HIKMICRO

Handheld Thermography Camera
Pocket Series

User Manual

Pocket 2 Manual for CCF Camera Borrowers

Contents

Chapter 1 Overview

1.1 Device Description

The handheld thermography camera is a device with both optical images and thermal images. It can do thermography, distance measurement, video recording, snapshot capturing, alarm, and it can connect to Wi-Fi, hotspot and Bluetooth. The built-in high-sensitivity IR detector and high-performance sensor detects the variation of temperature and measure the real-time temperature. The temperature measurement range is -20 °C to 400 °C (-4 °F to 752 °F), with the accuracy of ± 2 °C (± 3.6 °F) or 2% when the ambient temperature is 15 °C to 35 °C (59 °F to 95 °F) and the object temperature is above 0 °C (32 °F).
The device is easy to use, and adopts ergonomic design. It is widely used for building inspection, HVAC, as well as electrical and mechanical equipment maintenance.

1.2 Main Function

Thermography

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

Fusion

Device can display fusion of thermal view and optical view.

Palette and Alarm

Device supports multiple palettes, and you can set the palette mode according to the alarm function.

Client Software Connection

- Mobile Phone: Use HIKMICRO Viewer to view live image, capture, and recording, etc. on your phone. You can also access the album and download the files to your phone.

HIKMICRO Viewer Android

HIKMICRO Viewer iOS

- PC: Use HIKMICRO Analyzer (https://www.hikmicrotech.com/en/product-c-detail/18) to analyze pictures offline, and generate a report on your PC.

Bluetooth

Device can be connected to headset via Bluetooth, and you can hear the voice in the recording or capture.

