



Handheld Thermography Camera
HIKMICRO B Series
User Manual



Contact Us

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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 (www.hikmicrotech.com).

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Frequency Bands and Power (for CE/UKCA)

The frequency bands and transmitting power (radiated and/or conducted) nominal limits applicable to the following radio equipment are as follows:

Wi-Fi 2.4 GHz (2.4 GHz to 2.4835 GHz): 20 dBm

For the device without a supplied battery, use the battery provided by a qualified manufacturer.

Refer to the product specification for detailed battery requirements

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.



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.

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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.

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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.

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

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

Cet appareil est conforme aux normes RSS exemptes de licence d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes :

- (1) cet appareil ne doit pas causer d'interférences, et

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Cet appareil est conforme aux limites d’exposition au rayonnement IC RSS-102 établies pour un environnement non contrôlé.

Safety Instruction

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.

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

- The input voltage should meet the Limited Power Source (3.7 VDC, 0.5 A) according to the IEC61010-1 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.

Battery

- The built-in battery cannot be dismantled. Please contact the manufacture for repair if necessary. The battery may explode if it is replaced by an incorrect type. Replace with the same or equivalent type only.
- 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.

- Dispose of used batteries in conformance with the instructions provided by the battery manufacturer.
- 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.
- When the device is powered off and the RTC battery is full, the time settings can be kept for 4 months.
- Before the first use, charge the lithium battery for more than 3 hours.

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.
- 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.
- 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 the startup 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 visit

<https://www.hikmicrotech.com/en/support/calibration-service.html>.

Technical support

<https://www.hikmicrotech.com/en/contact-us.html> 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.

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.
- 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.

Emergency

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

Laser Light Supplement Warning



Warning: The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from

direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens. The wave length is 650 nm, and the power is less than 1 mW. The laser meets the IEC60825-1:2014 standard.

Laser maintenance: It is not necessary to maintain the laser regularly. If the laser does not work, the laser assembly needs to be replaced in the factory under

warranty. Keep the device power off when replacing laser assembly. Caution-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Manufacture Address:

Room 313, Unit B, Building 2, 399 Danfeng Road, Xixing Subdistrict, Binjiang District, Hangzhou, Zhejiang 310052, China

Hangzhou Microimage Software Co., Ltd.

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CONTENTS

1	Introduction	1
1.1	Product Introduction.....	1
1.2	Main Function	1
2	Appearance	2
3	Preparation	4
3.1	Charge Device.....	4
3.2	Power On/Off.....	4
3.3	Interface Description.....	4
4	Display Settings.....	5
4.1	Set Image Mode	5
4.2	Set Palettes	6
4.3	Set Level & Span.....	6
4.4	Set Color Distribution.....	7
4.5	Set Brand Logo	7
5	Temperature Measurement	7
5.1	Set Measurement Parameters	8
5.2	Set Measurement Tool	8
5.3	Enhance High-Temperature Target.....	9
5.4	Set Temperature Alarm	9
6	Capture Snapshots	10
6.1	Capture One Image	10
6.2	View Snapshots.....	10
6.3	Export Snapshots	11
7	Connect Device to Wi-Fi.....	11
8	Set Device Hotspot.....	11
9	HIKMICRO Viewer Connection.....	12
9.1	Connect via Wi-Fi	12
9.2	Connect via Hotspot.....	12
10	Set Macro Mode (Optional)	13
11	Cast Screen.....	14
12	Set LED Light	14
13	Maintenance	14
13.1	View Device Information	14
13.2	Set Time and Date	14
13.3	Set Language	14
13.4	Format Storage.....	14
13.5	Upgrade.....	15
13.6	Restore Device	15
14	Appendix.....	15
14.1	Common Material Emissivity Reference	15
14.2	Frequently Asked Questions (FAQ)	16

1 Introduction

1.1 Product Introduction

The handheld thermography camera is a camera with thermal and optical images. The built-in high-sensitivity IR detector and high-performance sensor detect the temperature changes and measure the real-time temperature.

It helps the users to find the risky part and lower their property loss. The device supports live view, capturing snapshots, etc. It is mainly applied to various industries, such as building, HVAC, and auto industry.

1.2 Main Function

Temperature Measurement

Device detects the real-time temperature, and display it on the screen.

Alarm

Device outputs audible and visual alarm when the target's temperature is higher than the threshold value.

