**.
5. Optional: Check **HTTPS Browsing** to access the device only via HTTPS protocol.
6. Select **Server Certificate**.
7. Set **Web Authentication**.

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.

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.

8. Click **Save**.

9.5 Multicast

Multicast is group communication where data transmission is addressed to a group of destination devices simultaneously.
Go to **Configuration** → **Network** → **Network Service** → **Multicast** for the multicast settings.

IP Address

It stands for the address of multicast host.

9.5.1 Multicast Discovery

Go to **Configuration** → **Network** → **Network Settings** → **TCP/IP** to enable this function.
Check the **Enable Multicast Discovery**, and then the online network device can be automatically detected by client software via private multicast protocol in the LAN.

9.6 RTSP

RTSP (Real Time Streaming Protocol) is an application-layer controlling protocol for streaming media.

Steps

1. Go to **Configuration** → **Network** → **Network Service** → **RTSP**.
2. Enter **Port**.
3. Set **Multicast** parameters.

   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.
4. Set **RTSP Authentication**.

   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.

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.

5. Click **Save**.

9.7 Port Mapping

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

Steps

1. Go to **Configuration** → **Network** → **Network Service** → **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**.

9.7.1 Set Auto 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 **Auto**.
3. Click **Save**.

Note

UPnP™ function on the router should be enabled at the same time.

9.7.2 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.

9.7.3 Set Port Mapping on Router

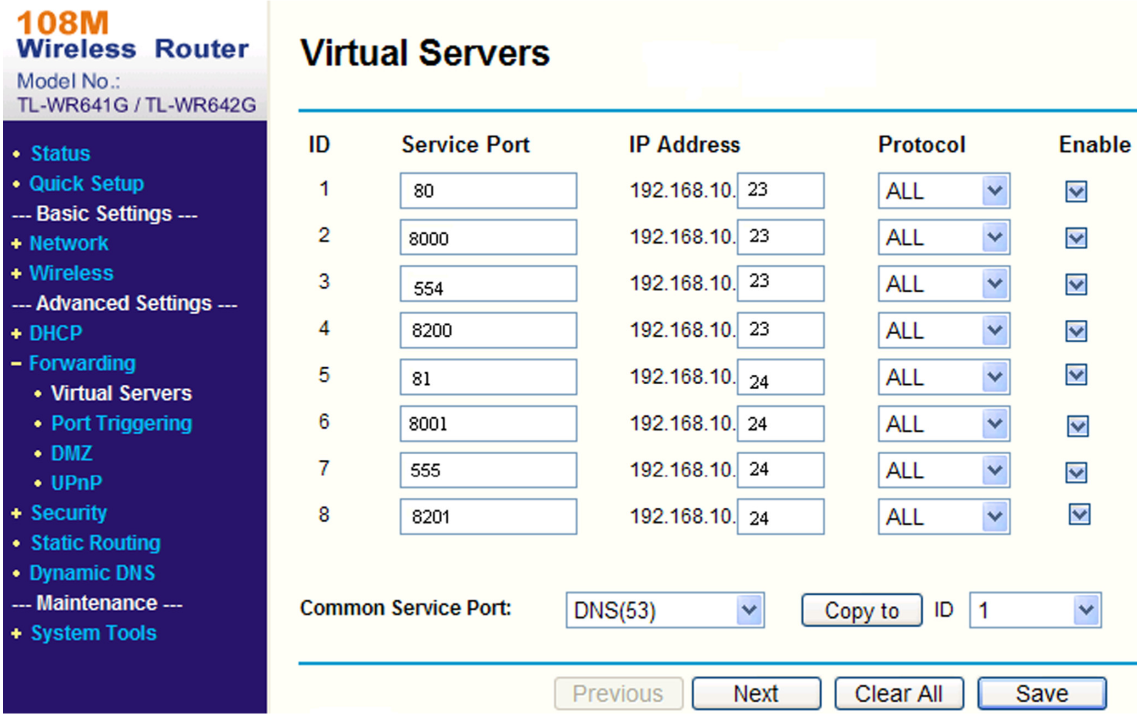
The following settings are for a certain router. The settings vary depending on different models of routers.