1.3 Appearance

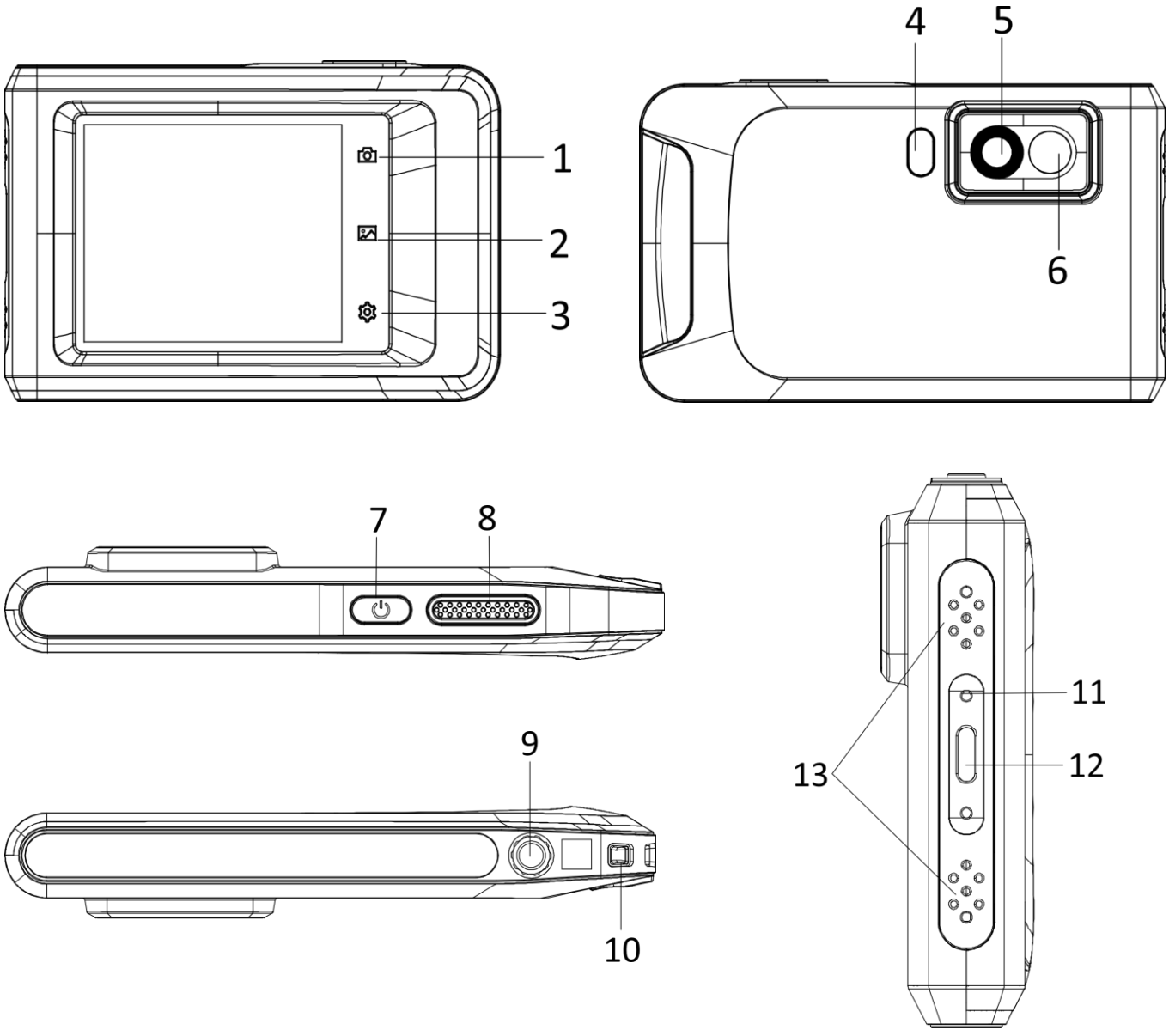


Figure 1-1 Appearance

Table 1-1 Button and Interface Description

No.	Description	Function
1	Back Key	Tap to exit the menu or return to previous menu.
2	File Key	Tap to enter albums.
3	Settings Key	Tap to enter settings interface.
4 & 14	Flash Light	Fill light on objects and output flashing alarm.
5	Thermal Lens	View the thermal image.
6	Optical Lens	View the optical image.
7	Power Key	Hold to power on/off the device.
8	Capture Key	● Press: capture snapshots/stop recording ● Hold: start recording
9	Tripod Mount	Mount the tripod.
10	Strap Attachment Point	Mount the strap.
11	Indicator	Indicate the charging status of the device. ● Solid red: charging normally ● Flashing red: charging exception ● Solid green: fully charged
12	Type-C Interface	Charge the device or export files with Type-C cable.
13	Buzzer	Output audible alarm.

Note

Clicking sound and frozen image is a normal phenomenon. The "clicking noise" is generated by FFC (Flat Field Correction), which is used to correct the non-uniformity of the display, improve image quality, and achieve better temperature results.

Chapter 2 Preparation

2.1 Charge Device

Before You Start

Please make sure the battery is installed before charging.

Steps

1. Lift the cover of cable interface.
2. Plug in the cable, and connect the power supply to charge the battery.

2.2 Power On/Off

Power On

Hold for over three seconds to turn on the device. You can observe the target when the interface of the device is stable.

Note

It may take at least 30 s until the device is ready for using when you power on it.

Power Off

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

2.2.1 Set Auto Power-off Duration

Go to **Local Settings** → **Device Settings** → **Auto Off** to set the automatic shutdown time for device as required.

2.3 Operation Method

The device supports both touch-screen control. You can tap the screen to set parameters and configurations.

