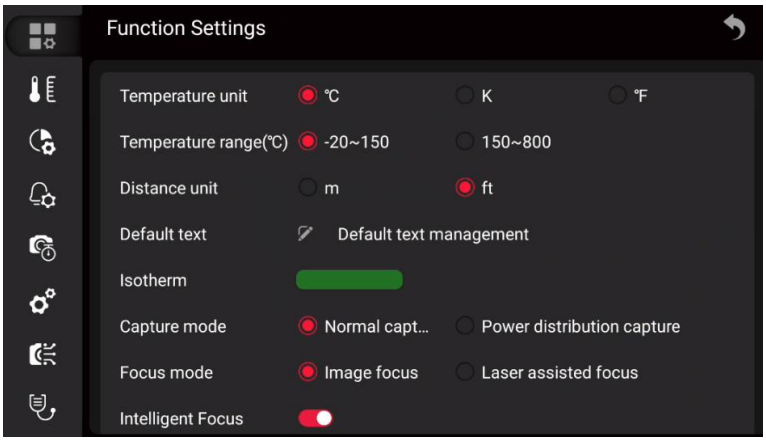
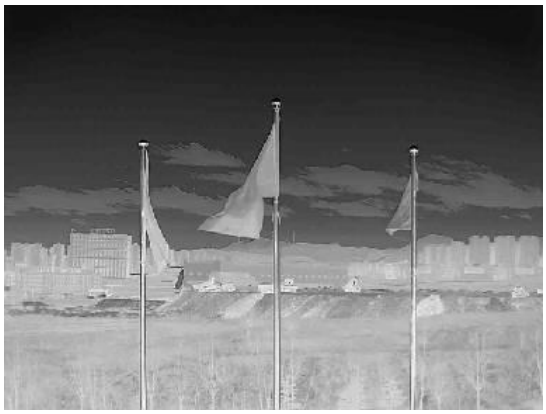
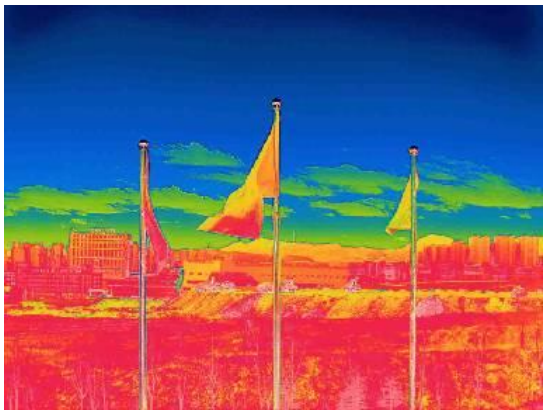
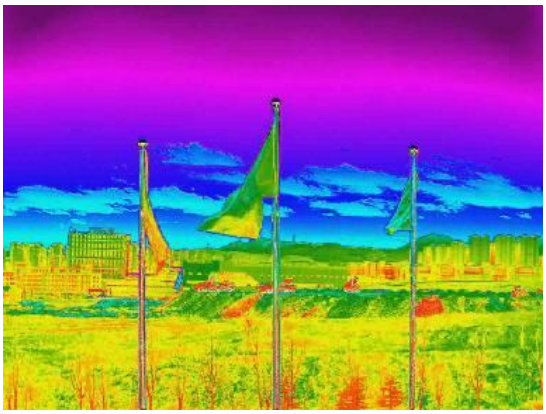
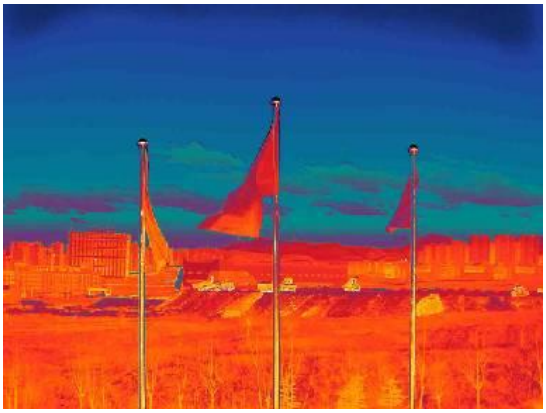
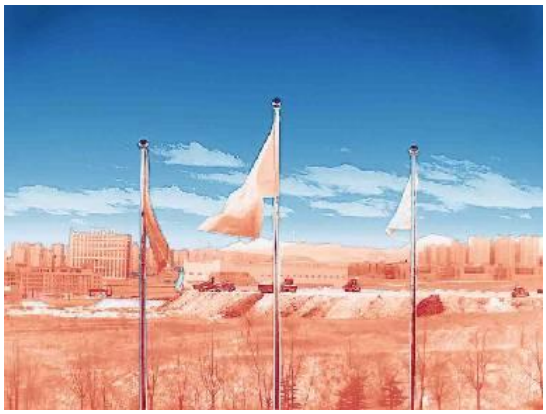
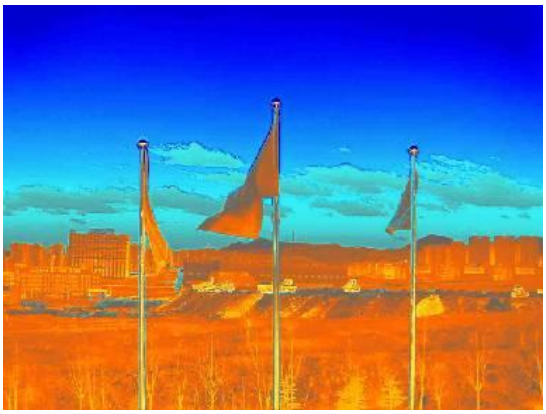


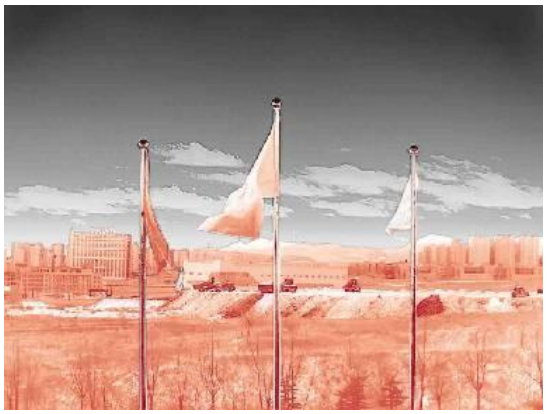
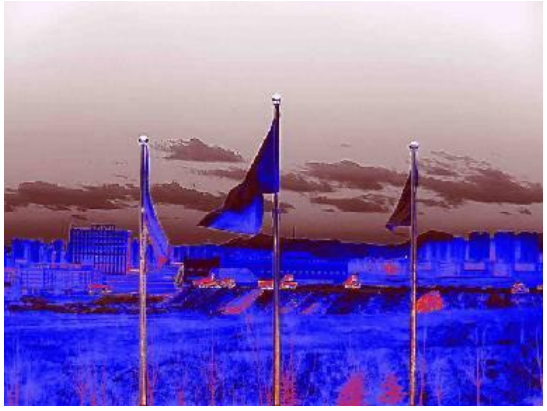
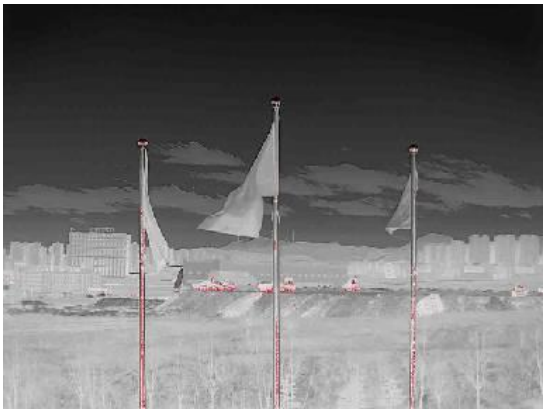
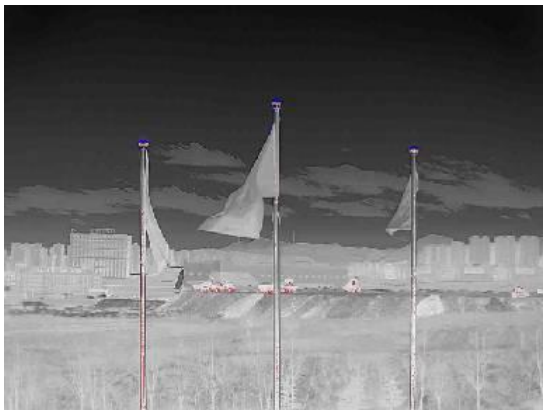
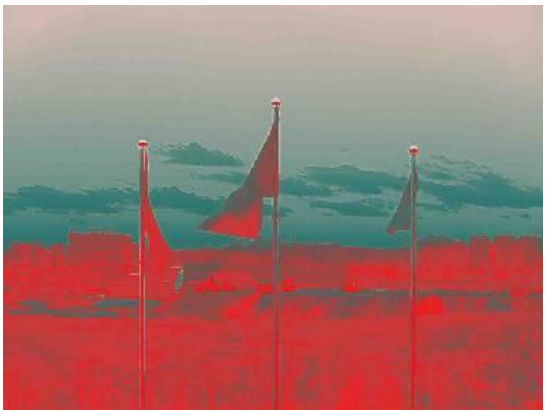
13.4. Changing the color palette

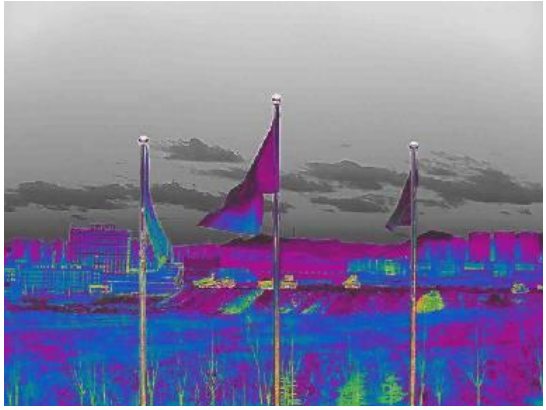
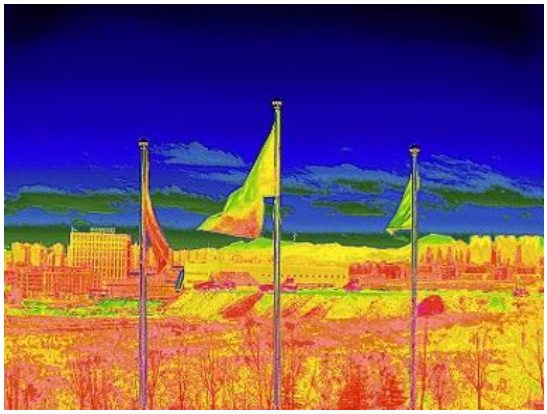
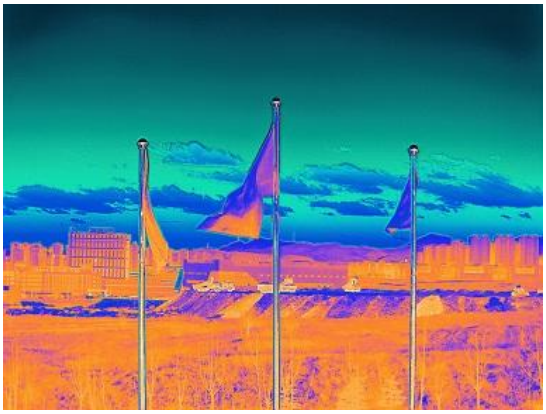
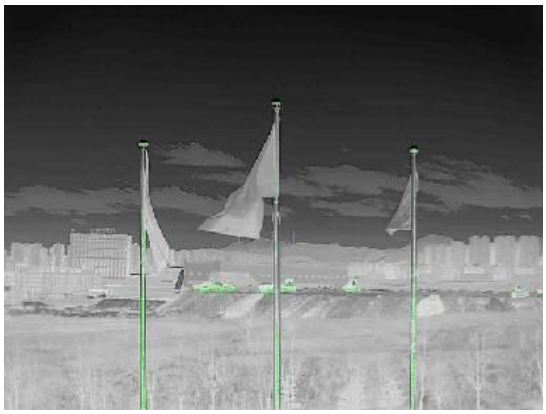
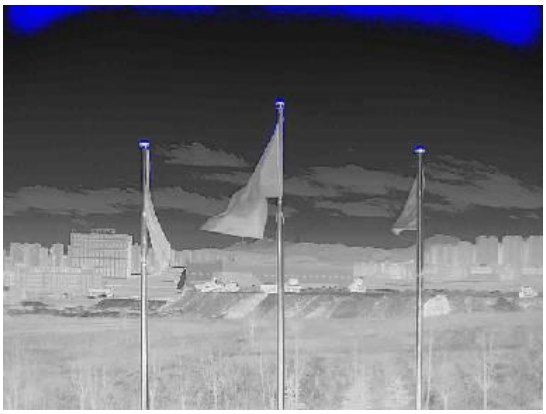
You can change the color palette that the camera uses to display different temperatures.

A different palette can make it easier to analyze an image.

	
White hot	Black hot

 Rainbow	 HC rainbow
 Iron	 Lava
 Sky	 Ash

 Ashes red	 Hot iron
 Special 1	 Warning red
 Ice fire	 Green red

 Special 2	 Gradient red
 Medical	 Multicolor
 Warning green	 Warning blue

Please follow the below steps.

