Acoustic Leak Detector

User Manual

Legal Information

About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the HIKMICRO website (***http://www.hikmicrotech.com***).
Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATTER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment 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 equipment 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 equipment 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

FCC Conditions

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

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

Note: Due to the device size limit, the above statement may not be disclaimed on the device.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

EU/UK Conformity Statement

CE	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).
UKCA	This product and - if applicable - the supplied accessories too are marked with "UKCA" and comply therefore with the following directives: Radio Equipment Regulations 2017, Electromagnetic Compatibility Regulations 2016, Electrical Equipment (Safety) Regulations 2016, the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012. Frequency Bands and Power (for CE/UKCA) The frequency bands and modes and the nominal limits of transmitted power (radiated and/or conducted) applicable to this radio device are the following: Wi-Fi 2.4 GHz (2.4 GHz to 2.4835 GHz), 20 dBm.
	Directive 2012/19/EU (WEEE Directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

According to the Waste Electrical and Electronic Equipment Regulations 2013: Products marked with this symbol cannot be disposed of as unsorted municipal waste in the United Kingdom. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

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.

According to the Batteries and Accumulators (Placing on the Market) Regulations 2008 and the Waste Batteries and Accumulators Regulations 2009: This product contains a battery that cannot be disposed of as unsorted municipal waste in the United Kingdom. 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radioexempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

ce matériel est conforme aux limites de dose d'exposition aux rayonnements, CNR-102 énoncée dans un autre environnement.

KC

B급 기기: 이 기기는 가정용(B급) 전자파적합기기로써 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

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

● Use of the product must be in strict compliance with the local electrical safety regulations.

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

● Input voltage should meet the Limited Power Source (3.85 VDC, 570 mA) according to the IEC62368 standard. Please refer to technical specifications for detailed information.
● Make sure the plug is properly connected to the power socket.
● DO NOT connect multiple devices to one power adapter, to avoid over-heating or fire hazards caused by overload.
● Use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements.

Battery

● Improper use or replacement of the battery may result in explosion hazard. Replace with the same or equivalent type only. Dispose of used batteries in conformance with the instructions provided by the battery

manufacturer.

- 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.
- Use the battery provided by a qualified manufacturer. Refer to the product specification for detailed battery requirements.
- DO NOT charge other battery types with the supplied charger. Confirm there is no flammable material within 2 m of the charger during charging.
- DO NOT place the battery near heating or fire source. Avoid direct sunlight.
- DO NOT swallow the battery to avoid chemical burns.
- DO NOT place the battery in the reach of children.
- When the device is powered off and the RTC battery is full, the time settings can be kept for 6 months.
- In the first use, charge the device for more than 2.5 hours in the power-off status.
- The lithium battery voltage is 3.85 V, and the battery capacity is 2100 mAh.
- The battery is certified by UL2054.

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.

● Please notice that the current limit of USB 3.0 PowerShare port may vary with the PC brand, which is likely to result in incompatibility issue. Therefore, it's advised to use regular USB 3.0 or USB 2.0 port if the USB device fails to be recognized by PC via USB 3.0 PowerShare port.

● Your camera will periodically perform a self-calibration to optimize image quality and measurement accuracy. In this process, the image will pause briefly and you will hear a "click" as a shutter moves in front of the detector. The self-calibration will be more frequent during start up or in very cold or hot environments. This is a normal part of operation to ensure optimum performance for your camera.

Calibration Service

● We recommend you send the device back for calibration once a year, and please contact the local dealer for the information on maintenance points. For more detailed calibration services, please refer to https://www.hikmicrotech.com/en/calibrationservices/2.

Using Environment

● Make sure the running environment meets the requirement of the device. The operating temperature shall be -10 °C to 50 °C (14 °F to 122 °F), and the operating humidity shall be 95% or less.

● This device can only be safely used in the region below 2000 meters above the sea level.

● Place the device in a dry and well-ventilated environment.

● 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.

● When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out.

● DO NOT aim the lens at the sun or any other bright light.

● The device is suitable for indoor and outdoor uses, but do not expose it in wet conditions.

● The level of protection is IP 54.

● The pollution degree is 2.

