Operation Instructions

for the Infrared Thermal Imager
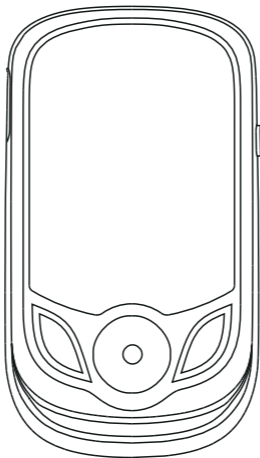
HT-A2+

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Preface

Respected users:

How are you! Thank you for purchasing our instrument. In order to use it in a better manner, we remind you to read the instruction for use carefully before use and keep it properly so as to look up in the future use.

Safety Instruction

Please ensure that you have read and understood the safety precautions described in the following text before using the product so that you can operate it correctly.

The safety precautions described in the following text guides you to operate the product and its accessories correctly and safely to avoid damage and loss to you,other people and the device.

⚠ Considerations

Please observe the following guide in order not to damage the product:

Don't assemble or dismantle the product without permission.

The product is a type of super precise equipment. Don't try to dismantle, assemble or remodel any part of the product. Repair of the product should be made by technical personnel designated by the company.

Avoid damage to probe of the product

Note: don't put the product close to strong heat source directly (such as electric iron). Otherwise, It may damage the probe of the product.

Product hum

When the product works, there is light sound of clicking every several seconds. This is normal phenomenon that the lens captures images.

⚠ Warning

The warning describes the acts that may cause harm to users.Please observe the following operation in order to avoid electric shock or personal injury.

- **If the product case is damaged, don't use it continuously.**
  Please contact the local distributors or agents of the company under such condition.

- **During the process of use, if the product is found with smoke,spark and the burnt smell, please stop using at once.**
  In case of such condition, the product power supply should be powered off first.After the smoke and peculiar smell disappears completely, please contact the local distributors or agents of the company.

- **Don't remodel the adapter and the data line.**
  Otherwise, such remodeling may cause short circuit or fire.

- **Don't weld the battery without permission.**
  Such operation may damage the battery and result in leakage and explosion of the battery.

- **Avoid that the battery is impacted (such as collusion and falling, etc).**
  Such condition may damage the battery case or result in that the battery leaks or explode.

- **Please pull off the adapter on the power socket when charging is not made.**
  The adapter may get overheated if it is connected with power supply for a long time. This may cause overheating, deformation and fire.

- **Please ensure that the plug of the adapter is inserted into the specified power socket.**
  The adapter plug may be different due to the regions. Please make confirmation whether the specification of the adapter is consist with the specification of electric appliances in your region. Otherwise, this may cause overheating of the equipment, electric shock, fire, chemical leakage inside the battery, explosion and other serious consequences.

- **When the plug of the adapter or wire is damaged, stop using immediately.**

  Don't change the battery unless the plug of the charger is inserted into the socket completely.

- **Do not touch the electric wire with wet hands.**

  It is possible to cause electric shock when touching the electric wire with wet hands. When pulling out the electric wire, hold the electric wire head rightly to pull out the wire. Don't pull off the electric wire directly. Otherwise, the electric wire may be broken, causing electric shock and fire.

- **Forbid dip the product into water caught in rain.**

  If the case contact with any liquid, please wipe it dry immediately. If water or other liquid enters the inside of the instrument, please power off the power supply at once.Continuous use may result in product damage.

- **Clean the dust on the adapter plug and the data line.**

  When it is exposed to dusty and dump environment for a long time, the dirt surrounding the electric equipment will accumulate moisture. This may cause short circuit and fire.

- **Don't use abradant, isopropanol or solvent to clean the enclosure of the device.**

  Such operation may cause the product case to be damaged.

- **The product temperature may increase after a long time of charging.**

  You may feel scorching heat when the hands touch the sensors.

- **Problem caused by water condensation**

   Don't bring the instrument into low temperature environment from high tempera-ture environment in a short time or from low temperature environment to high temperature environment. This may result in that the inside of the instrument and appearance produce water condensation. In such condition, the instrument should be placed into portable box or plastic bag. Before use, make it restore to the environmental temperature and take it out to use.If the product has water condensation inside, please power it off immediately.Otherwise, the instrument may be damaged. Operation is not allowed unless the water condensation disappears.