1. Use the joystick to go to (Palettes).

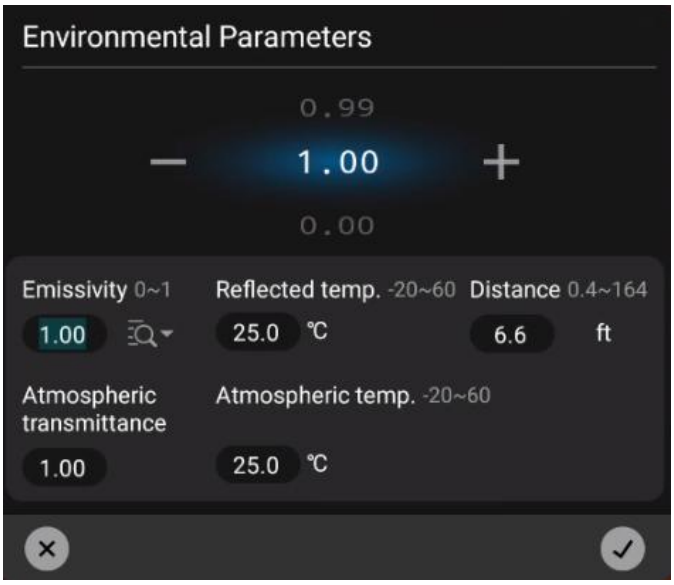
2. Press the OK button to enter the submenu.

3. Use the joystick to select a different color palette.

4. Press the OK button to confirm.

13.5. Changing the environmental parameters

For accurate measurements, it is important to set the environmental parameters: emissivity, reflected temperature, object distance, atmospheric transmittance, and atmospheric temperature.



You can set global parameters or set the environment parameters of analysis tools separately. See 14.5 Changing Analysis Tool Properties.

13.6. Image Calibration

Image calibration is to perform non-uniformity calibration (NUC) on the detector, which is a software-based image correction to adjust for the deviation in response of each individual detector element(pixel).

When the thermal image is superimposed with noise generated by non-uniformity, the quality of the image

is deteriorated. Image correction is required, which is automatically calibrated by the thermal camera. Corrections can also be performed manually, such as before starting video recording or after autofocusing.

Manual correction can be done in several ways.

- Use the joystick to select and press .
- Tap on the touch screen.
- Press the Gallery button for more than 2 seconds.

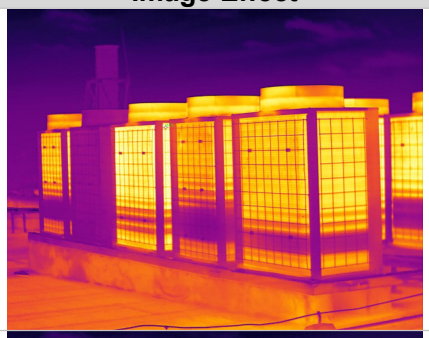
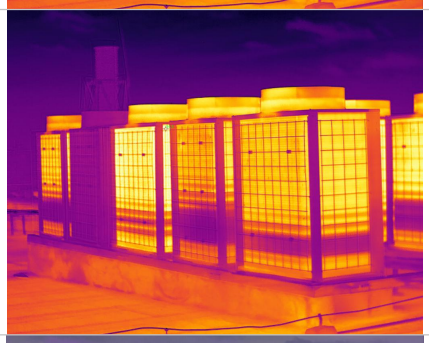
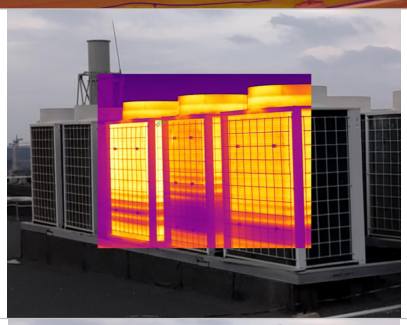
13.7. Set Image Mode

The thermal camera captures both thermal and visible light images, and you can choose the type of image you want to display on the screen by setting the image mode.

Five different picture modes are available.

- Thermal：thermal images
- DDE：display thermal images with enhanced details
- Fusion： an image in which the infrared image and the visible light image are fused in a certain proportion.
- PIP: the infrared image is displayed above the visible light image.
- PIP：an infrared image is shown above the visible image.
- Visible：visible light images

The different types of image modes are shown in the table below.

Image Mode	Image Effect
Thermal	
DDE	
Fusion	
PIP	
Visible	

Please follow the below steps.

1. Use the joystick to go to (Image Mode).

2. Press the OK button to enter the submenu.

3. Use the joystick to select different mode (thermal), (fusion), (PIP), (DDE), (visible).

***Note**: If *.irv video format (Settings>Function Settings>Video Format=IRV, and Recording Mode Video are selected, only thermal imaging mode can be selected.*

4. Press the Ok button to confirm.

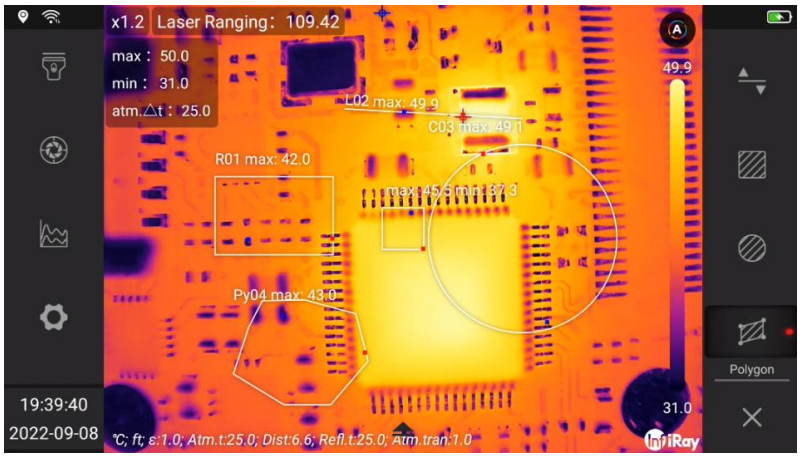
Note

- *If PIP mode is selected, you can move or zoom the size of the infrared area by touching the selection area.*
- *If thermal fusion or DDE mode is selected, you can move the position of visible light image by touching the selection area.*

14. Analysis Setting

You can use one or more analysis tools at the same time to measure the temperature of the target.

For example, spot temperature measurement, area temperature measurement.



14.1. Add/Delete Analysis Tools

Please follow the below steps.

1. Use the joystick to go to (Analyze).

2. Press the Ok button to enter the submenu.

(1) Select (spot temperature measurement) to add a spot temperature measurement analysis tool.

(2) Select (line temperature measurement) to add a line temperature measurement analysis tool.

(3) Select (rectangular area temperature measurement) to add a rectangular frame area temperature measurement analysis tool.

(4) Select (circular area temperature measurement) to add a circular frame area temperature measurement analysis tool.

(5) Select (customized polygon area temperature measurement) to add a customized polygon frame area temperature measurement analysis tool

(6) Select (preset import) to import a set of user preset analysis tools. Please refer to 13.2 User Preset Settings. (Not applicable to some models)

(7) Select (Cancel) to cancel the last added analysis tool.

(8) Select (Clear) to clear all analysis tools.

3. For resizing and/or moving analysis tools, see 14.3 Resizing or moving analysis tools.

4. For changing analysis tool parameters, see 14.5 Changing Analysis Tool.

5. Press the Back button, or select (Return) to return to the first-level menu.

14.2. User Preset Settings

You can save a set of analysis tools to user presets for quick recall. User preset template can set the parameters of each analysis tool individually.

***Note**: importing user presets will clear the currently added analysis tools, and then import the preset analysis tool combination.*

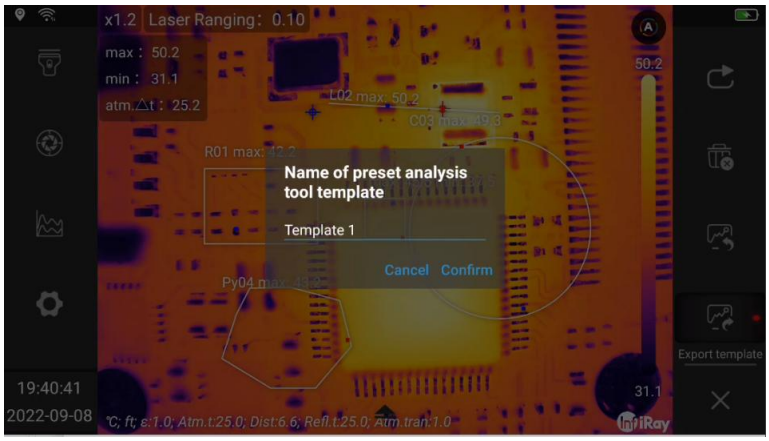
Please follow the below steps.

1. Use the joystick to go to (Analyze), and press the OK button to enter the secondary menu.

2. Add/remove analysis tools to ensure that the analysis tools on the current screen are templates that meet the analysis requirements.

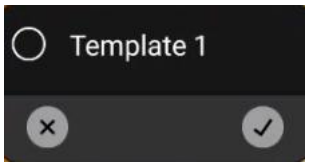
3. Select (Preset Export) and press the OK button to export all analysis tools on the current screen to the preset.

4. The dialogue box of preset will pop up, edit the name and click OK to save.



5. Select (Preset Import) and press the Ok button to pop up the Import dialog box.

6. Select the template to be imported, and click Confirm in the lower right corner of the dialog box.



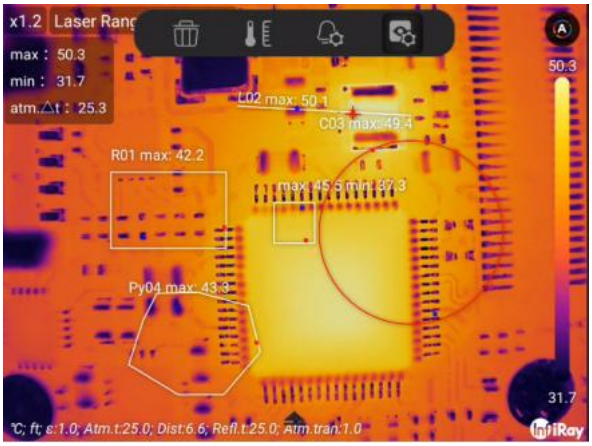
14.3. Move or Adjust Analysis Tools

You can move or resize analysis tools.

***Note**: If you have previously added analysis tools or user presets, you need to touch the screen to move and resize analysis tools.*

Please follow the below steps.

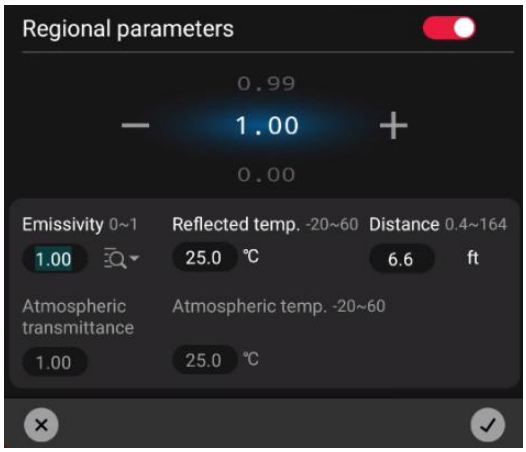
1. Touch the analysis tool that needs to be adjusted or moved on the screen, the analysis tool will be highlighted, and a toolbar will pop up on the screen.



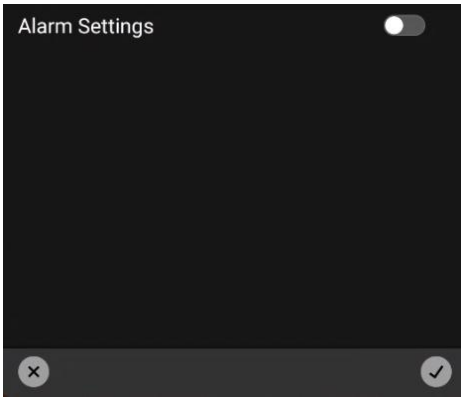
2. Move the joystick to switch functions, including: (delete), (area parameter), (alarm), (attribute).

3. Select (Delete) to delete the currently selected analysis tool.

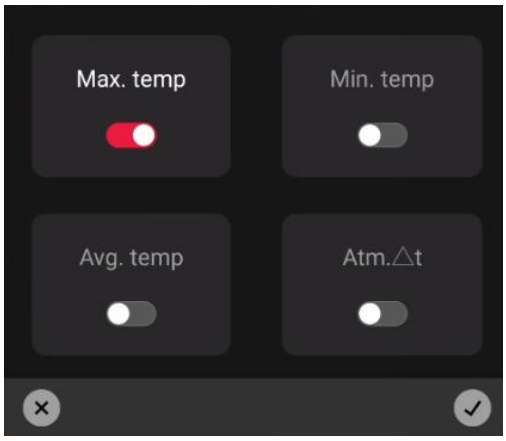
4. Select (Regional parameters), and a dialog box will pop up. Set the environment parameters of the currently selected analysis tool. Please refer to 14.5 Change Analysis Tools.



5. Select (Alarm), and a dialog box will pop up. Set the alarm parameters of the currently selected analysis tool. Please refer to 14.7 Alarm Settings.



6. Select (Properties), and a dialog box pops up. Set the properties of the currently selected analysis tool. See Analysis Settings in 14.5 Change Analysis Tool.



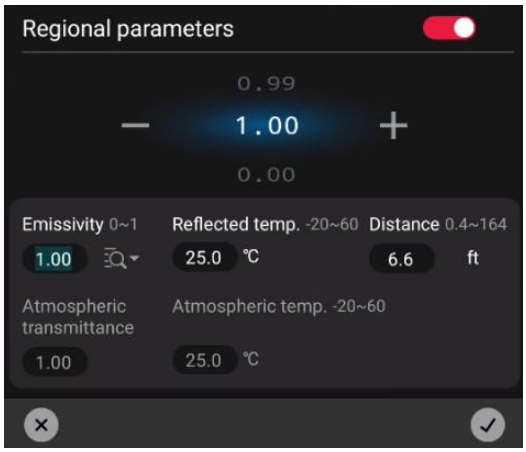
7. Touch the analysis tool to move on the touch screen.