Technical Support

The ***https://www.hikmicrotech.com*** portal will help you as a HIKMICRO customer to get the most out of your HIKMICRO products. The portal gives you access to our support team, software and documentation, service contacts, etc.

Emergency

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

Manufacture Address

Room 313, Unit B, Building 2, 399 Danfeng Road, Xixing Subdistrict,Binjiang District, Hangzhou, Zhejiang 310052, China Hangzhou Microimage Software Co., Ltd.

COMPLIANCE NOTICE: The thermal series products might be subject to export controls in various countries or regions, including without limitation, the United States, European Union, United Kingdom and/or other member countries of the Wassenaar Arrangement. Please consult your professional legal or compliance expert or local government authorities for any necessary export license requirements if you intend to transfer, export, re-export the thermal series products between different countries.

Contents

Chapter 1 Overview

1.1 Device Description

The acoustic leak detector is a high-performance device designed for technicians and plumbers to find leaks in plumbing, water service, and residential or commercial properties. It has four ranges of selectable digital bandpass filters, and the amplification is up to 80 dB. Through the filtration and amplification of the sound frequency ranges, the device can help you locate the leakage point accurately.
It can be widely used indoors and outdoors with the handheld sensor and pick-up sensor correspondingly. Furthermore, it can detect the ignored leaks, reducing the resource waste and property loss

1.2 Main Function

Inspection

Device supports the inspection and quick inspection.

Wide Frequency Range

Device can cover the frequency range from 150 HZ to 4500 HZ with four ranges of selectable digital bandpass filters.

Mute button

Device can make the audio adjustment by the mute button of the sensor.

Client Software Connection

● Mobile Phone: The device supports both Wi-Fi connection and WLAN hot spot. Connect the device to HIKMICRO Viewer, you can view live view, capture snapshots, and record videos via HIKMICRO Viewer App on your phone. You can also, analyze pictures offline, generate and share a report via the app. Scan the QR codes on the cover to download
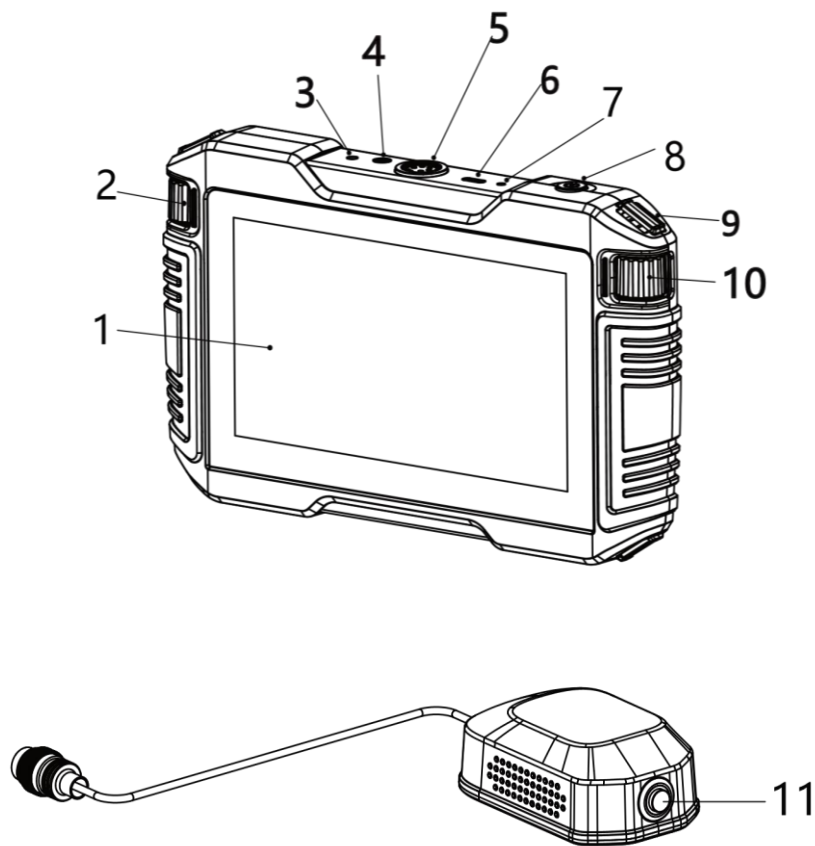
the App.