- **Avoid that the product is impacted (such as collision and falling, etc).**

   Such operation may cause the product to be damaged. Please avoid such operation.

- **Long-time storage and regular charging.**

   The product should be placed at a cool and dry environment if it not used for a long time. If the product installed with battery is stored for a long time, charging should be made regularly.

   Otherwise, the battery will run out and the service life will be shortened.

Preliminary Acquaintance with Infrared Thermal Imager

For a long time, infrared thermal imaging detection technology has become an important means to ensure Industrial safety in developed countries. Theapplication field includes electric power, metallurgy, petro-chemistry, machinery,coal, traffic, fire control and national defense, etc. It can not only carries out real-time detection at high voltage, high current and high speed operation to perform real-time detection for production and instrument but also need not power off the power supply, stop the machine or stop the

production to find the potential problems and prevent occurrence of malfunction. The "non contact" modern detection technology is safe, reliable and quick. It is a type of technical revolution compared with traditional contact detection method.The infrared thermal imaging technology is widely used in the following fields:

- Power equipment, transmission, transformer line inspection;
- Hidden fire source search in fire protection;
- Personnel search and rescue in the fire, and fire command;
- Analyze the location and heat loss of leak points in heat pipes and heating equipment;
- Determining the location of the heating fault of the operating train;
- Security department night monitoring.

Overview

This product is a light and portable handheld infrared thermal imager with simple operation and a wide range of application scenarios. It looks comfortable providing clear and delicate thermal imaging, so it is an ideal outdoor device.

It supports several pseudo-color modes with one-click switching, capable of distinguishing the location of target in the scene in a timely manner.

To take images, you can save thermal images into this device, read images by USB or save them into your computer used to generate reports and print them.

Cleaning of the Products

Please use damp cloth or weak soap to clean the enclosure of the device. Don't use abradant, isopropanol or solvent to clean. The lens and screen should be cleaned with use of cleaning agents for professional optical glasses.

Lens Maintenance

Prevent damage of the infrared lens：

- Clean the infrared lens carefully. The lens is provided with refined anti-reflection coating.

- Don't clean with force to prevent damage of the anti-reflection coating.

- Use a cleaning solution for lens maintenance, such as alcohol-based commercial lens cleaners, alcohol, and a lint-free cloth or paper towel. Compressed air tanks can be used to remove loose particles.

Clean the lens:

- The compressed air tank or dry nitrogen ion gun (if applicable) may be used to blow the loose particles on the lens surface.

- Dip the lint free cloth in alcohol.

- Squeeze the excessive alcohol in the cloth or apply the lint free cloth on dry cloth lightly.

- Wipe the lens surface by making circular motion. Then discard the cloth.

- If it is necessary to repeat above step, please use new cloth to dip with the cleaning solution to wipe.
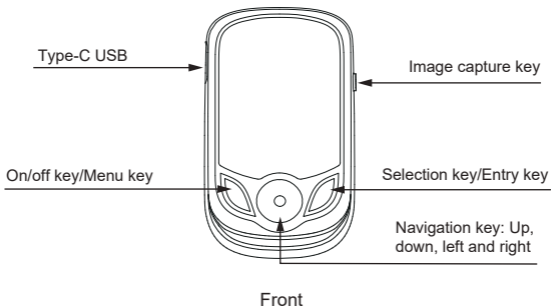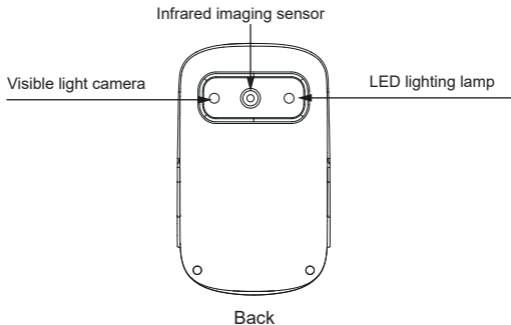
Performance Indices

Technical parameters	
Product model	HT-A2+
Detector's resolution ratio	256x192
Pixel size	12um
Response wave band	8-14um
NETD	<50mk
Frame rate	25Hz
Lens focal length	3.2mm
Minimum imaging distance	0.15m
Viewing angle	56°x 42°
IFOV	3.75mrad
Focus mode	Fixed focus
Temperature measurement function	Center spot/Maximum temperature/ Minimum temperature
Temperature measurement range	-20℃-120℃,120℃-550℃
Temperature measurement accuracy	300℃-500℃:±4% -15℃-300℃:±2℃ or ±2% -20℃-15℃:±4℃