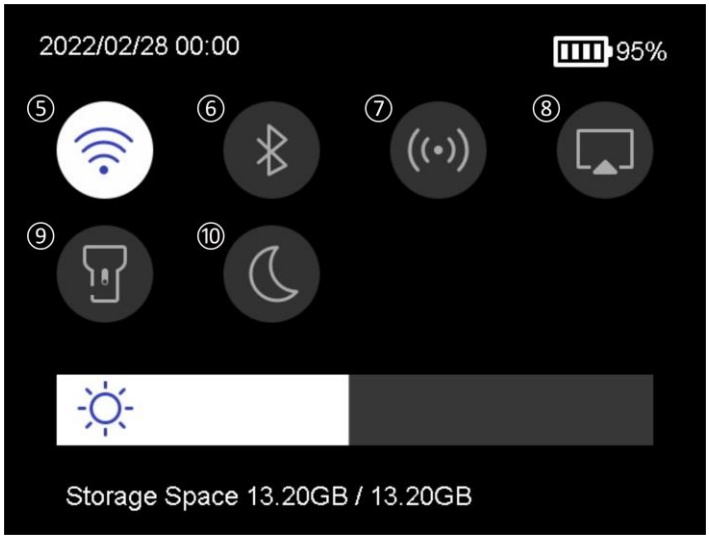
2.4 Menu Description

In the observation interface, tap the screen to show the menu bar, and swipe down to call the

swipe-down menu.

① Back
② File
③ Settings
④ Menu

Figure 2-1 Main Menu



Battery Condition

⑤ Wi-Fi
⑥ Bluetooth
⑦ Hotspot
⑧ Screen Cast
⑨ Flashlight
⑩ Dark/Bright Mode

Figure 2-2 Swipe-Down Menu

Chapter 3 Display Settings

3.1 Set Screen Brightness

You can drag the brightness adjustment bar in the swipe-down menu.

Figure 3-1 Adjust Brightness via Swipe-Down Menu

3.2 Set Display Mode

You can set the thermal/optical view of the device. **Thermal**, **Fusion**, **PIP**, and **Optical** are selectable.

Steps

1. Tap **Menu**, and select .
2. Tap the icons to select a view mode.

   In thermal mode, the device displays the thermal view.

   In fusion mode, the device displays the combined view of thermal channel and optical channel. Recomended

   In PIP (Picture in Picture) mode, the device displays thermal view inside the optical view.

Note

You can adjust the size, distance and digital zoom of the PIP.

   In optical mode, the device displays the optical view.
3. Press **Back** to exit.

3.3 Set Palettes

The palettes allow you to select the desired colors.

Steps

1. Tap **Menu**, and select  .
2. Tap the icons to select a palette type.

   White Hot

   The hot part is light-colored in view.

   Black Hot

   The hot part is black-colored in view.

   Rainbow

   The target displays multiple colors. It is suitable for scene without obvious temperature difference.

   Ironbow

   The target is colored as heated iron.

   Red Hot

   The hot part is red-colored in view.

   Fusion

   The hot part is yellow-colored and the cold part is purple-colored in view.

   Rain

   The hot part in the image are colored, and the else is blue.
3. Press **Back** to exit the setting interface.

3.4 Adjust Digital Zoom

no digital zoom (x1) recommended

Steps

1. Tap the live view interface to call the digital zoom frame.
2. Tap the digital zoom frame.

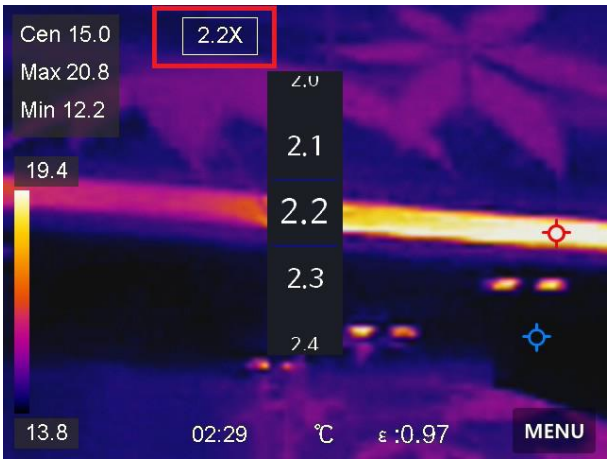


Figure 3-2 Adjust Digital Zoom

2. Select the digital zoom value as required
3. Tap the screen to save and exit.

3.5 Display OSD Info Probably not needed

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

Time

Device time and date.

Parameters

Thermography parameters, for example, target emissivity, temperature unit, etc.

Brand Logo

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

Chapter 4 Temperature Measurement

The thermography (temperature measurement) function provides the real-time temperature of the scene and display it on the left of your screen. The thermography function is turned on by default.