SuperIR

Device supports **SuperIR** to increase the image quality.

Client Software Connection

- Mobile Phone: You can view live view, capture snapshots, record videos via HIKMICRO Viewer app on your phone. You can also analyze radiometric images, generate and share a report via the app. Scan the QR codes to download the app.



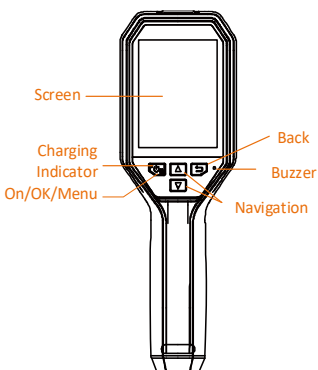
HIKMICRO Viewer
Android



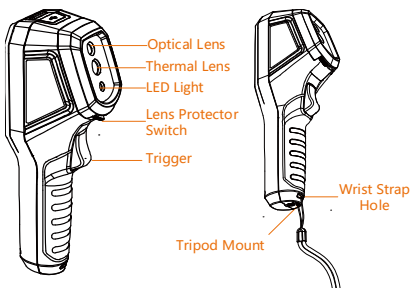
HIKMICRO Viewer
iOS

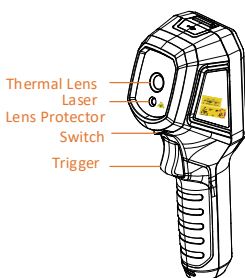
- PC: You can download HIKMICRO Analyzer (<https://www.hikmicrotech.com/en/industrial-products/hikmicro-analyzer-software.html>) to analyze pictures offline professionally, and generate a custom format report on your PC.

2 Appearance



Button	Function
	Hold: Power on/off Press: Display menu or confirm operation.
	Exit the menu or return to previous menu.
	In menu mode: Press  and  to select parameters. In live view mode: Press  to switch image mode (only supported by certain models), and press  to switch palettes.





Component	Function
Charging Indicator	Solid Red: Charging. Solid Green: Fully charged.
Type-C Interface	Charge the battery or export snapshots.
Trigger	In live view: ● Press: Capture snapshots. ● Hold: Locate the target with laser light, and release to capture snapshots (only supported by certain models). In menu mode, press the trigger to go back to live view.
Laser	Locate the target with laser light (only supported by certain models).

Note

- The appearance and button functions vary according to different models.
- The optical lens, LED light, or laser is only supported by certain models. Please refer to the actual device.
- The warning sign is beside the laser and on the left side of the device.



Warning:

The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens. The wave length is 650 nm, and the power is less than 1 mW. The laser meets the IEC60825-1:2014 standard.

3 Preparation

3.1 Charge Device

Steps:

1. Open the top cover of the camera.
2. Connect the device interface and the power adapter with Type-C cable.



3.2 Power On/Off

Power On

Remove the lens cover, and hold  for over three seconds to turn on the device. You can observe the target when the interface of the device is stable.

Power Off

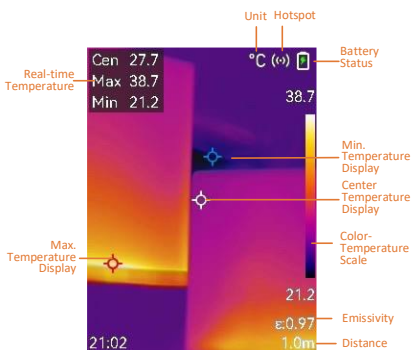
When the device is on, hold  for three seconds to power off the device.

Set Auto Power-off Duration

In the live view interface, press  and go to **More Settings → Auto Power-off** to set the automatic shutdown time for device as required.

3.3 Interface Description

The interface of different models may vary. Take the actual product for reference.



4 Display Settings

4.1 Set Image Mode

You can set image modes of the device. **Image Mode** is only supported by certain models. Please refer to the actual device or the datasheet.

Steps:

- 1 Select an image mode by the following ways:
 - Go to **Settings** → **Image Settings** → **Image Mode**, and select a preferred image mode.
 - Press  in live view to switch image modes.
 - Thermal: Display the thermal image only.
 - Fusion: Fuse the optical image with the thermal image. The fused image with clear edge is displayed in this mode.
 - PIP: Display a part of the thermal image on the optical image.
 - Visual: Display the visual image only.
- 2 **Optional:** When selecting the fusion mode, you need to select the distance in **Image Settings** → **Parallax Correction** according to the distance to the target, so as to better overlap the thermal and optical images.
- 3 Press  to save and exit.