Temperature measurement unit	Celsius and Fahrenheit
Emissivity setting	0.01-1.0 adjustable
Language	Chinese, English, German, Italian
Operating temperature	-10℃ --50℃
Protection level	IP54
Fall	2M

Hardware functions

Lighting	LED flash
Detector	256x192
Visible light camera	0.3Mp (652x480)
Display screen	3.2"LCD 240x320
Capacitive touch screen	CTP3.2" 240x320
Buttons	7 functional buttons (Power on/off, up, down, left, right, select, shooting/video recording)
Memory	eMMC 16GB (space available at13.9G)
WIFI	Supported
Hardware interface	Type-C
Charging	5V/2A
Sound	Not supported
Battery	3000mAh

Product Structure

1. Instruction to Structure

Infrared imaging sensor

Visible light camera

LED lighting lamp

Back

Type-C USB

Image capture key

On/off key/Menu key

Selection key/Entry key

Navigation key: Up, down, left and right

Front

2. Product Structure

Temperature range   Current emissivity

Central point temperature

Battery power

Color code

The highest temperature cursor

Temperature cursor at central point

The lowest temperature cursor

Maximum value/ minimum value of field temperature

Time

MAX:36.3°C MIN:16.5°C   15:1

Color code: used to mark the color corresponding to the relative temperature from low to high in the field of version.

The central point temperature cursor: used to indicate the central position in the screen area. The cursor color displays white. The temperature value is displayed top left corner of the screen.

The highest temperature cursor: used to indicate the highest temperature position in the screen area. It will move with the movement of the highest temperature. The cursor displays red. The temperature value is displayed at bottom left corner of the screen.

The lowest temperature cursor: used to indicate the lowest temperature position in the screen area. It will move with the movement of the lowest temperature. The cursor displays green. The temperature value is displayed at the center position below the screen.

3. Key Description

On/off key/Menu key Selection key/Entry key

Navigation key: Up, down, left and right
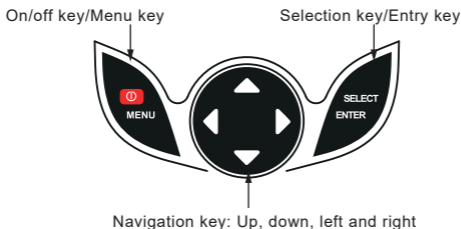
Operation Instruction

Product boot/shutdown

Press and hold the " ⏻/MENU" button for more than 3 seconds to turn the
Thermal Imaging on or off.

LCD screen display

After turning on the power, the screen shows the thermal imaging status.
Note:Time adjustment may be required when you move the camera between
environments with widely varying ambient temperatures.

Switching between infrared thermal image and visible image

press " ◀ " or " ▶ " key to switch the degree of fusion between inferred
thermal images and visible images (the degree of fusion is 0%, 25%, 50%,
75% and 100%).

Image capture

press the image capture key. When the capture is successful, the screen
will display "store photo?" prompt. If "yes" is selected, please press
" ⏻/MENU" key to determine to save the image. If "no" is selected, press

" SELECT/ENTER " key to determine not to save the image.

Video recording

In the normal startup and running interface, long press the capture button, the screen will display the prompt "record video?" , if you want to select "Yes" at this time, please press the " ⏻ /MENU" button or the capture button to start recording. If you want to select "No" , press the "SELECT/ENTER" key to cancel the recording. Long press the capture key again to end the recording.

The function to hide highest/lowest temperature column at the screen bottom

Under the operation after normal start up, press " ▲ "key and the screen bottom will display highest/lowest temperature column. Press " ▲ " can also hide it.

LED lighting

Long press the capture button for about 2 seconds to turn on or off the LED light.

Image output

The saved images through capture may be checked and output by connecting with a computer through Type-C USB.

Reading images

Open the USB protective cover, as shown in the front view of the product, connect the Type-C USB cable to the USB port and then connect to the computer to read the image or save it into the computer.

The supported operating system through verification includes: winxp,win7, win 8, win10, win11, Apple system.

It is recommended that the USB cable attached to the unit or a better quality USB cable be used.