8. Touch and drag the analysis tool to change the size.

14.4. Changing Parameters of Analysis Tool

To make accurate measurements, the analysis tool parameters must be set correctly.

14.4.1. Parameter Type



The following parameters can be configured.

- Distance: the distance between the thermal camera and the target.
- Ambient temperature: the temperature of the air between the thermal camera and the target.
- Reflected temperature: which is used when compensating for the radiation from the surroundings reflected by the object into the camera. This property of the object is called “reflectivity”.
- Emissivity: how much radiation an object emits, compared with the radiation of a
- theoretical reference object at the same temperature (called a “blackbody”). The opposite of emissivity is reflectivity. The emissivity determines how much of the radiation originates from the object as opposed to being reflected by it.
- Atmospheric transmittance: the ratio of the flux of electromagnetic radiation that is attenuated by the atmosphere to the flux of incident electromagnetic radiation. Atmospheric transmittance is an important factor affecting infrared radiation transmission. The atmospheric pressure, humidity and gas density can change significantly in a short period of time where the atmospheric transmittance

over a particular area is greatly affected by meteorology. So, the transmittance will change considerably as a result. The directly way is to measure the reference infrared radiation source such as the standard blackbody at a certain distance with infrared measuring equipment. The measured atmospheric transmittance at this distance is obtained according to the measured value of the blackbody, the radiance of the blackbody and the radiation responsiveness of the infrared equipment.

- Among the analysis tool parameters, emissivity is the most important parameter that needs to be set correctly. If the emissivity is set to a low value, the reflection temperature also becomes important. Target distance, ambient temperature, atmospheric transmittance and relative humidity are correlated when the distance is large.

14.4.2. Recommended Values

If you are not sure about these values, please follow the below recommended values.

Distance	2.0m
Ambient Temperature	25℃
Reflected Temperature	25℃
Emissivity	0.95
Atmospheric Transmittance	1.0

14.4.3. Change Parameters

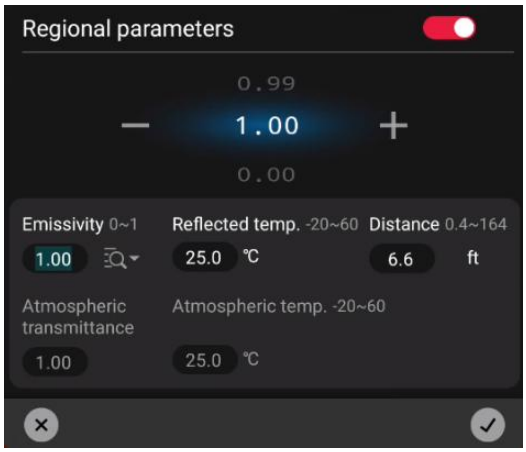
You can set global object parameters, or modify parameters for each analysis tool separately, such as emissivity, reflected temperature, and distance.

***NOTE**: Setting global parameters is usually sufficient; the two most important parameters are emissivity and reflected temperature.*

1. Please follow the below steps to modify global object parameters.

(1) Use the joystick to go to (Regional Parameters).

(2) Press the OK button to pop up a dialog box.



(3) Move the joystick left and right to switch parameters: emissivity, reflected temperature, distance, atmospheric transmittance, and ambient temperature.

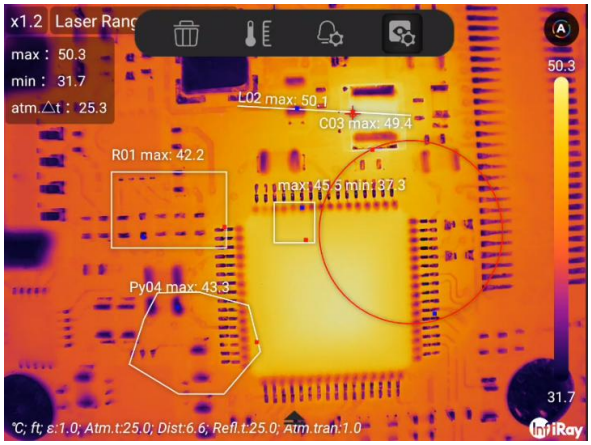
(4) Moves the joystick up and down to set the parameters.

(5) Go to and press the Ok button to confirm the modification and close.

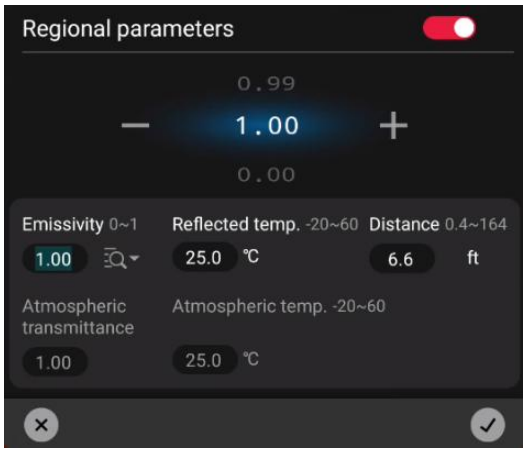
(6) Go to and press the return key, cancel the modification and close.

2. Please follow the below steps to modify the parameter separately.

(1) To select an analysis tool, touch the analysis tool on the screen to bring up the toolbar.



(2) Select (Regional Parameters).



(3) Move the joystick left and right to switch parameters: emissivity, reflected temperature, distance, atmospheric transmittance, and ambient temperature.

(4) Moves the joystick up and down to set the parameters.

(5) Go to and press the OK button to confirm the modification and close.

(6) Go to and press the return key, cancel the modification and close.

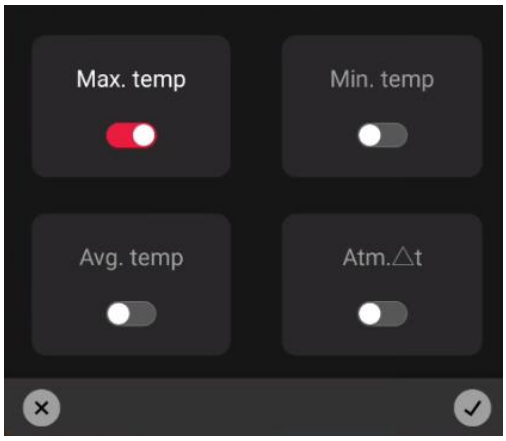
14.5. Change Properties of Analysis Tool

You can set the properties of the analysis tool separately, including maximum temperature, minimum temperature, average temperature, and ambient temperature difference. For line analysis tools, historical temperature information curves can also be displayed.

Please follow the below steps.

1. Touch the analysis tools on the screen.

2. Use the joystick to select (Properties), a dialog box will pop up.



3. Move the joystick left and right to switch parameters: Max temperature, Min temperature, Avg temperature, and ambient temperature difference.

4. Enable or disable the display property.

5. Go to and press the OK button to confirm the modification and close.

6. Go to and press the return key, cancel the modification and close.

14.6. Set Analysis Tool Alarm

You can make the camera trigger an alarm when the set analysis conditions are met.

14.6.1. Alarm Type

You can choose the following alarm types.

- Above: When the temperature is higher than the preset alarm temperature, an alarm will be triggered.
- Below: When the temperature is lower than the preset alarm temperature, an alarm will be triggered.
- Interval: When the temperature is within the preset alarm temperature interval, an alarm is triggered.

14.6.2. Alarm Signal

This symbol is displayed in the results table when an alarm has been set by the analysis tool. When an alarm is triggered, the attribute values in the result table are displayed in red (above the preset alarm),

blue (below the preset alarm) and yellow (between the preset alarm), symbols (above the preset alarm), (below preset alarm) and flash (between preset alarm) flash.

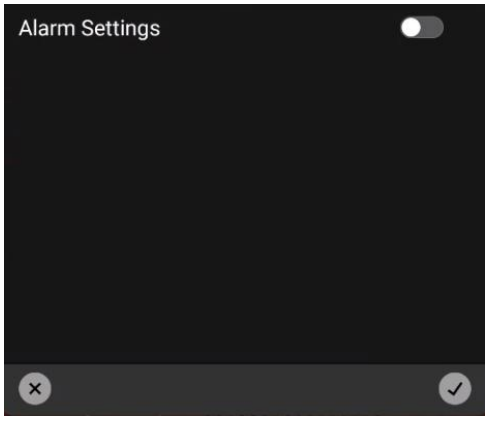
You can also set an audible alarm (you will hear the wailing of police siren when the alarm is triggered) or a snapshot of the alarm.

14.6.3. Alarm Settings

Please follow the below steps to set alarming.

1. Touch the analysis tool on the screen and make sure at least one property is enabled. Max temperature, Min temperature, Avg temperature, and atmospheric temperature difference.

2. Use the joystick to select (Alarm), and a dialog box will pop up.



3. Touch to enable the alarm settings.

4. Move the joystick left and right to switch parameters: Max temperature, Min temperature, Avg temperature, and ambient temperature difference.

5. Move the joystick up and down to enable or disable the display of this property.

6. Press the OK button to confirm the modification and close.

7. Press the back key to cancel the modification and close.

You can also make batch settings in settings. See 20.3 Analysis Settings.

14.7. Isotherm

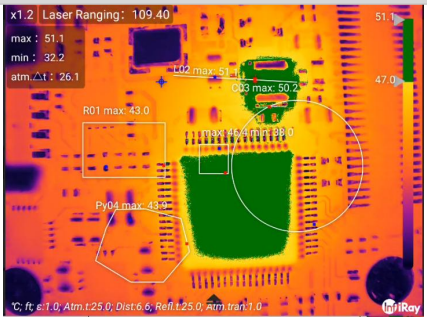
By setting isotherm, anomalies can be easily spotted in infrared images. Apply isotherm for pixels in the image that are above, below, and below the set temperature with a contrasting color.
The camera can be set to trigger the following types of color alarms.

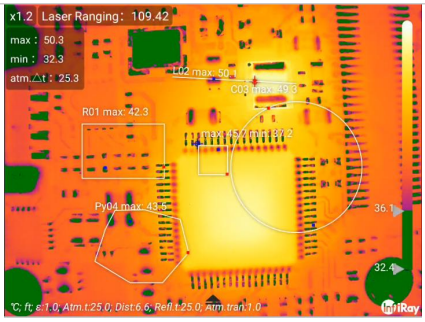
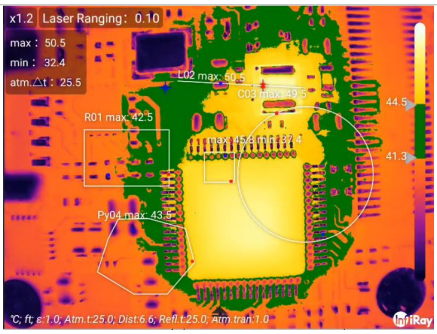
- Above alarms: This will apply a contrasting color to all pixels whose temperature is above the specified temperature threshold.

- Below alarms: This will apply a contrasting color to all pixels whose temperature is below

- Interval alarms: This will apply a contrasting color to all pixels with all temperatures between the two specified temperature thresholds.

An example is as follows:

Isotherm Type	Image Example
Above Alarm	

Below Alarm	
Interval Alarm	

Please follow the below steps to set above alarm, below alarm, and interval alarm.

1. Use the joystick to go to isotherm.

2. Press the OK button to enter the secondary menu. Move the joystick to select the alarm type, above alarm, below alarm, interval alarm.

3. Press the OK button, the threshold temperature will be displayed on the temperature scale on the right side of the screen.

4. To change the threshold temperature:

(1) For interval alarm, move the joystick left/right to select low/high temperature value.

(2) Move the joystick up and down to change the threshold temperature.

15. Remote Connection and Control

You can connect to the thermal imager through a USB cable or Wi-Fi, and obtain image, video and real-time access to the infrared data stream and analysis through the software.

Please follow the steps:

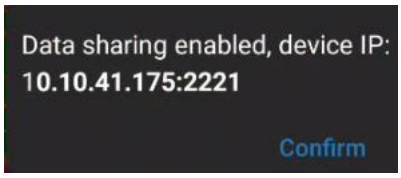
1. Swipe up-down on the screen with the finger to unfold the shortcut tools bar.

2. Go to

Data Sharing via joystick button and press Ok button.

3. It will display *Please Connect Wi-Fi or USB devices* if the device has not been connected.

4. A prompt window will pop up if the device has been successfully connected.



(1) Visit Gallery File: You can visit the gallery data via PC TAS software or mobile App. You can also visit the gallery via the FTP service of third-party software, please refer to Chapter 17.

(2) Projection Screen: The real-time image can be viewed via PC TAS software or mobile App. You can also video the image via the third-party software which supports RTSP protocols.

(3) Real-time temperature analysis: The temperature acquired from the PC TAS or mobile APP can be analyzed simultaneously.

5.Tab the *Data Sharing* again to end the service.