HIKMICRO Viewer Android   HIKMICRO Viewer iOS

- PC: You can connect the device to your PC via a type-C cable, and cast the real-time live view of the device to your PC through the UVC alarm client.
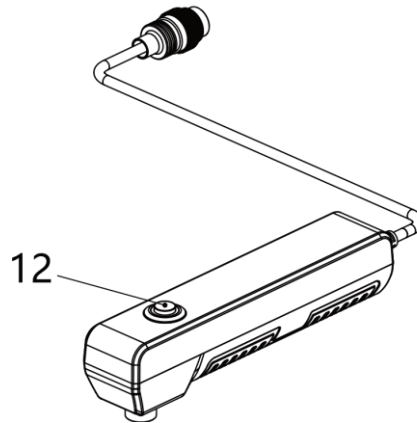
1.3 Appearance

Figure 1-1 Appearance

Table 1-1 Button and Interface Description

No.	Description	Function
1	Touch Screen	● Show the live view interface. ● Touch-screen operation.
2	Volume Adjustment Wheel	Adjust the headset volume.
3	Reboot Key	Press to restart the device.
4	Headset Jack	Connect the headset to the device.
5	Sensor Interface	Connect the handheld sensor or pick-up sensor to the device.
6	Type-C Interface	Charge the device, cast screen or export files with Type-C cable.
7	Indicator	Indicate the charging status of the device. ● Solid red: charging normally ● Solid green: fully charged
8	Power Key	● Press: standby mode/wake up device ● Hold: power on/off

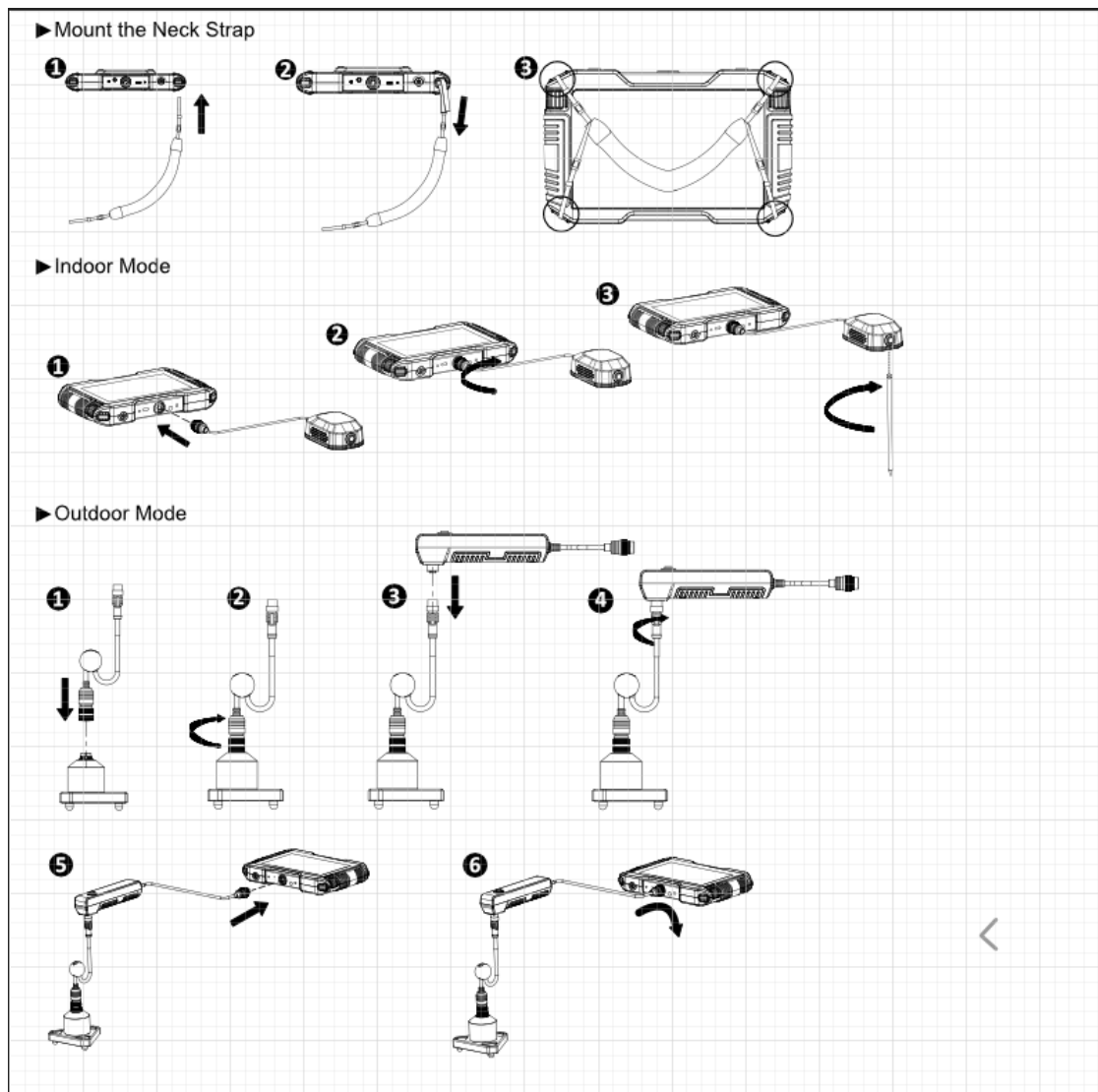| 9	Neck Strap Attachment Point	Mount the neck strap.
10	Operational Environment Shift Wheel	Adjust the corresponding level according to the frequency range including Indoor I, Indoor II, Outdoor I, Outdoor II.
11	Mute Key	Start/stop receiving the audio signal from the handheld sensor.
12	Mute Key	Start/stop receiving the audio signal from the pick-up sensor.