Cautions:

When connecting to the computer, select 'Safe Eject Device' and then unplug the data cable to avoid problems such as file system damage. If there are issues such as inability to store, you can find the hard drive on your computer and repair it.
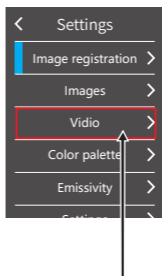
An introduction to the touch button menu

Press the " ⏻/MENU" button to bring up a menu bar on the left, which includes "Image overlap", "Image", "Video", "Palette", "Emissivity", and "Set" sub menu.

In which the red box areas on both sides of the menu interface are invalid touch areas, and the effective touch areas of the sub menu are as follows:

‹ Settings
Image registration ›
Images ›
Vidio ›
Color palette ›
Emissivity ›
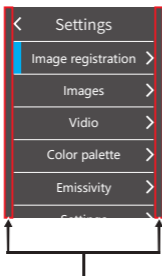
Design blanks
No touch sensing

‹ Settings
Image registration ›
Images ›
Vidio ›
Color palette ›
Emissivity ›

Sub menu
Effective touch area

1."Image overlap" sub menu

1.1. Description of image overlap

The image overlap makes it easier for users to understand infrared images by using aligned visual and infrared images. By overlapping images, a visual image of each infrared image can be captured to accurately display the temperature distribution of the target area and share it more effectively with others.

1.2. Application of image overlap

Press the " ⏻/MENU " button to go to the main menu, from the main menu, by touch, click on the "Image overlap" to go to the sub menu or by the Navigation button, select the image overlap sub menu, and press the "SELECT/ENTER" button to go to the image overlap adjustment mode. Press the up, down, left or right button from the Navigation button to perform visible light image translation operation, and press the "SELECT/ENTER" button to exit the image overlap mode.

(Note: If there is no operation for 6 seconds continuously, the image overlap mode will be exited automatically).

2."Image" sub menu

2.1. Viewing images

Press the " ⏻/MENU" button to go to the main menu, from the main menu, by touch, click on the "Image", as shown in the figure below:
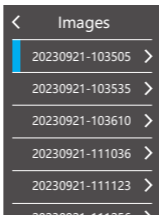
Touch to select the images to be previewed, or click on the up or down Navigation button to select the pictures to be previewed, and press the "SELECT/ENTER" button to view images, as shown in the figure below:

Return to previous level

Previous picture

Next picture

Delete pictures
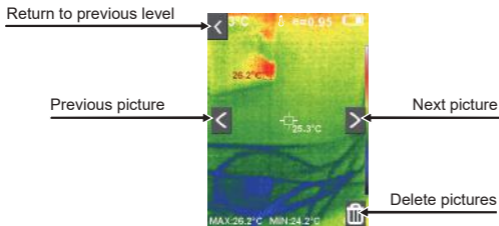
As shown in the figure above, click on the " < " or " > " button in the middle of the screen or press the "◀" or "▶" Navigation button to be able to achieve the previewing of the previous and the next pictures. Click on the " < " in the left upper corner of the screen or press the " ⏻/MENU" button to be able to return to the menu.

2. Deleting images

When browsing images, click on the button in the right lower corner of the screen, and a dialog box will pop up asking whether to delete the current image. Click on "Yes" to delete the current image, or "No" not to delete the current image and deactivate the current dialog box.

3. "Video" sub menu

3.1. View videos

Press " ⏻/MENU " button to go to the main menu, from the main menu, by touch, click on the "Video" to go to the sub menu or by the Navigation button, select the "Video" sub menu, and press the "SELECT/ENTER" button to go to the sub menu, as shown in the figure below:
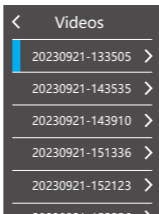
By touch, select the videos to be played, or click on the up or down Navigation button to select the videos to be played, and press the "SELECT/ENTER" button to play videos. In the process of video playing, click on the "SELECT/ENTER" button to be able to pause.

In viewing videos (in case of no playing), press the "◀" Navigation button to be able to view the next video, and press the "▶" Navigation button to be able to view the next video.

Press the " ⏻ /MENU" button to return and quit the menu.

3.2. Deleting videos

In viewing videos (in case of playing or not playing), press the "▲" button, and "Delete videos?" dialog box will appear on the screen. Now, if you touch to select "Yes" or click on the "SELECT/ENTER" button to confirm the deletion of the videos.If you touch to select "No" to confirm not to delete the videos. Press the " ⏻/MENU" button to return and quit the menu.