4.1 Set Thermography Parameters Probably not needed

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

Steps

1. Go to **Local Settings** → **Thermography Settings**.
2. Set the **Thermography Range**, **Emissivity**, etc.

   Thermography Range

   Select the temperature measurement range. The device can detect the temperature and switch thermography range automatically in **Auto Switch** mode.

   Emissivity

   Refer to ***Common Material Emissivity Reference*** to set the emissivity of your target.

   Reflection Temperature

   If any object (not the target) of high temperature is in the scene, and the target emissivity is low, set the reflection temperature as the high temperature to correct the thermography effect.

   Distance

   The distance between the target and the device. You can customize the target distance or select the target distance as **Near**, **Middle**, or **Far**.

   Humidity

   Set the relative humidity of current environment.
3. Return to previous menu to save the settings.

Note

You can go to **Local Settings** → **Device Settings** → **Device Initialization** → **Measurement Tool Initialization** to initialize the temperature measurement parameters.

4.1.1 Set Unit

Go to **Local Settings** → **Device Settings** → **Unit** to set the temperature unit and distance unit.

4.2 Set Temperature Range

Set a temperature section and the palette only works for targets within the temperature section. You can adjust the temperature range.

Steps

1. Tap **Menu**, and select .
2. Select auto adjustment or manual adjustment .

Auto Adjustment Normally recommended	Select . The device adjusts temperature range parameters automatically.
Manual Adjustment A fixed scale helps temperature comparisons in different places. OR if there are temperature extremes in view, that you don't want to measure, which would stretch an Auto scale, making it less temperature sensitive. Manual setting can ignore the extremes and give better images of the rest.	Select . There are 2 ways to manually adjust the range: ● Adjust the temperature range based on selected area. Tap an interest area of the screen. A circle is displayed around the area, and the palette readjusts to the temperature range of the area. ● Adjust the maximum and minimum temperature of the range. ● Tap to select the max. temperature, min. temperature, or both. You can also tap the max. temperature or min. temperature at the ends of the palette bar to select them. ● Tap the arrows on the left side of the screen to adjust the temperature value.

3. Press **Back** to exit.

4.3 Set Thermography Rule

You can set thermography rules to measure the min., max., and center temperatures of the current scene.

Steps

1. Tap **Menu**, and select .
2. Tap to select the thermography rule as required. **Hot**, **Cold**, and **Center** are selectable.
3. Tap **Back** to save and exit.

Note

- The min., max., and center temperatures are displayed on the left top of the screen.
- Tap the rule again to delete the rule.

4.4 Set Temperature Alarm

Quite specialist

When the temperature of targets triggers the set alarm rule, the device will perform configured actions, such as making audible warning and flash alarm, and sending notification to the client software.

Steps

1. Go to **Local Settings** → **Thermography Settings** → **Alarm Settings** → **Temperature Alarm**.
2. Enable the function and set the alarm threshold and alert threshold.

   Alarm Threshold

   When the tested temperature exceeds the threshold, the device sends alarm notification to the client software. It if the audible warning is enabled, and the flashlight will flash if the flashing alarm is enabled.

   Alert Threshold

   When the tested temperature exceeds the threshold, the device sends alert notification to the client software.
3. Go to **Local Settings** → **Thermography Settings** → **Alarm Settings** → **Alarm Linkage**.
4. Enable **Audible Warning**, **Flash Alarm**, or both.

   Audible Warning

   The device triggers voice alarm when target temperature exceeds the alarm threshold.

   Flash Alarm

   The flashlight will flash when target temperature exceeds the alarm threshold.

4. Tap < to save and exit.

Chapter 5 Picture and Video

Insert memory card into the device, then you can record videos, capture snapshots, and mark and save important data.

Note

- Device does not support capturing or recording when the menu is shown.
- When the device is connected to your PC, it does not support capturing or recording.
- Go to **Local Settings** → **Capture Settings** → **Filename Header**, you can set the filename header for capturing or recording to distinguish the files recorded in a specify scene.