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 devices are connected to the same router, you can configure the ports of a device as 80, 8000, and 554 with IP address 192.168.1.23, and the ports of another device 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

Figure 9-1 Port Mapping on Router

Note

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

9.8 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** → **Platform Access** → **ISUP**.
2. Optional: Select an access center.
3. Check **Enable**.
4. Select a protocol version and enter related parameters.
5. Click **Save**.
   Register status turns to **Online** when the function is correctly set.

Chapter 10 System and Security

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

10.1 System Settings

10.1.1 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.

10.1.2 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. Select **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.

Click **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**.

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** → **Time Settings**.
2. Check **Enable**.
3. Select **Start Time**, **End Time** and **DST Bias**.
4. Click **Save**.

10.1.3 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**.

10.1.4 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.

Note

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

3. Click **Save**.

10.1.5 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.

10.2 User and Account

10.2.1 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 ✎ to change the password and permission.
Delete	Select a user and click 🗑.

Note

The administrator can add up to 31 user accounts.

3. Click **OK**.

10.2.2 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** → **Online Users**, click **General**, and set **Simultaneous Login**.

10.2.3 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.

10.2.4 Set Live View Connection

It controls the remote live view connection amount.

Live view connection controls the maximum live view that can be streamed at the same time.

Enter **Configuration** → **System** → **System Settings** → **System Service** to set the upper limit of the remote connection number.

10.3 Maintenance

10.3.1 Restart

You can restart the device via browser.
Go to **Maintenance and Security** → **Maintenance** → **Restart**, and click **Restart**.

10.3.2 Upgrade

Before You Start

You need to obtain the correct upgrade package.

⚠**Caution**

DO NOT disconnect power during the process, and the device restarts automatically after upgrade.

Steps

1. Go to **Maintenance and Security** → **Maintenance** → **Upgrade**.
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 🗀 to select the upgrade file.
4. Click **Upgrade**.

10.3.3 Restore and Default

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

Steps

1. Go to **Maintenance and Security** → **Maintenance** → **Backup and Restore**.
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.

10.3.4 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 **Maintenance and Security** → **Maintenance** → **Backup and Restore** → **Backup**.
   2) Click **Export** 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) Go to **Maintenance and Security** → **Maintenance** → **Backup and Restore** → **Reset**.
   3) Click 🗀 to select the saved configuration file.
   4) Input the encryption password you have set when exporting the configuration file.
   5) Click **Import**.

10.3.5 Search and Manage Log

Log helps locate and troubleshoot problems.

Steps

1. Go to **Maintenance and Security** → **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.

10.3.6 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 device models.

1. Go to **Maintenance and Security** → **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.

10.3.7 SSH

Secure Shell (SSH) is a cryptographic network protocol for operating network services over an unsecured network.
Go to **Maintenance and Security** → **Maintenance** → **Device Debugging**, and click **Settings** of **SSH**. You can edit the number of the port. Click **Save**.

⚠**Caution**

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

10.3.8 Export Diagnose Information

Diagnose information includes running log, system information, hardware information.
Go to **Maintenance and Security** → **Maintenance** → **Device Debugging** → **Diagnose Information**. Click **Export**. In the pop-up window, check desired diagnose information and click **Export** to export corresponding diagnose information of the device.

10.4 Security

You can improve system security by setting security parameters.

10.4.1 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 **Maintenance and Security** → **Security** → **IP Address Filter**.
2. Check **Enable**.
3. Select the type of IP address filter.

Blocklist	IP addresses in the list cannot access the device.
Allowlist	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 the selected IP address or IP address range in the list.
🗑	Delete the selected IP address or IP address range in the list.