4. Introduction to "Color Palette" Sub-menu

4.1.Color Palette Description

The palette can be used to change the pseudo-color display of the infrared image on the display. Some tune Swatches are better suited for specific applications and can be set up as needed.

The palette is divided into: rainbow, iron, cold color, white hot, black hot, five palettes.

These palettes work best with high thermal contrast and provide additional color contrast between high and low temperatures.

Suitable selection of color palette displays the details of the target objective better. Rainbow, iron, cold color palettes focus on display of color. Such color palettes are very suitable for high heat contrast and are used to improve the color contrast between high temperature and low temperature. But the black hot and white hot color palettes provide even linear color.

The following is the image of the same object with selection of different color palettes.
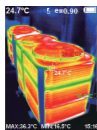
| Rainbow | Iron | Cold color | White hot | Black hot |

4.2. Palette application

Press the " ⏻ /MENU" button to go to the main menu, from the main menu, by touch, click on the "Palette"to go to the sub menu or by the Navigation button, select the "Palette"sub menu, and press the "SELECT/ENTER" button to go to the sub menu, as shown in the figure below:
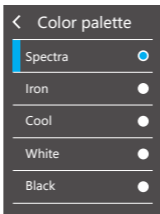
By touch, select Palette or press the "▲" or "▼" Navigation button to select the palette, and then by touch, click on the left upper corner or press the " ⏻/MENU" button to be able to set the palette successfully.

5. Introduction to "Emissivity" Sub-menu

5.1. Emissivity Description

The emissivity of the product can be adjusted from 0.01 to 1.00 with the default value of 0.95. Many common objects and materials (such as timber, water, skin and textile fabric) can reflect the heat energy effectively. So it is easy to obtain relatively correct measurement value. The emissivity is usually set as 0.95 when the coarse objects that are easy to give outenergy. For semi-matte objects that give out less energy, the emissivity is usually set as 0.95 when the coarse objects that are easy to give out energy. For semi-matte objects that give out less energy, the emissivity is about 0.85 and the emissivity of semi-gloss objects is 0.6. The shiny objects are divided into materials with low radiation coefficient. The emissivity is usually set as 0.3 at the time of measurement. Correct setting of the value of emissivity is very important for you to carry out the most correct temperature measurement. The surface emissivity will produce giant impact on surface temperature measured by

the product. Understanding the surface emissivity will enable you to obtain correct temperature measure ment result.

5.2. Emissivity Setting

The product is provided with four types of object measurement modes:

- Coarse object (0.95)
- Semi-matte object (0.85)
- Semi-shiny object (0.60)
- Shiny object (0.30)

According to the characteristics of the measured objects, users may set the emissivity value through the "self-define" option (please refer to the table of "emissivity of common materials").

The operation steps are as follows:

Press the " $\bigcirc$ / MENU " button to go to the main menu, from the main menu, by touch, click on the "Emissivity" to go to the sub menu or by the Navigation button, select the " Emissivity " sub menu, and press the "SELECT/ENTER" button to go to the sub menu, as shown in the figure below:
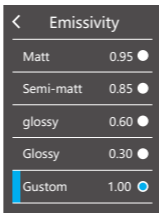
For the four kinds of emissivity above, touch and select the emissivity, or press the "▲" or "▼" Navigation button to select the emissivity, and then press the "SELECT/ENTER" button for the selection, and finally, touch

and click on the left upper corner to return or press the " ⏻/MENU" button to return to be able to set the emissivity successfully. If you touch to select "User defined" emissivity to go to the editing state, or press the "▲" or "▼" Navigation button to select "User defined" emissivity, and then press the "SELECT/ENTER" button to go to the editing state, as shown in the following figure:
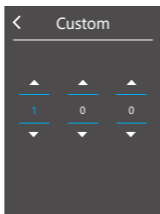
Touch and click on the corresponding columns on the screen, and then touch and click on the "▲" or "▼" button to set the corresponding values, or by the "▶" or "◀" Navigation button, select the corresponding columns, and then by "▲" or "▼" Navigation button, set the corresponding values. After modification, touch and click on the left upper corner to return or press the " ⏻ /MENU" button to return to be able to set the emissivity successfully.

