



**Firefighting Thermal Camera
HIKMICRO FB Series**

User Manual



Contact Us

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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.



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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.

Conformité Industrie Canada ICES-003

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

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 8 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). Up to 10 minutes for ambient temperature -10 °C to 90 °C (14 °F to 194°F); up to 2 minutes for ambient temperature -10°C to 115°C (14 °F to 239 °F). The humidity shall be less than 95%, non-condensing.
- DO NOT expose the device to high electromagnetic radiation or dusty environments.
- DO NOT aim the lens at the sun or any other bright light.

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

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1 Introduction

1.1 Product Introduction

The firefighting thermal camera is a rugged, compact, high-quality thermal imaging camera designed for inspectors to observe in total darkness and smoke, helping to save lives, protect property, and keep inspectors safe. Various firefighting palettes can satisfy most scenarios.

1.2 Main Function

Temperature Measurement

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

Firefighting Palettes

Device supports multiple firefighting palettes including rescue, fire, building, hot area, cold area, etc.

Alarm

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

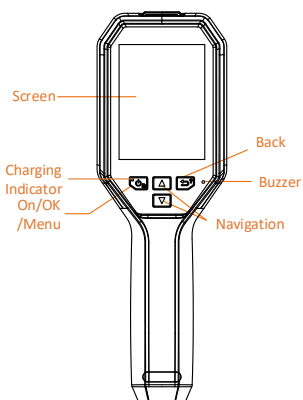
SuperIR









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

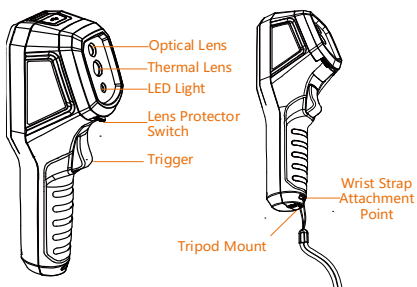
Client Software Connection

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.

1.3 Appearance



Button	Function
	Hold: Power on/off Press: Display menu or confirm operation.
	Live View: Hold to turn on/off LED light quickly. Menu Mode: Press to exit the menu or return to previous menu.
 	Live View: Press  to switch image modes, and press  to switch firefighting palettes. Menu Mode: Press  and  to select parameters.
Trigger	Live View: Pull the trigger to capture snapshots. Menu Mode: Pull the trigger to go back to live view.



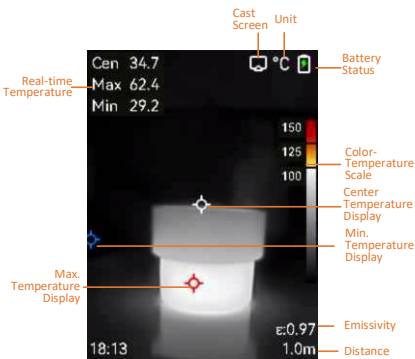
Component	Function
Charging Indicator	Solid Red: Charging normally. Solid Green: Fully charged.
Buzzer	Output audible alarm.
Type-C Interface	Charge the device or export files with USB type-A to type-C cable.
LED Light	Provide light in a dark environment.
Lens Protector Switch	Protect the thermal lens.
Tripod Mount	Mount the UNC 1/4"-20 tripod.

Note

- The appearance and button functions may vary according to different models.
- It is recommended to switch on the lens protector when the device is not in use.

1.4 Live View

The live view interfaces of different firefighting palettes may vary. Refer to the actual live view interfaces.







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.

2 Getting Started

Follow the procedure to get started with the device:

Steps:

- 1 Charge the device for 3 hours for the first time, or until the charging indicator remains solid green. Refer to **3.1 Charge Device** for more information.
- 2 Hold  to power on the device.
- 3 Aim the device at the target. Hold  to turn on the LED light if the environment is dark.
- 4 Press  to select a suitable image mode, and press  to select a suitable palette. Refer to **3.4 Set Image Mode** and **3.5 Set Firefighting Palettes** for more information.
- 5 Pull the trigger to capture an image.
- 6 Connect the device to PC using the USB type-A to type-C cable, and you can do one of the following operations:
 - Export files to PC. Refer to **3.7 Manage Files** for more information.
 - Cast screen to PC by UVC protocol-based client software or player. Refer to **5.1 Cast Screen** for more information.