16. Cloud Platform

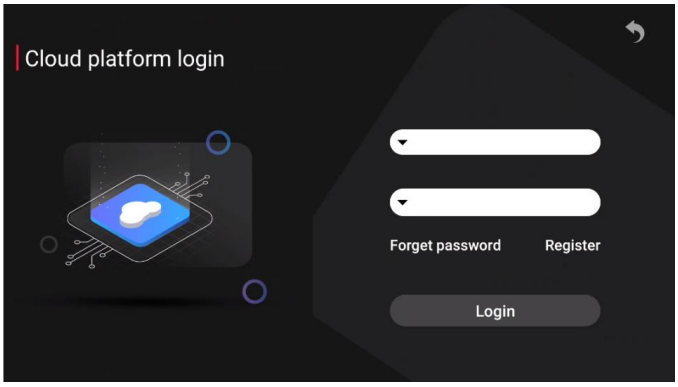
Cloud platform can be used to upload and download data to improve data management efficiency, as well as for secondary analysis and remote connection to reduce work complexity and make data analysis more flexible.

Please follow the below steps.

1. Slide down to expand the shortcut toolbar.

2. Use the joystick to go to

(Cloud Platform) to login.



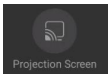
3. After clicking Login, you can connect to the cloud platform. Internet connection is necessary to use the cloud platform. For internet connection, please refer to 20.6.1 Connecting to WLAN.

17. Wireless Projection

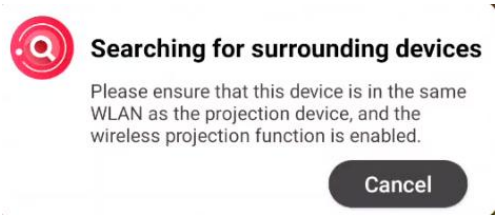
You can cast the screen of the current device to other large screens in the network that support the Miracast protocol.

Please follow the below steps.

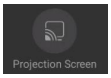
1. Swipe down to unfold the shortcut toolbar.

2. Use the joystick to go to 

(Wireless Projection) to open the dialog box.



4. Select a large screen that can be connected to perform screen projection in the dialog box.

5. Touch 

(Wireless Projection) to turn off projection.

18. FTP

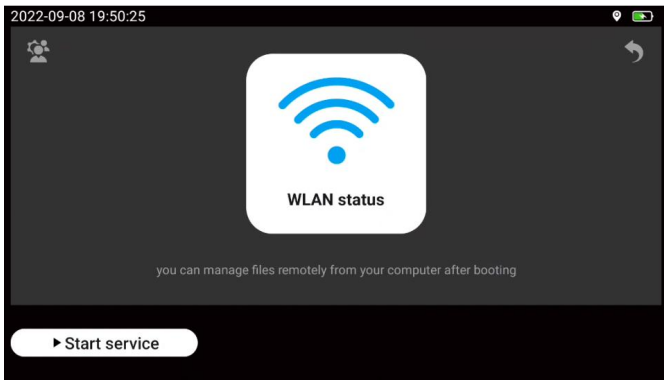
You can configure the thermal camera as an FTP server. Users can connect to the thermal camera to upload or download files through the FTP protocol.

Please follow the below steps.

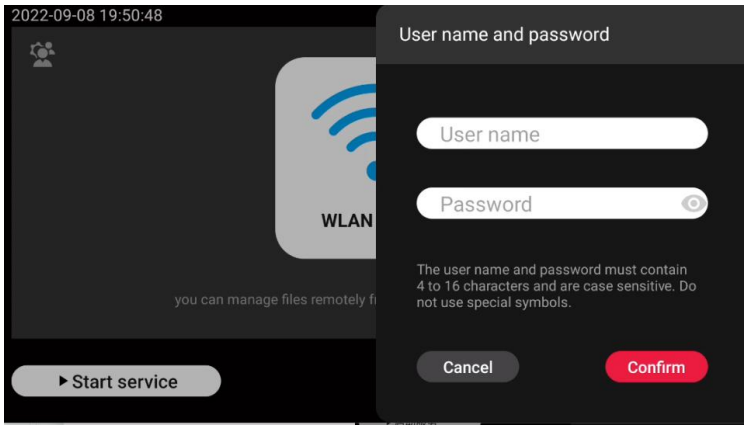
1. Slide down to expand the shortcut toolbar.

2. Use the joystick to go to

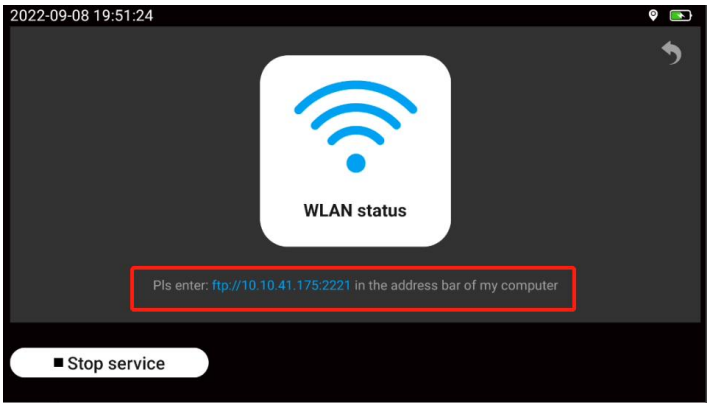
(FTP) to start the dialog.



3. Touch to pop up the username/password configuration dialog box.

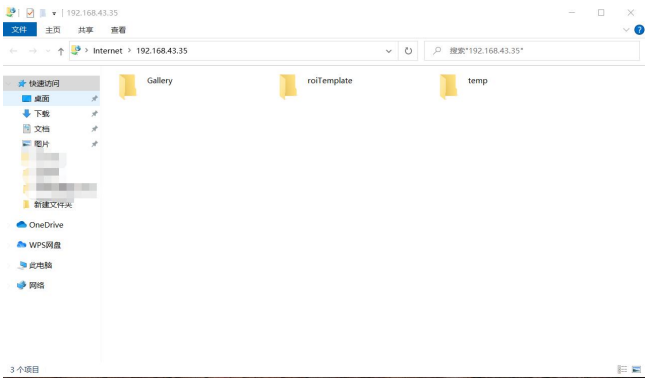


4. Touch *Start Service* to start the FTP service.



5. Touch *Stop Service* to stop the FTP service.

6. Follow the prompts to enter the FTP server address in the address bar of the PC, input the user name/password to enter the gallery, and make sure that the PC and the thermal camera are in the same local network.



19. Data Sharing

By connecting the thermal camera to the PC through the data sharing, you can obtain the real-time temperature data stream and analysis tool settings of the thermal camera, and perform secondary analysis in the PC software.

***Note**: This function is available in PC software or mobile application, meanwhile, make ensure that the PC and the camera are connected and in the same local network.*

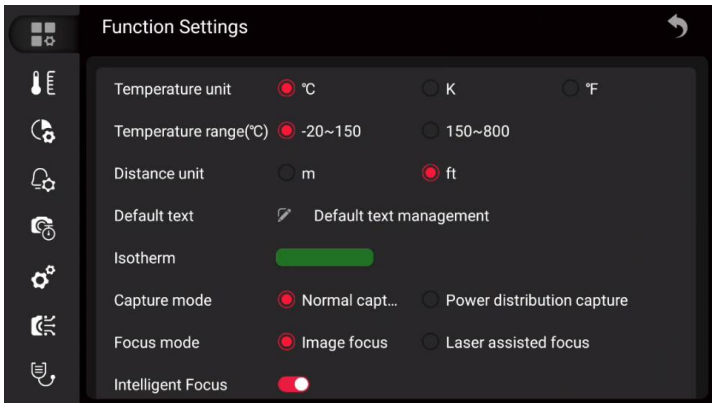
Please follow the below steps.

1. Slide down to expand the shortcut toolbar.

2. Use the joystick to go to (Data Sharing) to enable the service.

20. Settings

Settings can be changed in the thermal camera. The settings menu includes the followings. (Function Settings), (Environmental Parameters), (Analysis Settings), (Alarm Settings), (Time-lapse image capture), (System Settings), (Smart Capture), (Diagnostic Rules)



20.1. Function Settings

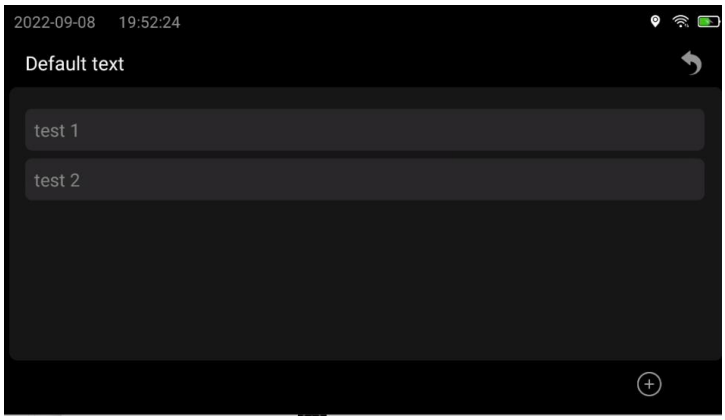
Basic function settings, including temperature unit, temperature range switching, distance unit and other parameters. Default texts, filename prefixes, and report templates can be managed.

20.1.1. Default Text

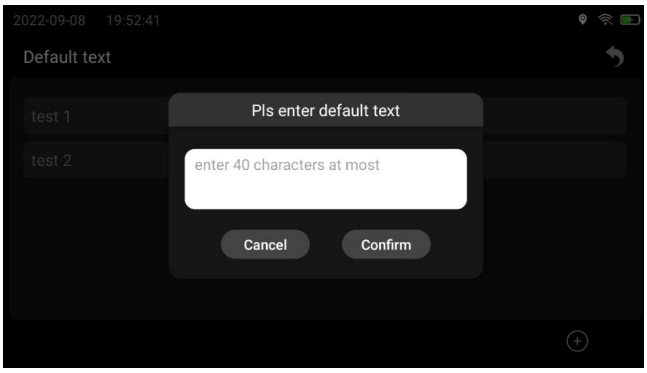
You can manage default text for image notes. See image editing.

Please follow the below steps.

1. Use the joystick to go to Default Text Management and press the Ok button.

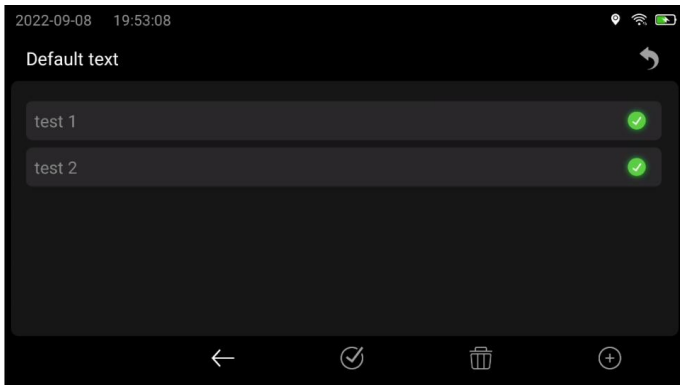


2. Touch to start the dialog to add default text.



3. After entering the text, click OK to save.

4. Click the text, the toolbar will pop up, and click to delete the default text.



5. To delete all preset texts, click .

20.1.2. Filename Prefixes

You can customize the filename prefix of the image. Use the joystick to go to Edit Filename Prefix to enter the prefixes.

20.1.3. Edit Report Templates

You can edit templates for generating analysis reports.

Please follow the below steps.

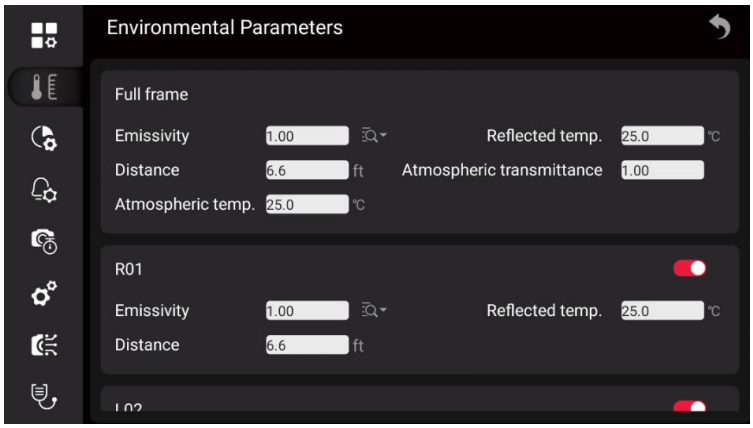
1. Use the joystick to go to Edit Report Template, and press the joystick to enter the report template editing page.

2. The contents in red dashed boxes can be edited, including Logo, page header, and title.

3. After editing, click to save.

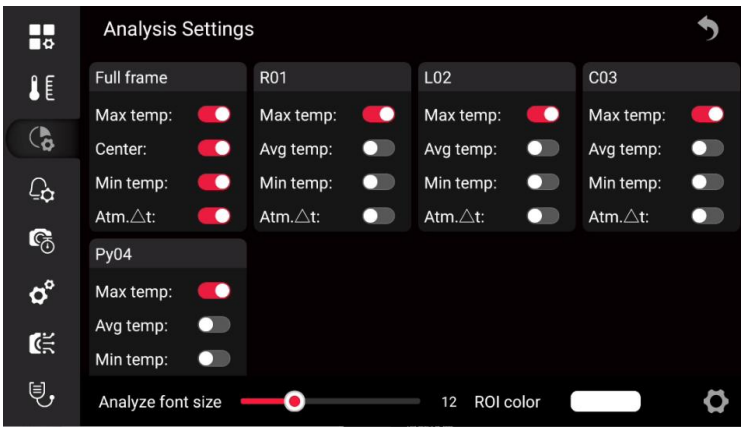
20.2. Environmental Parameters

To configure full frame ambient parameters, see 14.4 Change Analysis Tool Parameters.