5.3. The Emissivity Value of Common Materials

Substance	Thermal radiation	Substance	Thermal radiation
Bitumen	0.90~0.98	Black cloth	0.98
Concrete	0.94	Human skin	0.98
Cement	0.96	Foam	0.75~0.80
Sand	0.90	Charcoal dust	0.96
Earth	0.92~0.96	Paint	0.80~0.95
Water	0.92~0.96	Matte paint	0.97
Ice	0.96~0.98	Black rubber	0.94
Snow	0.83	Plastic	0.85~0.95
Glass	0.90~0.95	Timber	0.90
Ceramics	0.90~0.94	Paper	0.70~0.94
Marble	0.94	Chromium hemitrioxide	0.81
Gypsum	0.80~0.90	Copper oxide	0.78
Mortar	0.89~0.91	Ferric oxide	0.78~0.82
Brick	0.93~0.96	Textile	0.90

6." Set " sub menu

Press the " ⏻/MENU" button, from the main menu, select "Set", and then press the "SELECT/ENTER" button to go to the "Set" sub menu.

Settings		
Auto on/off▶	No 5min 20min	
Brightness▶	Low Medium High	
Language▶	English Chinese Italian German	
Temperature unit▶	Celsius Fahrenheit	
Temperature range▶	Low at -20℃-120℃ High at 120℃-550℃	
Time format▶	24-hour system 12-hour system	
Set time▶	Set dates▶	Set year Set month Set date
	Set time ▶	Set hour Set minute Set second
Cold and hot spots▶	Off On	
WIFI▶	Off On	

6.1. Auto power off setting

Press the " /MENU" button to go to the main menu, from the main menu, by touch, click on the " Set " to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then by touch, click on the "Auto Off " to go to the setting interface, or by the Navigation button, select the "Auto Off " sub menu, and press the

 "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
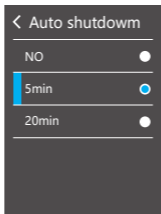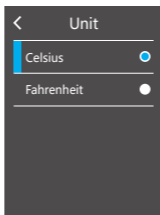

As shown in the figure above, by touch, select 3 options, or press the "▲" or "▼" Navigation button to select 3 options. Then press the "SELECT/ENTER" button for confirmation. After setting is okay, by touch, click on the left upper corner to return or press the " /MENU" button to return to be able to set the auto power off option successfully.

6.2. Brightness setting

Press the " /MENU" button to go to the main menu, from the main menu, by touch, click on the "Set"to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then, by touch, click on the "Brightness" to go to the Set interface, or by the Navigation button, select the " Brightness " sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
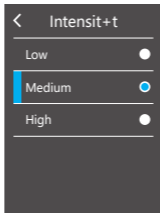
As shown in the figure above, by touch, select 3 options, or press the "▲" or "▼" Navigation button to select 3 options, and then press the "SELECT/ENTER" button for confirmation. After setting is okay, by touch, click on the left upper corner to return or press the " ⏻/MENU" button to return to be able to set the brightness option successfully.

6.3. Language setting

Press the " ⏻/MENU" button to go to the main menu, from the main menu, by touch, click on the " Set " to go to the sub menu or by the Navigation button, select the "Set" sub menu, and then press the "SELECT/ENTER" button to go to the sub menu.

Then, by touch, click on the "Language" to go to the Set interface, or by the Navigation button, select the "Language " sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
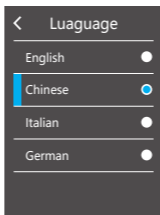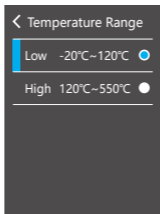
As shown in the figure above, by touch, select 4 options, or press the "▲" or "▼" Navigation button to select 4 options, and then press the "SELECT/ENTER" button for confirmation. After setting is okay, by touch, click on the left upper corner to return or press the " ⏻/MENU" button to return to be able to set the language option successfully.

6.4. Temperature unit setting

Press the " ⏻/ MENU" button to go to the main menu, from the main menu, by touch, click on the " Set " to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then, by touch, click on the "Temperature Unit" to go to the Set interface, or by the Navigation button, select the "Temperature Unit" sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
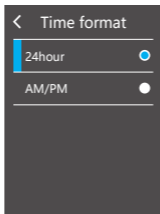
As shown in the figure above, By touch, select "Celsius" or "Fahrenheit" option, or press the "▲" or "▼" Navigation button to select these 2 options, and then press the "SELECT/ENTER" button for confirmation.