5.1 Capture Picture

Before You Start

Enable the flashlight via the swipe-down menu in dark environment.

Steps

1. Go to **Local Settings** → **Capture Settings**.
2. Select **Photo Settings** to set the capture mode.

Single Capture	Capture one picture for one time. recommended
Continuous Capture	Capture multiple pictures for one time. You can set the amount of pictures.
Timed Capture	Device captures one picture after the specified time interval. You can set the time interval as needed.

3. Select **Picture Type** to set the picture type.

Offline Picture	Select this type when analyzing the picture with the client software. You can add remarks on the picture.
Thermal	Select this type for custom software development. Remark on the picture is not allowed.

4. Optional: Set the optical resolution as needed.
5. Press 〈 to exit.
6. In the live view interface, press the capture key to capture snapshot.
7. Refer to ***Export Files*** to export the snapshots.

5.2 Record Video

Before You Start

Enable the flashlight via the swipe-down menu in dark environment.

Steps

1. In the live view interface, hold the capture key to start recording. The recording icon and count down number display in the interface.

Figure 5-1 Record Video

2. When you finish, press the capture key to stop recording. The recording video will be saved automatically.
3. Refer to ***Export Files*** to export the snapshots.

5.3 Manage Albums

Probably not needed

The recorded image/video files are saved in the albums. You can create new folders, rename a folder, change the default folder, move files between the folders, and delete folders.

5.3.1 Create a New Album

Steps

1. Press  to enter **Albums**.
2. Tap  to add a new album.
3. A soft keyboard is displayed, where you can enter the name of the album by touching the screen.
4. Tap  to finish.

Note

The newly created album becomes the default saving album and appears at the top of the album list.

5.3.2 Rename an Album

Steps

1. Press to enter **Albums**.
2. Select the album to rename.
3. Tap •••, and select **Rename**. A soft keyboard is displayed.
4. Tap to delete the old name, and enter the new name for the album by touching the screen.
5. Tap to finish.

5.3.3 Change the Default Saving Album

Steps

1. Press to enter **Albums**.
2. Select the album you want to use as the default saving album.
3. Tap •••, and select **Set as Default Saving Album**.

Note

The default saving album appears at the top of the album list.

5.3.4 Delete an Album

Steps

1. Press to enter **Albums**.
2. Select the album you want to delete.
3. Tap •••, and select **Delete**. A prompt box appears on the interface.
4. Tap **OK** to delete the album.

5.4 View Recorded Files

Steps

1. Press to enter **Albums**.
2. Tap to select the album storing the files.
3. Tap to select the video or snapshot to view.

4. View the selected file and relevant information.

Figure 5-2 View a File

Note

For more information contained in capture snapshots or videos, you can install the thermography client to analyze them.

5.5 Manage Files

You can move, delete, and edit the recorded files. Voice notes and messages can be added to the files.

5.5.1 Delete a File

Steps

1. Press to enter **Albums**.
2. Tap to select the album storing the file to be deleted.
3. In the album, tap to select the file to be deleted.
4. Tap •••, and select **Delete**. A prompt box appears on the interface.

5 Tap **OK** to delete the file.

5.5.2 Delete Multiple Files

Steps

1. Press to enter **Albums**.
2. Tap to select the album storing the files to be deleted.
3. In the album, tap , and tap the files to be deleted.

Note

You can tap to select all files, and tap to cancel the selection.

4. Tap . A prompt box appears on the interface.
5 Tap **OK** to delete the files.

Note

You can also delete a single file in this way.

5.5.3 Move a File

Steps

1. Press to enter **Albums**.
2. Tap to select the album storing the file to be moved.
3. In the album, tap to select the file to be moved.
4. Tap , and select **Move**. The album list is displayed.
5 Tap to select the album to move to.

5.5.4 Move Multiple Files

Steps

1. Press to enter **Albums**.
2. Tap to select the album storing the files to be moved.
3. In the album, tap to select the files to be moved.