20.3. Analysis Settings

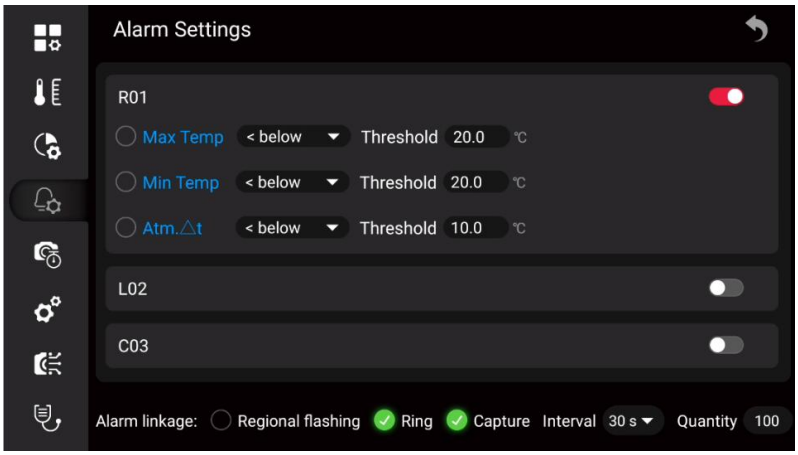
You can configure the properties of the whole frame and analysis tools, including the maximum temperature, center temperature, minimum temperature, and ambient temperature difference of the whole frame; maximum temperature, average temperature, minimum temperature, and ambient temperature difference of analysis tools.



You can adjust the font size and border color of the analysis tool.

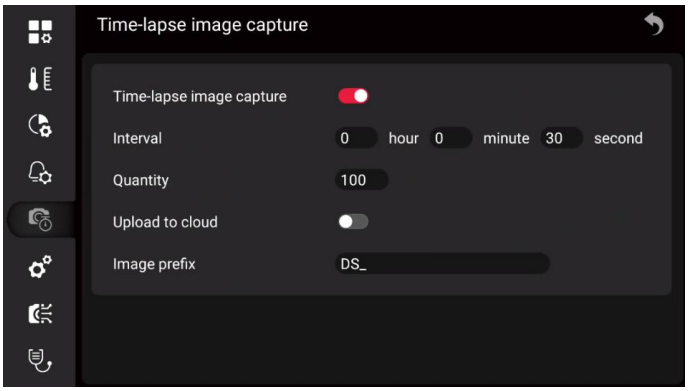
20.4. Alarm Settings

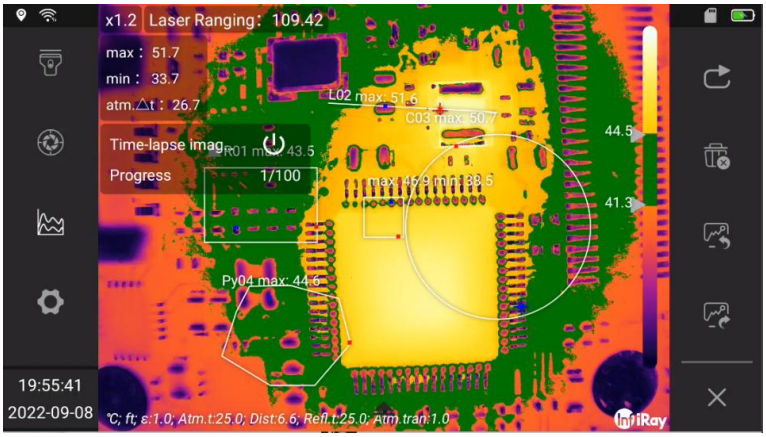
You can set alarm settings of analysis tools in batches and configure alarm linkage.



20.5. Time-lapse Image Capture

You can configure the thermal camera to save images in a timed (time-lapse) mode.

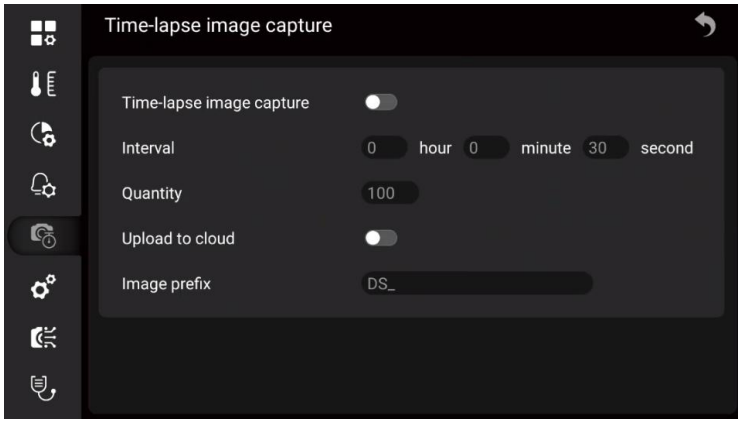




Please follow the below steps.

1. Go to (Settings) via the joystick, and press the OK button.

2. Select (time-lapse image capture) to enter the secondary menu to set parameters.



3. Time-lapse image capture: (On) or (Off).

4. Interval: Set the interval of capturing time-lapse images, ranging from 5s to 24 hours.

5. Quantity: The default is 100, ranging from 1 to 1000.

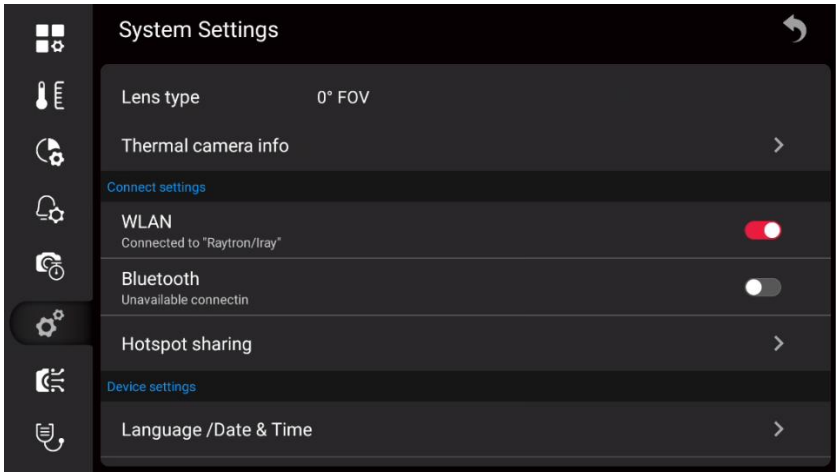
6. Upload to cloud: After enabled, the photos will be uploaded to the cloud by default. (Not available for some models)

7. Image prefix: Customize the prefix for time-lapse images, DS_ by default.

8. To manually start or stop the time-lapse image capture, press the photo button, and you can also touch (stop) to stop time-lapse image capture.

20.6. System Settings

You can view device-related information in the system settings, and perform connection settings and device settings.



20.6.1. Wi-Fi Settings

You can connect the camera to a wireless local area network (WLAN) using Wi-Fi, or let the camera provide Wi-Fi access to other devices. The most common uses are as follows.

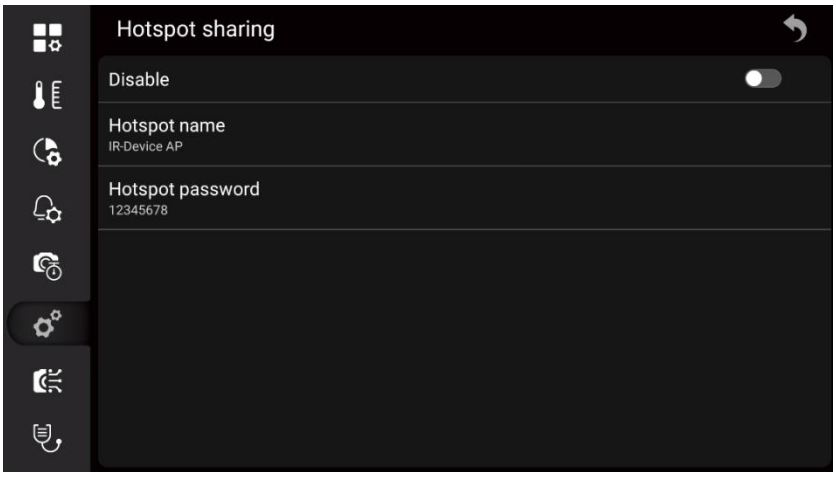
Setting up the thermal camera as a wireless access point. This method is primarily used with mobile devices, such as Android or IOS mobile terminal.

Connect the camera to a wireless local area network (WLAN). This method is primarily used for remote connection and control, cloud platform access.

Note: *You can only choose one of these two modes.*

Please follow the below steps to connect to a wireless access point.

1. Use the joystick to go to Hotspot Sharing, and then press the OK button.

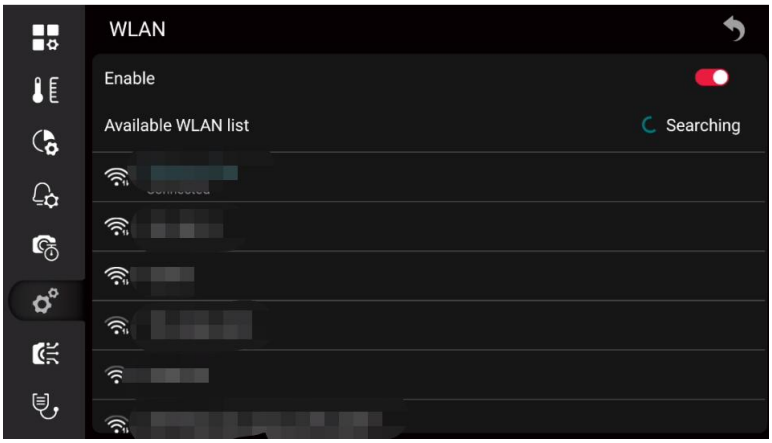


2. Touch to configure the hotspot name and hotspot password.

3. Touch the switch and the hotspot will be turned on.

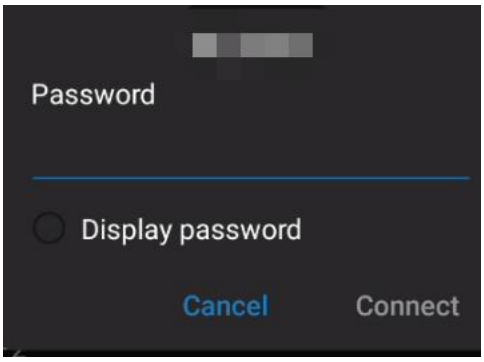
Please follow the below steps to connect to WLAN.

1. Use the joystick to go to WLAN configuration, and press the OK button to enter the WLAN configuration list.



2. Use the joystick to go to , refresh the available WLAN list.

3. Select the network to be connected, and press the OK button to pop up a dialog box.



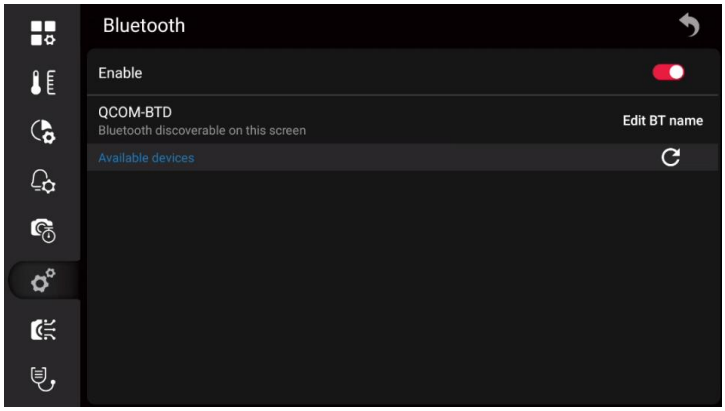
4. After entering the password, use the joystick to go to Connect and press the OK button to confirm.

20.6.2. Bluetooth Pairing

Before using a Bluetooth device, it needs to be paired with the camera, which can be configured in the settings or in the shortcut bar.

Please follow the below steps to set it in the settings.

1. Use the joystick to go to Bluetooth, and then press the Ok button.



2. If the Bluetooth is off, press the OK button to activate Bluetooth.

Note: make sure the external Bluetooth device is available.

3. Select an available device and press the OK button.

4. It will take about 15 seconds to wait for the list of available devices to appear.

5. When a Bluetooth device is found, select the device to be added and begin pairing. Then, the device

can be used.

***Note**: Only enabled Bluetooth headsets will appear in the list of available devices.*

6. You can add several devices.

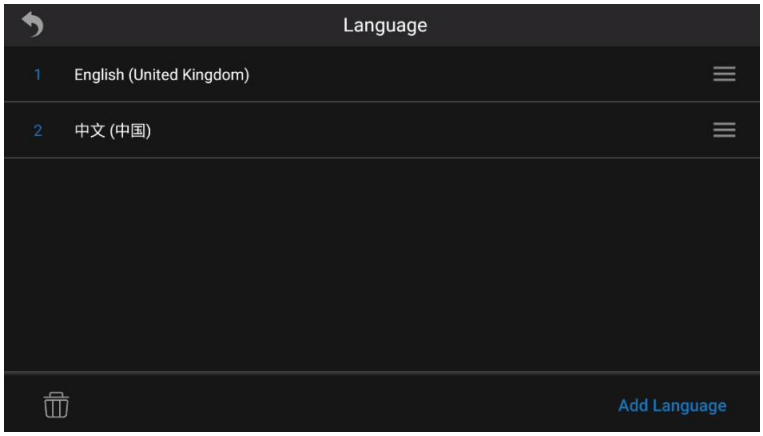
7. You can remove the device by selecting Unpair Device.