After setting is okay, by touch, click on the left upper corner to return or press the " ⏻/MENU" button to return to be able to set the temperature unit option successfully.

6.5. Temperature Range setting

Press the " ⏻/MENU" button to go to the main menu, from the main menu, by touch, click on the "Set" to go to the sub menu or by the Navigation button, select the "Set" sub menu, press the "SELECT/ENTER" button to go to the sub menu.

Then by touch, click on the "Temperature Range" to go to the Set interface, or by the Navigation button, select the "Temperature Range"sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
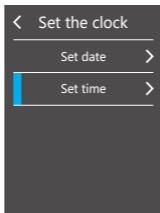

As shown in the figure above, By touch, select "Low" or "High" option, or press the "▲" or "▼" Navigation button to select these 2 options, and then press the "SELECT/ENTER" button for confirmation. After it is set, by touch, click on the left upper corner to return or press the " ⏻/MENU " button to return to be able to set the temperature range successfully.

6.6. Time format setting

Press the " ⏻/ MENU " button to go to the main menu, from the main menu, by touch, click on the "Set" to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then, by touch, click on the "Time Format" to go to the Set interface, or by the Navigation button, select the "Time Format" sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:

As shown in the figure above, By touch, select the "24-hour system" and "12-hour system" options, or press the "▲" or "▼" Navigation button to select these 2 options, and then press the "SELECT/ENTER" button for confirmation. After setting is okay, by touch, click on the left upper corner to return or press the " ⏻/MENU" button to return to be able to set the time format option successfully.

6.7. Setting time

Press the " ⏻/MENU" button to go to the main menu, from the main menu, by touch, click on the " Set " to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then, by touch, click on "Set Time" to go to the Set interface, or by the Navigation button, select the " Set Time " sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:

As shown in the figure above, setting the clock is divided into "Set Date" and "Set Time".

6.7.1 Setting dates

By touch, click on "Set Date" to go to setting, or by the "▲" or "▼" Navigation button to select "Set Date", and then press the "SELECT/ENTER" button to go to the setting, as shown in the figure below:
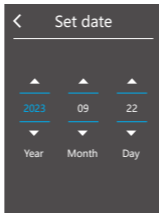
As shown in the figure above, there are three columns like "year", "month" and "date", and by touch, click on the "▲"or "▼" button of the corresponding columns on the screen to set the corresponding values, or by the "▶" or "◀" Navigation button, select the corresponding columns, and then by the "▲" or "▼" Navigation button, set the corresponding values. After modification, by touch, click on the left upper corner to return or press the "⏻/MENU" button to return to be able to set dates successfully.

6.7.2 Setting time

By touch, click on the "Set time" to go to the setting, or by the "▲" or "▼" Navigation button, select "Set Time", and then press the "SELECT/ENTER" button to go to the setting, as shown in the figure below:
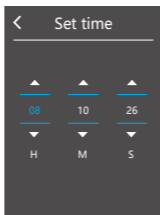
As shown in the figure above, there are three columns like "H", "M" and "S", which, respectively, correspond to hour, minute and second. By touching the "▲" or "▼" button corresponding to the columns on the screen, set the corresponding values, or by the "▶" or "◀" Navigation button, select the corresponding columns, and then by "▲" or "▼" Navigation button, set the corresponding values. After modification, by touch, click on the left upper corner to return or press the "⏻/MENU" button to return to be able to set time successfully.

6.8 Cold and hot spots setting

Press the " ⏻ / MENU " button to go to the main menu, from the main menu, by touch, click on the "Set" to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then by touch, click on the "Cold and Hot spots" to go to the Set interface, or by the Navigation button, select the "Cold and Hot spots" sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
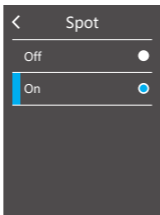
As shown in the figure above, by touch, select the "Off" or "On" option, or press the "▲" or "▼" Navigation button to select these 2 options, and then press the "SELECT/ENTER" button for confirmation. After setting is okay, by touch, click on the left upper corner to return or press the " ⏻/MENU" button to return to be able to set the cold and hot spots option successfully.