Note

● Only when you release the mute key can you see the audio data display.
● You also can go to **Local Settings → Audio Settings** to select the mute mode.

Chapter 2 Preparation

2.1 Assemble Accessories

ⓘNote

Please assemble the accessories according to the condition.
Tighten all the interfaces of the device.

2.2 Power On/Off

2.2.1 Power On

⎯ⓘ**Note**

Please fully charge the device before you start for the first time.

Press ⏻ to turn on the device. You can detect the leaks when the interface of the device is stable.

2.2.2 Power Off

Manual: When the device is turned on, hold ⏻ for about three seconds to power off the device.
Set Auto Power-off Duration：
Steps
1，Go to **Local Settings** → **Device Settings** → **Auto Off**
2，Press ⏻ to set the automatic shutdown time for device as required.

2.3 Standby Mode

When the device is not in use, you can enable the standby mode for the power saving.

2.3.1 Enable the Standby Mode

Manual: When the device is turned on, press ⏻ to enable the standby mode.
Set Auto Power-off Duration：
Steps
1. Go to **Local Settings** → **Device Settings** → **Auto Sleep**
2. Press ⏻ to set the automatic shutdown time for device as required.

Disable the Standby Mode

When the device is in the standby mode, press ⏻ to wake up the device.

2.4 Swipe-Down Menu

In the observation interface, swipe down to call the swipe-down menu.

⌷**i**Note

Go to **Local Settings** → **Device Settings** → **Connect** also can set the above parameters. Please refer to Chapter 6 for detailed information.

Chapter 3 Display Settings

3.1 Display Appearance

Go to **Local Settings → Device Settings →Appearance to select the light or dark appearance.**

3.2 Set Screen Brightness

Go to **Local Settings → Device Settings → Display brightness** to drag the brightness adjustment bar as required.

ⓘNote

You also can set the screen brightness in the swipe-down menu.

3.3 Display OSD Info

Go to **Local Settings → Device Settings → Display Settings** to enable the information on-screen display.

Status Icons

The icons of the connection, storage space, Wi-Fi, hot spot, cast screen and the electric quantity.

Time

Device time and date.

Brand Logo

The brand logo is a manufacturer logo displayed on the upper left corner of the screen.

Chapter 4 Operation Method

The acoustic leak detector can detect the leakage points by inspection and quick inspection.

4.1 Quick Inspection

You can detect the single leakage point quickly by collecting its audio amplitude.

Hearing Protection：when the device receive the

：Amplitude display including the line chart, bar chart and the figure.

Indoor I: Adjust the corresponding level according to the frequency range including Indoor I，Indoor II, Outdoor I, Outdoor II.

4.2 Inspection

You can tell the leakage points by collecting the audio amplitudes in the 12 points at the same time.