8. After adding a Bluetooth headset, it can be used to add voice annotations.

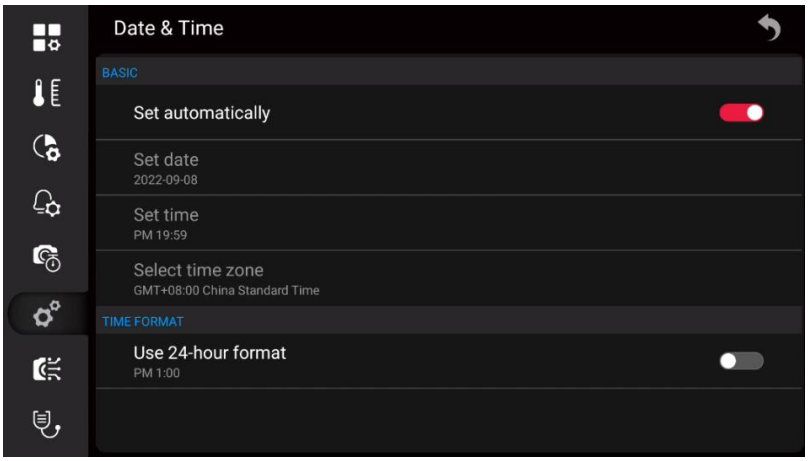
For quick configuration in the shortcut bar, please refer to 9 Shortcut Toolbar.

20.6.3. Language and Date

You can select the language from hundreds of languages according to your language habits Use the joystick to go to Language Date & Time > Language.

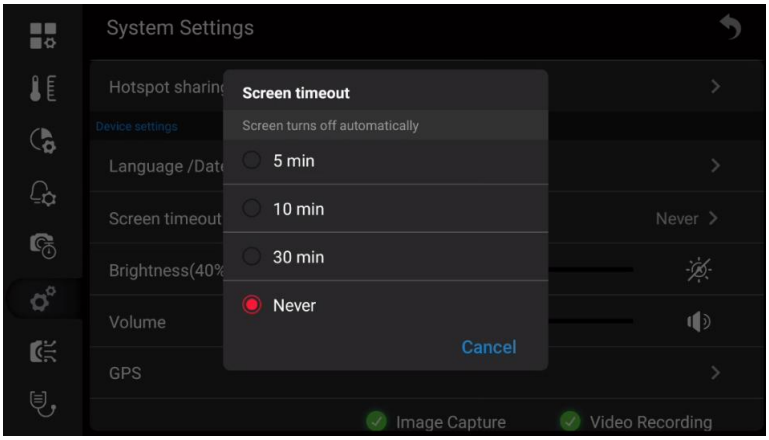


You can set the date and time, or synchronize via the network. In this case, you need to connect to the Internet. For networking operations, see 20.6.1 Connecting to WLAN. Use the joystick to go to Language Date & Time > Date & Time.



20.6.4. Auto Screen Timeout

You can set the automatic screen timeout time, and use the joystick to go to the automatic screen timeout. Never by default.



20.6.5. Brightness

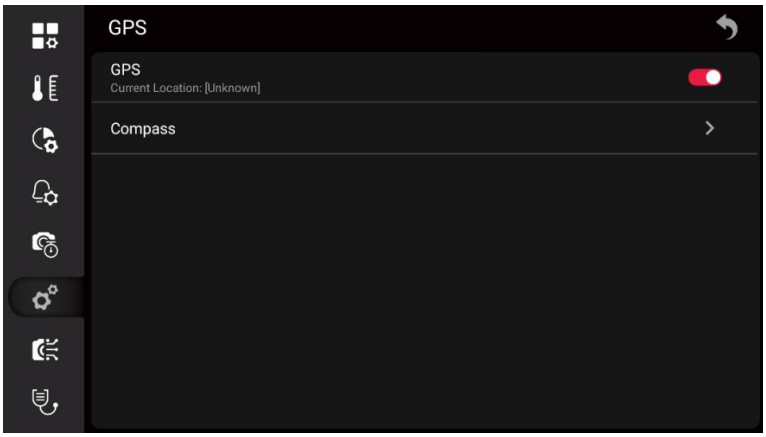
The screen brightness slider is used to control the brightness of the screen., or you can enable automatic screen brightness.

20.6.6. Volume

The volume slider is used to control the volume.

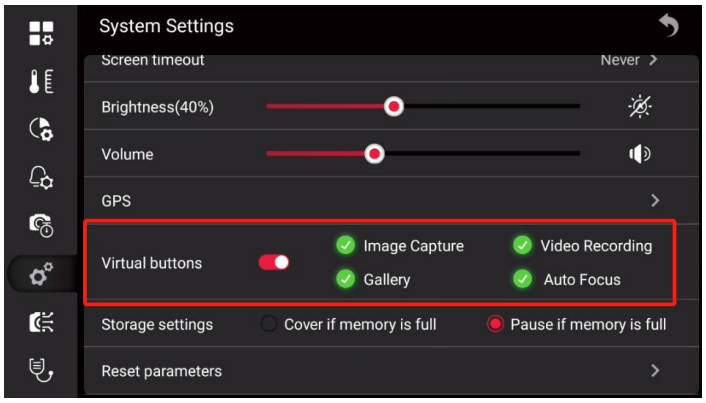
20.6.7. GPS

You can turn GPS on or off, and you can see the location information after turning it on.

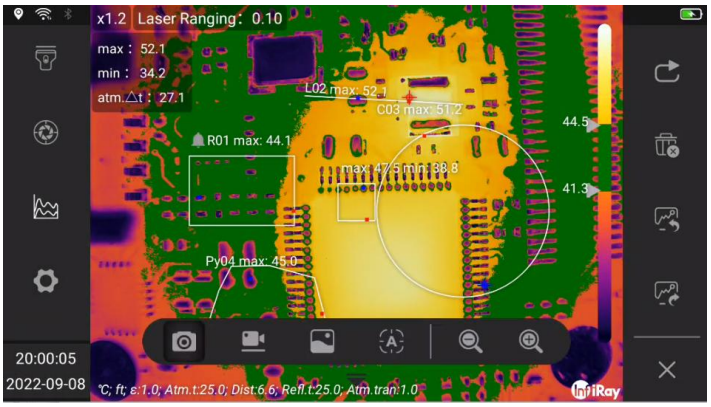


20.6.8. Virtual Buttons

After virtual buttons are enabled, you can use touch screen instead of physical buttons. The virtual buttons include Image Capture, Video Recording, Gallery, and Auto Focus.



After the virtual buttons are enabled, the expansion toolbar can be woken up on the home screen. As shown in the following figure.



20.6.9. Storage Settings

There are two kinds of storage available, cover or pause if the memory is full.

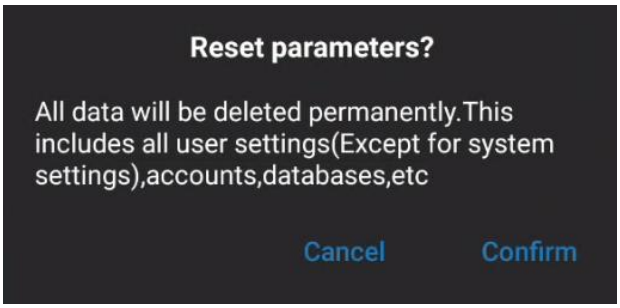
- Cover if the memory is full： historical files will be covered. Taking pictures or videos at regular intervals will not be suspended, but it may overwrite useful files.

- Pause if the memory is full: when the card is full, tasks such as taking pictures and videos cannot be performed. You need to manually delete files or delete files in batches to continue.

20.6.10. Reset Parameters

You can clear customized settings by resetting the parameters.

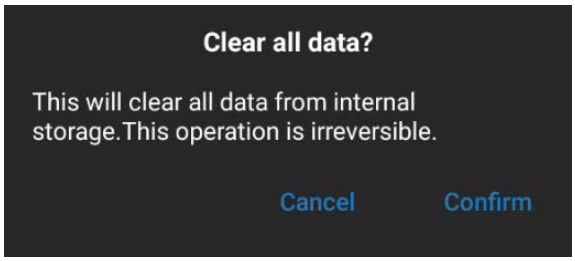
***Note**: This operation will clear all customized settings, including customized settings, analysis tool configuration, palette, ambient parameters and other configurations. Wi-Fi, Bluetooth, images and other data are not affected.*



20.6.11. Factory Reset

You can reset your device to its factory state with a factory reset.

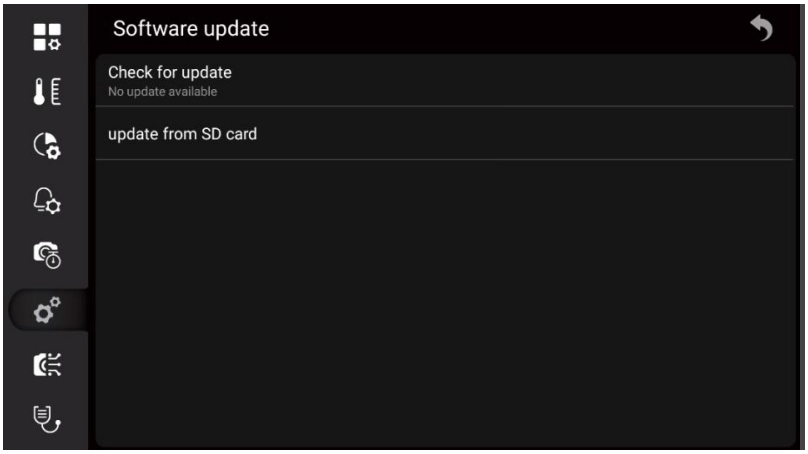
***Note**: This operation will clear all data, including images and other data. Please take cautions.*



20.6.12. Software Update

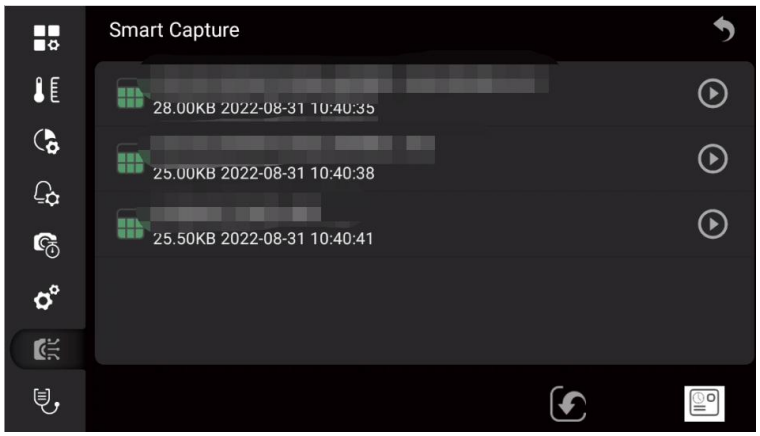
You can choose online update (OTA) upgrade or update from SD card.

- OTA: The device should be connected to the Internet. For the network operation, see 20.6.1 Connecting to WLAN.
- Update from SD card: You need to copy the update file to the SD card. For details on obtaining the update file, see 24.2 Firmware Update.



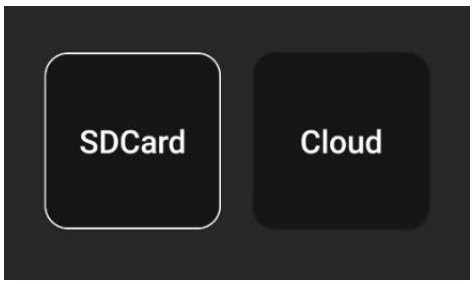
20.7. Smart Capture

You can import the smart capture package from SD card or cloud platform.

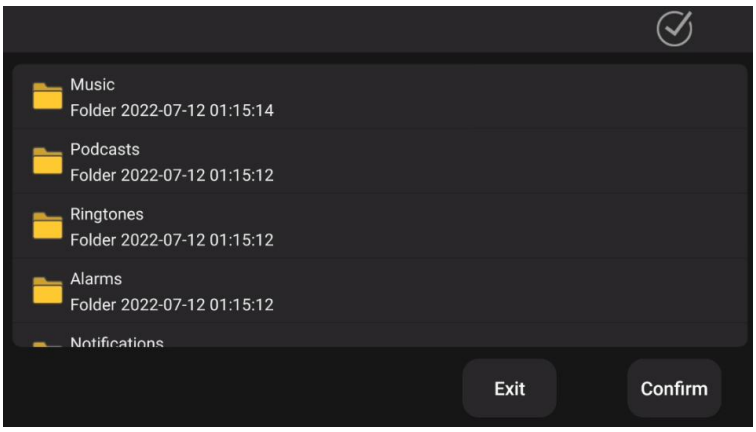


Please follow the below steps.

1. Use the joystick to go to (Import), and press the OK button to pop up a dialog box.



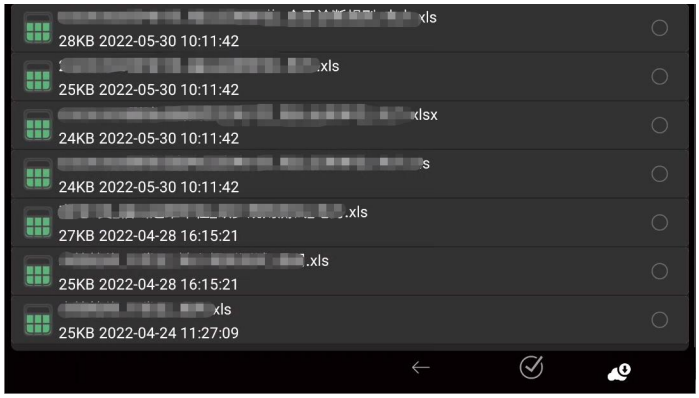
2. Select SD card for importing.



(1) Select the path and file to save the smart capture package, and click 确认导入 to import.