6.9 WIFI setting

First, connect the wifi connection function requiring support by the A2+ device, and then press the " ⏻ / MENU " button to go to the main menu, from the main menu, by touch, click on the "Set" to go to the sub menu or by the Navigation button, select the "Set" sub menu, and press the "SELECT/ENTER" button to go to the sub menu.

Then, by touch, click on the "WIFI" to go to the Set interface, or by the Navigation button, select the " WIFI " sub menu, and press the "SELECT/ENTER" button to go to the Set interface, as shown in the figure below:
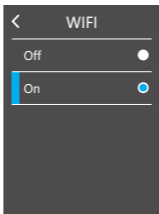

As shown in the figure above, By touch, select the "Off" or "On" option, or press the "▲" or "▼" Navigation button to select these 2 options, and then press the "SELECT/ENTER" button for confirmation. After setting is okay, by touch, click on the left upper corner to return or press the " ⏻/ MENU" button to return to be able to set WIFI option successfully.

If 'On' is selected, search for WiFi hot spots on the connected device, connect to the "Thermal 0000" hot spot, enter 192.168.230.1 in the web browser, and you can see the displayed content on A2+ in the browser. Based on the displayed content, you can set various operations on A2+.

Thermal Imaging Image Analysis Software Operation Guide

Software Installation And Operation

1. Connect the product with a USB cable, and then connect to the computer. Open the removable disk in the computer, find the "INSTALLATION PACKAGE" folder and open it, and click ❄ to install the software.

2. After installation, open ❄ Enter the picture analysis software interface,-click "Open File", and select the picture to be analyzed,as shown in the figure:
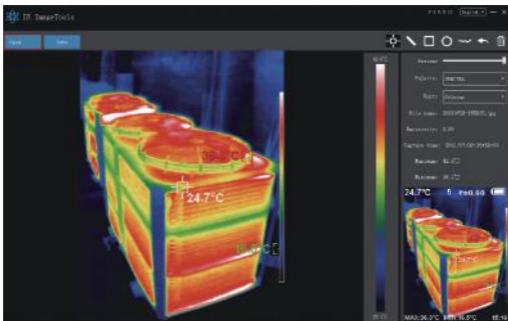
Interface Introduction

1. Select the language in the upper right corner of the interface, you can choose Chinese, English, and switch between the two languages.

2. On the right are shown as: fusion rate, color palette, temperature unit, picture information.

- Fusion rate: Moving the slider can realize the fusion of visible light image and infrared thermal image. The left end is a visible light image, and the right end is an infrared thermal image.

- Palette: In the palette, click the " ▼ " icon to choose from five color palettes: rainbow, iron red, cold, white hot, black hot.

- Temperature unit: In the temperature unit, click the " ▼ "icon to select three temperature units: Celsius, Fahrenheit, and Kelvin.

- Picture information: display file name, emissivity, capture time, maximum temperature, minimum temperature, center point temperature, original thermal image.

3. "Open File" in the upper left corner of the interface, open the thermal image to be read. When you need to save the picture after the operation, click "Save"
(Note: the saved picture cannot be opened again with this software).

Icon Introduction

1. " ⊹ " icon, take the temperature of the thermal image.

2. " ＼ "icon, select the maximum temperature and minimum temperature of the thermal image in a straight line.

3. " ▢ "icon, select the thermal imaging map to select the maximum temperature and minimum temperature.

4. " ◯ " icon, circle the thermal imaging map to get the maximum temperature and the minimum temperature.

5. " ~~~ "icon, arbitrarily circle the thermal imaging map to take the maximum temperature and the minimum temperature.

6. " ← "Return icon, when an operation error occurs, you can click this icon to return to the previous operation.

7. " 🗑 "Delete icon, when you select multiple temperature values and need to cancel all of them, click Delete.

Troubleshooting

If you encounter with any problem when using the thermal image device,please use the following table for repair.If the problems are not solved, please cut off the power supply and contact with the manufacturer.

Failure phenomenon	Failure cause	Solution
The thermal imaging device cannot start	The battery is not installed	Install the battery
	The power of the battery is used up	Replace with new battery or charge it
The thermal imaging device powers off automatically	The power of the battery is used up	Replace with new battery or charge it
	The time set for automatic power off is due	Restart or change the time for automatic power off after restarting (refer to 6.1)

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说明书印刷要求

尺寸：90x120mm
四色印刷 80g 双铜 骑马订