Note

You can tap to select all files, and tap to cancel the selection.

4. Tap . The album list is displayed.
5. Tap to select the album to move to.

Note

You can also move a single file in this way.

5.5.5 Add Text Note on File

Steps

1. Press to enter **Albums**.

2. Tap to select the album storing the file to be edited.
3. In the album, tap to select the file to be edited.
4. Tap ••• , and select **Text Note**. A soft keyboard is displayed.
5. Enter the text note by touching the screen.
6. Tap ☑ to finish.

What to do next

You can open the edited photo to view the text note.

5.6 Export Files from the camera to your PC

Connect the device to your PC with supplied cable, you can export the recorded videos and captured snapshots.

Steps

1. Open the cover of cable interface.
2. Connect the device to your PC with cable and open the detected disk.
3. Select and copy the videos or snapshots to PC to view the files.
4. Disconnect the device from your PC.

Note

For the first time connection, the driver will be installed automatically.

Chapter 6 Connect Bluetooth

You can record and hear the sound contained in the videos or images via bluetooth headsets after pairing the device with bluetooth headsets successfully. Probably not needed

Steps

1. Select from the main menu.
2. Go to **Local Settings** → **Connect** → **Bluetooth**.
3. Tap to enable the bluetooth.

Note

You can also press < to quit pairing.

The device will search the nearby enabled bluetooth headsets and pair them automatically.

Result

After pairing you can record and hear the sound via the headsets while recording and playing the video or image.

Chapter 7 Set LED Light

Tap the flashlight button on the swipe-down menu to enable the LED light.

Chapter 8 Cast Screen

Probably not needed

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

Install the UVC Alarm Client on your PC.
You can download the software from http://www.hikmicrotech.com/en.

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 9 Thermal View 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.

9.1 Connect via Wi-Fi Probably not needed

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.

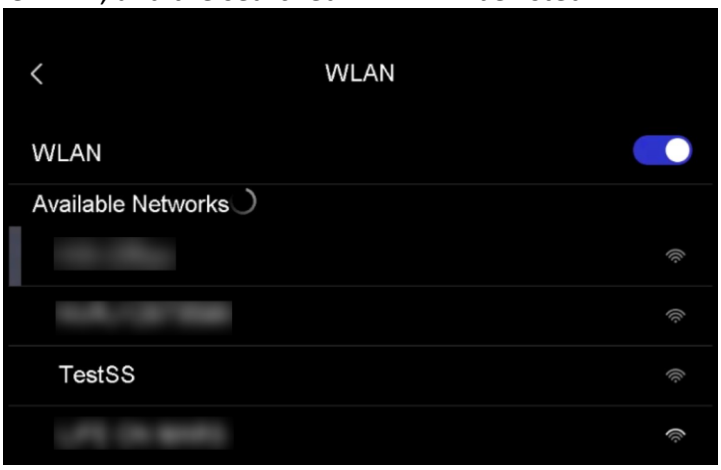


Figure 9-1 Wi-Fi List

4. Select the Wi-Fi to connect to. A soft keyboard is displayed.
5. Enter the password by touching the screen.

Note

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.

9.2 Connect via Hotspot

Probably not needed

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.

Figure 9-2 Set Hotspot

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.

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 10 Maintenance

10.1 View Device Information

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

10.2 Set Date and Time

Steps

1. Go to **Local Settings** → **Device Settings** → **Time and Date**.
2. Set the date and time.
3. Press 〈 to save and exit.

Note

Go to **Local Settings** → **Device Settings** → **Display Settings** to enable or disable time and date display.

10.3 Upgrade Device Not needed

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 then it will upgrade 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**.

10.4 Restore Device Use only if the camera is seriously malfunctioning. Please tell us the problem.

Go to **Local Settings** → **Device Settings** → **Device Initialization** to initialize the device and restore default settings.

Chapter 11 Appendix

11.1 Common Material Emissivity Reference

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

11.2 Device Command

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

11.3 Device Communication Matrix

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

11.4 FAQ

Scan the following QR code to get device common FAQ.

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