（2）Click (Select All),and 退出导入 (Exit Import).

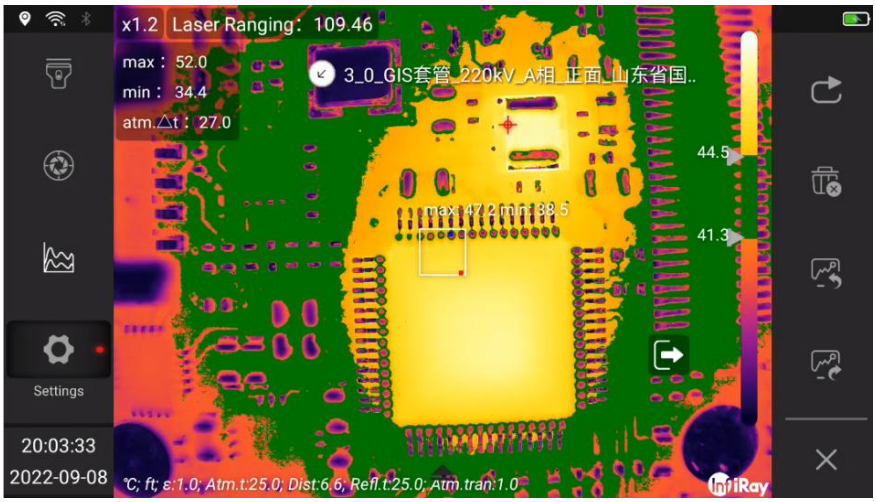
3. To import from the cloud platform, you need to ensure that you have followed the cloud platform connection operation. For details, see 16 Cloud Platform.



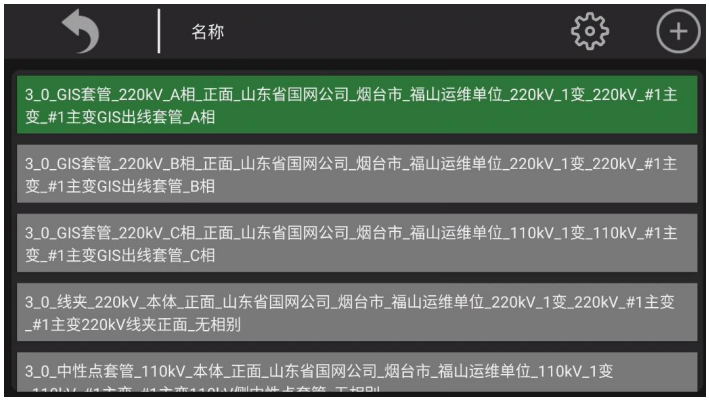
(1) Select the smart capture package to be imported, click (Download), and then import.

(2) Select to select all smart capture packages.

4. Use the joystick to go to the smart capture package to be imported, and press the OK button or touch to load the current smart capture package and return to the real-time preview interface.



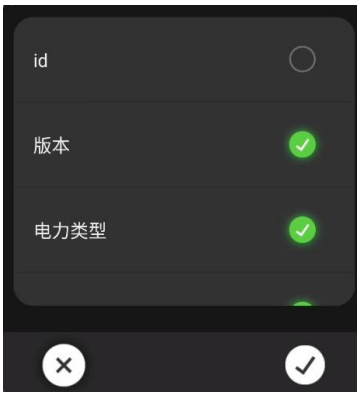
5. Touch the device name to expand the list of subjects.



(1) Move the joystick to switch the subject in the list.

(2) Go to (Return) to return to the live shooting screen and continue shooting.

(3) Go to (Settings), expand Properties Settings, and select the File Name field as required.



(4) Go to (Copy) to copy the currently selected object, whose name ends with _copy.

(5) Touch (Exit) to exit the current Smart Capture mode, or by selecting (Settings) > Smart Capture > (Exit).

6. The captured images can be checked in the gallery and sorted in folders named after the properties of the smart capture package.

7. Image processing, see 11 Saving and processing images.

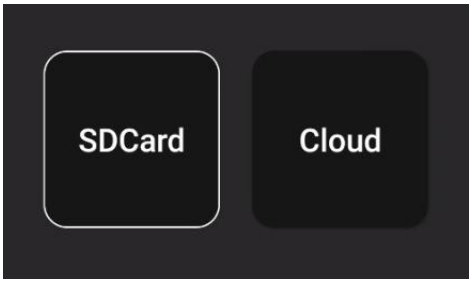
20.8. Smart Diagnostics

Generally, there will be different degrees of aging during the work of power equipment, and heating defects caused by current and voltage will occur. In such situation, periodic inspection is required. The inspection process with a thermal camera requires a lot of practical experience. While, due to experience or operational reasons, defects may be misjudged. In this case, you can use the smart diagnosis of the thermal camera to integrate the power grid diagnosis rules, which can quickly make intelligent defect judgments and reduce tedious on-site analysis and calculation steps, and the diagnosis result can be obtained immediately by shooting.

***Note**: This mode needs to be used with Smart Capture and is not available for some models.*

Please follow the below steps.

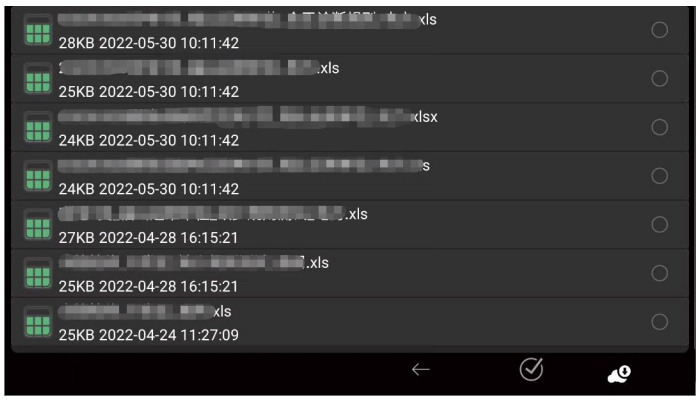
1. Use the joystick to go to (Import), and press the OK button to pop up a dialog box.



2. Select SD card for importing.

Select the path and file to save the smart capture package, and click 确认导入 to import. Click (Select All),and 退出导入 (Exit Import).

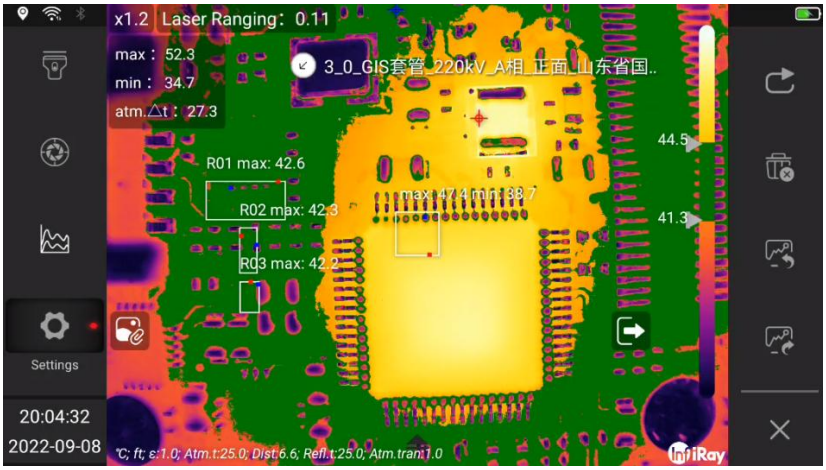
3. To import from the cloud platform, you need to ensure that you have followed the cloud platform connection operation. For details, see 16 Cloud Platform.



(1) Select the smart capture package to be imported, click (Download), and then import.

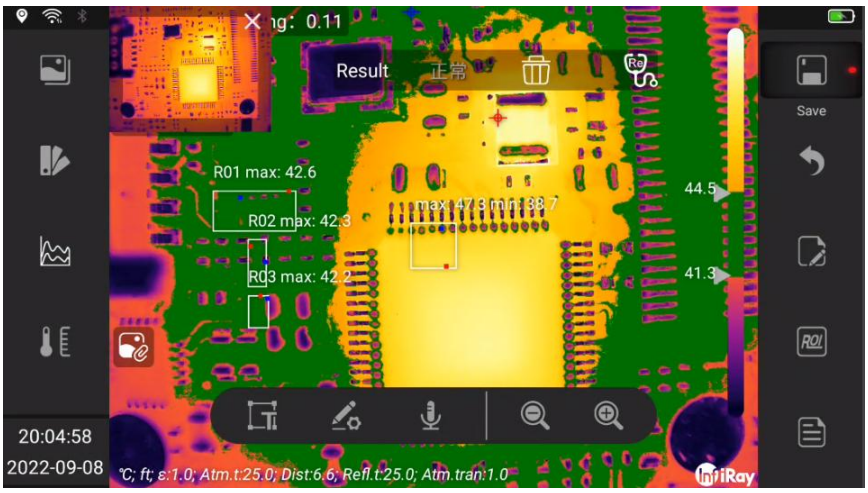
(2) Select to select all smart capture packages.

4. After importing the smart diagnostic package, it can be used in smart capture mode. For loading the smart capture package, please refer to 20.7 Smart Capture.



5. Touch to view the reference graph and analysis tool settings in the current mode, and then touch the screen to return.

6. Press the image capture button to enter the smart diagnosis interface.



7. The diagnosis result is displayed in the diagnosis confirmation column at the top of the screen. Click (Delete) to clear the diagnosis result, click (diagnosis) to diagnose again.

8. The captured images can be checked in the gallery and sorted in folders named after the attributes of the smart capture package.

9. Image processing, see 11 Saving and processing images.

21. Technical Data

21.1. S1280 25°

Thermal features	Detector Resolution	1280×1024
	Super Resolution	5.1MP
	Lens Configuration	25° lens with auto and manual focus; auto identification after lens change
	FOV	25°×20°
	Focus Mode	Manual, Auto, Laser-assisted, continuous
	IFOV（Spatial Resolution）	0.68 mrad
	The Min. Imaging Distance	0.5m
	Measurement Range	Standard：-20℃~150℃(Low), +150℃~800℃(Medium) Optional：+400℃~ +1500℃/other ranges (High)
Common Features	Detector Type	Uncooled IRFPA Detector
	Thermal Sensitivity	25mK
	Spectral Range	8 - 14 μm
	Image Frequency	30Hz
	Remote Access & Control	Connect to IRPT_TAS software on PC or IOS/Android on mobile devices via TYPE-C/Wi-Fi/Hot Spot to control; access to internal data via FTP
	Flashlight	Yes
Image Presentation &Image Mode	Display Size	5.5 in. touch screen，1920×1080 pixels
	Viewfinder	0.39 in. OLED, 1920×1080 pixels
	Digital Camera	4224×3136 ,13 MP
	Color Palettes	19 types of color palettes such as Iron, Gray, Iron inv.,Gray inv.
	Image Mode	Thermal, PIP, Thermal Fusion, Visual, Detail

		Overlay
	Temperature Scale	Auto, Manual, Linear
Image Storage	**Storage Media**	SD card， standard 64GB，support hot plug，support SD， SDHC，SDXC， max. extendable to 2TB
	Image Format	jpg
	State Grid Format	Yes
	Storage Qty.	8000
	Text Annotations	Yes, add text annotations via text input, preset texts, OCR recognition, QR code scanning, voice-text conversion
	Voice Annotation	Support, up to 300s voice
	File Naming	Yes, name file via text input, preset texts, OCR recognition, QR code scanning, voice-text conversion
Video Recording & Transmission	**Radiometric IR-video Recording**	Support compressed radiometric video recording(.irv)
		Support standard MP4 video recording
	Non-radiometric IR-Video Recording or Visual Video Recording	
	Radiometric IR-video Streaming	View thermal video stream via TYPE-C/Wi-Fi
	Non-radiometric IR-video Streaming	RTSP
	Communication Interfaces	TYPE-C/Wi-Fi
	Video Output	HDMI, wireless screen projection
	Analysis Software	PC(IRPT_TAS) and mobile (IOS /Android APP)
	Video Resolution	1920×1080
Measurement	**Accuracy**	5℃～150℃:±1°C or ±1% of reading (the larger

Analysis		value shall prevail) at 25℃; Below 1500℃, ±2°C or ±2% of reading at 25℃
	Measurement Unit	Celsius, Fahrenheit, Kelvin
	Emissivity	0.01-1.00，step 0.01
	Ambient Temperature	-20～50℃，step 0.1℃
	Distance Settings	0～50m，step 0.1m
	Alarm	Audible and image alarms
	Color Alarms（Isotherm）	Above/Below/Interval
	GPS	The location information will be displayed on the image, support GPS, BDS or GLONASS
	Compass	Support DMC indication
	Analysis Report	PDF format, the template can be edited and exported in camera
System Functions	**Laser Pointer**	Support
	LRF	Support，displayed on screen
	Area Measurement	Support
	Analysis Funcion in Camera	Movable spot, line, box, polygon（configurable Max./ Min./ Avg./enviromental variables/area alarm switch), 30 at most; support at most 5 predefined mode
	Zoom	1-15×， support continuous zoom via adjustment ring
	Data Communication Interfaces	Wi-Fi, Bluetooth, USB Type-C, HDMI
	Voice Control	Voice assistance, fast command recognition
	Smart Patrol	Support, general task package importing and editing, auto image naming
	Smart Diagnosis	No
Others	**Microphone/Speaker**	Yes
	Battery	4.2V,detachable 9000mAh Li ion battery，support fast charge
	Charging Time	1.5 hours to 90% capacity