Note

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 the startup or in very cold or hot environments. This is a normal part of operation to ensure optimum performance for your camera.

4.2 Set Palettes

The palettes allow you to select the desired colors.

Steps:

- 1 Select a palette by the following ways:
 - Go to **Settings → Palettes**, and press  to switch palettes.
 - Press  in live view to switch palettes.
- 2 Press  to save and exit.

4.3 Set Level & Span

Set a display temperature range and palette only works for targets within the temperature range. You can get better image contrast by adjusting the level & span parameters.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press /, and select **Level & Span**.
- 3 Select **Setting Mode**, and press  to switch auto and manual adjustment.
 - In **Auto** mode, the device adjusts display temperature range automatically.
 - In **Manual** mode, select **Parameters** to enter the setting interface. Press  to lock or unlock the max. temperature or min. temperature, and press / to adjust unlocked value. Or, unlock the max. and min. temperature, and press / to increase or decrease the individual values while remaining the same temperature range.
- 4 Press  to save and exit.

4.4 Set Color Distribution

Set the color distribution to change the distribution of colors in the image. Different color distributions facilitate you to better analyze the image.

Steps:

- 1 In the live view interface, press  and go to **More Settings → Color Distribution**.
- 2 Select a color distribution mode.
 - **Linear:** Linear mode is used to detect small high temperature targets in low temperature background. Linear color distribution enhances and displays more details of high temperature targets, which is good for checking small high temperature defective areas such as cable connectors.
 - **Histogram:** Histogram mode is used to detect temperature distribution in large areas. Histogram color distribution enhances high temperature targets and remains some details of low temperature objects in the area, which is good for discovering small low temperature targets such as cracks.
- 3 Press  to save and exit.

Note

Color Distribution is not supported in manual **Level & Span**. Please refer to **Set Level & Span** to select a setting mode.

4.5 Set Brand Logo

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

Steps:

- 1 In the live view interface, press  and go to **More Settings → Brand Logo**.
- 2 Press  to enable the function.
- 3 Press  to save and exit.

Result

The brand logo is added on the live view interface and snapshots.

5 Temperature Measurement

The temperature measurement function provides the real-time temperature of the scene. The temperature information is displayed on the

left top of your screen. The function is enabled by default.

5.1 Set Measurement Parameters

You can set temperature measurement parameters to improve the accuracy of temperature measurement.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  /  to select desired parameters.
- 3 Press  to go to the setting interface.
 - **Emissivity:** Enable **Custom**, and select **Emissivity** to set the emissivity of the target as the effectiveness in emitting energy as thermal radiation by pressing  / . Or you can select a preset emissivity.
 - **Distance:** Set the distance between the target and the device.
 - **Unit:** Go to **More Settings** → **Unit** to set the temperature unit.
 - **Temperature Range:** Select a temperature range or select **Auto Switch**. The device can detect the temperature and switch temperature range automatically in **Auto Switch** mode.
- 4 Press  to save and exit.

5.2 Set Measurement Tool

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  / , and select **Measurement**.
- 3 Select the hot spot, cold spot, center spot, or the user-defined spots that you want to show on live view.
- 4 **Optional:** You can customize the user-defined spots if needed.
 - 1) Go to **Measurement**, select a user-defined spot, and press .
 - 2) Press  /  /  /  to adjust the position of the spot.
 - 3) Press the trigger to finish setting.

- 5 The device shows the real-time temperature on the upper left side of live view interface.

5.3 Enhance High-Temperature Target

In target enhancement function, when the target's temperature is higher than the set value, the target will become red.

Steps:

- 1 In the live view interface, press  and select **Palettes**.
- 2 Press  /  to select **Above Alarm**.
- 3 Press  and select **Temperature** to configure the enhancement temperature threshold. When the temperature of target is higher than the set value, the target will be red in live view.
- 4 Press  to save and exit.

 Note

- Press  in live view to quickly switch to **Above Alarm**.
- **Above Alarm** is only supported by certain models. Please take the actual product for reference.