Note

Make sure the lens protector is removed before turning on the device.

3 Basic Operations

3.1 Charge Device


Steps:

- 1 Open the top cover of the camera.
- 2 Connect the device interface and the power adapter with USB type-A to type-C cable.




3.2 Power On/Off


Power On

Remove the lens protector, 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 Set LED Light



Turn on the LED light in the dark environment. You can turn on/off LED light by the following ways:

- Hold  in live view to turn on/off the LED light quickly.
- Press , and go to **Flashlight** to turn on/off the LED light.

3.4 Set Image Mode


You can set image modes of the device.

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 visual 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 visual 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 visual images.
- 3 Press  to save and exit.

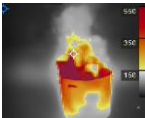



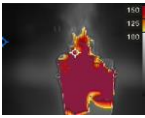
3.5 Set Firefighting Palettes


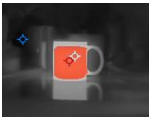

The palettes allow you to select the desired colors.

Press  in live view to switch palettes, or go to **Settings** → **Palettes** to choose a palette.

The live view interfaces vary under different palettes. Please refer to the actual interfaces.

Table 3-1 Firefighting Palettes Description

Description	Example
<p>Basic (Default) It is applicable to firefighting, and life searching and rescue. The real-time temperature is marked with the corresponding colors in the color-temperature scale.</p>	
<p>Fire Detection It is applicable to scenes with many open fires and high background temperature. The display effect is similar to the basic mode. Only that the temperature threshold of red and yellow marking is higher.</p>	
<p>Black Hot It is applicable to firefighting, and life searching and rescue. Black and white image. The temperature of darker areas is higher.</p>	
<p>White Hot It is applicable to firefighting, and life searching and rescue. Black and white image. The temperature of white areas is higher.</p>	
<p>Rescue It is suitable for searching and rescuing people in the field, building, or traffic accident scene. The display effect is similar to the basic mode. Only that the temperature threshold for red and yellow marking is lower.</p>	

Description	Example
<p>Building It is applicable to building analysis and detection of building-related exceptions. Thermal images can provide information about structure, machinery, pipe, and electrical system.</p>	
<p>Hot Area It is applicable to search remaining fire during overhaul after fire is basically out, people in water or open field, etc. High temperature areas are colored red.</p>	
<p>Cold Area It is applicable to detect low temperature targets and cold spots in a fire like gas streams which may provide oxygen or fuel for burning, and mark them in blue.</p>	

3.6 Capture Snapshots

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, pull the trigger to capture a snapshot.
- 2 **Optional:** If the snapshots are exported and viewed on a high resolution screen, go to **Settings** → **SuperIR** to enable **SuperIR** before capturing. The snapshots with **SuperIR** are of higher quality than those without it.
- 3 **Optional:** If a visual image is needed to be saved separately, go to **Settings** → **Image Settings** to enable **Save Visual Image**.

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.

3.7 Manage Files

You can view, delete, and export files in the

albums.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Select **Albums**, and press  to access albums.
- 3 Select an image of interest, and press  to view it. You can do one of the following when viewing images:
 - Press  to delete.
 - Press / to switch images.
 - Press  to exit.
- 4 Export files to PC.
 - 1) Open the interface cover.
 - 2) Connect the camera to your PC with USB type-A to type-C cable and open the detected disk.
 - 3) Copy and paste the files 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 USB type-A to type-C cable from PC during drive installation, or it may cause damage to the device.





4 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.


4.1 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.
- 4 Press  to save and exit.

4.2 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.

4.3 Set Temperature Alarm

Set the alarm rules and the device will alarm when the temperature triggers the rule.

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.
 - **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 (**More Than/Less Than**). Select **Alarm Threshold** to set the threshold temperature for alarms. The alarm will be triggered if the

temperature detected in the scene meets the preset alarm rule.

- 5 Press  to save and exit.

5 More Settings



5.1 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 USB type-A to 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.


5.2 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.

5.3 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.


5.4 View Device Information

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

5.5 Set Time and Date



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

5.6 Set Language

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

5.7 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.

6 Maintenance

6.1 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**.

6.2 Restore Device

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

7 Appendix

7.1 Common Material Emissivity

Reference

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

7.2 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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