Collect amplitude in points

Tap one of the points and tap again when the amplitude is stable. Then the average amplitude will be displayed on the top of the corresponding point.

Note

● You can collect the data again in the same point.

Clear

Clear all the data in 12 points.

Analyze

Analyze all the points which has completed the collection and the suspect leakage point will be marked in red.

Chapter 5 Cast Screen

You can connect the device to your PC via a type-C cable, and cast the real-time live view of the device to your PC through the UVC alarm client. Then you can synchronously view the live view and parameters such as the maximum temperature, the distance, and the emissivity on your PC.

Before You Start

Download the UVC Alarm Client from HIKMICRO official website, and install the client on your PC. Refer to the user manual of the client for detailed operation.

Steps

1. Select from the main menu.
2. Go to **Local Settings → Connect → Cast Screen**.
3. Tap to enable the function.
4. Open UVC Alarm Client on your PC.
4. Connect the device to your PC via a type-C cable.

Result

The live view interface and parameters of the current image will be synchronously displayed on your PC.

Chapter 6 HIKMICRO Viewer APP Connection

The device supports both Wi-Fi connection and hotspot. Connect the device to HIKMICRO Viewer, and you can control the device via mobile client.

6.1 Connect via Wi-Fi

Before You Start

Download and install HIKMICRO Viewer on your phone.

Steps

1. Select ▓ from the main menu.
2. Go to **Local Settings** → **Connect** → **WLAN**.
3. Tap ⬭ to enable Wi-Fi, and the searched Wi-Fi will be listed.
4. Select the Wi-Fi to connect to. A soft keyboard is displayed.
5. Enter the password by touching the screen.

> **⊡iNote**
>
> DO NOT tap **enter** or **space**, or the password may be incorrect.

6. Tap ☑ to save.
7. Launch the App and follow the startup wizard to create, and register an account.
8. Add the device to online devices.

Result

You can view the live view, capture snapshots, and record videos via the App.

6.2 Connect via Hotspot

Before You Start

Download and install HIKMICRO Viewer on your phone.

Steps

1. Select ▓ from the main menu.
2. Go to **Local Settings** → **Connect** → **Hotspot**.
2. Tap ◯▬ to enable the hotspot function. The hotspot name is the last 9 digits of the device serial No.
3. Tap **Set Hot Spot**. A soft keyboard is displayed.
4. Set the password for the hotspot.

ⓘ**Note**

- DO NOT tap **enter** or **space**, or the password may be incorrect.
- The password should contain at least 8 digits, consisting of numbers and characters.

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5. Tap ☑ to save.
6. Connect your phone to the hotspot of the device.
7. Launch the App and follow the startup wizard to create, and register an account.
8. Select Wi-Fi configuration in the App, and enter the serial number of device to add the device. Refer to the manual of APP client for details.

Result

You can view the live view, capture snapshots, and record videos via the App.

Chapter 7 Maintenance

7.1 View Device Information

Go to **Local Settings** → **Device Information** to view the device information.

7.2 Set Date and Time

Date

Steps

1. Go to **Local Settings** → **Device Settings** → **Time and Date** to calibrate the date.
2. Swipe down/up the parameters to select the target date.
3. Press 〈 to save and exit.

Time

Steps

1. Go to **Local Settings** → **Device Settings** → **Time and Date** to calibrate the time.
2. Select the 24-hour or the 12-hour mode.
3. Swipe down/up the parameters to select the target date.
3. Press 〈 to save and exit.

7.3 Upgrade Device

Steps

1. Connect the device to your PC with cable and open the detected disk.
2. Copy the upgrade file and paste it to the root directory of the device.

3. Disconnect the device from your PC.
4. Reboot the device and go to **Local Settings → Device Settings**. Tap the icon of the upgrade file and then the device will reboot automatically. The upgrading process will be displayed in the main interface.

Note

After upgrading, the device reboots automatically. You can view the current version in **Local Settings → Device Settings →Device Information**.

7.4 Restore Device

Go to **Local Settings → Device Settings → Device Initialization** to restore the storage memory and the parameter.
Format Memory: restore the storage memory.
Restore: Initialize the device and restore default settings.

Note

Please back up the important files before the initialization.

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