5.4 Set Temperature Alarm

Set the alarm rules and the device will alarm when the temperature triggers the rule. **Flashing Alarm** is only supported by certain models.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  / , and select **Alarm**.
- 3 Press  to enable the function, and you can enable **Flashing Alarm** or **Audible Warning** as required.
 - **Flashing Alarm:** The LED light flashes when the target temperature exceeds the alarm threshold (only supported by certain models).
 - **Audible Warning:** The device beeps when target temperature exceeds the alarm threshold.

 Note

The LED light will turn off automatically after enabling flashing alarm.

- 4 Select **Measurement** to set the alarm rule. Select **Alarm Threshold** to set the threshold temperature. When the target's temperature is higher or lower than the

threshold value, the device will output alarm.

- 5 Press  to save and exit.

6 Capture Snapshots

6.1 Capture One Image

You can capture snapshots in live view, and a thumbnail of the snapshot is displayed in live view. The snapshot will be automatically saved in the albums.

Steps:

- 1 In the live view interface, you can capture snapshots by the following ways.
 - Press and release the trigger in live view to capture snapshots.
 - Hold the trigger in live view to locate the target with laser light, and release the trigger to capture snapshots (only supported by certain models).

Note

In the live view interface, press  and go to **More Settings → Laser** to turn on/off laser light. **Laser** is only supported by certain models.

- 2 **Optional:** If the thermal images are exported and viewed on a high resolution screen, enable **SuperIR** in the menu before capturing. Resolution of captured images with **SuperIR** is 4 times higher the original one.
- 3 **Optional:** If a visual image is needed to be saved separately, go to **Settings → Image Settings** to enable **Save Visual Image** (only supported by the models with optical lens).

What to do next:

You can view and manage the snapshots in the album, and export them to PC.

Note

- You cannot capture snapshots when the device is connected with PC.
- **Save Visual Image** is only supported by certain models.

6.2 View Snapshots

Steps:

- 1 In the live view interface, press  to show the menu.

- 2 Press  /  to select **Albums**, and press  to enter the album.
- 3 Press  /  to select the picture, and press  to view it.
- 4 **Optional:** Press  to delete picture in picture view interface. Press  /  to switch the picture.
- 5 Press  to exit.

6.3 Export Snapshots

Purpose:

Connect the device to your PC with Type-C cable, and then you can export the captured snapshots. You can also export snapshots via HIKMICRO Viewer. See **HIKMICRO Viewer Connection**.

Steps:

- 1 Open the interface cover.
- 2 Connect the camera to your PC with Type-C cable and open the detected disk.
- 3 Select and copy the snapshots to PC and view the files.
- 4 Disconnect the device from your PC.

Note

- For the first connection, the driver will be installed automatically.
- DO NOT disconnect the Type-C cable from PC during drive installation, or it may cause damage to the device.

7 Connect Device to Wi-Fi

Steps:

- 1 In the live view interface, press  and go to **More Settings → WLAN**.
- 2 Press  to enable the function.
- 3 Press  /  to select Wi-Fi, and enter the password.
- 4 Press  to save and exit.

Note

- DO NOT enter **space**, or the password may be incorrect.
- Wi-Fi function is only supported by certain models. Please refer to the actual device.

8 Set Device Hotspot

Steps:

- 1 In the live view interface, press  and go to **More Settings → Hotspot**.
- 2 Press  to enable the function.
- 3 Set the password.
- 4 **Optional:** Select **QR Code** to display the QR code of the device. Please refer to **Connect via Hotspot** to quickly connect the device hotspot.
- 5 Press  to save and exit.

Note

- DO NOT enter **space** when setting the password, or the password may be incorrect.
- Hotspot function is only supported by certain models. Please refer to the actual device.

9 HIKMICRO Viewer Connection

The device supports both Wi-Fi connection and WLAN hotspot. Connect the device to HIKMICRO Viewer app, and you can control the device via mobile app. This function is only supported by certain models. Please refer to the actual product for reference.

9.1 Connect via Wi-Fi

Before You Start

Download and install HIKMICRO Viewer on your phone.

Steps:

- 1 Turn on the device hotspot and complete the hotspot settings. See **Connect Device to Wi-Fi** for instructions.
- 2 Connect your phone to the Wi-Fi network that the device is in.
- 3 Launch the app and follow the startup wizard to create, and register an account.
- 4 Search and add the device to the mobile client.

Result

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

9.2 Connect via Hotspot

Before You Start

Download and install HIKMICRO Viewer on your phone.