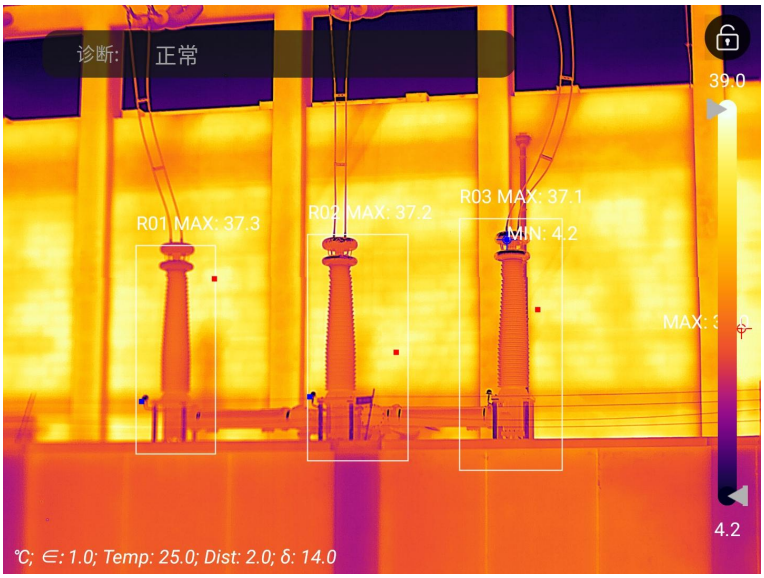
	Charging System	In camera or two-bay charger
	Battery Operating Time	Continous operating time≥ 3 hours (the actual time depends on the environment and use condition)
	Neck Strap	Yes
	Operating Temperature Range	-15°C~ 55°C
	Storage Temperature Range	-40°C~ 70°C
	External Interfaces	TYPE-C USB3.0, SD card, SIM card, Mini HDMI, Tripod Mounting
	Encapsulation	IP54
	Weight and Dimension（L×W×H）	<1.7kg（incl. battery）, 14×21×11.5 cm
	Optional Accessories	Lithium battery, Bluetooth headset, Wide-angle lens, micro-lens, lens bag, portable bag

22. Applications Introduction

22.1. Smart Power Inspection and Diagnosis

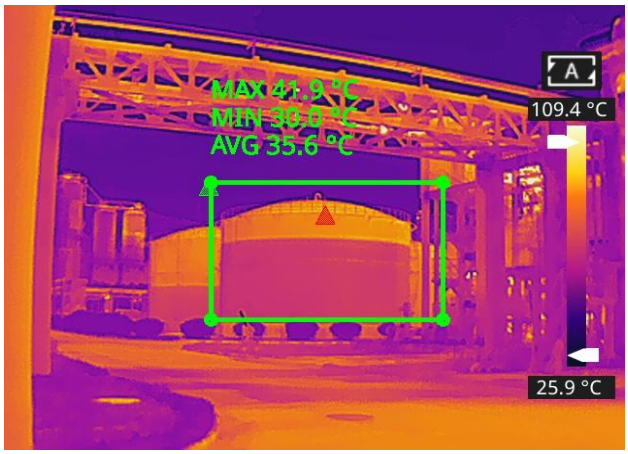
With the development of the power system, higher requirements have also been put forward for the safe operation of infrastructure such as power grids and power plant equipment. Major power companies have invested a lot of manpower and material resources in the inspection and maintenance of lines and equipment to ensure the power transmission quality of power enterprises. As an important task to ensure the normal operation of the power system, inspection work can maintain and repair power equipment efficiently, eliminate hidden problems in the operation of power equipment, and fundamentally improve the safety, efficiency and stability of power equipment.

Integrating flexibility and intelligence, S series has very high precision and sensitivity, which can measure small temperature differences. So small temperature differences can be found in time during the inspection, reducing the occurrence of abnormal equipment conditions greatly. The functions of intelligent speech recognition and diagnosis make the complex workflow simple, improve the work efficiency, and make S series a good helper for expert-level operation and maintenance.



22.2. Storage Level Detection

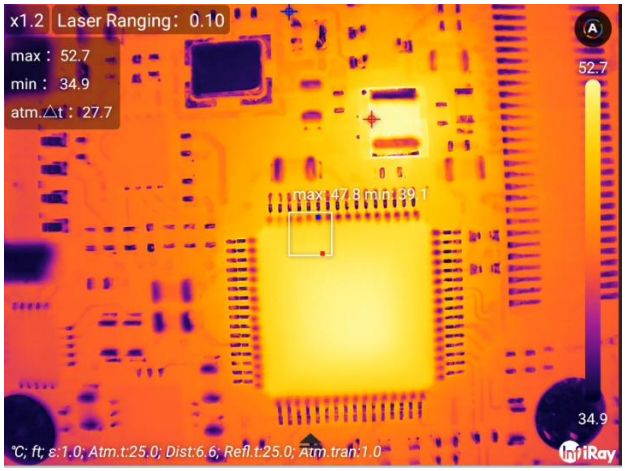
There is a temperature difference between the liquid stored in the storage tank and the upper gas. With S series thermal camera, the liquid level of the storage tank can be observed from a long distance, preventing unexpected failures caused by the failure of the liquid level gauge.



Storage Level Detection

22.3 PCB Inspection

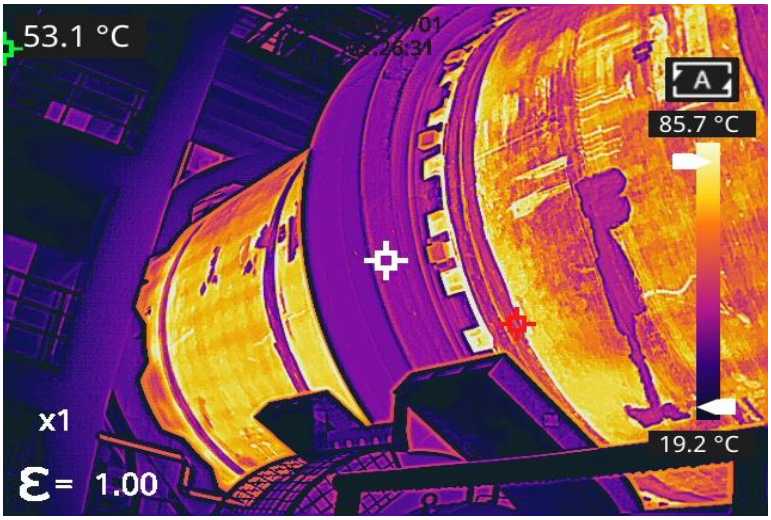
PCB is of small size, high integration and complex structure, and it requires a lot of time and efforts with traditional contact detection. Thermal imaging technology has absolute advantages in troubleshooting faulty circuit boards. With S series handheld thermal camera, you can quickly find abnormally high or low temperature components and judge circuit board failures.



PCB Inspection

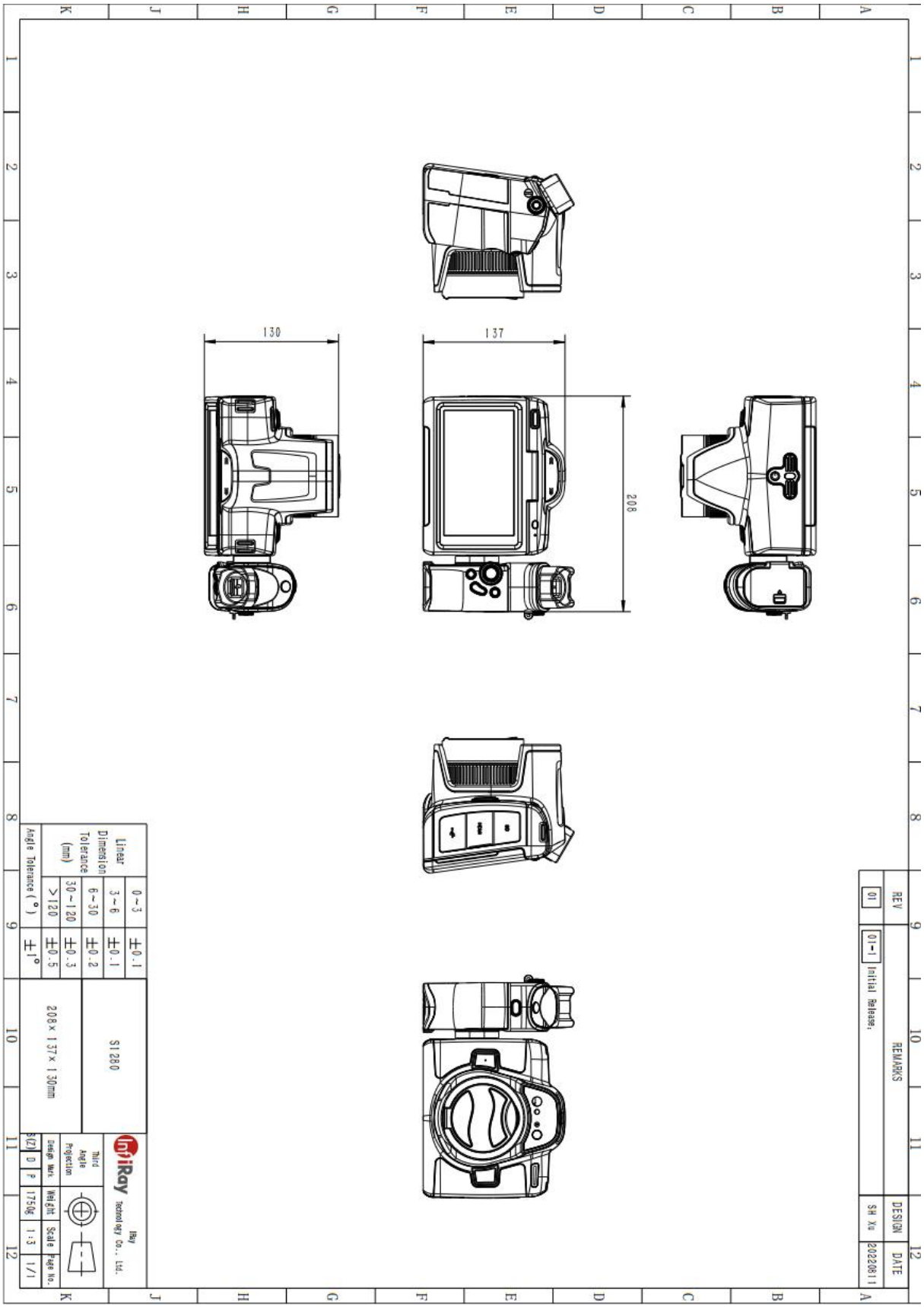
22.4 Rotary Kiln Defect Monitoring

Rotary kiln is an important equipment for hazardous waste incineration. The interior of the kiln body is made of refractory materials and the exterior is surrounded by steel plates. With the long-term operation of the rotary kiln, the lining material may get erosive and thin, or even fall off, resulting in abnormally high external temperatures. With S series handheld thermal camera, the abnormally high temperature of the outer wall can be found and located, and corresponding measures can be taken to avoid safety accidents.



Rotary Kiln Defect Monitoring

23. Structure Drawing



24. Download Software and Update Firmware

24.1. Download Software

1. Visit our official website: www.infiray.com, and enter Service Support-Product Support Center to find S1280. Click to enter Client, and you can download S series handheld PC client IRPT_TAS.exe or the Android client IRPT_TAS_android.apk

2. Follow the instructions to install IRPT_TAS on a PC or IRPT_TAS_android on a mobile phone.

3. After the installation is completed, there is no need to restart the computer or phone, you can preview pictures and videos taken by the device, perform secondary analysis on infrared images and generate test reports.

24.2. Update Firmware

If the firmware of the device needs to be updated, please call the technical support hotline 400-883-0800 and update it under the guidance of the product application engineer.

You can also use OTA upgrade, please refer to 20.6.12 *Software Update*.

25. Cleaning Thermal Camera

25.1. Cleaning Camera Housing, Cables and Other Items

Camera Housing, Cables and Other Items	
Liquids	One of the following liquids can be used. 1.Warm water 2. Weak detergent solution
Cleaning Tools	A soft cloth
Cleaning Procedure	Please follow this procedure: 1.Soak a soft cloth in the liquid. 2.Twist the cloth to remove excess liquid. 3.Clean the camera parts with the cloth.

CAUTION

Never apply solutions or similar liquids to the camera, cables or other parts directly to avoidt damage to the equipment.

25.2. Cleaning Infrared Lens

Cleaning Infrared Lens	
Liquids	One of the following liquids can be used. 1.Commercial lens cleaning liquid with more than 30% is opropyl alcohol. 2.96% ethyl alcohol(C2H5OH).
Cleaning Tools	Absorbent cotton
Cleaning Procedure	Please follow this procedure (Take dustless cloth as an example). 1.Soak the dustless cloth in the liquid. 2. Squeeze the absorbent cotton to squeeze out the excess cleaning solution. 3. Gently wipe the lens with absorbent cotton, which can be used only once, do not reuse.

CAUTION
Do not clean the infrared lens too hard. This can damage anti-reflective coating of the lens.

25.3. Clean Infrared Detector

Even a small amount of dust on the infrared detector can cause defects to images

***Note**: This section only applies to cameras where removing the lens will expose the IR detector. Iin some cases, dust cannot be removed by the following procedures, please contact technical support for removal service.*

CAUTION

In step 2 below, do not use compress ed air from the pneumatic air circuit in the workshop, which usually contains an oil mist to lubricate the air tools.

Please follow the below steps to clean detectors.

1. Remove the lens from the camera.

2. Use compressed air from the compressed air tank to blow off the dust.

Worth comes from Service

Technical Hotline

400-883-0800

24h Hotline

400-998-3088

Customized Services

Visit http://www.infiray.com for more information