5. Click **Save**.

10.4.2 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 **Maintenance and Security** → **Security** → **Login Management** → **Control Timeout Settings** to complete settings.

10.4.3 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

The function is only supported by certain device models.

Server Certificate/Client Certificate

Note

The device has default self-signed server/client certificate installed. The certificate ID is ***default***.

Create and Install Self-signed Certificate

Steps

1. Go to **Maintenance and Security** → **Security** → **Certificate Management**.
2. Click **Create Self-signed Certificate**.
3. Input certificate information.

   Note

   The input certificate ID cannot be the same as the existing ones.

4. Click **Save** to save and install the certificate.
   The created certificate is displayed in the **Server/Client Certificate** list.
   If the certificate is used by certain functions, the function name is shown in the column **Functions**.
5. Optional: Click **Property** to see the certificate details.

Install Self-signed Request Certificate

You can send the self-signed certificate to a trusted third-party for the signature, and install the certificate to the device.

Before You Start

Create a self-signed certificate first. See ***Create and Install Self-signed Certificate*** for instructions.

Steps

1. Go to **Maintenance and Security** → **Security** → **Certificate Management**.
2. Select a self-signed certificate from the **Server/Client Certificate** list.
3. Click **Create Certificate Request**.
4. Input request information.
5. Click **Save**.
   The certificate request details are displayed in a pop-up window.
6. Copy the request content and save it as a request file.
7. Send the file to a trusted-third party for signature.
8. After receiving the certificated sent back from the third-party, install it to the device.
   1) Click **Import**.
   2) Input **Certificate ID**.

   Note

   The input certificate ID cannot be the same as the existed ones.

   3) Click 📁 to select the certificate file.
   4) Select **Self-signed Request Certificate**.
   5) Click **Save**.

   The imported certificate is displayed in the **Server/Client Certificate** list.
   If the certificate is used by certain function, the function name is shown in the column **Functions**.
9. Optional: Click **Property** see the certificate details.

Install Other Authorized Certificate

If you already has an authorized certificate (not created by the device), you can import it to the device directly.

Steps

1. Go to **Maintenance and Security** → **Security** → **Certificate Management**.
2. Click **Import**in the **Server/Client Certificate** list.
3. Input **Certificate ID**.

   Note

   The input certificate ID cannot be the same as the existed ones.

4. Click📁 to select the certificate file.

5. Select **Certificate and Key** and select a **Key Type** according to your certificate.

   Independent Key If your certificate has an independent key, select this option. Browse to select the private key and input the private-key password.

   PKCS#12 If your certificate has the key in the same certificate file, select this option and input the password.

6. Click **Save**.
   The imported certificate is displayed in the **Server/Client Certificate** list.
   If the certificate is used by certain function, the function name is shown in the column **Functions**.

Install CA Certificate

Before You Start

Prepare a CA certificate in advance.

Steps

1. Go to **Maintenance and Security** → **Security** → **Certificate Management**.
2. Click **Import** in the **CA Certificate** list.
3. Input **Certificate ID**.

> **Note**
>
> The input certificate ID cannot be the same as the existing ones.

4. Click 🗀 to select the certificate file.
5. Click **Save**.
   The imported certificate is displayed in the **CA Certificate** list.
   If the certificate is used by certain functions, the function name is shown in the **Functions** column.

Enable Certificate Expiration Alarm

Steps

1. Check **Enable Certificate Expiration Alarm**. If enabled, you will receive an email or the device 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)**.

> **Note**
>
> - If you set the reminding day before expiration to 1, then the device 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 device will remind you in 10:00 the first day.

3. Click **Save**.

10.4.4 TLS

The Transport Layer Security (TLS) protocol aims primarily to provide privacy and data integrity between two or more communicating computer applications. TLS settings are effective for HTTP(S) and enhanced SDK service.

Go to **Maintenance and Security** → **Security** → **TLS**, and enable the desired TLS protocol. Click **Save**.

⚠**Caution**

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

See Far, Go Further

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