Steps:

- 1 Turn on the device hotspot and complete hotspot settings. See **Set Device Hotspot** for instructions.
- 2 You can connect the device hotspot by the following ways.
 - Connect your phone to the device hotspot and enter the hotspot password.
 - Launch the app and scan the hotspot QR code of the device with the app. See **Set Device Hotspot** to display the QR code.

Note

Please refer to the user manual of the app for more detailed operations.

- 3 Launch the app and follow the startup wizard to create, and register an account.
- 4 Search and add the device to the mobile client.

Result

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

10 Set Macro Mode (Optional)

The macro mode assists the handheld thermography camera to view very small objects. The camera can measure the temperature for the very small objects and locate the temperature exception points.

Before You Start

- Install the macro lens before using this function. Refer to the quick start guide of the macro lens for detailed operation.
- The macro lens is not included in the package. Please purchase it separately. The recommended model is HM-B201-MACRO.

Steps:

- 1 In the live view interface, press  and go to **More Settings → Macro Mode**.
- 2 Press  to enable the function.
- 3 Press  to save and exit.

Note

- After enabling the macro mode, only the emissivity can be modified. Parameters such as distance, image mode, parallax correction, and measurement range cannot be modified.

- After disabling this function, the parameters will be restored to the previous set values, and the temperature range will be set to auto switch.

11 Cast Screen

The device supports casting screen to PC by UVC protocol-based client software or player. 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.

Before You Start

- Connect the device and PC with supplied Type-C cable.
- Download the software and install the client on your PC.

Steps:

- 1 In the live view interface, press  and go to **More Settings → USB Cast Screen**.
- 2 Press  to enable the function.
- 3 Open the UVC client software on your PC, and you can view the live view and operation of the device.

12 Set LED Light

In the live view interface, press , and go to **Flashlight** to turn on/off the LED light.

Note

LED Light is only supported by certain models. Please refer to the actual device.

13 Maintenance

13.1 View Device Information

In the live view interface, press  and go to **More Settings → About** to view the device information.

13.2 Set Time and Date

In the live view interface, press  and go to **More Settings → Time and Date** to set time and date information.

13.3 Set Language

In the live view interface, press  and go to **More Settings → Language** to set the menu language.

13.4 Format Storage

Steps:

- 1 In the live view interface, press  and go to **More Settings → Format Storage**.
- 2 Press  and select **OK** to start formatting storage.



Note

Format storage before first use of it.

13.5 Upgrade

Before You Start

- Download the upgrade package from the official website first.
- Go to **Settings → More Settings → Auto Power-off** to turn off auto power-off to prevent auto shutdown during the upgrade.

Steps:

- 1 Connect the device to your PC with Type-C cable and open the detected disk.
- 2 Unzip the upgrade package to obtain the upgrade file.
- 3 Copy the upgrade file and replace it to the root directory of the device.
- 4 Disconnect the device from your PC.
- 5 Reboot the device and then it will upgrade automatically. The upgrading process will be displayed in the main interface.



Note

After the upgrading, the device automatically reboot. You can view the current version in **Settings → More Settings → About**.

13.6 Restore Device

In the live view interface, press  and go to **More Settings → Restore Device** to initialize the device and restore default settings.

14 Appendix

14.1 Common Material Emissivity Reference

Material	Emissivity
Human Skin	0.98
PCB	0.91
Cement Concrete	0.95
Ceramics	0.92

Material	Emissivity
Rubber	0.95
Paint	0.93
Wood	0.85
Asphalt	0.96
Brick	0.95
Sand	0.90
Soil	0.92
Cotton	0.98
Cardboard	0.90
White Paper	0.90
Water	0.96

14.2 Frequently Asked Questions (FAQ)

Q: The charge indicator flashes red.

A: Examine the items below.

1. Examine whether the device is charged with the standard power adapter.
2. Make sure the environment temperature is above 0°C (32°F).

Q: Capturing fails.

A: Examine the items below:

1. Whether the device is connected to your PC and the capture function is unavailable.
2. Whether the storage space is full.
3. Whether the device is low-battery.

Q: The PC cannot identify the camera.

A: Examine whether the device is connected to your PC with standard Type-C cable.

Q: The camera cannot be operated or no responding.

A: Hold  to reboot the camera.

Scan the following QR code for device common FAQ.





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